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A

## WEEKLY REVIEW OF MEDICINE.

EDITED BY

FRANK P. FOSTER, M.D.

VOLUME XLVII.

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# LIST OF ILLUSTRATIONS IN VOLUME XLVII.


| | PAGE |
|---|---|
| Case of Chronic Chorea. Two Illustrations | Facing 1 |
| Treatment of the Sac in Kelotomy. Three Illustrations | 66, 67 |
| Rubber Cushions for Surgical Purposes. Two Illustrations | 104 |
| Portrait of Dr. T. R. Varick | Facing 113 |
| An Electric Nasal Saw. Six Illustrations | 120 |
| Tube for Nasal Intubation | 123 |
| Temperature Chart | 125 |
| Arnold Automatic Steam Cooker | 150 |
| Koch's Sterilizer (modified) | 150 |
| Apparatus for Sterilizing Dressings | 150 |
| Hæmostatic Clamp Forceps | 151 |
| Congenital Club-foot. Five Illustrations | 158, 159 |
| Ear Instruments. Four Illustrations | 185 |
| Horizontal Transverse Section of Pelvis. Three Illustrations | 201, 202 |
| An Aseptic Obstetric Case | 249 |
| Snare for the removal of Laryngeal Growths | 261 |
| Pinkham's Laryngeal Aspirator | 283 |
| Alexander's Operation. Four Illustrations | 298, 299 |
| A New Antiseptic Scissors and Forceps Lock | 332 |
| Dr. H. A. Kelly's Two-way Catheter | 332 |
| Diabetic Affections of the Eye. Five Illustrations | 345–347 |
| Cystoscopes. Six Illustrations | 427, 428 |
| Rubber Pad for Surgical Purposes | 473 |
| Gunshot Wounds of the Cranium. Two Illustrations | 485 |
| A Modified Thomas's Perforator | 501 |
| Uterine Stem | 508 |
| Rubber Tube | 509 |
| A Modified Palmer's Uterine Dilator | 510 |
| Angular Tenaculum | 510 |
| Stem Introducer | 510 |
| Human Brain | 533 |
| Glosso-labio laryngeal Paralysis | 534 |
| Progressive Muscular Atrophy. Three Illustrations | 535, 537 |
| Apparatus for recording Spinal Curvatures. Four Illustrations | 544, 545 |
| Diagrams of Spinal Curvatures. Four Illustrations | 541 |
| Nasal Probe | 553 |
| Fracture of the Fibula with Injury to the External Popliteal Nerve | 562 |
| A Case of Extra-uterine Pregnancy | 566 |
| A New Suture-fastener for Silver Wire. Four Illustrations | 572, 573 |
| The Brachial Plexus of Man | 622 |
| The Brachial Plexus of the Cat | 622 |
| The Hip Joint of the Cat | 623 |
| The Ligamentum Teres in the Cat | 623 |
| The Knee Joint in the Cat | 623 |
| The Ligaments of the Knee Joint in the Cat | 624 |
| Portable Apparatus for generating Oxygen | 627 |
| An Apparatus for Extending the Elbow Joint | 642 |
| Wire Cuirass. Three Illustrations | 645 |
| Apparatus for Extending and Rotating the Forearm. Three Illustrations | 657, 658 |
| An Aseptic Needle-Holder | 670 |
| A Knife-blade Tenaculum | 693 |
| A Rope Écraseur for Hysterectomy | 726 |



Before Treatment.



After Eight Weeks' Treatment.

Dr A. L. Ranney's case of chronic chorea of thirty-one years' standing (from untouched negatives). For the history, see Case X, page 5.

## Original Communications.

# THE TREATMENT OF FUNCTIONAL NERVOUS DISEASES BY THE RELIEF OF EYE-STRAIN.*

BY AMBROSE L. RANNEY, A. M., M. D.,

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WITHIN the past year the attention of the medical profession has been drawn, more forcibly perhaps than ever before, to the fact that eye-strain may constitute an important element in the causation of nervous disturbances of the so-called "functional" type.

In the light shed upon this subject chiefly by recent contributions to medical literature,† the view is gradually being accepted by many in the profession that certain nervous diseases (whose pathology, to say the least, is still in doubt) are possibly not dependent in every case upon an unrecognized organic lesion; and they are being led to coincide with the statement that the term "functional" nervous disease may be properly applied, in some instances at least, to the graver nervous conditions—such, for example, as epilepsy, chorea, hysteria, or other manifestations of nervous exhaustion, and insanity. In other words, the professional mind seems more willing now than in the past to discard an apparently fruitless search for a pathognomonic lesion for each intractable nervous condition, and to look more calmly upon tangible clinical facts, even if they are radically opposed to pre-existing views.

If the view that eye-strain is a frequent cause of functional nervous derangements proves to be the correct one, beyond the possibility of doubt or cavil, it is not difficult to see that a hope of marked relief or of ultimate recovery is practically extended to many hopeless sufferers upon whom drugs have exerted little or no benefit.

In anticipation of the general acceptance of such a view (which I feel assured must in time prevail), I have consented to discuss from a clinical and physiological standpoint some of the points involved in this theory. In doing so I shall call your attention to a few illustrative cases, with running commentaries upon such of them as present, to my mind, any points of special interest. All of these cases have been encountered in my own practical office work, and most of them have been seen frequently by physicians of repute in our city, and by some physicians of note from neighboring States.

In order that those of my audience who have possibly not given much attention to the views which these cases are particularly selected to illustrate may properly understand the train of reasoning that offered a solution to my mind of the symptoms here recorded, I take the liberty of quoting a few paragraphs from a paper which I lately read before the International Medical Congress at Washington, entitled "Does a Relationship exist between Anomalies of the Visual Apparatus and the so-called 'Neuropathic' Predisposition?" * This paper was based upon a carefully tabulated analysis of the records of one hundred consecutive cases of typical neuroses taken from my private case-book.

In this paper I say:

> Until there is a uniformity in the methods employed for testing the eye-muscles,† and of terms for the recording of anomalies so detected, the profession must unfortunately continue to be more or less embarrassed in this line of research. I do not feel justified in personally discussing this subject here, as it has only an indirect relationship with this paper; but I can not refrain from saying, in this connection, that to defective methods of examination, made venerable chiefly by their antiquity, we owe to-day, in my opinion, much of our ignorance of anomalies of the ocular muscles.
>
> Some time ago I was struck, on looking over a children's magazine, with an illustration designed to teach the reader the dependence of the various organs of the body upon the brain. It represented the brain as the head of a manufacturing establishment sitting at his desk, and around him were the various departments—as, for example, the liver-department, the stomach-department, the eye-department, etc. These departments were connected with the head of the establishment (the brain) by telegraph-wires, through which each could make its wants known and receive information regarding them.
>
> Probably the designer of this sketch (made for the purpose of illustrating to the child the dependence of the organs upon the brain for their successful operation, as well as their actual support) built "better than he knew." He embodied in his drawing a graphic representation of certain fundamental principles of physiology which are not clearly understood even by many adult minds in their bearings upon the general health.
>
> The lungs do not make us breathe; except in an indirect way, by asking the brain to start the necessary muscles into action. The stomach does not perform its functions until after the brain has been requested by it to turn on the blood-supply in sufficient quantities to produce the requisite quantity of gastric juice. The intestine performs its incessant worm-like movements by no inherent power of its own. The heart keeps up its rhythmical beating only when permitted to do so by the great center of nerve force.

---

* A lecture delivered by the author before the class of the New York Post-graduate Medical School and Hospital.

† The reader is referred to the articles by Dr. George T. Stevens on "Chorea" ("Medical Record," 1876); on "Anomalies of the Ocular Muscles" ("Arch. of Ophthalmology," June, 1877); and on "Ocular Irritations and Nervous Diseases" ("New York Medical Journal," April, 1877); also to his work on "Functional Nervous Diseases" (D. Appleton & Co., N. Y., 1887); also to a contribution by Dr. H. D. Noyes, on "Tests for Muscular Asthenopia and Insufficiency of the External Recti," read by him before the International Medical Congress, Copenhagen, 1884; also to papers by the author on "The Eye as a Factor in the Causation of some Common Nervous Symptoms" ("New York Medical Journal," February 27 and March 15, 1886); on "Eye-strain in Neurology" ("New York Medical Journal," April 16, 1887); on "Eye-strain in its Relations to Functional Nervous Diseases" ("Medical Bulletin," September, 1887); and an abstract of an essay read before the International Medical Congress at Washington, entitled "Does a Relationship exist between Anomalies of the Visual Apparatus and the so-called 'Neuropathic Predisposition?'" ("Medical Register," November 19, 1887).

* An abstract of this paper was published in the "Medical Register," November 19, 1887.

† See article by Dr. G. T. Stevens in the "Archives of Ophthalmology," June, 1887.

Now, is it at all inconsistent with physiological principles to advance the view that any excess of nervous expenditure to one organ over the normal amount which should be furnished is done at the expense of the others sooner or later?

No one can draw incessantly upon his reserve capital of nerve force without incurring a risk of ultimately exhausting it. A *bankruptcy in the reserve capital of nerve-force* entails untold ills to the individual.

The day of reckoning is postponed in any given case in direct proportion to the drafts made upon the reserve and the amount of the reserve. This may help us to explain why some escape it indefinitely, while others are precipitated into indescribable distress when life is hardly begun.

In case the bearing of eye-strain upon the problem of nervous expenditure is not very clear to some of my hearers, I deem it wise to quote here some extracts from a late brochure of mine upon this subject ("N. Y. Med. Jour.," Feb. 27 and March 13, 1886).

Speaking of hyperopia, I say:

Fortunately for our nervous system, the normal eye takes pictures of surrounding objects *without any muscular effort* when the object is more than twenty feet away; hence, during the larger part of each day, the *normal eye is passive*, and is practically at rest, although performing its functions. How different is the condition of the far-sighted or 'hyperopic' eye, however, from the normal! For this eye (since it is *too short* in its antero-posterior axis) all objects *have to be focused by muscular effort*, irrespective of their distance from the eye. Such an eye is never passive. It has no rest while the body is awake. It is always straining more or less intensely to bring properly upon the retina the images of objects seen.

The "hyperopic" condition of the eye, or "far-sightedness," as it is called, is a very common defect. It is especially frequent in persons of tubercular parentage. It is well, therefore, to suspect the existence of this defect in children or adults whose ancestors have died of "consumption."

Again, speaking of muscular anomalies, I use the following illustration:

A high-couraged horse feels the will, as well as the support, of his driver through the reins by means of the bit. Although his course and rate of speed are changed from time to time at the will of the driver, the reins are never slackened. The horse becomes acquainted with the desires of his master by a sense of increased or diminished tension upon the reins. He is guided to either side by a difference in the tension of the two, although the driver does not entirely relax his hold upon the opposing rein while he uses the guiding one, and the difference in tension may be very slight.

So it is with the normal eye. It is both controlled and supported while performing its movements within the orbit by the eye-muscles (which are its reins). The brain is the driver. At its command the eye revolves, or remains stationary at any desired point. The tension of muscles, opposed to any movement of the eye required, is so modified by the brain as to insure the requisite support to the eyeball, and to steady it as it moves. Thus, a perfect equipoise is constantly established between opposing forces, adjusted with the nicest care to meet the full requirements of the organ under all possible circumstances. The normal eye does not tremble or wabble when it moves or the attempt is made to hold it in any fixed attitude. It is a piece of machinery, perfect in all its parts, reliable in its movements, perfectly controlled by its master.

The eye with "muscular insufficiency" is like a horse with an inexperienced and incompetent driver; the proper tension upon the reins is not maintained at all times, as it should be; there is no equilibrium between antagonistic muscles; fixed attitudes are maintained with difficulty for any length of time; the brain becomes more or less disturbed by its inability to properly control the eye-movements, and exhausted by the continual strain imposed upon it by the efforts required to do so even imperfectly.

A point may now be raised concerning which some misapprehension seems to exist among medical men (judging from remarks which I occasionally hear expressed). I refer to the relationship of actual squint to nervous disturbances.

No one can deny that people frequently live for long periods of time in houses impregnated with sewer-gas and in the most malarious regions without apparently suffering in consequence. Yet no intelligent man would attempt to prove to-day that sewer-gas poisoning and malarial infection were delusions simply because some people had escaped their influence.

The argument has been advanced that, because some cross-eyed people have escaped epilepsy, chorea, insanity, and functional neuroses of the milder types, it is erroneous to maintain that eye-strain has anything to do with these conditions. This is absurd upon its face. The hint might, perhaps, be pertinently dropped in this connection that cross-eyed people practically suffer but little from their muscular error, simply because they have *habitual double vision, which no effort on their part can correct.* These subjects learn very quickly to practically discard one image (the one seen by the crossed-eye) and to use one eye only for ordinary vision. In other words, they never try to blend the images of the two eyes, except in certain attitudes of the head which result in a single visual image, without an effort on the part of the patient.

It is only in those cases where (in spite of a muscular error) the images of the two eyes can be blended by a great effort that the patient begins to experience the deleterious physical influences of abnormal muscular tension in the orbit.

If we admit the proposition that eye defects, or anomalies of the ocular muscles, are liable to become causes of impaired nervous energy (because they demand an excess of nervous expenditure), we are forced to the conclusion that the earlier this source of physical depression is removed the better are the prospects of the person so relieved of escaping diseases which impaired nervous energy necessarily tends to hasten or develop. We are naturally led to question if the so-called "neuropathic predisposition" is not dependent (in a certain proportion of cases, to say the least) upon "eye-strain." We might possibly also be led to think that the so-called "tubercular tendency" (which is present, as far as my observation goes, in nearly 50 per cent. of all cases of marked functional nervous disease) might, in some cases, be modified, controlled, or perhaps arrested before its physical results become apparent by taking from the life of such subjects a load which their small reserve capital of nervous energy particularly unfits them to endure.

It is hard to give up the view, so universally conceded, that a predisposition to disease means a "constitutional taint." Yet, in many cases, we are absolutely unable to demonstrate that any evidence of physical weakness or disease has appeared until sufficient time had elapsed from the date of birth for the development of a serious impairment of nervous energy. What has caused it? Has it been deficient nourishment, a lack of maternal care or solicitude during childhood, gross violations of the rules of hygiene, or a lack of prudence on the part of the individual when of matured experience? The history of case after case answers "no" to such surmises. These, then, are not the all-important factors in every case. Phthisis, epilepsy, chorea, headaches, neuralgias, hysteria, dyspepsia, obstinate constipation, nervous prostration, inebriety, and many other evidences of the neurasthenic state are markedly hereditary. What is the load (if any) which many sufferers of this type are carrying through life? *Have they a congenital burden* —which is, perhaps, too often unrecognized? I leave these questions for future research to solve.

In this lecture I will call your attention to a few cases selected from my own case-book where the relief of ocular defects produced remarkable and unexpected benefit after all hope of recovery had practically been abandoned by the patient.

I bring these cases prominently before you in the interest of science only; because the improvement made by these patients is attributable not to drugs, but solely to Nature, when a burden of which she could not rid herself was taken away and recuperation became possible.

Did you ever see a tired horse fall prostrate under an excessive burden? *How long would he remain so were the burden not removed?*

Case I. *Chronic Epilepsy.*—Male, aged forty-three, merchant. Began to have severe epileptic fits when seventeen years of age. Had masturbated when a boy and had been addicted in later years to excessive venery.

*Family History.*—One brother is a confirmed dipsomaniac; the father died of paralysis; one sister is a victim to sick headaches; no phthisis has existed in the family, so far as could be ascertained.

The epileptic seizures of this patient varied in frequency from two or three a week to one in three months. He came under my care in 1871 (when twenty-eight years old), and was treated by me for many years with enormous doses of the bromides of potassium and sodium. These salts reduced the attacks to about four a year. Stopping the bromides invariably increased the frequency of the attacks.

*Eye-defects.**—In January, 1886, his eyes were examined after his return from an extended residence in the South. He showed under atropine a *latent hyperopia* of 2·50 D., and also a manifest *esophoria* of 4°. Subsequently several degrees of "latent" esophoria also manifested itself.

Partial tenotomies were performed upon both interni, and hyperopic glasses were given him. Since the first operation (January, 1886) he has taken no bromides and has not had a convulsion. He has twice been "at death's door" with fevers, but he has shown at no time any epileptic tendencies.

* For the meaning of terms employed in connection with muscular anomalies of the orbit, the reader is referred to the "New York Medical Journal" for December 4, 1886.

Case II. *Excruciating Headaches, Chronic Diarrhœa, and Neuralgic Paroxysms.*—Female, aged twelve.

*Family History.*—The father is somewhat eccentric and intemperate; pulmonary consumption was extremely common among the paternal ancestry; one brother is an epileptic and is partly idiotic; all the paternal side of the family are very excitable and nervous people.

This little patient was a great sufferer. Whenever attempts were made by her parents to send her to school, she would "break down" at once with peculiar attacks characterized by obstinate vomiting, chronic diarrhœa, intractable headache, and neuralgic pains in the spine, limbs, and chest. All medical treatment had proved of no permanent benefit. So long as study was not attempted, the child suffered only at intervals with these severe attacks, but she remained weak and delicate.

*Eye-defects.*—An examination of her eyes showed a *latent hyperopia* of nearly 3 D. and *esophoria* of 8°. Prior to the use of atropine she had normal vision ($\frac{20}{20}$). The wearing of spherical glasses (2 D.) and prisms (4° over each eye with the bases out) caused all her distressing symptoms to disappear within two weeks.

A letter, lately received from her mother by me, says: "I thank you next to the dear Lord for removing this burden of anxiety about my child, which was becoming unbearable."

Prisms were ordered in this case because the parents decided to postpone a radical correction of the muscular error. This step I expect to undertake very soon.

Case III. *Chronic Epilepsy.*—Female, aged twenty, unmarried.

*Family History.*—The father died of apoplexy. No hereditary tendency to nervous disease or phthisis could be discovered.

The epileptic seizures had existed for five years and developed after an excessive use of the eyes in sewing upon a black material. Menstruation was regular. The epileptic fits were, however, more frequent during the week prior to and following the menstrual epoch. Under large doses of bromides and ergot she had once in her history passed six weeks without an attack; but she averaged, when I first saw her, about six attacks each month. An epileptic attack could usually be induced by *fixing the eyes for a few minutes intently upon some near object.* She had at one time as high as thirty severe fits in twenty-four hours. When the bromides were withdrawn from this patient, the fits increased to several each day (often as high as ten severe seizures). She had for years suffered from obstinate constipation and pain during her menses.

*Eye-defects.*—This patient was found to be *absolutely emmetropic* both before and after the use of atropine. She showed, however, an esophoria of 5° and a very low power of abduction. Subsequently, a large amount of latent esophoria developed.

Several partial tenotomies were performed upon the interni of this patient during an interval of some four months until all latent esophoria was apparently overcome. After the first operation, the lacrymal secretion, which was singularly defective, became normal, her mental despondency disappeared, and her attacks rapidly diminished in frequency. Since June 10, 1886, she has had no fits to my knowledge, nor to that of her physician so far as I can ascertain. The case was lost sight of by both of us some months ago, much to my regret. When I last tested her eyes, she showed no defect and was apparently in perfect health. She had passed several menstrual epochs without any epileptic seizures.

In this case I would call attention (1) to the fact that emmetropia existed; (2) to the fact that the eye was the apparent exciting cause of her attacks; (3) to the fact that

epileptic seizures could be induced by excessive use of the internal muscles of the eye; and (4) that the esophoria was "latent" to a very marked degree.

In addition to these points of interest, another fact is worthy of passing remark—viz., that the relief of the "eye-strain" was followed in this case by a total disappearance of the habitual constipation that previously had existed, and that menstruation ceased to be accompanied by pain up to my last notes on the case. This experience, although apparently a coincidence, is not by any means infrequent with female patients in my experience, after a partial tenotomy of an eye-muscle for the relief of an abnormal tension within the orbit. It is probably to be attributed to the fact that the nerve-power of the patient improves rapidly after the excessive expenditure of nerve-force demanded by abnormal eye-tension is arrested, thus allowing of an improvement in the functions of the other viscera. My introductory remarks will, I trust, make this explanation clear to the audience and bring this statement more into apparent harmony with physiological laws.

Case IV. *Melancholia, Morbid Impulses, Cerebral Confusion and Distress, and an Intractable Prostatic Neuralgia.*—Male, aged twenty-three, unmarried.

*Family History.*—The mother of the patient suffers from neuralgia and headache. The paternal grandfather had paralysis. The paternal grandmother was "extremely delicate." One brother suffers from headaches. Another brother is very excitable and of a highly nervous temperament. No case of consumption has ever occurred in any branch of the family.

*Eye-defects.*—Hyperopia (latent) of 2·50 D. Esophoria (manifest) 4°. Subsequently, 12° were elicited prior to any operative procedure.

This patient had been under medical care for many months for a prostatic neuralgia, and had derived no benefit from local or general treatment. He developed *melancholia*, and would frequently retrace his steps for several blocks, during a stroll, in order to touch some object which he felt he should have touched when he passed it. The use of his eyes intensified his mental symptoms markedly. He also suffered from morbid fears. He had never had venereal disease. After partial tenotomies were performed upon his interni, and his hypermetropia was corrected by +1·50 spherical glasses, his recovery was very rapid and complete. He has had no abnormal mental symptoms or neuralgia of his prostate since the first operation (now nearly two years). His father, one brother, and a sister have since been examined by me, and all had very marked eye-defect.

In some respects this is one of the most remarkable cases I have yet observed. The mental condition of the patient, prior to the relief of eye-tension, was such as to justify the worst forebodings. Neither he nor his family had ever suspected any eye-defect in spite of the fact that his "latent" hyperopia was of a very high degree (nearly 3 D.), and his "latent" esophoria was of an equally high degree. His prostatic neuralgia was of a severe and intractable type, and its cause could not be discovered; yet it disappeared at once after a free operation upon the interni.

Case V. *Cerebral Neurasthenia, Pseudo-ataxia, and Chronic Headache.*—Male, married, aged forty-three.

*Family History.*—Two brothers died of phthisis, one uncle of paralysis; maternal ancestors are nervously predisposed; two children of the patient suffer from nervous disturbances.

*Eye-defects.*—Hyperopia (latent) of 2 D. Esophoria of 7° (manifest).

This gentleman was a great sufferer. Had been forced to give up his business from constant distress in the head, which was aggravated by any mental labor. He walked with difficulty on account of a feeling of great insecurity, and closely simulated the gait of an ataxic. He ate poorly and slept badly. No organic disease could be found, and electrical treatment was thoroughly tried, and proved of little benefit. Within twenty-four hours after a tenotomy of his internal rectus was performed he ceased to have pain in his head, walked with greater ease than for many months, and left for his distant home within a week, provided with +1 D. spherical glasses. The last report from him noted a slight tendency toward a return of his bad feelings, and he was advised to have his eyes again examined to ascertain if any latent esophoria remained to be corrected.

In his last letter he says: "I have not had a sick-headache since leaving New York, and much less of the neuralgic pain in the neck and other parts."

Cases VI and VII. *Asthenopia and Sick-headaches.*—Males, unmarried, aged twenty-one and twenty-two. Both were college students.

*Family History.*—Headaches were common in their immediate relatives and ancestors, and in one phthisis was found to have affected the ancestry.

*Eye-defects.*—Both had slight latent hyperopia and esophoria (manifest) of a moderate degree.

These were typical cases of asthenopia and sick-headache. Both wore prisms for a while with benefit, but they found that a latent esophoria showed itself, and required a change of the strength of the prisms. The stronger prisms caused them some distress in walking. They both underwent an operation for the radical correction of the defect, and have remained entirely free from asthenopic symptoms and headache up to the present time. The necessity of wearing glasses, which was thus dispensed with, is a matter of delight to both.

In one of these cases a marked tendency to dyspepsia and chronic constipation has apparently been entirely overcome. This fact was also noted in Case III.

The last tests made of the eyes of these patients showed an entire absence of muscular defect in the orbits.

Case VIII. *Cerebral Neurasthenia, Constant Pain in the Head of Five Years' Duration, Asthenopia, etc.*—Female, unmarried, aged twenty-one years.

*Family History.*—Maternal aunt and five paternal relatives died of phthisis; two cousins had chronic chorea.

*Eye-defects.*—Patient had hyperopia (latent) of 1·25 D. and exophoria (manifest) of 2°. A latent hyperphoria of 2° was subsequently discovered.

This young lady was brought into my office by two assistants, who were obliged to carry her from the carriage. For several years she had been carried daily from her room to the library of her father's house, and, after reclining in a chair for a few hours, she would be again carried to her bedroom. She could manage with difficulty to walk slowly across a room. She had not been able to write, read, sew, or see her most intimate friends for five years on account of a constant pain in her head, which was rendered intolerable by any use of the eyes or excitement. Her symptoms began while at boarding-school, from which she was removed to her home in a recumbent posture and by easy stages.

I used static electricity upon this patient for some weeks with a slight improvement in her power of walking, but no relief to her head. I then persuaded her to consent to a relief (by partial tenotomies) of her abnormal eye-tension. Tenoto-

mies were then performed upon her left superior rectus and both externi within the space of two weeks. From that date her improvement was very rapid. She was sent home a few weeks later practically cured.

A letter from her physician, lately received by me, says:

"Your patient is the wonder of this region. She rivals the 'Jersey Lily' in her feats of walking."

Before this patient was sent home she ascended and descended five flights of stairs daily, and averaged over a mile's walk each day without a companion to assist her.

Case IX. *Spinal Neurasthenia; Gastralgic Attacks; Attacks of Laryngeal Spasm; Persistent Tremor.*—Female, married, aged forty-two.

*Family History.*—Several blood-relatives died of phthisis; father and brother died of phthisis.

*Eye-defects.*—The patient was found to be emmetropic (when under atropine). Esophoria (manifest) of 3° existed.

This is quite as striking a case as the one last narrated, although of a different character. The patient had been for sixteen years a chronic invalid. She was unable to bear the least excitement. Even the companionship of her family for an evening was at times too great a strain upon her nervous system. She was at times a great sufferer from severe paroxysms of neuralgia of the stomach, and frequent attacks of alarming shortness of breath and a sense of impending suffocation would occur. I personally witnessed one of these attacks in my office, and it was entirely free from a trace even of hysteria. It was of much shorter duration than an asthmatic attack, and seemed to be due to a spasm of the larynx. She became markedly cyanotic, and suffered alarming shortness of breath.

In addition to these symptoms, this patient suffered from an uncontrollable trembling of the facial muscles and limbs when at all startled or excited. She had been for years unable to attend places of amusement or to bear physical exertion.

Much to my surprise (as she had a marked phthisical history), an examination of her eyes showed no refractive error (even when under the influence of atropine). She showed, however, a very high degree of esophoria, and a partial tenotomy was performed upon both of her interni. The effect was magical. She recovered her health completely within two months, and is to-day able to endure as much as when a young girl. The last report from her, some weeks ago, states that she had "shopped all day and attended the theatre in the evening." An old friend of the family lately alluded to the case, in my presence, as one "not of cure, but of resurrection."

Case X. *Chronic Chorea of Thirty-one Years' Duration, affecting the Head, Face, and all the Extremities.*—Female, aged thirty-three, unmarried.

*Family History.*—The father had pulmonary hæmorrhages for many years. One paternal aunt died of "hasty consumption." Sick-headaches are very common among both paternal and maternal ancestors. Neuralgia is a frequent complaint among the paternal ancestors.

When two years of age this girl developed chorea. The spasmodic twitchings steadily grew worse, in spite of the fact that her father was a physician, and that she had the services of the most skillful medical men from time to time. The twitchings began on the right side; but they subsequently involved the left side, and also the head and face.

She has suffered some from sick-headaches, as has also her sister. The *hands have gradually become so contractured* that all attempts to use them are more or less distressing. Her fingers could not be extended farther than would suffice to grasp small objects.

When I first saw this patient she was unable to write except by grasping the pencil with all the fingers and the palm of the left hand, and holding the left hand with the right hand as the spasmodic movements of writing were made. She walked with a peculiar unsteady and crab-like gait, ate with difficulty, and suffered great pain between the shoulder-blades and over the first lumbar vertebra (two points, by the way, which are very frequently attacked, in my experience, when eye-strain is present). She had never written with ink. Prior to menstruation (which occurred at seventeen years of age) the patient had experienced attacks (probably epileptic) which she describes as "those of numbness, followed by a loss of consciousness." She has had chronic constipation all her life. The memory and mental faculties are perfect.

When I first saw this patient the spasms were very violent, especially about the face and neck. The limbs were jerked about, the fingers too tightly clinched at times to grasp anything, and the speech was rendered peculiarly spasmodic and almost unintelligible at times. She sputtered, and at times ejected drops of saliva, when endeavoring to converse.

At the first examination she exhibited no refractive error; but, under atropine, a high degree of hyperopia (1·75 D.) was detected, and proper spherical glasses (+ 1 D.) were at once provided. In order to test her eye-muscles, the services of Professor J. Williston Wright, of this city, who saw her with me by invitation, were invoked to hold her head. This he did with no small effort by clasping the head on either side, and firmly pressing her head against his body as he stood behind her chair. During this examination she whistled shrill notes on two occasions, and underwent the most violent facial and body contortions.

The results of this imperfect examination (necessarily so under such conditions) indicated to me that a high degree of hyperphoria existed; and, as I could not again see the patient for some months, I decided to perform a free division of the left inferior rectus muscle. I then instructed the patient to try and get a photograph taken, if possible, before she saw me again. She laughingly said that she "had never been able to have a picture taken, but that she would do so if she could." She then departed for her home with instructions to return to me for treatment in the autumn. The first picture of this case is one that she was able to have taken three weeks after the operation, when her head and shoulders had become comparatively calm, as a result of the relief afforded by it. This photograph was deemed at that time a great success by herself and friends. You can see in it the blurred outlines which indicate that the movements were still somewhat active.

During the past autumn this patient has been under my care for some eight weeks. I have partially divided the right superior rectus and both externi in order to overcome a high degree of left hyperphoria and exophoria, and I have administered static sparks daily to the spine and limbs. The second picture will give, better than words can describe it, an idea of the wonderful improvement which has taken place. Prior to her departure for her home (some weeks since) she could thread the finest cambric-needle, and pass her fare to the conductor of a street-car without attracting the notice of passengers, or throwing it out of the window, as she certainly would have been apt to do two months previously. She can fully extend her fingers, walk several miles a day, write with far greater certainty and ease, and eat at a boarding-house table without exciting comment. Her limbs still twitch somewhat immediately before going to sleep, and, in the presence of strangers or when unduly excited, she still shows some spasmodic movements of the face and shoulders. When calm she is, however, perfectly composed, and almost entirely free from convulsive movements. She considers herself as practically cured; but I suspect that time and some further operative work upon the eye-muscles

will be demanded before complete restoration to health is effected.

As I regard this case as one of the most distressing and typical cases of chronic chorea ever reported, it may be well to state that the patient is well known to Professor A. M. Phelps and Professor J. W. Wright, of this city, and Professor Woodward, of Burlington, Vt., and that she has been seen by many members of the profession both from this city and distant States during her treatment in my office.

During the whole treatment of this patient no drugs have been employed, and the photographs are from untouched negatives. I attribute to the static applications the rapid relief of the contractured state of the fingers and the improvement in her general strength; but, from many facts observed during my treatment of her, I am convinced that the relief of the eye-strain is alone deserving of whatever credit may be claimed for her recovery. Four weeks before she was dismissed from my care she read and sewed continuously for several days, and was immediately precipitated into a relapse, which as rapidly subsided when the cause was ascertained and its recurrence prevented.

(*To be concluded.*).

## TREATMENT OF FEVER.*

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Fever, strictly defined, is any abnormal elevation of the temperature of the body, and the discussion of its treatment if limited to the strict application of the term would imply merely the discussion of the means at our command for the restoration of the disturbed heat equilibrium to the normal standard. But in the practice of the healing art it is but seldom that we meet with instances in which abnormal elevation of temperature is the only pathological condition which demands the exercise of our skill. As a matter of fact, the pyrexia is almost always associated with other symptoms which demand as close attention as does the fever itself. Indeed, the concurrent circumstances are frequently of such a character that the simple elevation of temperature falls into a secondary place, and our attention must be directed to the combating of morbid processes which are far more serious and threatening to the life of the patient.

In order to be able to cope with these dangerous maladies the physician should enter upon his work fully equipped with a knowledge of their nature and causes, and of the means which we have at our command for partially or completely nullifying their injurious influences upon the human body. He should have sufficient knowledge of the pathological and clinical history of disease, not only to fully appreciate the significance of the symptoms by which he is confronted at a given time, but also to anticipate the difficulties and dangers by which they are likely to be followed. Practically, therefore, the treatment of fever involves the management of many different forms of disease, and of every variety and combination of morbid physiological phenomena. In order to render the subject as clear as possible, I shall begin with the discussion of the simplest forms of fever, and then take up the more complicated.

The purest type of fever that is known to clinical observers is that to which attention was first called by Genzmer and Volkmann in 1877,* and which was denominated by them febris simplex, or aseptic fever. Volkmann found that, after subcutaneous operations and injuries such as fractures, dislocations, etc., a rise in the temperature of the body occurred, lasting from twenty-four hours to a week or even longer. This elevation of temperature, which frequently attained a height of from 103° to 104° F., was ushered in by no premonitory symptoms; no disturbance of the nervous centers was observed beyond an occasional slight headache or feeling of malaise; patients usually made no complaint whatever, but seemed to retain their ordinary feeling of well-being, and the existence of fever was only determined by the objective examination of the surgeon. There were, however, certain symptoms present which may be considered as always accompanying a pyrexial temperature when their development is not interfered with by other morbid states. These are increased frequency of pulse and respiration, increased excretion of carbonic acid and the nitrogenous ingredients of the urine, particularly urea, and a slight diminution of the normal secretions of the body. The tongue was usually slightly if at all coated, the digestion not noticeably impaired, and the appetite not diminished. There was, however, an increase of thirst, and the skin was moist though not sweating. A similar febrile process is said to follow occasionally upon cutting operations performed with antiseptic precautions. The disease is one which requires no treatment. The points of interest are: that in spite of the considerable elevation of temperature which obtains in many cases, there are no symptoms referable to the nervous centers with the exception of those directly involved in the production of the febrile temperature. There are no marked disturbances of the functions of the alimentary canal, and there are none of the pulmonary or other complications that are observed in the more serious febrile diseases.

The form of fever most nearly resembling this with which medical practitioners have to deal, is the so-called ephemera, or simple continued fever. By this term I mean to indicate a febrile condition of rapid onset and brief duration, unaccompanied, as a general rule, by serious complications, and depending for its production on various causes. It is most commonly the result of disordered states of the alimentary canal, resulting from the introduction of indigestible or irritating substances, from fatigue, and from exposure to cold or heat. In children it is often a consequence of very slight disturbances, and in such cases is of very short duration. It is also observed in tropical regions, and during the heated term in the temperate zone as a direct effect of the action of intense heat upon the nervous system. This latter form of the disease is known as ardent

* Read before the Medical Society of the County of Kings, December 20, 1887.

* "Sammlung klinischer Vorträge," No. 121, 1877.

continued fever. It is manifested by a rapid rise in temperature, sometimes to the height of 104° or 105° F., accompanied by increased rapidity of the pulse and respiration, increased excretion of urea, with a diminution in quantity and rise in the specific gravity of the urine, a dry, hot skin, and diminution of the secretion of the digestive fluids. The tongue is usually more or less coated, the patient complains of thirst, and there is usually some headache and feeling of weariness and restlessness. More intense nervous symptoms, such as delirium, coma, and convulsions, are only found in children, in those who have a predisposition to these symptoms, and in cases which result from the action of excessive heat. This simple form of continued fever has no exact pathological identity such as distinguishes those which result from a specific infection, but is to be regarded simply as a pyrexia due to a variety of causes. It results from this that for the practical physician to make a simple diagnosis of ephemeral fever is not sufficient. The pyrexia of itself involves little if any danger to life, and the most important duty of the diagnostician is to determine its cause, as it is upon this that the rational treatment of the disease must be based. If the disorder is observed in an infant or child, and alarming symptoms, such as great restlessness and jactitation, delirium, coma, or convulsions, present themselves, while some means must be adopted for their speedy relief, it should not be forgotten that they are probably dependent for their origin upon the presence of undigested food or other irritating substance in the stomach or intestine, and that the cure of the case will only be affected by the spontaneous or artificial removal of these matters. If convulsions be actually present, steps should be taken to subdue them before anything else is done, as they involve a direct and immediate danger to life. The means for this are so well known that it is unnecessary for me to discuss them. After the convulsions have been quieted and the alimentary canal emptied as far as possible by the action of emetics, enemata, and the subsequent exhibition of a cathartic, other remedies may be employed for the control of the febrile symptoms. The pyrexia itself, however, will rarely need specific medication, and such agents as will contribute to the amelioration of the concomitant phenomena, such as the arterial excitement and the restlessness or delirium, are all that are necessary. In adults, in whom the fever is almost always caused by digestive disturbances, the therapeusis should be based upon the exciting cause. A brisk cathartic, followed by some measures calculated to soothe the irritated condition of the alimentary canal, will usually be all that is necessary, though here too, if the arterial excitement be high and the patient complain of headache or sleeplessness, the bromides, aconite, and veratrum viride may be given according to the discretion of the practitioner. Antipyrine and antifebrine have been found to have a sedative and analgesic effect in addition to their power to reduce temperature, and a moderate dose, late in the evening, will frequently induce sleep and probably hasten recovery. But the elevation of temperature in itself requires little or no treatment. The fever which results from overheating of the body is usually intense, and is complicated by the danger of inflammation of the brain or its meninges. Such cases require a more active treatment addressed to the nervous system itself. Another morbid condition, which stands midway between the aseptic fever of Volkmann and the infectious diseases, is the ordinary surgical or wound fever. This is observed during the interval which intervenes between the reception of the wound and the establishment of suppuration. It probably results from the absorption of morbid products from the swollen and infiltrated tissues. It usually supervenes in from twenty-four to forty-eight hours after the occurrence of the operation or injury. The temperature mounts rapidly, but seldom reaches a dangerous height. The other symptoms are those which accompany simple fever; but the more serious manifestations of disturbance of the central nervous system may present themselves, though usually to only a moderate extent. They are generally limited to a delirium more or less pronounced, in accordance with the gravity of the case and the susceptibility of the patient, and to a greater restlessness and greater liability to complications than is observed in simple fever.

The essential fevers differ from those already considered in that they present themselves to us as more distinct pathological entities. In these diseases we have to deal not only with a disorder of the ordinary functions of the body, but also with a specific agent which underlies the visible phenomena, and stands to them in the relation of an efficient cause. The treatment of these diseases, therefore, should be both general and specific. Unfortunately, however, in the majority of them, the infecting germ or substance has not been discovered, or, if it is known, no means have as yet been found by which it can be neutralized or destroyed without at the same time destroying the body upon which it preys. There are, however, at least two of this class which may be treated specifically—viz., rheumatism and malarial fever. Rheumatism, which is due to the accumulation of an organic acid, probably lactic acid, in the body, yields to the action of the alkalies, and this treatment, first proposed by Fuller, is to-day, when properly carried out, thought by many to be the best that we have. In salicylic acid Buss has given us another specific remedy, but whether it is as valuable as the alkalies is still undetermined. The use of the alkalies or salicylates in rheumatism, and of quinine in malarial fevers, is followed by such a marked amelioration of all the symptoms that it is usually not necessary to resort to any other medication, unless it be for the purpose of improving the condition of the digestive apparatus, or, in some instances, to relieve unusually severe nervous symptoms or combat complications. It is noteworthy that in these affections the fever of itself, though running high, seldom requires any special antipyretic treatment. If the cause is removed or neutralized, the pyrexia and all of its accompanying symptoms promptly subside. It is true that quinine, which acts so efficiently upon the malarial infectious germ, is also an antipyretic; but it is also true that the doses necessary for its cure are not large enough to reduce the temperature to the same extent in any other febrile malady. It is also true that the salicylates are active and efficient antipyretics, but it is not probable that it is through their antipyretic influence that they combat

the rheumatic condition, because the alkalies, which have no marked effect upon the temperature of the body, are equally good in the treatment of this disease. It is also interesting to observe that quinine will not reduce the temperature of rheumatism as it does that of the malarial fevers, and that the converse holds with regard to the salicylates.

In the management of the other specific fevers, diphtheria measles, scarlet fever, and typhus abdominalis, we have to rely entirely upon our general therapeutic resources, though we may entertain the hope that in the future some specific remedies may also be discovered for the relief of these diseases.

The treatment resolves itself into the proper hygienic management of the patient and the adoption of measures to mitigate his sufferings and avert or control the dangerous symptoms and complications.

In regard to the hygienic management I will content myself with a few observations on the subject of diet. First, water: The thirst by which fever patients are tormented represents undoubtedly an actual need of the body for more fluid, though it is no doubt intensified and rendered abnormally great by the dryness of the mouth, stomach, and intestines. It should be our aim, therefore, to administer sufficient to supply the actual needs of the organism without entirely yielding to the voracious demands of the sufferer, as an excessive imbibition of water is apt to disturb the stomach and produce emesis and to take away the appetite for more strictly nourishing substances. The nurse should be instructed to give water in small quantities in the intervals between the administration of other foods, and this whether the patient requests it or not. The latter rule is imperative in instances presenting the typhoid condition, because the obtundity of the senses is so great that such persons frequently fail to recognize their own wants. Care should be taken that the water given is pure, and for this reason it is better not to use the ordinary ice-water, as the presence of bacteria and other spores in the ice delivered at our houses is quite constant, as has been shown by Dr. Prudden; and the abnormal condition of the stomach might favor their development and the accompanying fermentations and decompositions. If ice-water is needed it is better to fill bottles from the hydrant and put them on the ice. When vomiting is present, and it is thought well to give cracked ice, it would undoubtedly be best, where practicable, to have pure water frozen for the purpose on the premises. The addition of acids to the water would to a great extent overcome this difficulty. It has been suggested by Dr. Austin Flint, in his able paper on the "Pathology and Treatment of Fever," read before the Ninth International Medical Congress, that in febrile conditions there is an actual diminution of the production of water by combustion in the body. This, if true, would furnish an additional and very important reason for its free administration. It is not, however, as far as I know, demonstrated that there is such a failure. It would seem, from the result of physiological experiments performed by himself and Dr. John C. Draper, that, during health, and particularly during short periods of fasting, water is one of the results of the oxidative processes. But whether diminished excretion of water in fever is to be taken as a sign of its diminished production, or simply indicates that it is retained in the body, is not proved. My impression is that Dr. Flint underestimates the amount of water given off by the bodies of febrile patients. It is true that the quantity of urine and perceptible perspiration, as well as the glandular secretions, are diminished, but this is to some extent compensated by the increased insensible transpiration from the skin, as demonstrated by Leyden, and by the greater frequency of breathing. Moreover, this diminution of the watery excretions is largely limited to the early days of the fever. In typhoid, for instance, in the second week the urine generally increases in quantity and diminishes in specific gravity, while sweating is much more pronounced than during the pyogenetic stage.

The other articles of diet should be given in fluid form, and it is the opinion of all writers upon the subject—and I believe of the profession generally—that they should be largely nitrogenous in their composition. Cases occur, however, in which bland, starchy substances, such as rice, arrow-root, barley-water, etc., agree very well. Dr. Flint thinks that it may be advisable to administer these hydrocarbonaceous substances more freely than has hitherto been the custom. He bases his argument for their use on their well-known efficacy in maintaining the temperature of the body during exposure to excessive cold. He thinks that the demand for the production of heat causes such a destruction of the hydrocarbons of the body—viz., the adipose tissue—that their free administration might, to some extent, do away with this loss. The objections to their use have been based upon the inability of the febrile stomach and intestines to properly digest them, owing to the diminished secretion of the salivary, pancreatic, and intestinal juices. If this can be overcome, Dr. Flint's suggestion may prove to be a very valuable one. In health, the generation of heat occurs principally in the muscles, and this probably holds true also in fever, where an abnormally intense process of some kind is going on in the muscular substance. This pathological process is shown by the extensive degeneration which is found post mortem, though these changes differ somewhat in different diseases, and those found in fever are not the same as have been found by Litten and others in animals whose temperature has been simply raised by preventing a discharge of heat from the body. In the latter have been found extensive fatty degeneration, while in the former this change, if it occurs, is preceded by a granular albuminoid degeneration, or by an amyloid transformation. In order, however, to supply material for the carrying on of these processes in the muscles, the adipose tissue of the body is drawn upon very largely, and it is quite possible that the introduction of hydrocarbonaceous articles with the food might save the fatty tissues from such a rapid disintegration. At any rate, the experiment is well worthy of trial. The administration of nitrogenous substances is, however, of primary importance, as they will undoubtedly assist in recuperating the rapidly disorganizing muscles. Here, too, the question of assimilation comes up. When the toxæmia is intense, and its malign influence is exerted upon the glandular and digestive apparatus, even

the simplest foods can not be digested and assimilated. It then becomes necessary to avail ourselves of the assistance which science has recently rendered us in this emergency, and procure an artificial digestion of the aliments before they are introduced into the body. Armed with the means which we now have to overcome this difficulty, we are in far better condition than ever before to combat the inanition which always threatens those who are affected by long-continued or intense fever. I have no doubt that, by a systematic use of peptonized foods, the mortality from these diseases, and particularly from enteric fever, may be very considerably diminished. As an illustration of their value, I may mention the case of a physician affected with typhoid fever which ran for six weeks, with an evening temperature, for two or three weeks, of about 104° F., with only moderate morning remissions. The tongue remained moist and almost entirely clean throughout the entire course of the disease. This gentleman, for four or five weeks, took no other nourishment than peptonized milk. Though this is an exceptionally favorable instance, still I believe that such a result may frequently be approximated if the patient can be induced to adhere to the diet.

The question of the administration of alcohol in fever is also an important one, and may be appropriately discussed at this point, because of its occupying a position midway between food and medicine. When fevers assume the sthenic type, or when they run a mild and uncomplicated course, the administration of alcohol is not only unnecessary, but frequently inadmissible. It is also, I believe, a mistake to administer stimulants from the beginning of an attack in the hope of averting unfavorable consequences. When, however, the adynamic condition is well marked at any time in the course of the disease, and especially if the symptoms are those indicative of a typhoid condition, a free and regular administration of alcohol is at once called for. Thus, in typhus fever, which is the type of the adynamic series, its administration should in many cases be begun as soon as the diagnosis is made. In measles, scarlet fever, and the early stages of enteric fever, alcohol is usually not indicated unless the adynamia is more than ordinarily pronounced. But in diphtheria, and in the latter half of most cases of typhoid, it is regarded by most practitioners as the best means we have for overcoming the depression of the vital powers. Dr. N. S. Davis, of Chicago, however, claims that, even in these instances, alcohol is unnecessary, and that equally good or better results may be obtained without its use. The particular indications for the administration of alcoholic stimulants in fever are cardiac weakness as evinced by indistinctness of the first sound and a feeble pulse, and jactitation or subsultus, which show that the integrity of the nervous system is impaired by the persistence of high fever or the intensity of the specific poison. Under such circumstances, the rule is to administer sufficient alcohol to overcome the symptoms.

In order to obtain the best results from its use, it should be prescribed in the same way as any other medicine, in definite doses given at stated intervals, very little reliance being placed upon the judgment of the attendants. It is not easy to say whether, under these circumstances, alcohol is or is not of value as a food. There are, however, some physiological and clinical facts which would seem to indicate that it is. Professor Flint, arguing from the standpoint of the physiologists, claims that it, like other hydrocarbons, is oxidized in the body with the production of force. It is also a matter of common observation that in typhoid conditions generally large quantities of alcohol may be taken into the body without their giving rise to any characteristic odor in the breath, and it is one of the old rules of practice that, as soon as this odor is discovered, the dose should be diminished. It has been suggested by some that alcohol may have an antipyretic effect, but this is, to say the least, questionable.

In the further treatment of fever regard should be had to the nature of the infection, the pyrexia, and the condition of the special systems. In the typical septic fevers—such as pyæmia, septicæmia, and some of the puerperal diseases—the very free administration of alcohol has, according to the testimony of all observers, more or less of a specific curative influence.

Whether it actually affects the life of the infecting organisms, or whether it assists the tissues in resisting their attack, I do not know, but its good effects are so remarkable that its use in these affections has become universal. In erysipelas the sesquichloride of iron has also, apparently, a specific controlling influence.

When the disease is associated with active inflammations, particularly of the serous membranes—as in cerebro-spinal fever and peritonitis—opium is the recognized remedy. Aside from these instances, we have no drugs which exert anything like a special action upon the morbid process itself, unless such an action may be attributed to the mineral acids, or the combination of carbolic acid and iodine in typhoid.

The antipyretic treatment may be carried out either by the action of cold upon the surface of the body, or by the exhibition of some of the drugs which are known to have this peculiar effect when given internally. The direct abstraction of heat—a method of which I have little personal experience—seems to be best accomplished by the use of the graduated bath of von Ziemssen. The patient is immersed in the bath at a temperature of about 90° to 95° F.; this is gradually cooled, by the addition of cold water or lumps of ice, to 70 or 68 degrees.*

The patient remains in the bath about fifteen minutes, or until he begins to feel chilly, at the end of which time he is replaced in bed and dried. If there is any coldness of the extremities, they are warmed by the application of heat, and if there is any feeling of exhaustion, some hot broth or mild stimulant is given. The internal temperature continues to fall for about half an hour after the patient is removed from the bath. At the end of that time the temperature should be taken, preferably in the rectum, and if there is a fall of from two to three degrees C. it is considered sufficient. When the fever heat again rises to the point which is considered dangerous, the bath

* H. von Ziemssen, "Klinische Vorträge"; "Antipyrese und antipyretische Heilmethoden," Leipsic, 1887.

is repeated; 103·5° to 104° F. is considered to be the proper indication for the commencement of the treatment. In the use of the cold bath, which is the form recommended by Liebermeister, the patient is at once immersed in water at a temperature of 70°. The length of time for the bath is ten minutes; the effects obtained are the same as those of the graduated bath. The cold bath, however, is not deemed so advisable as the graduated where there is great adynamia, and neither one should be used if there is intestinal hæmorrhage, perforation, or a tendency to collapse.

The cold pack is another method, but is stated by Liebermeister to have only about one fourth the efficacy of the cold bath. The simpler method of sponging the body with cold water, while very grateful to the patient, has little or no antipyretic effect unless continued for a long time.

Though highly recommended by many European authors, it is doubtful if the antipyretic treatment is as useful as it has been represented to be. American practitioners have never found it necessary to resort to it as frequently as has been done in Europe, but their results are probably as good. It seems probable to me that the injurious effects of temperatures under 105° F. have been considerably overestimated, and Dr. Da Costa, who recommends the cold bath, states that it is not necessary to employ it unless the temperature reaches that height.*

That good effects do follow the use of the antipyretic treatment is unquestionable, but whether these effects are due to reduction of temperature or to the improved condition of innervation which results from their use is the question. The same effect upon the nervous system can be attained by cool sponging of the body, which reduces the temperature very slightly, and I have been informed by Dr. Daniel Ayres that he has seen similar results follow the oiling of the surface of the body in fever patients. I am not aware that oiling the surface brings about any reduction of temperature.†

It is also not improbable that the benefits to be derived from cold bathing, even aside from the reduction of temperature, have been overstated by Liebermeister and others. Eichhorst, who recommends the practice in typhoid fever, makes the moderate statement that an improved condition of the nervous system not infrequently follows the use of the cold baths, and Struempell also is very guarded in his recommendation of them. It has further been ascertained by Senator, by a comparison of the statistics of the different hospitals of Berlin, that in the Augusta hospital, where the antipyretic treatment has not been used, the percentage of recoveries from typhoid fever is greater than in those institutions in which this method has been employed.‡ It is probable that, with the more extensive use of the recently discovered antipyretic drugs, antipyrine and antifebrine, the cold baths will gradually fall into disuse.#

An additional advantage which these drugs have over the direct abstraction of heat by means of cold water is that they cause an actual diminution of the production of heat in the body, whereas the cold bath exerts no such influence. It is stated by Niemeyer, as the result of experiments by Liebermeister, that the production of heat is actually increased by the use of the cold bath.* But even if there were no actual increase, but the production simply remained the same, while the temperature was lowered by the more rapid abstraction of heat, antipyrine and antifebrine would still be more useful. The other antipyretics—namely, quinine, aconite, and digitalis—are not so useful on account of their depressing qualities, and they will probably be entirely replaced in the future by antipyrine and antifebrine.

These drugs may be employed either by the stomach, rectum, or subcutaneous injection, without annoyance to the patient, or the necessity of so many trained assistants, and with just as favorable if not more favorable results. If deemed advisable, it is possible, by their use in moderate and regularly repeated doses, to retain the temperature at almost any point deemed advisable. Whether, however, this is necessary in ordinary cases is doubtful. Many cases of typhoid and other infectious fevers run their course with moderately high temperatures, but with no very alarming symptoms, and many of the worst cases, particularly of the septicæmic conditions, and also of typhoid, show no hyperpyrexia from beginning to end. Indeed, it would seem that a certain increase in the temperature of the body is a part of the normal course of a febrile disease, and that, unless it reaches a hyperpyrexial degree, it may be safely let alone. If, however, the temperature rises above 105°, it becomes dangerous, and in that case it must, if possible, be controlled by antipyretic remedies. The point which I wish to make in regard to the antipyretic treatment is that it should not be too hastily adopted, that the physician should not allow his attention to be too exclusively occupied by this one symptom to the neglect of others which are in many, if not in the majority of cases, more important, and that the great majority of cases of fever will run their course favorably without any antipyretic treatment whatever. The attention of the physician should be especially occupied in watching the development of collateral symptoms, which should be combated, where they require it, according to the well-recognized rules of therapeutics. He should always bear in mind that there is more danger of over-treating than of under-treating the patient.

Where we are unable to apply specific remedies, our object should be, first of all, to attend to the general nutrition of the body; second, to maintaining the strength of the patient by stimulants where food is inadequate to this end; third, combating unfavorable symptoms in the nervous and vascular systems; and, lastly, to the artificial reduction of the temperature, if this should attain a dangerous height.

The treatment of the symptoms connected with the

* Introduction to J. C. Wilson's "Treatise on the Continued Fevers," New York, 1881, p. xvi.

† Von Ziemssen states that the *warm* bath has the same effect on the nervous system, the difference between this and the cold bath being that the former does not reduce the temperature. (*Op. cit.*, p. 26.)

‡ "Dtsch. med. Wchnschr.," 1885, p. 733.

# Liebermeister himself stated, before the discovery of antipyrine, antifebrine, etc., that, were it necessary for him to choose between the cold bath and quinine in the treatment of typhoid, he would in most cases take quinine. (Von Zeimssen's "Cyclopædia of the Pract. of Med.," Am. transl., New York, 1874, vol. i, p. 216.)

* See also Liebermeister, "Antipyretische Heilmethoden," Von Ziemssen's "Handb. d. allg. Therapie," Leipsic, 1880, Bd. i.

nervous system will vary according as their type is sthenic or asthenic. The headache, restlessness, and more or less active delirium observed in the course of the more sthenic fevers, and at certain stages of those of the asthenic variety, are best controlled by agents which act as sedatives upon the nerve-centers without diminishing the secretions. These are the bromides, chloral, urethane, and paraldehyde. In mild cases the bromides, particularly at night, are sufficient. Where the restlessness is more pronounced, and insomnia is a marked symptom, chloral in moderate doses is beneficial. In the administration of this drug the best results are obtained by giving two or three moderate doses—say ten grains to an adult at intervals of two hours, beginning early in the evening. By this plan we avoid any danger of too great a depressing effect upon the heart, and secure a gradual and somewhat cumulative soporific effect. When it is not thought safe to use chloral, and we desire a purely hypnotic effect, paraldehyde, in doses of from one to two drachms, or urethane, thirty to forty grains, may be given with safety, and with almost absolute certainty of obtaining a beneficial result. In the low delirium and vigilance of the asthenic fevers the best sedative is opium, and the best form of administration is that of a pill. The ordinary dose is from half a grain to a grain every three or four hours. This may usually be omitted for a few hours in the early part of the day, when the tendency to delirium is least marked, and resumed in the afternoon. It may be advantageously combined with quinine, camphor, or the monobromide of camphor. When the mucous membranes and skin are very dry and harsh, I believe it to be advisable to combine small doses of calomel with the opium. This is a plan of treatment recommended by Dr. George B. Wood,* and, though I would not carry it as far as he did—that is, to the point of slight salivation—still I believe that its moderate use is often followed by very salutary effects. This treatment should not, however, replace the free and regular exhibition of alcohol. In instances where the delirium is maniacal, and it is important to quiet the patient quickly, subcutaneous injection of morphine should be resorted to, but only as a temporary expedient. In addition to these measures, it may be well, when the delirium is active, to apply cold to the head.

Circulatory disturbances are also to be treated according to their active or adynamic character. When the pulse is rapid, strong, and resistant, the heart's action forcible, and its sounds clear and distinct, it may be well, even if this occur in the early stages of fevers of the typhoid type, to use some arterial sedative. Frequently the agents used for the control of the nervous condition will also affect this. If any other drug is employed, it should be one as little depressing as possible. Probably the best of the arterial sedatives for use in such cases is veratrum viride. While this drug exerts a potent effect in lowering vascular pressure, it is known to be almost free from danger. Its effects are not of long duration, and it appears to produce no lasting debility. For these reasons it is much better adapted to the treatment of the early stages of typhoid fever than aconite, the use of which can not but be fraught with more or less danger, inasmuch as we can not know at what time the disease will assume the asthenic type. In doses of three or four minims of the fluid extract at intervals of two to three hours, veratrum viride is, I believe, a perfectly safe arterial sedative. When the heart begins to flag, and the pulse becomes soft and non-resistant, the alcohol and opium, which are usually demanded for the relief of other symptoms, will be sufficient for this. If, however, some re-enforcement of the treatment be necessary, the best agent that we have at our command is the oil of turpentine. This can be given in three-to-five minim doses, either in a capsule with the opium, or by itself in an emulsion. Its disagreeable taste may be overcome by the addition to the mixture of a few drops of the oil of gaultheria. In typhoid fever turpentine is also useful for its direct effect upon the intestinal mucous membrane. Attention was first drawn to this fact by Dr. George B. Wood (*l. c.*), and its value has been attested by many experienced practitioners since his day. The dryness and heat of the skin of fever patients are most pleasantly relieved by sponging the surface with cool water, to which alcohol, bay rum, or Florida water may be added. When, on the contrary, there is profuse sweating, acetic acid or vinegar may be added to the water, and, if this be not sufficient, a grain of the oxide of zinc, with a twelfth or eighth of a grain of the extract of belladonna, may be given in a pill every three hours. When pulmonary complications present themselves in the form of asthenic bronchitis or pneumonia they call for an increase in the amount of stimulants, and usually for the exhibition of some stimulating expectorant. It is not necessary for the purpose to introduce any other agent than those already mentioned, as there is nothing more useful in these cases than alcohol, quinine, and the oil of turpentine. Carbonate of ammonia may be of use, but, I think, is not as desirable as the drugs already alluded to.

When in the course of the infectious fevers there is a marked diminution in the quantity of urine, with the appearance of albumin or of the morphological elements which indicate the existence of nephritis, the treatment will depend upon the character of the collateral symptoms. Should there be no marked evidences of uræmic poisoning, it may be best not to adopt any special medication. If, however, the signs of uræmia are well marked, we should give a mild hydragogue cathartic, and, if this is not sufficient, should endeavor to induce copious perspiration. This can be best done by the hypodermic injection of from one eighth to one sixth of a grain of the nitrate or muriate of pilocarpine. This may be preceded by the use of the cold pack, and should be accompanied by an increase in the amount of alcoholic stimulants.

I can not close this paper more appropriately than by quoting the following sage remarks of that able clinical teacher, Professor J. M. Da Costa: "Yet, to treat a case with the best chance of success, still something else is required—the practical skill which takes note of the epidemic influence prevailing; which recognizes that all cases are not alike because they bear the same name; which does not overlook that, in the same disease, apparently the brunt

* "Practice of Med.," Philadelphia, 1858, vol. i, p. 357.

may fall primarily on this organ or on that organ, that the nervous system or the circulation may suffer disproportionately and exceptionally from the onset, or, as in fevers of the worst form, be overwhelmed together; which lays stress on peculiarity of causation, of temperament, of constitution; which sees, therefore, not only the disease in the sick man, but the sick man in the disease."

## ON THE USE OF THE WET-CUP IN PLACE OF THE LEECH IN CERTAIN ACUTE DISEASES OF THE EAR.

By GORHAM BACON, M. D.

Otologists in this country, as well as in Europe, are generally agreed as to the great value of leeching in cases of acute inflammation of the auditory canal, middle ear, or mastoid process, attended with intense pain when there are great hyperæmia and infiltration of the parts, and engorgement of the vessels in the periosteum and mucous membrane. In such cases the pain is almost always alleviated and frequently removed by the local abstraction of blood, and in many instances, I believe, the further progress of the disease is arrested.

According to Roosa, "an attack of diffuse inflammation of the external auditory canal in an adult may often be cut short by the use of leeches," and, in speaking of acute catarrh of the middle ear, he says: "The application of from one to six leeches, according to the severity of the disease and the age of the patient, will usually be sufficient to quiet the most severe pain in the ear, and to check the intensest form of catarrhal inflammation. I have seen almost magical effects from their use."

Schwartze says: "In cases of actual middle-ear catarrh where the pain is severe, if leeches are applied in the hyperæmic stage close to the tragus, they will relieve not only the pain and tension in the ear, but will gradually cut short the inflammatory process." Leeches are also of benefit in the first stage of inflammation of the mastoid cells.

Hartmann also says: "Bloodletting is often employed with very favorable results in acute inflammation of the different parts of the organ of hearing, or in acute exacerbations of chronic inflammation, accompanied by great hyperæmia and violent pain."

Wilde and v. Troeltsch have shown that the blood-supply of the tympanum is influenced by the local abstraction of blood when the point for the operation is selected close to the tragus, in front of the pinna. This is due to the fact that the veins from the membrana tympani run along the anterior superior wall of the external meatus in its lining membrane, and empty into the anterior facial vein, just in front of the tragus. Politzer says that "bleeding in this locality will also effect a depletion of the venous network situated in the cavity of the maxillary joint and its neighborhood, the importance of which Zukerkandl was the first to point out, the supply of blood in the vessels of the tympanic cavity, which are in communication with these vessels, being thus lessened." There is also an anastomosis between the vessels of the mastoid cells and the vessels of the integument covering the mastoid process, so that local bleeding at this latter point will produce a temporary depletion, not only of the vessels from the mastoid, but also of those from the tympanum anastomosing with them.

During the past eighteen months I have been using a wet-cup to produce local bleeding, instead of the leech, with most satisfactory results. For this purpose I have had made a scarificator (Fig. 1) in which six lance-shaped needles are

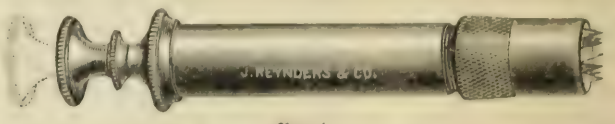



Fig. 1.

concealed. The instrument is very similar to one shown by Dr. David Webster at the last meeting of the Medical Society of the State of New York, which he uses, together with cocaine and galvanism, for producing anæsthesia about the eye, except that I have substituted different needles. The depth of the punctures can be regulated by screwing or unscrewing the end or cap of the scarificator. When this is determined, the spring is pulled back, the instrument is applied to the parts, and the tissues are scarified. A cupping-glass (Fig. 2), similar to those manufactured by

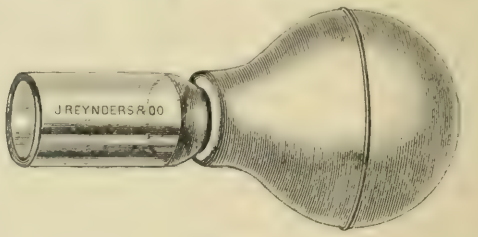



Fig. 2.

the Davidson Rubber Company, except that the glass is made smaller and adaptable to the parts about the ear, is then immersed in hot water for a few moments, in order to promote the bleeding as much as possible, and applied close to the tragus, or below the lobule, or over the mastoid process. The glass itself holds three drachms. If necessary, three cups can be applied at once in front of the tragus, just below the lobule and over the mastoid.

Heurteloup's artificial leech is recommended by Politzer "in cases in which a rapid depletion is required and the quantity of blood to be withdrawn is to be exactly controlled." The objection to its use is that the cutting instrument causes considerable pain and the cupping-glass is so large that its application behind the ear is attended with much difficulty on account of the irregular surface of the mastoid process. On the other hand, the punctures made with the instrument which I use cause but little pain, and the cupping-glass is applied without difficulty and held in position by the patient, thus in every way being much simpler than the use of leeches.

Bartholow, speaking of bloodletting by means of leeches and cupping, says: "The counter-irritant effects are much more pronounced from cups than from leeches," and according to Biddle "cups are generally preferable in internal inflammations, from their more decided revulsive influence."

I have been led to substitute the wet-cup for the leech for several reasons:

1. Many patients, and especially children, have a great repugnance to having a leech applied to the ear, so that it is extremely difficult in such cases to use them.

2. The bleeding from a leech-bite is frequently difficult to arrest, and in one case which came under my observation it was necessary to resort to the actual cautery to control the hæmorrhage.

3. A leech-bite occasionally gives rise to erysipelatous inflammation and ulceration, and not infrequently produces a circumscribed abscess, even in apparently healthy individuals.

4. Leeches are not always to be had, especially in the country, and are very frequently a troublesome remedy, besides being expensive.

In a paper on "Sea-bathing as a Cause of Ear Disease," published in the "Medical News," January 29, 1887, I advised the use of the cupping-glass in place of the leech where it is desirable to promote the abstraction of blood, because "the cupping-glass is always at hand, the quantity of blood abstracted can be entirely regulated, and it is much more agreeable to the patient."

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## Correspondence.

### LETTER FROM VIENNA.

*The Sixth International Congress of Hygiene and Demography.—Continued Discussion on Cholera.—International Regulations concerning Epidemics.—The Adulteration of Food.—The Pasteur Treatment of Rabies.*

Vienna, *December 3, 1887.*

In the continued discussion on cholera, in the Third Section, under the presidency of Professor Croslawine, of St. Petersburg, Professor Max Gruber, of Vienna, read a report on the cholera in Austria in 1885 and 1886, embracing observations that he had made with reference to the spread, the contagiousness, and the prophylaxis of the disease, and concluding with the following statements: "The *Vibrio* of Koch is the specific agent in the diffusion of cholera, and this micro-organism is spread by human intercourse—by individuals and their clothing. No proof has been furnished of the communicability of cholera by means of drinking-water. Its prevalence is quite distinctly dependent on season and weather. Complete protection may be obtained by measures already adopted, but only with the aid of a perfected State sanitary organization, and particularly of an increased popular knowledge of hygiene."

Dr. Linhart, of Gotschee in Carniola, reported his observations in the cholera epidemic in that province of Austria, and pleaded in favor of local regulations to prevent outbreaks of the disease.

In the Third Section, under the presidency of Ritter von Hofmann, of Vienna, the subject of international regulations concerning epidemic diseases was taken up. The reporters were Dr. Sonderegger, of St. Gallen, Switzerland, Dr. Vallin, of Paris, and Mr. E. Murphy, of London, and the following propositions were presented:

1. A sanitary officer to be appointed for every port, whose duty it should be to obtain information as to the sanitary condition of the port and of the health of the passengers and crews of vessels arriving at or leaving the port; this information to be placed at the disposal of the consuls of the countries to which outgoing vessels were bound.

2. Every country to have a central office, to which should be sent reports of the number of cases of specified epidemic diseases occurring in every large town and port during each week (immediate notice being sent of cases of cholera); this information to be at the disposal of the governments of other countries.

3. Precautions to be taken by the sanitary authorities and officers of vessels, as already indicated, to prevent the embarkation of persons or articles infected with cholera.

4. A station to be established on the Suez Canal for the purpose of obtaining information as to the health of passengers and crews of vessels bound for Europe, but not for their detention for more than the time necessary for procuring this information. This information to be placed at the disposal of representatives of the different governments.

5. Every vessel arriving in a European port to be dealt with in a manner to be determined by the government of the country to which the port belonged.

Before the proper discussion began, a lively debate sprung up, at the instance of the president, on the question of whether the assembly would content itself with a theoretical discussion of the subject, or vote on the propositions presented. The latter was decided upon, and the reporters were accordingly instructed to prepare their propositions with that purpose in view. The discussion, which occupied several sessions, turned chiefly on the value of preventive measures against cholera. Geheimrath Professor von Pettenkofer said, among other things, that, so long as the ætiology of cholera was insufficiently known, and so long as opinions differed as they did at present as to the nature of the cholera *spirillum* and the conditions under which it throve, propositions aimed against cholera would have but little weight with governments. All preventive measures attended with restrictions on intercourse and commerce were illusory, so far as the purpose intended was concerned; all quarantines were destitute of value. If the meeting was contented with doing something, *ut aliquid fecisse videatur*, he could comprehend the propositions. He was in no wise opposed to the establishment of a central bureau of information, but the proposed prophylactic measures, such as isolation and disinfection, would hinder the spread of cholera as little as their omission would favor it. This had become evident in Bavaria in 1836, when nothing was done against the spread of the cholera, and yet no previous epidemic had been so mild. The speaker, after having repeatedly emphasized his opinion that anticontagionistic preventive measures were of no value, pointed to England, where, in spite of enormous and unlimited intercourse, no cholera had appeared for many years, and at last expressed the wish that quarantines should be abandoned for ever. Dr. Stekoulis, of Constantinople, and Professor Corradi, of Bologna, also spoke against the utility of quarantines, and against the closure of the Suez Canal.

After Hueppe, Gruber, Mosso, von Pettenkofer, Brouardel, Smith, and others had repeatedly stated their opinions, the following resolution, framed by Dr. Vallin, Dr. Sonderegger, Mr. Murphy, and Dr. Finkelnburg (of Bonn), was read:

"The Third Section of the Sixth International Congress of Hygiene and Demography expresses the desire that an international convention should be formed between the different States for protection against cholera, yellow fever, the plague, etc., the following propositions to serve as the basis: 1. Notification of each case of the above-mentioned diseases must be

compulsory, and it must be made as soon as possible. 2. In a neutral State of Europe a board of information must be created, to which notice should be immediately telegraphed of the first cases of the diseases, as well as regular accounts of the course of epidemics; the board to transmit the reports to all the participating States. 3. The convention to make the necessary regulations with regard to seaports and centers of commerce, the supply of drinking-water, the purification of the soil, etc. 4. The contracting States to take care that in places where there are endemic or epidemic diseases persons and articles of merchandise suspected of being infected are not transported. 5. Ships arriving from infected places should be furnished with arrangements for isolating the sick and carrying out the necessary disinfection. 6. A ship that has started from or touched at an infected place should be submitted to a medical examination at the port of arrival. 7. When cholera cases have occurred on board a ship, the patients must be disembarked and isolated, and those who are suspected of infection must be kept under observation until an accurate diagnosis has been made. 8. Such a ship should be watched until all the requirements of disinfection have been fulfilled and it is certain that there is no longer any contagium on board. 9. At the different landings on the Suez Canal international medical supervision should be established, and officers to be designated by the sanitary council of Alexandria should be charged with taking such measures as are necessary for the safety of Europe." After some discussion, the resolution was adopted by a large majority.

In the Second Section, under the presidency of Professor Hoffmann, of Leipsic, international measures against the adulteration of food were discussed. The reporters were Professor Paul Brouardel and Professor Gabriel Pouchet, of Paris, Dr. Angele Caro, of Madrid, Dr. Ferrière, of Geneva, Professor A. Hilger, of Erlangen, and Dr. Hamel Roos, of Amsterdam. Professor Pouchet read the report in the name of Professor Brouardel. It proposed the formation of an international committee, consisting of three members from each country, to devise and execute measures against the adulteration of food. This committee was first to formulate a concise definition of what was meant by adulteration. Dr. Hilger wished that the committee's field of action might be a larger one, comprising (1) the creation of examining boards after a uniform method; (2) the fixing of uniform methods for the examination of articles of food; and (3) the procuring of international legislation on the subject. Dr. Caro proposed examining boards not only for large towns, but also for small communities. Dr. Roos, the editor of the "Revue internationale des falsifications des denrées alimentaires," favored the establishment of laboratories on the frontiers, at which certificates should be made out concerning all imported articles. The discussion was directed largely to the question of the fitness of the apothecaries to make the necessary examinations. The capability of the Austrian apothecaries for the work was maintained by Dr. Fried, of Vienna, and denied by Dr. Paschkis, of Vienna.

At an extraordinary session of the Third Section, Professor Albert, of Vienna, in the chair, Dr. Chamberland, the director of M. Pasteur's laboratory, read a long paper by M. Pasteur on the preventive inoculation of rabies. The discussion revealed a very general and gratifying recognition of M. Pasteur's achievements. Dr. Ullmann, who had carried on the inoculations at Professor Albert's clinic, stated that the method showed a mortality of 2·5 per cent., which he contrasted with the much higher percentage in non-inoculated persons. Dr. Metschnikow, the director of the bacteriological laboratory at Odessa, fully corroborated Dr. Chamberland's and Dr. Ullmann's statements.

It was voted to hold the next congress in London in 1891.

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## THE COLOR REACTION OF CULTIVATIONS OF THE CHOLERA SPIRILLUM.

The discovery of the color-reaction to mineral acids shown by the cultivations of the cholera spirillum forms a valuable contribution to our knowledge of this organism, and may prove a useful adjuvant in the diagnosis of Asiatic cholera.

About a year ago Poehl stated that in cultivations of the cholera spirillum a red color was produced by the action of the mineral acids. Afterward observations were made on this subject by Bujwid, Brieger, and Dunham. More recently careful investigations as to the nature and conditions under which this reaction occurs have been made by Josef Jadassohn, and reported in Nos. 16 and 17 of the "Breslauer ärztliche Zeitschrift." The reaction consists in the production of a red or dark violet color in cultivations of the cholera spirillum in certain nutrient solutions by the addition of different mineral acids.

Hydrochloric, sulphuric, and nitric acids have all been used with success, and, aside from these, less decided reactions can be obtained with hydrobromic, phosphoric, lactic, and oxalic acids. Bujwid and Jadassohn strongly advise the use of hydrochloric acid, while Dunham obtained better results with concentrated sulphuric acid. Jadassohn greatly prefers the hydrochloric acid, and even ascribes the only reliable diagnostic power to it, on the ground that both sulphuric and nitric acid produce such changes in color in the ordinary cultivation media as to greatly interfere with or entirely conceal the characteristic reaction, while hydrochloric acid, on the other hand, produces no such change. Nitric acid is the least reliable and least valuable of the three, and yet it sometimes gives the sharpest and clearest reaction, and is the only available reagent for use in making the test in impure cultivations.

Sulphuric acid acts most rapidly and energetically, but care must be used in its application or the action of the strong acid on the nutrient medium will conceal the red color. For this reason it is better to employ this diluted one half with water, while hydrochloric and nitric acids are more useful in a concentrated form.

The reaction can be obtained in cultivations of the cholera spirillum in gelatin, agar-agar, solutions of peptone, blood serum, hydrocele fluid, etc. But it does not appear in cultivations in milk, hydrant-water, or solutions of sugar or starch. The age of the cultivations at which the reaction first appears and its intensity depend largely upon the abundance of the growth and the nature of the medium. When cultivations have been placed in a brood oven so that the growth is abundant, it can be obtained much earlier than if they have been

kept at the temperature of the room. This seems to be the only influence that the temperature at which cultivations are grown has upon the appearance of the reaction. The reaction appears earlier in media which contain peptone, and the intensity depends somewhat upon the amount of peptone present.

In cultivations upon beef-peptone agar-agar that have been placed in a cultivation oven, the reaction will often appear in from eight to twelve hours. Upon the addition of hydrochloric acid to such cultivations at first a red color spreads over the surface, and in the course of an hour is found to have extended into the deepest portions of the tube far from the bacterial growth.

The reaction in cultivations upon gelatin placed under the same conditions of growth appears at about the same time as in those upon agar-agar—*i. e.*, in from eight to twelve hours. When the acid is added, at first the fluid portions of the cultivation assume a bright rose-color, and then, as the solid portions are liquefied by the acid, these likewise take the same hue. If the fluid portions of the cultivation are first carefully poured off and the acid is then added, the solid portions of the gelatin, where there is no growth, assume the same color, showing that here, as in agar-agar, the agent which produces the reaction rapidly diffuses itself throughout the medium quite independently of the extent of the growth of the organism.

Dunham thought that for the production of the characteristic reaction it was essential that the nutrient medium should contain peptone. Jadassohn found, however, after a long series of careful experiments, in which the most varied media were employed, that the presence of peptone was not essential to the production of the reaction, as he also obtained it in nutrient solutions containing only albumin. A more characteristic and earlier reaction, however, is obtained in the presence of peptone than in the presence of a pure albumin alone. But, on the other hand, that the reaction does not occur in all solutions when the cholera spirillum is present, is shown by its failure to appear in cultivations in hydrant-water and solutions of starch, sugar, etc.

The second condition which is necessary for the production of the reaction is the free access of oxygen. The presence of oxygen is not essential to the growth of the cholera spirillum, but in cultivations where oxygen has been excluded by overlaying the media with a thin film of sterilized oil the color reaction is not obtained. If the oil is afterward carefully removed, after a short time the characteristic reaction can be obtained. Jadassohn found that the formation of the color product bore a direct and constant relation to the amount of oxygen present.

The question of the purity of the cultivation in reference to the reaction is one of great importance. Bujwid and Dunham have arrived at different conclusions regarding the necessity of this condition. Bujwid says "if the cultivation is not pure—*i. e.*, if it contains many other bacteria—the reaction does not take place." Dunham, on the other hand, obtained the reaction in the following experiment: He inoculated a tube containing a one-per-cent. solution of peptone with a mixture of cholera bacilli and human fæces, so that 43 per cent. of the bacteria present were cholera bacilli. In five hours he obtained the reaction with hydrochloric acid, but after twenty-four hours it disappeared. Jadassohn confirmed this observation. He found also that when tubes were simultaneously inoculated with the cholera spirillum and some other organism, after the growth of both organisms was abundant no reaction was obtained with hydrochloric acid and but little with sulphuric acid, but the characteristic color appeared when nitric acid was added.

Dunham only obtained the reaction in old impure cultivations by adding first sulphuric acid and then nitrous acid, but Jadassohn found that nitric acid answered the same purpose. Both Dunham and Jadassohn have made many test observations upon cultivations of other forms of micro-organisms, and especially upon the forms morphologically similar—viz., the Miller, Finkler and Pryor, and Deneke comma bacilli, and the Emmerich cholera bacillus. These four forms of organisms, with the *Bacillus pyogenes fœtidus*, are the only ones that gave color reactions to the mineral acids at all similar to that of the cholera spirillum. In the cultivations of these in peptone solutions, the addition of hydrochloric acid produced no change in color until the cultivations were many days old, and then the change was scarcely perceptible. Nitric acid brought out the characteristic violet-red color. Sulphuric acid produced a much less marked reaction than the nitric, and often no reaction.

In cultivations upon agar-agar the same general results were obtained. The color produced by the nitric acid had the same appearance as that produced in the cultivations of the cholera spirillum, but hydrochloric acid and sulphuric acid brought out no color. The reaction of cultivations of these organisms to the different acids is thus seen to be much the same as that found in impure cultivations of the cholera spirillum. That forms so similar morphologically should show such strikingly similar chemical reactions is certainly worthy of note.

Brieger has found that the violet-red coloring matter produced in beef-peptone gelatin cultivations of the cholera spirillum can be thrown down as a dirty red-brown precipitate by neutralization with soda; this he calls the color-base. It is dissolved by repeated shaking in benzene, and from this solution it can be obtained in brown-red scales. These scales are soluble in alcohol, in ether, and in chloroform. The alcoholic solution of the salt gives a dark band in the spectrum in D. He concludes that the cholera coloring matter is a true dye-stuff, does not seem to possess any poisonous qualities, and (as shown by other experiments) is an indol derivative. This last observation is significant, for, as has been shown, the color is only obtained in solutions of peptone or albumin, and indol, we know, is formed by the decomposition of albumin.

The diagnostic value of the reaction in cholera dejecta is a purely experimental question, and remains yet to be answered. But it is possible that the reaction to nitric acid, such as is shown in impure cultivations, may be also obtained with the dejecta, and may be of great value.

Jadassohn arrives at the following conclusions as the result of his experiments: 1. Pure cultivations of the cholera bacillus

in a nutrient solution containing peptone after a short time give a red color upon the addition of hydrochloric acid, which as yet has been found in no other form of bacteria. 2. This color also appears upon the addition of nitric and sulphuric acids, but the reaction is less characteristic, because the nitric acid especially will produce the same color in somewhat older cultivations of the spirilla of Finkler and Pryor, of Deneke, and of Miller, and in cultivations of the Emmerich bacillus and the *Bacillus pyogenes fœtidus*. 3. The cause of the red color reaction in cultivations of the cholera spirillum is the presence of a substance formed only with the free access of oxygen from peptone or albumin, which, according to the investigations of Brieger, is a derivation of indol. 4. Impure cultivations of the cholera spirillum for the most part show the reaction only with nitric acid.

### QUARANTINE.

As will be seen by the continued account of the proceedings of the recent meeting of the International Congress of Hygiene and Demography, given in our Vienna letter, much of the time of that meeting was devoted to questions bearing chiefly upon the prevention of cholera epidemics. The discussion was remarkable for Professor von Pettenkofer's repeated and emphatic declarations of his disbelief in the utility of quarantines as a means of protection against visitations of this disease. That noted epidemiologist even seemed to go so far as to deny the efficiency of preventive measures in general, although he probably made a mental reservation of personal and local cleanliness; for he made a point of the comparative mildness of the Bavarian epidemic of 1836, "when nothing was done against the spread of the cholera." The Munich professor was not supported by the meeting, for an almost unanimous vote was passed recommending an international convention to elaborate and enforce the measures advocated in the resolutions prepared by Dr. Vallin, Dr. Sonderegger, Mr. Murphy, and Dr. Finkelnburg. Substantially, those resolutions recognized the value of quarantine. It is evident, therefore, that the detention of passengers and merchandise from infected ports is still considered by the majority of European sanitarians to be one of the means to be trusted to in preventing importations of cholera. So far as we may infer from the Vienna discussion, the general sense of the meeting on that point was about the same as the opinion held by most of our own sanitarians, as exemplified in the uneasiness manifested from time to time by various boards of health in distant parts of the country as to the efficiency of the New York quarantine station and by reports lately made to several medical societies.

The latest of these reports, by a committee of the New York Academy of Medicine, will be found in full, with the omission of a few details, elsewhere in this issue of the Journal. This committee is popularly supposed to have been appointed at the request of the Mayor, for the express purpose of examining into the condition of the quarantine station and suggesting remedies for any shortcomings it might find—as the Mayor puts it, "to point out its defects and its requirements, in order to bring it up to the highest ideal standard of modern scientific and medical knowledge." As a matter of fact, the committee is the Mayor's only by adoption, so to speak, and it submitted its report to that officer only as a matter of courtesy. The committee was appointed at a meeting of the Academy held on the 3d of November. At that meeting, as our readers are aware, Health Commissioner Bryant read an important paper entitled "How the Medical Profession can aid the Board of Health," and it was after the paper had been read that Dr. Ellsworth Eliot moved the resolution under which a committee was appointed "to co-operate, when requested, with the Health Department, as suggested by Dr. Bryant." It seems, therefore, to be in a certain sense a standing committee, and its work in the matter of the quarantine station is to be viewed as only a part of what it may be expected to do.

But it is with this particular feature of its labors that we are concerned at present. The state of things which it depicts not only falls far short of "the highest ideal standard of modern scientific and medical knowledge," but is a disgrace to the assumed humanity of the people of the State of New York. As matters now stand, a decent and well-disposed immigrant would doubtless find his bodily health better cared for—to say nothing of his peace of mind—in almost any one of the State's jails or prisons than on Hoffman Island. Moreover, the hardships to which immigrants are there subjected are by no means balanced by the efficiency of the service in protecting the public health. Perhaps even the committee's report does not fully set forth the horrors of the place, but it shows abundant reason for the immediate institution of radical reforms. The report suggests these reforms in the most moderate terms, and it is to be hoped that its appeal may not long pass unheeded by the Legislature. It is announced, indeed, that a bill has already been introduced into the Senate containing provisions for improving the service. The State can not shirk the responsibility for the present deplorable condition of its quarantine station by allowing it to remain a bone of contention between various political rings or by pleading its expectation that the national Government will soon take the concern off its hands.

## *MINOR PARAGRAPHS.*

### THE MICROSCOPY OF THOUGHT.

Under this title, by which was meant an appreciation of the minute physical changes that go on in various parts of the encephalon as accompaniments of sensory, volitional, and motor processes, Dr. E. R. Maxson, of Syracuse, lately gave the Central New York Microscopical Club a very clear and interesting outline of the physiology of the brain. Attempts to make such matters comprehensible to persons who have not been trained in their study usually fall far short of success, but Dr. Maxson seems to have succeeded uncommonly well in the difficult task.

### FUNERALS OF MEDICAL MEN.

We are glad to learn that the Academy of Medicine has given up the practice of inserting notices in the newspapers, in the announcements of deaths, inviting the members to attend

the funeral of such and such a deceased fellow-member. The Medical Society of the County of New York would do well, we think, to follow the Academy's example. The theory of a brotherhood in medicine is very pretty, but the New York profession is now so large, and so many of its members belong to one or both of the societies mentioned, that the brotherly tie is hardly strong enough to lead to general compliance with the request expressed in the notices; but, as they are signed by the president and secretary, there seems to be an irksome obligation unfairly thrown upon those officers to act every now and then as public mourners.

## FOREIGN QUALIFICATIONS IN BELGIUM.

The "Lancet" learns that a bill now before the Belgian Chambers is likely to take away from the Minister of the Interior and of Public Instruction the arbitrary power of granting or refusing licenses to practice. It seems that the present incumbent, M. de Volder, having been remonstrated with by a medical society for granting licenses to foreigners without an examination, replied that he had made up his mind to give no more licenses to foreign medical men. This is a matter in which we as a nation have little if any interest, as it is doubtful if there is a single American physician desirous of settling in practice in Belgium; but on general principles we should be glad to see that country make its policy in this respect conform to the reasonable requirement of an examination at which persons of all nationalities should be on an equality. And we should like to see our own legislative bodies do the same thing, and not, as they do now for the most part, open the portals wide to all possessors of a foreign degree.

## A BRITISH ARMY SURGEON CONVICTED OF MURDER.

It is painful to read the proceedings in the recent trial of a retired surgeon-major of the British army, an account of which is given in the "British Medical Journal." The charge was that of having caused his wife's death by poisoning, and the apparent motive was his passion for another woman, to whom he was married on the fifteenth day after his wife's death, alleging as his reason that he had done her a wrong. The prisoner, a man sixty-three years old, denied his guilt, and addressed the court for half an hour, arguing the improbability of his having done the deed; but the evidence was strong against him, and he was convicted and sentenced to be hanged.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 3, 1888:

| DISEASES. | Week ending Dec. 27 | | Week ending Jan. 3. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 12 | 5 | 5 | 4 |
| Scarlet fever | 117 | 20 | 136 | 17 |
| Cerebro-spinal meningitis | 4 | 3 | 2 | 0 |
| Measles | 70 | 8 | 25 | 9 |
| Diphtheria | 138 | 58 | 143 | 62 |
| Small-pox | 1 | 1 | 1 | 0 |

**The Health of Boston.**—During the week ending Saturday, December 31st, the following numbers of deaths from infectious diseases were reported to the Board of Health: Diphtheria, 18 deaths; scarlet fever, 7 deaths. There were also 23 deaths from consumption, 29 from pneumonia, 2 from whooping-cough, 16 from heart disease, and 14 from bronchitis. The total number of deaths was 214, against 219 during the corresponding week last year.

**The Randall's Island Hospital.**—Dr. Charles H. May has been appointed visiting ophthalmic and aural surgeon to the hospital.

**The Senate Quarantine Bill.**—A bill has been introduced into the New York Senate which fixes the number of salaried officers hereafter to be employed, and places the Health Officer on a salary of $10,000. It amends the original act of 1863, section 53, by stipulating that, while the Health Officer shall be entitled to receive the fees fixed by law for his services, these fees shall not exceed the following amounts:

For inspection of every vessel from a foreign port, $5. For inspection of every vessel from a domestic port south of Cape Penelope, between the 1st day of May and the 1st day of November in each year, $1. For sanitary inspection of every vessel after the discharge of cargo or ballast, $10. For fumigation and disinfection of every vessel, $5; but no more than two fumigations or disinfections shall be charged for any one vessel at the same time. For boarding every vessel and giving pratique between sunset and sunrise at the request of the owner, consignee, or master of the vessel, when such pratique can be given without danger to the public health, $5. For vaccination of persons on vessels on board of which small-pox has been developed during the voyage, each 25 cents, but no charge shall be made for the vaccination of any person who shall have been successfully vaccinated by the medical officer of the ship.

The Health Officer shall, out of these sums thus collected, pay for the running of a steamboat for the transportation of persons to and from the establishment, for visitations and for burying the dead, and the salaries of Deputy Health Officers, and such bargemen, nurses, and stewards as will be necessary for conducting the Quarantine establishment, excepting the salaries of the Quarantine Commissioners, all of which is now required by law. In addition to these expenses he must pay the salaries of the following officers, to be appointed by the Commissioners: A secretary of the Commissioners of Quarantine, $1,800; a superintendent of Swinburne Hospital, $2,500; a superintendent of Hoffman Island, $1,500; an engineer of Swinburne Island, $1,150; an engineer of Hoffman Island, $1,050; a carpenter at Swinburne Island, $900; a laundress at Swinburne Island, $300; a boatman at Swinburne Island, $750; a boatman at Hoffman Island, $750. The Health Officer shall be entitled to receive a compensation of not less than $10,000 per annum. In case the aggregate amount of the fees remaining in his hands at the end of each year, after the payment by him of the salaries, wages, and expenses which he is required by law to pay, is less than the sum of $10,000, the Commissioners of Quarantine shall ascertain by proper proofs, to be approved by the Attorney-General and filed with the Controller, the amount of such deficiency, and shall pay the same to the Health Officer out of any unexpended moneys in their hands.

It is said that another bill will be introduced abolishing the Quarantine Commission and placing the whole establishment in the hands of the Mayors of New York and Brooklyn, the presidents of the boards of health of the two cities, and the president of some such commercial body, such as the Maritime Exchange.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 25 to December 31, 1887:*

Baxter, J. H., Colonel and Chief Medical Purveyor. Ordered to inspect the medical purveying depot at St. Louis, Mo. S. O. 296, A. G. O., December 23, 1887.

Banister, William B., First Lieutenant and Assistant Surgeon. Ordered to proceed to Fort Lowell, Arizona, and report to the commanding officer for duty, upon the arrival of Surgeon P. J. A. Cleary at Fort Wingate, New Mexico. S. O. 135, Department of Arizona, December 20, 1887.

**Society Meetings for the Coming Week:**

Monday, *January 9th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (section in Chemistry and Technology); Lenox Medical and Surgical Society (private); Boston Society for Medical Improvement (annual); Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *January 10th:* New York Medical Union (private); Medical Societies of the Counties of Chautauqua (semi-annual), Chenango (annual), Clinton (annual—Plattsburg), Erie (annual—Buffalo), Genesee (semi-annual—Batavia), Greene (quarterly), Jefferson (annual—Watertown), Livingston (semi-annual), Madison (semi-annual), Oneida (semi-annual—Rome), Onondaga (semi-annual—Syracuse), Ontario (quarterly), Oswego (semi-annual—Oswego), Rensselaer (annual), Schenectady (annual—Schenectady), Schuyler (annual), Steuben (semi-annual), Tioga (annual—Owego), Wayne (semi-annual), and Yates (semi-annual), N. Y.; Newark, N. J. (election), and Trenton, N. J. (private), Medical Associations; Norfolk, Mass., District Medical Society (Hyde Park).

Wednesday, *January 11th:* New York Surgical Society; New York Pathological Society (annual); American Microscopical Society of the City of New York; Medico-legal Society (anniversary); Medical Societies of the Counties of Albany and Dutchess (annual—Poughkeepsie), N. Y., Tri-States Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Hampshire, Mass., District (quarterly—Northampton), and Worcester, Mass., District (Worcester) Medical Societies; Bennington, Vt., and Hoosick, N. Y., Medical Society (annual—Arlington, Vt.); Philadelphia County Medical Society (conversational).

Thursday, *January 12th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society (annual and election); Medical Societies of the Counties of Cayuga, Fulton (annual—Johnstown), and Rensselaer (annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *January 13th:* New York Academy of Medicine (section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *January 14th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

## OBITUARY NOTES.

**William D. Schuyler, M. D.,** died on Saturday, December 31, 1887, at his house, in West Fifty-seventh Street, after a painful illness due to a malignant growth within the abdomen. He was born in Monroe County in 1834, and received his medical degree from the College of Physicians and Surgeons in 1869, after which he served as a member of the house staff of Bellevue Hospital and then of the Roosevelt Hospital. He was a member of the Academy of Medicine and of the Medical Society of the County of New York. Dr. Schuyler was a successful and highly esteemed practitioner. During the last three or four years of his life he contributed a number of articles to our columns, all of which showed great depth of thought and exceptional practical acumen. Most of them were on the subject of pneumonia, and we learn that a revision of them, together with additional matter, is shortly to be brought out in the form of a monograph. Dr. Schuyler was a man of great earnestness, happily blended with gentleness and considerateness. Both the bodily pain incident to his disease and the mental distress caused by the prospect of a speedy termination of his career of usefulness were borne by him with rare fortitude and resignation. By his death the profession loses one of its most honorable members.

**Warner Cleveland, M. D.,** died at his house in New York on Sunday, the 1st inst., in the seventy-second year of his age. The deceased was a graduate of the Medical Department of the University of Vermont, of the class of 1847. At the time of his death he was a member of the Medical Society of the County of New York. For many years he practiced in Essex County, and he was at one time president of the Medical Society of the County of Essex.

# Letters to the Editor.

## PRIVATE VENTURES IN COLLECTIVE INVESTIGATION.

*To the Editor of the New York Medical Journal:*

Sir: Permit me to congratulate you upon your timely protest against mob-rule in therapeutics. Your timely editorial against "Private Ventures in Collective Investigation" will appeal to the practical intuitions of every physician. Who can adequately describe the mental torture caused by the man who is continually bombarding you with requests to give your "experience" upon points of medical and surgical practice of which he himself is, perhaps, totally ignorant, or only partially informed? Such creatures are the veriest hawks of science; they are no more to be confounded with those painstaking investigators who, by their original work, help to lend momentum to the medical machine, than rancid oil is to be confounded with Croton water! Away with them all!

Country Practitioner.

*To the Editor of the New York Medical Journal:*

Sir: I have read with pleasure your editorial on "Collective Investigation." You indeed merit the thanks of the profession for exploding this humbug. Who are these creatures who are sitting in judgment upon the deeds of other men? Have they ever done anything themselves? Most assuredly in the majority of cases they have not, since they give but the attenuated echo of other people's doings. There is hardly room for more of this scientific oleomargarine; it has already caused too much mental dyspepsia, and the Board of Health should quarantine it.

Veritas.

## A SUBSTITUTE FOR BRAN BREAD FOR DIABETICS.

Kiowa, Kansas, *December 20, 1887.*

*To the Editor of the New York Medical Journal:*

Sir: Having recently a patient suffering with diabetes, it became necessary to make a substitute for the "staff of life," and I had my druggist write for the price of bran flour. The manufacturers demanded so much as to practically place the flour beyond the reach of the poor. The formula for bread made from potatoes from which the starch had been removed was then tried, but did not prove satisfactory. The following for-

mula, however, has proved successful, and by its use the patient has passed three months without the least desire for bread, the urine becoming normal, and he has gained ten pounds in weight.

No drugs have been used, except an ounce of whisky with each meal. This formula may be known, but, having never seen it, I give it for the benefit of others, and, if in all cases it is as successful as it was in this one, it will demonstrate to the bran manufacturer the truth of the proverb *sibi ipsa semper aviditas nimia officit:*

Six eggs are thoroughly beaten, and then a teaspoonful of baking-powder, or its chemical equivalent, and a quarter of a teaspoonful of salt are added, and again the eggs are beaten. This mixture, poured into hot waffle-irons smeared with butter, is baked in a very hot oven. For variety and to make these biscuits seem more like coarse bread, pulverized nuts of those permitted may be added. They may be eaten hot with butter and cheese, but will remain good for a long time, and nobody would suspect that they were destitute of flour.

W. T. O'Donnell.

## BACTERIOLOGICAL CLASSIFICATION NAMES.

Delmont, Pa., *December 26, 1887.*

*To the Editor of the New York Medical Journal:*

Sir: In the matter of the minute organisms that enter so largely into modern pathology, I think we have rather a confusion of terms. We have microbes, bacteria, micrococci, bacilli, etc., as vegetable organisms. We have ptomaines as products of animal putrefaction. Now, of the former class, which are general and which particular? Are we to consider the microbe as the genus and the others as the species? I should like to see a biological classification of the subject in the Journal.

U. M. Snyder.

*** It would be difficult, perhaps impossible, to give a satisfactory classification of the pathogenetic micro-organisms at present. Microbes is a general term for all micro-organisms. Bacteria is commonly used in a sense nearly as wide, but in the singular, *Bacterium*, it is the name of a genus; so are *Micrococcus* and *Bacillus*. Our correspondent does not mention any species names. They are almost as the leaves of the forest in number, and many of them, as well as of the genus names, are used differently by different writers.

# Book Notices.

*A Hand-book of Diseases of the Skin*, with Especial Reference to Diagnosis and Treatment. By Robert Liveing, A. M., M. D. Cantab., F. R. C. P. Lond., Physician to the Department for Diseases of the Skin at the Middlesex Hospital, etc. Fifth Edition, revised and enlarged. London and New York: Longmans, Green, & Co., 1887. Pp. viii–451.

This book is one of the best of the shorter treatises upon skin diseases. In 1880 its author combined his two books (one upon the treatment, and the other upon the diagnosis of the diseases of the skin) into one book, and it is a new edition of this which is now before us.

The opening chapters upon classification, nomenclature, and diagnosis are judicious, and we heartily agree with the author in his plea for a simpler nomenclature and for the discarding of superfluous terms. Pye-Smith's table of "diseases of the skin regarded as anatomical conditions of certain layers, organs, or regions" is given on page 43, with some additions and alterations. This will be found helpful for purposes of diagnosis. The sections upon the various cutaneous diseases are well done, the symptomatology being clearly put, and the diagnosis given very fully. The methods of treatment advised are not so fully described nor so numerous as the title of the book would lead us to believe, and in some cases treatment is entirely omitted, as in the section on favus. The closing chapter of the book, which treats of therapeutics, is a useful one, containing a short account of the leading European spas, with indications for their use, and a long list of formularies. The book is readable, and shows in every part a thorough mastery of the subject.

*Hygiène Infantile.* Causes de la morbidité et de la mortalité de la première enfance à Buénos Ayres. Par le Docteur Émile R. Coni, Membre honoraire de l'Association Médica Bonaereuse du Círculo Médico Argentino, etc. Ouvrage couronné au concours Rawson par la Faculté des Sciences Médicales de Buénos Ayres. Buénos Ayres: Paul, 1886. Pp. xix–228.

This essay is chiefly commendable for its industrious compilation and careful analysis of statistics having a purely local bearing, and in this respect is a work of great importance, which can scarcely fail to lead to good results. To the North American or European reader its main interest lies in showing that the same insanitary conditions which we deprecate at home exist wherever ignorant humanity is congregated in nominally civilized communities, and with nearly the same consequences. In Buenos Ayres, as in New York, an appalling part of the mortality and morbidity of infancy comes under the generic head of "athrepsia," and is due to maternal ignorance of hygiene and maternal disinclination or inability to supply to infants their only proper food. There, as here, faulty domiciliary circumstances, lack of light and ventilation, overcrowding in the dwellings of the poor, bring their train of scrofula, tuberculosis, and the long procession of maladies arising from malnutrition. There, as here, filth furnishes the soil wherein exotic infection takes root and becomes endemic. We learn that Buenos Ayres shares in the monopoly of the western continent in the matter of trismus neonatorum, which the author ascribes to cold and dampness, conjoined with want of care and insanitary surroundings. To the same causes, but especially to dampness, he assigns a notable prevalence of noma, which he regards as closely allied to aphthous stomatitis.

In one respect, however, the Argentine capital differs widely from most of our northern cities; with a marriage-rate of 8 to the 1,000, its birth-rate ranges from 38 to 40 in a 1,000 of the population, and of these births 15 per cent. are estimated to be illegitimate. As a natural result, the mortality from infantile syphilis is very large, not counting the numerous still-births probably due to this cause, or the undoubtedly many cases where a euphemistic death-certificate is given to avoid publicity.

The measures of state medicine recommended by the author to diminish the sacrifice of infant life are: To lessen illegitimacy by removing the legislative obstacles which now impede marriage; to encourage mothers to nurse their offspring, and to establish a supervision over mercenary wet-nurses; to open lying-in hospitals for the poor, apart from general hospitals, with provision for home attendance where it is requisite, and to found *crèches* for the care of children during the working hours of the mother's day; to promote by law the hygienic construction of tenements for the laboring classes, and to enforce isolation of contagious diseases; to make vaccination and revaccination compulsory; and to suppress clandestine prostitution and create a special sanitary bureau to limit the propagation of venereal disease.

### BOOKS AND PAMPHLETS RECEIVED.

Dr. G. Beck's Therapeutischer Almanach, 15. Jahrgang, 1888. 1. Semester. Bern: Schmid, Francke, & Co., 1888.

Some Observations on Headaches in Children and their Relation to Mental Training. (Read in the Section of Diseases of Children at the International Medical Congress held at Washington, September, 1887.) By William Henry Day, M. D., Member of the Royal College of Physicians of London, etc. London: J. & A. Churchill, 1887.

As to Yellow Fever. By John P. Wall, M. D. [Reprinted from the "Florida Times-Union."]

Aerztlicher Bericht über die Thätigkeit des Carlsbader Fremdenhospitales in der Saison 1887. Erstattet vom Director der Anstalt Dr. August Hermann. [Sonderabdruck aus der "Prager medicin. Wochenschrift."]

Conduite à tenir dans l'avortement. Curage et écouvillonnage de l'utérus pour l'extraction du placenta retenu dans la matrice. Par J. A. Doléris, Ancien chef de clinique d'obstétrique et de gynécologie de la Faculté de Paris, etc. [Publication des "Nouvelles archives d'obstétrique et de gynécologie."]

Périnéorrhaphie immédiatement après l'accouchement au moyen des sutures ou en spirale, avec les fils de catgut résorbables. Par le Docteur Doléris. [Extrait des "Archives de tocologie."]

Étude sur l'histologie pathologique du placenta abortif. Par George Zinowieff, Docteur en médecine de la Faculté de Paris. [Publication des "Nouvelles archives d'obstétrique et de gynécologie."]

Recherches expérimentales sur l'intoxication par le sublimé corrosif, employé pour le lavage des muqueuses saines et des plaies. Par MM. Doléris et L. Butte. [Publication des "Nouvelles archives d'obstétrique et de gynécologie."]

Du raccourcissement des ligaments ronds. Par J. A. Doléris, Ancien chef de clinique d'obstétrique et de gynécologie de la Faculté de Paris, etc. [Publication des "Nouvelles archives d'obstétrique et de gynécologie."]

Traitement et restauration du col de l'utérus pendant la grossesse. Par J. A. Doléris, de Paris, etc.

## Reports on the Progress of Medicine.

### OBSTETRICS AND GYNÆCOLOGY.

By ANDREW F. CURRIER, M. D.

**The Treatment of Uterine Tumors by Electrolysis** ("Brit. Med. Jour.," Oct. 1, 1887, editorial).—Two important papers upon this subject are published in this number of the "British Medical Journal," one by Dr. Apostoli, of Paris, and the other by Dr. W. E. Steavenson, of London. Both were read at the recent meeting of the British Medical Association at Dublin. Apostoli recapitulates the work of his predecessors in this line, stating that their methods were empirical, that they had no system of measuring the force of the electrical current and of regulating its dosage, and that they adopted the objectionable plan of wounding the abdominal tissues above the pubes with their needles. In contrast with all these he asserts that by his method there is an accurate and scientific measurement of the current, that great strength of current may be used without detriment to the patient, and that there are no punctures above the pubes. He also states that the action of the positive pole is hæmostatic, while that of the negative pole is to lower the nutrition of the parts. He considers the chemical effect of the cauterization produced by the current as the potent influence rather than the thermic effect. If, as he asserts, the electrical current acts upon every molecule of tissue in the structure through which it is passed, and so must produce important changes, the fact is of very great value. Antiseptic measures are of great importance in performing operations upon tumors by his method, which should by no means be considered minor operations. The too violent application of the negative pole must also be avoided. His statistics are not sufficiently minute in their details. Steavenson lays special stress upon improvements which he has made in his electrodes, which are of flexible copper wire, ending in a short piece of platinum. They are cheaper than the long platinum rods for electro-puncture, and are easier to introduce and safer than Apostoli's rigid platinum ones. Steavenson thinks that the treatment of myomata by electricity is neither so easy nor so free from danger as Apostoli would have us believe. Those who use electrolysis should be sure that they understand the medical and surgical uses of electricity. He approves of Apostoli's method for the treatment of bleeding fibroids, and thinks it has been fairly successful in checking the growth of large fibroid tumors. It is questionable whether this method will ever supplant the purely surgical methods of treatment. If Apostoli's method is adopted, one must not only remember the precautions which he has suggested, but be on the lookout for unforeseen dangers, especially if the method is used extensively in dispensary practice.

Apostoli's paper has started a lively correspondence with the "British Medical Journal," letters from Mr. Lawson Tait and Dr. Julius Althaus appearing in the issue of October 29th, and from Dr. W. S. Playfair and Dr. R. Milne Murray in the issue of November 5th. Mr. Tait refers to his own experience with electricity and to the information upon this subject which he obtained in 1868 from Dr. Althaus. To Apostoli's five statements as to the defects in the methods of his (Apostoli's) predecessors in the use of electricity he offers "a categorical contradiction." The methods which he adopted eighteen years ago were not different, he affirms, in principle nor in essential methods of application from those which are now advocated as entirely new by Apostoli. He does not deny that Apostoli may be correct in his statements as to the effects of his treatment, but he deprecates the general use of the method by those who are not sufficiently informed upon the subject. Dr. Althaus thinks that his work in this field has been overlooked by Apostoli, and does not admit that the method which he (Althaus) used was defective as to dosage, as to the end aimed at, or as to results. The wet clay electrode of Apostoli was used forty years ago by Du Bois-Reymond in electro-physiological researches, and the term galvano-chemical cauterization originated with Tripier. The hæmostatic effect of the positive pole was also suggested by him (Althaus) twenty years ago. Dr. Playfair thinks favorably of Apostoli's work, and, in so far as he has followed his method, he has been satisfied with the results. He is entirely in favor of giving the method a fair trial and testing it upon its merits without particular reference to what may have been done by previous workers in this field. Dr. Murray warmly approves Apostoli's method, and considers the use of the milliampèremeter a great advance over previous methods of registering current strength, whether by means of the galvanometer or the notation of a certain number of cells. The present method is considered a decided step in the direction of accuracy as to nomenclature and usage of a powerful and important therapeutic force.

**The Sectional Anatomy of the Third Stage of Labor.**—Barbour ("Edinburgh Med. Jour.," Nov., 1887) summarizes the anatomical and physiological points in his paper as follows: (*a*) 1. No sections of the whole cadaver from the third stage have yet been made. 2. Porro uteri show that the placenta can follow a diminution of its site to $4 \times 4\frac{1}{2}$ inches without separation, and that this amount of contraction and retraction brings the wall into contact with the placenta all around. 3. Stratz's sections of the uterus and placenta are the only ones we have, as yet, from the third stage, but are of the uterus removed from the body. The one which illustrates placenta prævia shows the placenta separated, and the uterine walls embracing the placenta, which is presenting by its edge. The one which illustrates eclampsia shows absence of contraction and retraction over the unseparated portion. (*b*) 1. The question of separation of the placenta must be kept quite distinct from that of its expulsion. 2. Evidence is accumulating that, at the commencement of the third stage, the placenta is still as a whole or in great part attached. 3. Diminution in the area of its site to $4 \times 4\frac{1}{2}$ inches does not mean separation of the placenta. 4. Diminution of area beyond the foregoing limits, plus the action of the uterus as a whole upon the placental mass, is considered the formal cause or force which tends to produce separation, and the pains of the third stage are the efficient cause or agent through which the force acts. Effusion of blood is an accident and not essential. 5. During the contractions of the third

stage the surface of the placenta is thrown into heights and hollows; the heights do not necessarily mean effusion below. 6. The placenta usually descends with its edge, or a point near its edge, first, as Duncan described; though sometimes the fœtal surface comes first, as Baudelocque and Schultze described. The third stage is regarded as a second labor in miniature. The pain which expels the child is followed by a pause, during which the placenta is still as a whole or in great part attached; then labor comes on again, and the placenta is first detached and then expelled. This second labor is not always marked off by a distinct interval from the first, for one long pain may expel the child, and then detach and expel the placenta.

**The Notion which is implied in the Term Castration** (Hegar, "Ctrlbl. f. Gyn.," Oct. 29, 1887).—The term ovariotomy in all medical literature means only the removal of ovarian tumors of considerable size. Hegar originated the use of the term castration to signify the removal of the female reproductive glands in the same sense as it is used by surgeons for the removal of the analogous organs in the male, and by veterinarians for the operation upon either sex. The synonyms oophorectomy and normal ovariotomy have been discarded—the latter because it is seldom applicable. Tait's operation, or the removal of the uterine appendages, had been performed by the author and others before it received this name, Tait laying more stress upon the importance of the tubes and their removal than the others did. Similar remarks might be made in regard to the term salpingotomy. The object of castration is twofold: to remove an organ which is a source of irritation on account of pathological changes, and to bring to a conclusion the functions of ovulation and menstruation. The advantages of the anticipated climax were originally pointed out by Hegar, also collateral effects which might be expected from the ligation of certain vessels, stretching of bands, tearing of adhesions, effecting mobility in organs previously immobile, correction of uterine displacement, and the causation of a profound mental impression. According to Martin, Schröder, and C. Ruge, it is essential to the notion of castration that the ovaries be healthy and that recovery be dependent upon one mode of action—the anticipated climacteric. Martin even wishes to limit the term to those cases in which normal ovaries are removed for the purpose of producing an effect upon the sexual life—that is, upon psychoses which are involved in the cases. The definition of these authors is open to the objection that it involves a complex notion, referring both to the health of the organ which is to be removed and the method by which a cure is to be effected. Prochownik's definition is a better one, castration signifying to him the removal of the ovaries for the purpose of producing the menopause, irrespective of the health or disease of the ovaries. The knowledge concerning the relation between ovulation and the functions of the uterus, and concerning the influence of a cessation of activity of the ovaries upon the system at large, the nervous system, and the mind, is yet too indefinite to be formulated in any definition of castration. Again, Martin, in the second edition of his book on "The Pathology and Treatment of the Diseases of Women," considers that all castrations for myoma should be called ovariotomies, thus apparently discarding the consideration of the physiological condition of the organ in his definition. Whether the operation is called ovariotomy or castration, it is important to remember in giving a definition that the operation and the indication which calls for it are quite distinct, and this whether the indication is pelvic peritonitis, an affection of the tubes, or an affection of the ovaries. The fine distinctions which Ruge makes between ovaries which are anatomically diseased, though clinically not diseased—that is, the cystic degeneration, for example, which can not be ascertained by palpation—are considerations which ought not to enter into a definition of castration. The author believes, therefore, that the original idea as enunciated by him is better calculated to express the facts concerned in castration than any of the recent improvements and refinements.

**Parotitis following Ovariotomy.**—This complication was observed by Bumm ("Ctrlbl. f. Gyn.," Oct. 29, 1887) in the records of seventeen ovariotomies. The swelling of the gland was first noticed between the third and the eleventh or twelfth days after the operation. In two of the cases the sublingual and the submaxillary glands were also inflamed. It does not follow that the inflamed parotid will be on the same side of the body as the ovary which is extirpated. In nine of the cases the inflammation was of a suppurative character. Möricke considers this a serious complication. It would seem as if it were more likely to occur in cases in which the removal of the tumors was rendered difficult by adhesions. Most writers who have alluded to this subject at all regard this inflammation as an effect of the extirpation of the ovaries, though Keith believes it is entirely an accident. No better explanation of its cause can be offered than the well-known sympathy which exists between the salivary and the reproductive glands, irritations of the ovaries leading to vaso-motor disturbances in the parotids, and this being followed by inflammation. If no new factor supervenes, the process may continue as a simple inflammatory one, and end spontaneously. According to present knowledge, suppuration can only occur after the entrance of pyogenic micro-organisms which have been found to belong to the species *Staphylococcus aureus*. The drying up of the salivary secretion, which is not infrequently observed after ovariotomy, may be looked upon as an element of proof that the micro-organisms enter the system at the time of the operation.

**Endometritis during Pregnancy.**—Among the causes of abortion, says Veit ("Ctrlbl. f. Gyn.," Oct. 29, 1887), endometritis should receive greater consideration than has usually been accorded to it. The author prefers to call this variety *endometritis gravidarum* rather than *endometritis decidualis*. The changes in the ova which are cast off in connection with this condition are uniform, and they are not caused merely by the death of the ova. Abortion from this cause is good evidence that the disease existed previous to impregnation, but not necessarily that it was severe. The placenta in such cases will usually be found to have undergone pathological changes. The discovery of evidences of disease in ova which are cast off from this cause is not easy. Clinically the symptoms are pain, hæmorrhage, etc. In certain cases which came under the author's notice an examination showed very firm contracting power of the uterus, but only partial relaxation, with peculiar forms of tension, etc. To this variety belong many cases in which abortion is habitual, or in which there may be hydrorrhœa of the gravid uterus, obstruction in connection with an anteflexed gravid uterus, or the so-called uncontrollable vomiting of pregnancy. The principal suggestion which is to be made in regard to these cases is that they be carefully watched, and the accident prevented by suitable prophylaxis.

**Laparotomy in connection with Tuberculosis of the Peritonæum.**—Fehling ("Ctrlbl. f. Kinderh.," Nov. 5, 1887) read a paper before the gynæcological section of the sixtieth meeting of the Society of German Naturalists and Physicians. He considered it noteworthy that exploratory incisions of the abdominal wall were displacing exploratory punctures. With antiseptic precautions, the former were not dangerous. In recent years one meets with tuberculous changes in the peritoneal region more frequently than used to be the case. The results of exploratory incisions in such cases are so satisfactory that they demand further investigation, especially because an explanation is not yet possible. Three cases are narrated by the author in which the results warrant their detailed account:

1. A multipara, thirty-four years of age, suffering from amenorrhœa and emaciation. Above Poupart's ligament of the right side there was found a tumor as large as an orange, which was thought to be a development from the right ovary. There were small nodes behind the uterus on either side, but no ascites, and a suspicion of a malignant growth. An exploratory incision showed that the tumor was the cæcum changed to a round tumor by deposits of tubercle. Within the tumor were also included the vermiform appendix, and loops of the small intestine with their mesentery, all being infiltrated with tubercle. Behind the uterus the Fallopian tubes were pressed down in the form of a rose-cross. The incision was followed by great improvement without any particular reaction.

2. A multipara, twenty-four years of age, had a severe attack of peritonitis six months before she came under the author's observation. When seen by him she had a tumor supposed to be ovarian extending from the anterior spine of the ilium on the right side to the umbilicus. It revealed deep fluctuation and rumbling upon palpation. As she had suffered from a precedent attack of pleurisy, the diagnosis of tuberculosis was made and the abdomen was opened for the purpose of removing what was supposed to be an encapsulated mass of exudate.

The intestines were so matted together and so extensively attached to the abdominal wall that it was impossible to reach the free abdominal cavity. In the course of the operation the intestines were wounded and were sutured. The operation was followed by recovery, the patient gaining eighteen pounds during the succeeding three months.

3. A woman, twenty five years of age, who had given birth to a child two years and a half previous to the author's acquaintance with her, and six months previously had been punctured for the removal of ascitic fluid. Since that time she had been bedridden, with fever during much of the time. On her left side was a fluctuating tumor which extended above the navel. A diagnosis of encapsulated ascitic fluid of tuberculous origin was confirmed by incision. A drainage tube was passed through the vagina, and the sac of the tumor was attached to the abdominal wall. A portion of the latter was excised and found to contain tubercles. The intestines were also covered with tubercles. The wound was recovered from, and there was marked general improvement. The author has been struck with the varied forms which are assumed by tuberculous peritonitis. Of forty recorded cases in which operations have been done, only two occurred in men. Considering the frequency of tuberculosis of the male genital organs, it seems a little peculiar that primary tuberculosis of the peritonæum should be so infrequent. It would seem probable that tuberculosis of the peritonæum in women was secondary to tuberculous disease of the tubes; the lungs in such cases may be uninvolved. Of twenty-nine recorded cases of tubercular peritonitis, in twenty-one there was encapsulation of ascitic fluid; six of the patients died, and fifteen were relieved, eight for more than a year. Of five cases in which there was free ascitic fluid, two patients were relieved and two were cured. A long incision is usually to be preferred, and drainage *per vaginam* when possible. The curative effect of the operation does not consist in the iodoform or sublimate which may be used, but probably upon destructive changes which are exerted upon micro-organisms; or possibly it may be due to improved conditions of the circulation. It must not be forgotten that a spontaneous cure sometimes occurs. The author can not agree with Kümmel in considering peritoneal tuberculosis a local condition of the same grade as tuberculosis of the joints, for the anatomical conditions are entirely different. The long duration of the process and the apparently slow course of healing depend upon conditions similar to those which effect such a different result in pulmonary tuberculosis. The prognosis for operations in peritoneal tuberculosis is therefore not as hopeless as it would once have been considered.

**The Performance of Obstetrical Operations in Water.**—Kaschkaroff ("Ctrbl. f. Gyn.," Nov. 5, 1887) says that, since water can be sterilized more readily and certainly than air, it occurred to him that an apparatus could be constructed which would enable one to operate under a water-mirror. The water should be warm and disinfected, and should be constantly renewed at a uniform rate. The apparatus (which is in course of construction) should contain only sufficient water to immerse the lower half of the abdomen and the genital organs. Such operations as turning and craniotomy have already been done several times by the author, with good results, under water which was neither disinfected nor changed in the course of the operation. A century ago Aitken showed that Cæsarean section could be done more safely if it were done in an elevated temperature. Various attempts were made by surgeons to operate under water before the days of bloodless operations, but the discoloration of the water caused the attempts to be abandoned.

**Reports of the Obstetric Service at the Maternity at Marburg.**—According to Ahlfeld (*ibid*), since 1883 antiseptic precautions have been gradually perfected in this maternity. At the present time each woman who is about to be confined receives a full bath, after which clean garments are put upon her. The vagina and external genitals are carefully disinfected with a douche of hot sublimate solution (1 to 2,000). The attendants wear clean white trousers and aprons. Accidents from the use of sublimate have been very few and never severe, and Ahlfeld recommends that it be employed systematically by midwives. It is contra-indicated, however, in anæmic women, in placenta prævia, in cases in which mercurial treatment has been used for other conditions, and in nephritis. Ahlfeld lays great stress upon the natural treatment of the placenta—that is, non-interference in its expulsion as opposed to Credé's plan. He believes that by the natural method there is less bleeding then and subsequently, and less danger of puerperal fever. These views are the result of his experience since 1880. Credé's plan is admitted to be the best if there is profuse hæmorrhage which does not cease by mild rubbing of the abdomen over the uterus, in placenta prævia, and in cases in which there is infectious fever with tympanites uteri, following parturition. It is confidently asserted that the natural non-interfering treatment of the placenta has so many advantages that it must ultimately displace Credé's.

**Self-infection.**—Ahlfeld ("Ctrlbl. f. Gyn.," Nov. 12, 1887) says that the axiom that there can be no such thing as self-infection after a normal parturition is effectually exploded. Winckel has shown that it has occurred in women who have given birth to their children *in the street*, in which there could be no question of infection from the hands or instruments of physicians or midwives, and Ahlfeld has demonstrated the same by experimental investigations. The author understands by self-infection, with Semmelweiss, a condition in which the poisonous matter exists upon or in the genital organs at the time of parturition, or is developed during parturition or the puerperium. The infection may or may not be communicated to the patient during the manipulations of the physician or midwife. A sharp distinction between infection from without and self-infection does not seem to be possible; it is therefore difficult to say, in most cases, that the physician or the midwife is responsible should puerperal fever make its appearance. It is only recently that stress has been laid upon the influence exercised by micro-organisms upon the vulva and the external genitals, and this has led to undoubted improvement in the condition of puerperal women in general. It is now admitted that if pathogenetic spores are found in the vagina of a woman who is otherwise in good condition, disease may result, though there is still uncertainty as to whether they are developed in the vagina previous to parturition by their entrance into the tissues, or through the process of their proliferation. A fatal result from blood-poisoning or septic peritonitis may occur even though the patient may not have been touched by a physician or other attendant. Cases are narrated in which the evidence of septic infection from retained and putrefying products of conception is clear and convincing, poisoning from the absorption of ptomaines being admitted. The author does not agree with Kaltenbach in his belief that puerperal disease from such a cause is of rare occurrence.

**The Consensus between the Organs of Generation in the Female and the other Organs.**—Baart de la Faille (*ibid.*) says that at puberty the influence of the ovaries upon the other organs is most significant, and during menstruation indications of disease of various forms are especially prone to appear. Among such diseases and diseased conditions may be mentioned migraine, prosopalgia, nausea, vomiting, cardialgia, constipation, disturbances in the circulation of various kinds, and cutaneous eruptions, such as erysipelas, acne, and erythema. At puberty, also, disturbances of nutrition become prominent, such as chlorosis and anæmia, neuroses such as hysteria, disturbances both in the cerebro-spinal and the sympathetic systems, including chorea, epilepsy, hyperæsthesiæ, and anæsthesiæ. There may be psychical disturbances which are apparently dependent upon the process of ovulation, such as excitability, melancholia, pyromania, and nymphomania. To these might be added aphonia, spasm of the glottis, hyperæmia and anæmia of the brain, epileptic spasms, etc. During gestation the troubles associated with the uterus are conspicuous, and, in addition to obstinate vomiting, one meets with prosopalgia, migraine, insomnia, chorea, ptyalism, cough, pernicious anæmia, and of the cutaneous diseases urticaria and pemphigus. Albuminuria with or without eclampsia may obtain. If eclampsia is present, it is probably due to the reflex action of the uterus upon the medulla and the cerebrum. Cases are also narrated in which there was embolism of the pulmonary artery and puerperal phlebothrombosis which extended from the vena saphena to the vena cava inferior. Collapse occurred in four cases, two of which were fatal. During pregnancy it was observed that some diseases were retarded, for example tuberculosis and epithelioma uteri. In two cases heart disease was fatal during gestation. Repeated pregnancies may be accountable for osteomalacia or the development of osteophytes. Acute atrophy of the liver was observed in one case in the eighth month of pregnancy which was fatal in four days. After parturition one is accustomed to

see a pendulous abdomen, hæmorrhoids and varices, perhaps metrorrhagia and displacements of the uterus, and sometimes, as a consequence, hemicrania, clavus hystericus, singultus, cardialgia, and weakness of the heart. Of other conditions associated with uterine disorders the author observed nine cases of diabetes. Diseases of the eyes have been frequently observed in connection with uterine disease, though the exact relation has not yet been definitely determined.

**Dilatation of the Uterus by the Process of Progressive Obturations.**—Vulliet ("Nouv. arch. d'obst. et de gyn.," Oct. 25, 1887) devised in 1883 the method of dilatation by progressive tamponings. It consists: 1. In the obturation of the uterine cavity by means of substances which are incapable of causing traumatism or infection. 2. In the gradual increase of the volume which is composed of these foreign bodies. The substance which is used for the purpose of dilatation by the author is antiseptic cotton, which is immersed, before its introduction into the uterus, in an ethereal solution of iodoform. The iodoform may be to the ether as 1 to 10, or as 1 to 30, according to the number of cotton pledgets, and therefore the quantity of iodoform which is to be used. The pledgets must not be introduced until the ether has entirely evaporated, for that substance is very irritating to the uterine mucous membrane. The tampon is applied while the patient is in the genupectoral position, the entire cavity being occupied by the pieces of cotton, but without the expenditure of undue force. After forty-eight hours the tampon is removed, and a more voluminous one is immediately applied. As the dilatation progresses, the shape of the cotton column should be modified in accordance with the end which is to be accomplished by the dilatation. The author has found that six to eight tamponings are usually required in the course of fifteen to twenty days to obtain the degree of dilatation which may be necessary. The tolerance of the uterus for such treatment is quite astonishing. There is not apt to be any reaction, or if there is it takes the form of colicky pains, which never take the character of true expulsive pains. There are no septic accidents; in fact, if sepsis previously existed, it will be relieved or attenuated. The effect of the treatment is also hæmostatic, and it may be considered analogous to the treatment with the permanent catheter in urethral affections. The following conclusions are submitted: 1. It solves the problem of endoscopy; it enables us to diagnosticate, to make dressings, to operate, and to inspect the results of operations even to the deepest portions of the uterus. 2. It affords an excellent antiseptic dressing. 3. It gives us permanent instead of very brief dilatations, thus enabling us to repeat any necessary interference. 4. It is very serviceable in cases in which plastic modifications are desirable. 5. It acts upon certain neuroses which seem to radiate from the uterus in the same way as pregnancy. It may be objected that it is a slow process, but in the interest of good practice it is not desirable to hasten such processes.

**The Treatment of Uterine Cancer in its Advanced Stages by Terebene.**—Betrin (*ibid.*) does not question that, in the early stages of uterine cancer—that is, before the vaginal *culs-de-sac* are invaded—surgical methods of treatment are the most appropriate, whether they consist in amputation of the portio vaginalis, supravaginal excision of the cervix, or removal of the entire organ by the vagina. In more than three fourths of the cases which appear at the public dispensaries, however, the disease has already reached such an advanced stage that such operations are not feasible; the treatment of such cases must therefore be merely symptomatic. Three principal symptoms call for active attention—hæmorrhage, pain, and offensive discharges. The hæmorrhages may be relieved by the use of the curette, the diseased tissue being scraped away as thoroughly as possible, and this being followed by the use of the actual cautery, or such potential caustics as acetic acid and chloride of iron. The pain, which is often very severe in the pelvis, legs, thighs, kidneys, etc., may be treated with opium in various forms, cocaine, chloral, etc. The discharges, which not only are annoying on account of their offensive odor, but give rise to painful irritation upon the parts with which they come in contact, are to be relieved by means of antiseptic dressings, and for this purpose terebene has been successfully used by the author for a number of years. Before it is applied, it is recommended that the vagina be carefully irrigated with a sufficiently concentrated solution of permanganate of potassium, bromine, or chlorine. The terebene may be combined with equal parts of some fatty oil, pledgets of cotton may be saturated with it, and these may be applied as a tampon, Sims's speculum and Sims's posture being used for the purpose. The operation should be repeated every two or three days, according to the abundance and offensiveness of the discharge. The result of this treatment has been very satisfactory, and seems to retard the progress of the disease. The question of the bacterial origin of cancer is yet an open one. It is quite certain, however, that there are countless numbers of bacteria in the vagina and uterus during the progress of that disease, and the action of terebene in destroying them and producing a disinfection of the parts to which it is applied can not but be beneficial.

**Obstinate Vomiting not connected with Pregnancy; Dilatation of the Cervix Uteri.**—Boissarie ("Ann. de gyn.," Oct., 1887) remarks that ten years ago Copeman published in the "British Medical Journal" a series of cases in which obstinate vomiting in connection with pregnancy was relieved by digital dilatation of the *cervix uteri*. It occurred to the author that the same plan might be applicable in cases of obstinate vomiting not associated with pregnancy. This method was therefore adopted in a case which he has narrated in this paper with a perfectly satisfactory result. The sympathy which exists between the uterus and the stomach explains the success of this plan of treatment. This sympathy, which is most evident during pregnancy, is manifested in some women with each recurring menstruation. Dilatation is therefore a rational means of treatment for troublesome vomiting in women, not only during pregnancy, but also during menstruation and perhaps at other times.

**The Painful Variety of Cystitis.**—Hartmann ("Ann. des mal. des org. gén.-urin.," Nov., 1887, "Paris thesis," 1887) says that in certain conditions cystitis is characterized by intense pain, whatever be its variety or origin. The subject is therefore one of great importance, and forms a basal idea for treatment without regard to the pathogenesis or prognosis of the disease. The author first studies the conditions of the development and the characters of the symptom pain in bladder diseases, and then proceeds to the subject of treatment, whether medical or surgical. He disapproves of the distension of the bladder by means of voluminous injections under any pretext, believing that it is likely to produce exacerbations of the painful phenomena, or even so grave an accident as rupture of the bladder. If the pain is not unduly severe, and sensitiveness to pressure is not particularly manifest, operative treatment is useless. Such cases should be treated by medication of a calmative and narcotic character, by baths and balsams, and the intra-vesical instillation of a 1-to-50 or a 3-to-100 solution of nitrate of silver. Surgical means must be resorted to if the former are unsuccessful, and in severe cases they should be resorted to from the beginning. Tuberculosis is not a contra-indication, and the principle of intervention by operative means must be admitted in all rebellious cases of painful cystitis of whatever origin. As to the appropriate measure, dilatation of the neck may be resorted to, with drainage, in certain cases, and with success, but cystotomy is the better method—that is, colpo-cystotomy in the female, and perineal or hypogastric cystotomy in the male. The advantage of the hypogastric method is that it enables one to see and treat the vesical lesions. The treatment of the vesical mucous membrane may consist in the removal of vegetations, cauterization of ulcerations, curettement of tubercles, application of nitrate of silver, etc. If there should be a subsequent relapse, the author believes that it can usually be cured by quite simple treatment.

**Extra-peritoneal Removal of the Uterus.**—Frank ("Arch. f. Gyn.," xxx, 1) gives the record of sixteen cases in which the uterus has been enucleated by him from its peritoneal envelope. The indications have been uncontrollable uterine pruritus, retroflexion, metrorrhagia, prolapsus, carcinoma, and other neoplasms. Among his suggestions concerning after-treatment he mentions the use of a large nutrient enema immediately after the operation, which is thrown far into the intestine by means of a Nélaton catheter which is introduced as far as its end. This means of effecting nutrition is continued during subsequent days if the stomach does not functionate properly. Champagne and other wines are not much used by him, but he occasionally uses subcutaneous injections of camphor and ether. For drainage-tubes he uses specially prepared quills, on account of their thinness, smoothness, and incompressibility. They may be shaved down almost to the thinness of paper, and

openings may be made in them of any number and size. Before being used they should be immersed for eight days in a 5 per cent. solution of carbolic acid. The following objections have been made to this operation, and the author herewith offers his reply to them:

1. The operation is very difficult, and in performing it one will be very likely to tear the peritonæum. It is true that the operation is difficult unless one has seen it done or has practiced upon the cadaver, but this applies to many operations—for example, to the ordinary extirpation of the uterus by the vagina. In doing the author's operation one must be particularly careful to ascertain the position at which the peritonæum is reflected upon the body of the uterus. If the uterus is separated at the points of peritoneal reflection, the remainder of the operation will be easy, for the more the organ is dragged down the more is it under control. The finger or a sound should be in the uterine cavity sufficiently often for a guide. The work may be made easier by splitting the cervix in the middle line, and prolonging the incisions as the organ is dragged downward. As to the wounding of the peritonæum, a slight injury is not likely to do any harm, especially if the rent is closed at once.

2. How is it possible by this process of enucleation to effect complete control over hæmorrhage? As a matter of fact, the question of controlling hæmorrhage is not more troublesome than in the high operation for amputation of the cervix, for there is seldom any hæmorrhage from the body of the uterus in enucleation. During the operation, traction upon the organ tends to check bleeding, and after its removal the folds of peritonæum should be stitched together, being either inverted or replaced, according to circumstances, under which circumstance bleeding will also be prevented. Should it not be deemed advisable to stitch the peritonæum, a few ligatures passed in the region of the uterine end of the tubes will effectually close the torn branches of the spermatic arteries. Should there be troublesome oozing, which rarely occurs, it will be proper to apply a concentrated solution of the chloride of iron.

3. Removal of the uterus with the division of its peritoneal covering has the advantage that it enables one to remove the ovaries, which, if retained, might be the source of further trouble. This is admitted, but, on the other hand, their removal increases the difficulty of the operation, and the danger from sepsis and shock. The operation of enucleation is believed to be absolutely without danger, and especially useful in those cases in which the disease is limited to the uterus.

4. It is impossible to so enucleate the uterus that more or less muscular tissue shall not be left attached to the peritonæum. This means, in cases of carcinoma, the leaving of foci for the development of the disease. The enthusiasm for the total removal of the uterus for cancer has long since disappeared. It is only necessary to recall the arrangement of the lymphatic system of the uterus to realize that when once the lymph-vessels of the organ are involved the probability is great that the parametrium is already infected with carcinomatous elements, in which one is usually contented with energetic curetting. Schröder has also shown that recurrence after the supravaginal excision of the cervix is delayed longer than after extirpation. Enucleation is believed to be easier of performance than the high amputation, and also less dangerous. After the high amputation, septic infection of that portion of the uterine mucous membrane which is left often occurs, while if the body and fundus are enucleated the peritoneal folds quickly heal together, and the patient can safely leave her bed within twelve days. If any muscular tissue remains attached to the peritonæum after the uterus has been enucleated, it will be an easy matter to remove it, and then the inverted folds may be returned, with or without preliminary suturing. The operation is recommended less for cancer than for other diseases which are a source of permanent discomfort. It is recommended, only after other means of treatment have failed to bring relief, for those who are not likely to bear any more children, and especially for women of the working classes who depend upon their labor for their living.

**The General Treatment of Puerperal Sepsis.**—Runge (*ibid.*) refers to his paper published in 1886, in which he outlined a suitable method of treatment for septic cases among puerperal women, which should consist in the use of very large doses of alcohol, warm baths, nutritious food, and the avoidance of all antipyretic medicaments. Since that time he has treated nine cases of more or less severe puerperal sepsis by these means, and with only one fatal result. The opinions which were elicited by the paper in question were favorable to the avoidance and disuse of the so-called antipyretic medicaments; they were also favorable to the free use of alcohol, but they regarded the usefulness of the baths as at least questionable; indeed, some expressions were elicited which disapproved of them entirely as objectionable means. It was also doubted whether it would be possible, in the majority of cases, to administer a large quantity of nutrient material. The convictions of the author as to the value of the means which he has recommended have been deepened by additional experience. There are certain limits to the effectiveness of local treatment in puerperal sepsis. To be sure, one can prevent further resorption of poisonous germs by suitable precautions, but these do not defend the organism from the poison which has already been absorbed and is working in the circulation. The object of treatment should therefore be to furnish defense against the enemy which has already made its invasion, and, with this in view, the regulation of all the functions, especially those which pertain to digestion, is of first importance. The use of alcohol and warm baths will accomplish this end; the alcohol will increase the heart action and retard the metamorphosis of albuminoids, while the baths will increase the desire for food, and so prepare the way for the increased ingestion of nutrient material. By the same means the sensorium, circulation, and respirasion will be benefited, and the author's experience enables him to say that these are facts and not theories. The treatment with alcohol should precede the use of the baths, in order to fortify the heart for their influence. The temperature of the baths should be 22° to 24° C., and they should be used from five to ten minutes, according to the strength of the patient. If there is a tendency to collapse after their use, a large dose of alcohol should be given, or a subcutaneous injection of ether or of camphor. The greatest care should be exercised in giving the baths so as not to weary the patient. They are not so much indicated on account of elevated temperature as for their influence upon the general condition—the activity of the heart, the respiration, and the appetite. They are not indicated in cases in which there is obstinate vomiting, nor where collapse is imminent, nor where thrombosis is associated with sepsis. The value of this method of treatment can be better appreciated if it is considered that sepsis means a struggle for the mastery between the cells of the tissues of the body and the microbes which have invaded them. The plan of treatment which the author has indicated has for its object the fortifying of the body to enable it to pass through this struggle successfully.

**The Use of Corrosive Sublimate in Obstetric Practice.**—Szabo (*ibid.*) says that the use of sublimate is approved of at the Buda-Pesth Obstetric Clinic, but the following conditions and restrictions have been found useful: 1. For the disinfection of the hands a solution of sublimate of 1 to 1,000 is recommended. 2. For the disinfection of the external genitals a sublimate solution of 1 to 2,000 should be employed. 3. For the disinfecting irrigation of the uterine cavity or the vagina a sublimate solution of 1 to 4,000 is recommended. 4. Irrigation of the vagina, and still more of the uterine cavity, is permissible only when the indication is very positive, either after parturition or during the puerperium. 5. Not more than two quarts of sublimate solution should be used for irrigation of the vagina or the uterine cavity. 6. In atonic hæmorrhages post partum a 1-to-8,000 sublimate solution should be used as a hæmostatic. 7. Sublimate should not be used with women who are suffering from anæmia, phthisis, nephritis, or diseases of the digestive organs.

## Miscellany.

**The Academy of Medicine's Committee's Report on the New York Quarantine.**—The committee recently appointed by the New York Academy of Medicine, at the request of the Mayor, to examine into and report upon the condition of the New York Quarantine Station, consisting of Dr. C. R. Agnew, Dr. E. C. Janeway, Dr. Stephen Smith, Dr.

A. Jacobi, Dr. T. M. Prudden, Dr. H. M. Biggs, and Dr. R. H. Derby, has reported as follows:

"The first point reached in the exploration was Hoffman Island. It should be remembered that the Quarantine establishment, port of New York, consists of the landing station at Clifton, Staten Island, where vessels arriving receive the official inspection of the Health Officer; and two miles below this station, in the Lower Bay, two islands, artificially made of rip-rap and sand filling. The more northern of these islands, called Hoffman, is about two acres in extent; the more southern, near a mile distant from the former, is two acres and a half in size. Hoffman Island, in the system of Quarantine, is the place of detention. Off it detained vessels are anchored in the roadstead and exposed there to heavy seas when the wind is on the coast. To this island passengers and their baggage are taken from detained vessels by a small steam tug when, in the opinion of the Health Officer, their detention is made necessary by prevalence among them of infectious diseases, or when such diseases shall have existed on the ships in which they have arrived. The sick are sent immediately to Swinburne Island, to the hospital buildings which exist there.

"It is proper here to say that the Quarantine property, land, buildings, and plant generally owned by the State of New York, is in the custody of a body called the Commissioners of Quarantine, appointed by the State and responsible to it. The Health Officer of the port, appointed by the Governor of the State and confirmed by its Senate, has no other control of the property and stations than that of police. He may use it without addition or modification, and so far only as may be necessary to enable him to discharge his duties in preventing the introduction into the port of New York of contagious diseases or infectious substances. In regard to the question whether Quarantine property and affairs should be under the jurisdiction of a National Government rather than a State Government as now, the committee is not called upon to express an opinion. The committee deems its business to be to point out such defects of the Quarantine establishment as are plainly apparent and easily remedied; to advocate such improvements in the plant at Quarantine as would render it a sufficient safeguard for the port of New York and the country at large if administered in a scientific manner.

"As a related matter we would allude to the possible effect produced upon the business interests of New York and the country at large if cholera were permitted to invade the dense population of the city. It is estimated that $100,000 a day is received by those hotels in the city of New York from which people would flee if an alarm of cholera existed here. The amount of money received over the counters of shops from those who frequent the city to buy its innumerable wares can not be estimated. It is millions. Hundreds of millions are annually produced in values in our various factories. To disturb the peace and industrial interests of the city by permitting the irruption of cholera through defects in quarantine would inflict an injury upon business beyond computation. The time consumed in reaching San Francisco by railroad is about that of the possible maximum period of incubation of cholera. The germs of any of the contagious diseases admitted into the port of New York by inadequate quarantine might be conveyed to any portion of the United States, fructifying as they went. Every citizen of the United States and British provinces has therefore a personal interest in the condition of the New York Quarantine. The existence of cholera in New York would cause the entire country to quarantine against the city. In this way inter-State commerce would be paralyzed or seriously embarrassed. As regards the effect upon the health and death rate of the people we can not even surmise, as that question would turn upon the efficiency of sanitary police. The law of cholera, its propagation, limitation, and extinction are so well understood that the disease may be said without presumption to be subject to scientific prevention or control.

"With these few preliminary considerations your committee would now, in a cursory way, call attention to some of the manifest defects in the Quarantine establishment. In so doing they expect only to prepare the way for a thorough study of the subject. Thus steps may be taken to induce the Legislature, under appropriate law, to grant money enough to make Quarantine what it should be. The plans to do this should be speedily prepared by the State officers. If there is neglect in this matter, and cholera, which has threatened to invade our port for more than three years and has recently been brought to Quarantine, should appear in the spring, and, favored by warm weather, pass an imperfect quarantine and reach New York city or Brooklyn, or possibly extend beyond to near or remote places, public opinion would seek out the blameworthy and visit them with a condemnation which no seclusion would be deep enough to smother or mitigate.

"The ground on Hoffman Island is soft, uneven, full of recesses in which water, refuse, etc., will be retained without any chance of their being cleaned. The wood walls are in the worst possible condition, interrupted, broken, rotten. The rip-rap of only one half of the island is now supported by an inside wall of cement.

"The present buildings used for the residence of the people quarantined are hardly adapted for their purpose. They should be razed or remodeled.

"There is now hardly any adequate separation of ages, sexes, or families. No suspected groups can now be isolated. There is no opportunity at all to separate those who may be amply able and willing to pay. There is no proper accommodation, bedsteads, bedding, tables, forks, knives, spoons, plates, or towels. As an evidence of the hardships caused by want of means of isolation a steamer is at present detained at Quarantine, owing to the passengers and crew having been exposed to small-pox. They can not be taken to the island, as there is no subdivision of the hospital of observation.

"The supply of water is insufficient, and warm water is almost entirely wanting.

"For a population now there of more than 500 persons there are about four water-closets, each closet having three or four hoppers, some of which are not flushed at all, and all of which are old, badly constructed, and out of repair.

"The cleaning and disinfecting plant is entirely inadequate in extent and efficiency, thus making it impossible to cleanse the persons of the quarantined, or disinfect their luggage either expeditiously or thoroughly.

"The 'sulphur-room' should not be where it is and as it is; for, being on the main floor of a building occupied by masses of the quarantined, the latter are constantly exposed to fresh infection from clothing brought in to be disinfected and to the fumes of the sulphurous acid when the door of the sulphur-room is opened.

"The island must be protected against the inroads of the sea. This may be done as may seem best to the State Engineer:

"*First.* The rip-rap wall extending around the island should be made smooth and even to the water's edge.

"*Second.* The concrete wall, extending at present only part way around the island and inside the rip-rap, should be completed.

"*Third.* A solid wall of masonry, with smooth surface and steeply sloping, should be laid on the face of rough stones, either on the line of or within the existing rip-rap.

"*Fourth.* A low wall might be built within the rip-rap, capped with stone or granite curbing, on which a broad walk should be constructed around the island.

"An iron fence on the outer edge of the wall should extend entirely around the island, in order, first, to separate the occupants of the island from the rip-rap, and, second, to prevent access of strangers to the island.

"The surface of the island should be cemented or asphalted, and should be raised sufficiently above the exterior wall to allow of good drainage. It should be smooth and hard to allow of thorough cleansing and prevent the lodgment of filth or germs.

"The docks should be reconstructed, and two in number; the floorings made non-absorbent with concrete or asphalt. One should be for general use, and the other exclusively for the disinfecting plant. A covered landing-stage should be constructed on the former, from which the sick in stretchers could be transferred to boats. A covered way should be provided from this dock to the large buildings and hospital. It would be well to have a hand-car, rails to be laid from the dock to the buildings.

"The surface of the island outside the buildings should be divided by a wall or iron fence into two distinct portions:

"A.—The part adjacent to the boat-landing should be used for dis-

embarking, disinfection, etc., and on this should be placed the cook room and dormitory for employees, and all other administrative appurtenances.

"B. The remainder of the island should be divided by walls into approximately equal areas, corresponding to the groups of people, each with a water front, and each one of these areas should be in communication with only one of the sets of apartments occupied by the separate groups of people.

"It would be advisable to separate each of these yards from the water front by an open iron fence so as to leave a walk of about ten feet in breadth around the island exclusive of the administration area. There should be on the outer or sea side of this wall another iron fence around the entire island.

"The present administration building, if retained, and one of the largest buildings must be remodeled to answer for a new administration building, a disinfecting building, and a store-house.

"If the present large buildings are to remain, the roof should be repaired; each main floor should be subdivided into two or more portions by solid partitions, to allow the grouping of the inmates according to age, sex, and relationship; each apartment should have a separate entrance and be thoroughly ventilated. This method should be condemned, however, unless absolutely unavoidable, as poorly ventilated apartments would result. The best plan, and, in the opinion of the committee, the only sanitary one, would be to construct new fire- and filth-proof buildings, tearing down the old ones as speedily as possible; or, if need be, one at a time.

"The present administration building should either be remodeled or a new one erected. It should contain the medical officer's apartment (who should also be Superintendent) and quarters for an engineer, and with private kitchen; also an extension in one of the docks, with a furnace suitable for burning actually infected articles brought in by passengers, kitchen refuse, etc.

"Separated from these apartments there should be a large kitchen with accommodations for cooking meals for 800 or 1,000 persons; rooms for the attendants; boiler-room, containing at least two boilers for adequate power and security in case of accident to one; engine, pumps, and apparatus for electric lighting. The sleeping and living rooms for the employees, with three rooms for the resident physician, may be placed in a separate building.

"There should be a small isolated building, easy of access to the dock, where persons taken suddenly ill could be at once placed prior to their removal to Swinburne Island. It should contain at least four rooms, to admit of the separation of the sexes and of diseases.

"The main buildings should be on the pavilion plan, of brick and iron, with two stories. Each should have a central hall, from which wings should radiate at right angles. These wings should constitute rooms capable of giving 500 cubic feet of air to each adult or every two children, and of a size to accommodate 25 persons, with an extreme capacity of 40 or 50.

"A separate set of rooms should be provided for cabin passengers and those who could pay for better accommodations. . . .

"The disinfecting plant should be situated in a separate building near the water's edge. The plant should consist of two or more large iron chambers lined with steam pipes connected with a superheater, so that a dry temperature of at least 220° could be easily obtained. It should be arranged so that moist steam under 15 or 20 pounds pressure could be introduced. The room in which the chambers are placed should be divided by a non-absorbent partition, and the materials to be disinfected should be separated at one end and removed from the other, this handling to be done by separate people. . . .

"It would be wise to fill up the present cisterns and construct new ones. . . . It would be well to provide for an emergency by having a large reservoir to which water could be brought in case of emergency. Water for drinking and cooking might be brought by boat from Croton supply. . . .

"His Honor the Mayor wishes the committee to estimate the amount which will be required to be appropriated by the State in order to complete the necessary arrangements. . . . To comply fully with the request, the committee would say that a commission should be formed, to consist of the State Engineer, the Superintendent of Public Works, the Mayor of the City of New York, the Mayor of Brooklyn, a representative from the New York Board of Health, the Health Officer of the Port, and the Commissioners of Quarantine."

**An Ambulance Service for the National Guard of the State of New York.**—General Orders No. 36, issued from the Adjutant-General's office, December 22, 1887, read as follows:

I. Commanding officers of regiments and battalions, and of batteries and separate companies having a medical officer, will organize ambulance corps in their respective commands as follows: For a regiment or battalion the corps shall consist of the medical officers of the command, the hospital steward, and three enlisted men from each company of seventy-five men, and two enlisted men from each company of less than that number. For a battery or separate company the corps shall consist of the medical officer and four enlisted men. The enlisted men shall be detailed by the commanding officers upon the recommendation of their senior medical officers, and there may be included in the detail for a regiment or battalion two corporals, and for a battery or separate company one corporal, but no other non-commissioned officers. When the exigencies of the occasion require, commanding officers will detail such enlisted men as have already been found proficient, and may also detail musicians for duty with the corps. Men detailed for ambulance service shall be relieved from such duty on the application of the medical officer having charge of the corps to which they are attached.

II. The corps shall be under the immediate orders, control, and instruction of the senior medical officer of the command to which it belongs, but no assignment or detail for duty with the corps shall relieve an officer or enlisted man from his regular duties, except when on duty with the corps in active service.

III. To prepare the members of the corps for their duties, the medical officer in charge will provide a course of instruction. This course shall commence in the first week in January of each year and continue during the drill seasons of the year, and shall be open also to such other members of the command of which the corps is a part as may be approved by its senior medical officer. The dates, hours, and places when and where the instruction will be given shall be published in orders to the whole command by its commanding officer.

IV. The course of instruction, given by the medical officers of the command, shall include, for the present: Rudimentary instruction in anatomy and physiology. Rudimentary instruction in the diagnosis of the common accidents and diseased conditions to which national guardsmen are exposed, and the common means for the prevention of the same. Instruction as to the common means employed for the urgent relief of the sick and the injured, including stretcher drill and matters pertaining to transportation of the sick and injured. Instruction in individual and camp hygiene.

V. At the close of the course of instruction the detailed men of the corps shall be examined as to their proficiency by a board to be appointed for that purpose, as hereinafter provided. The senior medical officer of each regiment, battalion, battery, and separate company shall keep a record of the name, proficiency, and general standing of each member of the ambulance corps under his charge from the time of the first attendance of the member to the termination of his course of instruction, and also the result of his examination.

VI. Commanding officers of brigades will, with the approval of the Surgeon-General, appoint for their respective commands boards of examination, which shall consist of not less than three medical officers, whose duty it shall be to examine and report to the brigade commander as to the proficiency of the detailed men who have attended the prescribed course of instruction. These men will be ordered before the examining board on the application of the commanding officers of the regiment, battalion, battery, or separate company to which they belong.

VII. Enlisted men of ambulance corps, when actually on duty as such, are authorized to wear, in addition to insignia of military grade, around the left arm above the elbow, an arm badge (brassard) "of white cloth, sixteen inches long and three wide, with a cross of red cloth two inches high and two inches wide in the center."

VIII. An enlisted man who has passed the prescribed examination satisfactorily, and has the approval of the commanding officer of the brigade to which he belongs, will be permitted to wear at all times a

badge of a pattern to be prescribed in further orders, distinctive of the ambulance corps of this State, as an indication of a special fitness to aid the sick and injured under urgent circumstances.

IX. Details for instruction in the duties of an ambulance corps will be made annually, at such time as will permit the course of instruction of each succeeding class to begin promptly in the first week in January.

X. There shall be allowed and issued by the Chief of Ordnance, as Acting Quartermaster-General, State arsenal, corner of Thirty-fifth Street and Seventh Avenue, New York city, upon requisition made direct to him by the respective commanding officers, stretchers of a pattern approved by the Surgeon-General, at the rate of two for each regiment and battalion, and one for each battery or separate company having a medical officer.

**A Congress for the Study of Human and Animal Tuberculosis.**—A congress of physicians and veterinarians for the purpose of the scientific study of tuberculosis in man and in animals will be held in Paris from the 25th to the 31st of July, 1888, in the halls of the Faculty of Medicine. The congress is organized by a committee consisting of Professor Chauveau, president; Professor Villemin, vice-president; M. Butel, a veterinarian of Meaux; M. Leblanc, of the Academy of Medicine; M. Nocart, of Alfort; M. Rossignol, a veterinarian of Melun; M. Cornil, M. Grancher, M. Lannelongue, and M. Verneuil, of Paris; and M. L.-H. Petit, secretary-general.

The questions to be discussed will be of two sorts: Those proposed in advance by the committee of organization, and others chosen publicly, but all relating alike to tuberculosis. One day will be devoted to anatomical demonstrations in M. Cornil's laboratory. Another day will be devoted to examinations and autopsies of tuberculous animals at the School at Alfort. All French and foreign physicians and veterinarians may, by subscribing early enough and by paying a fee of ten francs, become members of the congress and take part in its proceedings. The subscription entitles the member to a volume of the "Proceedings" of the congress. The sessions of the congress will be public. All the communications and discussions will be in French. More complete details concerning the rules and government of the congress will be published hereafter.

The following questions are proposed by the committee of organization: 1. On the dangers incident to the use of the meat and milk of tuberculous animals, and the means of preventing them. 2. On the races of man, species of animals, and organic media in relation to their susceptibility to tuberculosis. 3. The avenues of introduction and propagation of the tuberculous virus in the economy; prophylactic measures. 4. On the early diagnosis of tuberculosis in man and in animals. Although the members of the congress will be left free to choose a certain number of questions in addition to the preceding, which will be accorded priority in the order of business, the committee of organization desires to call attention more particularly to the following: The heredity of tuberculosis in man and in various species of animals. Its contagiousness from man to man, among animals, and from animals to man, and *vice versa*. The various forms of evolution of experimental tuberculosis according to the quality and the quantity of the virus inoculated. The differences of tubercular affections in various species of animals. The means of distinguishing the lesions caused by Koch's bacillus from the granulations and inflammations due to various microbes (zooglææ, the bacteria of the contagious pneumonia of the hog, aspergilli, etc.), and to animal parasites or foreign bodies. On tubercular lesions complicated with other microbian lesions. The mode of formation of giant cells and tubercular islets. The evolution of local tuberculoses. On agents destructive to Koch's bacilli. Local and general measures capable of arresting the spread of experimental tuberculosis. The value of surgical treatment in tubercular affections.

Subscriptions should be addressed to M. G. Masson, treasurer, 120 Boulevard St.-Germain, Paris, and all communications relative to the scientific work of the congress to Dr. Petit, secretary-general, 11 rue Monge.

**New York Academy of Medicine.**—At the next meeting of the Section in Surgery, Monday evening, January 9th, Dr. Dixon Jones will present an "Apparatus for Sterilizing Dressings by Heat," Dr. J. H. Girdner will read a paper "On the Localization of Bullets, etc., by Electricity," and Dr. W. W. Keen, of Philadelphia, will read a paper "On Some Points in Wound Treatment."

At the next meeting of the Section in Neurology, Friday evening, January 13th, Dr. C. L. Dana will read a paper on "The Urine in Functional Nervous Diseases," and Dr. Grace Peckham will read a paper on "The Uterine Neuroses in their Diagnostic and Therapeutic Aspects."

At the next meeting of the Section in Ophthalmology and Otology, Monday evening, January 16th, Dr. J. L. Corning will read a paper on "Faradization of the Ocular Muscles," Dr. David Webster will read a paper on "Chorioidal Sarcoma with Invasion of the Optic Nerve," and Dr. H. Knapp will read a paper on the "Removal of an Orbital Exostosis."

At the next meeting of the Section in Theory and Practice of Medicine, Tuesday evening, January 17th, Dr. S. De Jager will read a paper entitled "Objections to Williams's Pneumatic Cabinet."

The first order of business at each of these meetings of sections is announced as the nomination and election of officers.

**University of Pennsylvania, Department of Medicine.**—It is reported that Dr. R. A. F. Penrose, who for many years has occupied the chair of obstetrics and diseases of women and children, has tendered his resignation, to take effect May 1, 1888. Dr. Penrose was appointed in 1863 to succeed Dr. Hugh L. Hodge, and stands fourth on the list of professors in the order of seniority.

**The Health of the State of New York.**—According to the State Board of Health's "Monthly Bulletin," for November, 1887, the whole number of deaths reported for the month was 7,292, including 1,421 from zymotic diseases.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending December 30th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending December 10th corresponded to an annual rate of 21·1 in a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Plymouth, viz., 15·6, and the highest in Newcastle-on-Tyne, viz., 33·2 in a thousand. Small-pox caused 17 deaths in Sheffield, 2 in Bristol, and 1 in Hull.

*London.*—One thousand five hundred and seventy-four deaths were registered during the week ending December 10th, including 32 from measles, 39 from scarlet fever, 27 from diphtheria, 70 from whooping-cough, 30 from enteric fever, and 12 from diarrhœa and dysentery. There were 408 deaths from diseases of the respiratory organs. Different forms of violence caused 49 deaths, and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 19·5 in a thousand. In greater London 1,996 deaths were registered, corresponding to an annual rate of 19·2 in a thousand of the population. In the "outer ring" 6 deaths from diphtheria, 8 from measles, 7 from "fever," and 25 from whooping-cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending December 10th in the sixteen principal town districts of Ireland was 28·8 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 4·8, and the highest in Dublin, viz., 34·4 in a thousand.

*Dublin.*—Two hundred and forty-one deaths were registered during the week ending December 10th, including 6 from measles, 3 from whooping-cough, 15 from scarlet fever, 3 from enteric fever, 1 from diarrhœa, and 2 from dysentery. Diseases of the respiratory organs caused 67 deaths. Two accidental deaths were registered, and in 37 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 34·4 in a thousand.

*Scotland.*—The deaths registered in eight principal towns during the week ending December 10th corresponded to an annual rate of 22·7 in a thousand of the population, which is estimated at 1,299,000. The

lowest mortality was recorded in Leith, viz., 16·5, and the highest in Paisley, viz., 32·5 in a thousand. The aggregate number of deaths registered from all causes was 567, including 14 from measles, 14 from scarlet fever, 4 from diphtheria, 29 from whooping cough, 5 from fever, and 13 from diarrhœa.

*Germany.*—The deaths registered in fifty-three cities of Germany, having an aggregate population of 6,831,222, during the week ending November 26th corresponded to an annual rate of 26·4 in a thousand. The lowest rate was recorded in Rostock, viz., 7·8, and the highest in Dantzic, viz., 30·7.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,102,200, corresponded to an annual rate of 18·7 in a thousand of the population. The lowest rate was recorded in Arnheim, viz., 15, and the highest in Rotterdam, viz., 21·1.

*Florence.*—The United States consul, in his dispatch dated December 2, 1887, confirms his telegram of the same date, as follows: "'Agent at Cagliari reports cholera at Terralba, Sardinia.' The consular agent further reports that 'on the part of the authorities the fact is kept as quiet as possible, but I have received reliable information that the news is unfortunately true.' A newspaper accompanying the above, published at Cagliari, dated the 28th November, 1887, reports 13 cases and 12 deaths from cholera at Terralba from the 16th to the 27th November, inclusive."

*Lima, Peru.*—The United States *charge d'affaires ad interim*, under date of December 3, 1887, incloses a copy of a newspaper clipping stating that "a police medical officer lately commissioned by the supreme government to report the increase of cholera in Chili sent on the 29th ultimo the following cablegram to the foreign office: 'Santiago, 70 cases; Talca, 1; Chillan, 16; Valparaiso, 6 sick in lazaretto, buried 19.'" Another clipping states that the ministry, in consideration of the fact that cholera has made its appearance in Chilian ports, and that rigorous quarantine can not yet be established on account of the lazaretto ordered to be constructed for said purpose not being finished, have ordered the ports closed to all shipping proceeding from the ports of the Chilian Republic, and those that may have touched in them, with the exception of Punta Arenas (Sandy Point).

*Havana.*—The sanitary inspector reports for the week ending December 17, 1887, 2 deaths from yellow fever and 89 from small-pox.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Paris | December 10. | 2,260,045 | 904 | .. | .... | 5 | .... | 49 | 8 | 29 |
| Warsaw | December 3. | 439,174 | 193 | .. | .... | 9 | .... | .... | 6 | 2 |
| Calcutta | November 12 | 433,219 | 235 | 7 | .... | .... | .... | .... | .... | .... |
| Amsterdam | December 10. | 378,686 | 148 | .. | .... | .... | 1 | 1 | .... | 1 |
| Munich | November 26. | 269,000 | 127 | .. | .... | .... | .... | 1 | 2 | 1 |
| Edinburgh | December 10. | 258,000 | 106 | .. | .... | .... | .... | 1 | .... | 1 |
| Palermo | December 11. | 250,000 | 116 | .. | .... | .... | 1 | .... | 1 | 5 |
| Belfast | December 3. | 224,422 | 155 | .. | .... | .... | .... | 5 | 5 | 1 |
| Genoa | December 10. | 179,526 | 100 | .. | .... | 13 | .... | .... | 1 | 7 |
| Leipsic | December 10. | 170,000 | 56 | . | .... | .... | .... | .... | 1 | 8 |
| Trieste | December 3. | 150,157 | 80 | .. | .... | 18 | .... | .... | 3 | 2 |
| Toronto | December 17. | 130,000 | 27 | .. | .... | .... | .... | .... | .... | 4 |
| Stuttgart | December 10. | 125,510 | 35 | .. | .... | .... | .... | .... | .... | 3 |
| Bremen | December 3. | 119,000 | 34 | .. | .... | .... | .... | .... | 1 | .... |
| Havre | December 10. | 112,074 | 57 | .. | .... | 1 | .... | 6 | 1 | .... |
| Pernambuco | November 29. | 110,000 | .... | .. | .... | .... | .... | 1 | .... | .... |
| Reims | December 10. | 97,903 | 43 | .. | .... | 1 | .... | .... | .... | 4 |
| Leghorn | December 11. | 94,423 | 41 | .. | .. | .... | .... | 1 | 1 | .... |
| Maracaibo | November 12. | 40,000 | 15 | | 2 | .... | 1 | .... | .... | .... |
| Maracaibo | November 19. | 40,000 | 16 | .. | 1 | .... | .... | 1 | .... | .... |
| Maracaibo | November 23. | 40,000 | 14 | .. | 1 | .... | 1 | .... | .... | .... |
| Maracaibo | December 3. | 40,000 | 15 | .. | 2 | .... | .... | .... | .... | .... |
| Cienfuegos | December 5. | 35,464 | 17 | .. | 2 | 6 | .... | .... | .... | .... |
| Cienfuegos | December 12. | 35,464 | 23 | .. | 1 | 9 | .... | .... | .... | .... |
| Callao | December 3. | 34,000 | .... | .. | .... | .... | .... | 1 | .... | .... |
| Guayaquil | December 1. | 30,000 | 54 | .. | 1 | 16 | .... | .... | .... | .... |
| Guayaquil | December 8. | 30,000 | 58 | .. | .... | 15 | .... | .... | .... | .... |
| Gibraltar | December 4. | 23,631 | 4 | .. | .... | .... | .... | 1 | .... | .... |

## ANSWERS TO CORRESPONDENTS.

*No. 118.*—This correspondent asks what proportion the fee of a consultant should bear to what his fee would have been had he been the regular attendant; also whether the attending physician is responsible for the consultant's fee and should collect it. We are not aware that practitioners generally fix their consultation fees on the basis of any definite proportion to their ordinary fees, but we presume that usually the proportion is about as three to one. We do not consider the attending physician responsible for the consultant's fees, unless the latter's services were rendered at the request of the attendant and without the concurrence of the patient; the practice is common, however, for a consultant, provided he was chosen by the attendant, to send his bill to the latter, but merely for transmission to the patient. It is considered the courteous way of proceeding, and is not intended to imply that the attending physician is in any degree responsible.

*No. 119.*—The meetings are open to the profession.

*No. 120.*—The book referred to was Smollett's "Adventures of an Atom."

*No. 121.*—As used by writers in the English language, the word adduction means not only the drawing of a part toward the median line of the body, but also, as in the case of the fingers and toes, a drawing toward the median line of a limb.

*No. 122.*—An important point in securing neat serrations with a roller bandage is to discontinue the tension each time a reverse is made, the part of the bandage last applied being held temporarily with the finger.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

### ADDRESS AT THE INAUGURATION OF THE SLOANE MATERNITY HOSPITAL AND OF THE VANDERBILT CLINIC,

DECEMBER 29, 1887.

BY PROFESSOR T. GAILLARD THOMAS, M. D.

"*Vita brevis; ars longa.*" Man's life is but a span; the life of Art is long and endures for ever. Generation after generation is cut down and disappears like the herb of the field; but Art, with grand and measured tread, marches onward through the ages!

As we meet here to-day to foster the interests of the noblest of the arts, so met the men and women of ancient Greece and Rome. Since then they and thousands who have succeeded them have vanished like a tale that is told; but the art which they fostered lives now, as it lived then, coming down to us in lusty strength, in youthful vigor, in enduring glory.

What is life for us to-day more than it was for those a thousand years preceding us? Have we found an antidote for its cares, a safeguard against its sorrows; a preventive of its brevity, its hollowness, or its weird and sad termination? What is art to-day contrasted with art as long ago? From an atom it has grown into a mountain. The story of its growth oversteps the limits even of imagination. He who a century ago would have given credence to the fairy-tale of the princess whose lover was aided in his search for her by three mysterious men, the first capable of traveling five hundred leagues in a day, the second of seeing thousands of miles, and the third of whispering through that distance into the ear of the person seen, would have been regarded as a madman. And yet to-day every one of these apparently vain imaginings has been verified. Within a few seconds the news from far-off lands is written or whispered to us; within a day thousands of miles are traversed with ease and certainty; and the patient student from hour to hour watches the heaping up upon the face of the moon of piles of scoriæ by volcanic action, and measures the depths of the valleys which they create. A century ago steam and electricity were unknown; now they are man's willing slaves, destined to do his bidding, as the ancients foreshadowed when they represented the thunderbolt in the hand of Jupiter. What imagination so vivid as to foreshadow the discoveries of the next century? What prophet so gifted or so bold as to foretell the triumphs of art as yet undreamed of and lying dormant in the womb of time?

Among the arts none has more essentially changed with time than has that whose votaries are assembled in this beautiful hall to-day; none is more rapidly changing now; and in the advance and perfection of none is society more deeply interested; for truly has it been said:

"A good physician skilled our wounds to heal
Is more than armies to the public weal."

Medicine as an art has existed since the days of Hippocrates, who lived four hundred years before Christ. During the two thousand two hundred years which have since elapsed little was done for its material and decided advancement until the beginning of the seventeenth century. For these more than two thousand years the art lived, but lived in intimate communion with superstition and the most unqualified charlatanism; lived in the musty tomes of priests and shavelings; lived in the brains of dreamers and theorists; lived in the hands of the herbalist and the barber. But still it lived, and in the early part of the seventeenth century it was stirred into renewed vigor by three influences which proved potent for good. Since that time amends have been made for prolonged torpor by a rapidity of progress which must meet the demands of the most exacting critic, and during the last half century it may with justice and without boastfulness be claimed that no other science or art has left it behind in the race for advancement.

I just now pointed out the influence which those two gigantic factors, steam and electricity, had exerted upon the arts in general. Early in the seventeenth century medicine felt a propulsive influence, no less decided, from the establishment of inductive philosophy by Francis Bacon, of the perfection and utilization of the microscope, and of the discovery of the circulation of the blood by the great Englishman, William Harvey. Archimedes once declared that if he were only given a standpoint for his lever he could move the world. These three contributions furnished a tripod for the support of a lever which at once moved medicine upward and onward.

And here, before I proceed further, let me meet the criticism which I feel sure that some of my non-professional hearers will launch at me, that the claim which I have ventured to make for medicine savors of boastfulness. I here boldly and without hesitation declare the belief that vaccination and the discovery of anæsthesia surpass in the beneficence of their results even steam and electricity. And as this is true as to these major factors, so do I claim that it is so as to many minor ones. Let me in all sincerity and truth ask you to-day these questions: Which would you prefer to give up—steam, with all its manifold advantages, all its blessings, all its influences upon civilization; or to return to the times when that loathsome disease, small-pox, would strike a community and pass over it like a simoon, killing hundreds by a terrible death and deforming thousands for life; to the time when a household would be stricken down, demoralized, and desolated; and when beauty was transformed into hideousness within a few days? Would you rather give up the charming results of that magical power electricity, with its grand achievements and its luxurious outcome; or return to the dark days when your loved ones, exposed of necessity to the surgeon's knife, would have to suffer mortal agony for hour piled on hour; when she who is dearer to you than life itself had to bear the agonies of the primal curse in the same degree as our mother Eve; and when you yourself, when dying a slow death of suffering, would be deprived of the sweet boon of euthanasia? I do not pause for a reply. I know that every one of you, every

man in all his selfishness, every woman in all her disinterestedness of love, will say with me, "Perish steam, perish electricity, rather than that we should go back to those dark and gloomy days of human woe and human helplessness."

If a dividing-line can anywhere be drawn between modern and ancient medicine, between medicine as a pure art and medicine as an art guided by the beneficent light of science, it would fall about the middle or latter part of the sixteenth century; and there can be no doubt as to the influence of the three great discoveries which I have mentioned in bringing about the grand result. From this time rapidly appeared upon the stage of medical labor those great students of the past who left upon its literature an impress as profound as that which was left upon general literature by Chaucer, Shakespeare, and Milton; I allude to Vesalius, Paré, and Sydenham, and later to Boerhaave, von Haller, Morgagni, Jenner, and the Hunters. These men labored at much greater advantage than did their predecessors, for their minds were prepared for proper methods of study by the establishment of inductive philosophy; their scope was greatly increased by the understanding of the circulation of the blood, and their eyes were given miraculous powers by the perfection of the microscope. Nevertheless, during the seventeenth and eighteenth centuries the art and science of medicine stumbled painfully and slowly onward, hampered by man's vain tendency to theorizing, constructing formulæ, and establishing artificial systems. Every great man felt that he must prove his right to being so considered by propounding and sustaining some dogma. What an investigator thought out in his closet, that he saw at the bedside, and that he strove to maintain, not by demonstration to the senses, but by words, by sonorous phrases, by eloquent sentences, and by astute and long-drawn argument. Read to-day the writings of one of the most charming of medical writers, the Thomas Watson of the olden time, Sydenham. You will find them teeming with seductive argument, eloquent appeal, powerful rhetoric; but equally will you be struck by want of evidence, absence of appeal to the senses, and failure of physical demonstration; abundant and pithy calls upon the intellect you will find, but none upon the sight, the touch, the hearing, and the smell. Does he advance the theory that carbuncle is a low grade of inflammation excited by the introduction into the blood of some external malign influence? If so, it is merely his own opinion; nothing more. He does not show you with the microscope the anthrax bacillus. Does he allege an altered renal action in general dropsy? If so, he fails to coagulate albumin in the test-tube, or show you tube-casts and epithelium. Does he maintain that the air-vesicles of the lungs are filled with plastic material during the first stage of pneumonia? If he does so, he lacks the power of making you hear the crepitant râle as a conclusive proof of his correctness.

As the pestilence which they sought to circumvent was said to walk "by darkness," so walked their finely drawn and carefully woven theories; and, alas, too often walked they hand-in-hand with the evil against which they were launched. During that period of mysticism, of doubt, and of theory our calling should in all honesty have pleaded guilty to the seathing definition of a physician as "a man who poured drugs of which he knew little into bodies of which he knew less."

And so things went on with medicine, not from bad to worse, for it would have been hard to find the latter, but from bad to a very little better, and thus they continued to go until the propitious dawn of the nineteenth century, which was heralded by the discovery of vaccination by the immortal Jenner. As the century advanced into its latter half our art had done enough to warrant it in laying claim to the title of "Demonstrative Medicine," in contra-distinction to that of the olden time, which might have been called "Theoretical Medicine." Men, educated by the influences which I have cited and by others of a similar nature, now began to make all supposition, all belief, all theory subordinate to physical proof, to demonstration to the senses. They began to study, not isolated in their closets, but banded together in hospitals, in laboratories, and in clinical rooms. There no man ventured to advance a view the truth of which he could not maintain by evidence. Diseases of the lungs and heart were listened to, not talked about; those of the deep structures of the eye were looked at with the ophthalmoscope; the darkness of the larynx was dissipated by the laryngoscope; all canals were tunneled for the admission of light by specula; and medical chemistry or the microscope would pronounce dogmatically as to the nature of fluids and solids removed from any part of the system.

All the nations of the earth soon began to vie with each other in the advancement of medicine, free of mysticism and theory, and capable of proof and of demonstration. In Germany, in France, in England, in Russia, and in Italy laboratories, hospitals, and cliniques soon teemed with students eager to learn what the new era could teach, and with devoted investigators equally eager to make discoveries and to impart them. And what is so far the outcome? It is so immense, so grand, so vast that the time allotted to this address is insufficient for even a rapid presentation of it. Let me cite a few facts only. The discovery of that blood-poisoning called septicæmia, and of the methods of avoiding it, by Lister, of Scotland, have robbed hospital operations of nine tenths of their terror, have already saved thousands and thousands of lives, and are destined in the future to give to man incalculable results.

Should the noble efforts of the great Pasteur succeed in accomplishing the prevention of hydrophobia, that success would be entirely due to it; should they fail, what of it? He has "struck a lead," as miners express it in mining, which, whether he live or die, whether he survive or perish, whether he succeed or fail, will be followed up by others to grand results.

A few years, a very few years ago, the lying-in or maternity hospitals of the world were transformed into charnel houses by that terror of all lands—puerperal fever. Now, in the most insalubrious parts of Paris, of Vienna, and of St. Petersburg, there is scarcely a mortality of three in a hundred from this cause where proper precautions are observed.

To the non-professional members of my audience all this, so wonderful is it, may appear as the tale of a ro-

mancer, or the exaggeration of an enthusiast. But it is neither. I have merely touched upon the theme; by no means have I done it justice.

And it requires no prophet's power to declare that scientific medicine is in our day in its early, puling infancy. What has been done is as nothing to what will be done. What we know falls into insignificance when compared with what we shall, what we must know, within the next century.

And what has accomplished all that has thus far been effected in the way of advancement? The great, the leading factor has been a change in our methods of study, an improvement in our plans of investigation, a more philosophical style of collating our facts and drawing our deductions. The laboratory work, the clinical study, and the use of instruments of precision, to which special reference has been made, have all been merely means for developing the experimental and demonstrative methods of study which have resulted in the new era which is now fully dawning upon us in all its abundance of results.

If in this great work the monarchical countries of Europe have outstripped our own land, it is because of the endowment of institutions of learning, the aid given to struggling science, the fostering hand stretched out to art by such forms of government on the one hand, and the well-known neglect of these things by republics on the other. Ever since the foundation of our country our medical colleges have struggled onward as private enterprises dependent for existence upon the fees of those to whom their diplomas were granted, unaided by government, unthought of by society, unendowed by men of wealth, whose millions at their deaths went to the support of some distant enterprise, the erection of some monument or statue, or some similar work of great though of far less importance. All honor to the house of Vanderbilt, which has created a new era, set an example which is even now being nobly followed, and engraved its memory upon the heart of every true physician of our country.

We are engaged to-day in inaugurating a clinic and lying-in hospital, both put at the disposal of our art by Vanderbilt's immediate descendants, desirous to emulate his glorious example, and eager to lay medicine under a greater debt than the great one which it already owed to its head.

"The Vanderbilt Clinic!" Did the origin of the word "clinic" ever strike you? It is derived from the Greek "κλίνη," a "couch," and its full signification is this: "In these halls the art of medicine is to be studied at the bedside. The mind of the student is not to be filled with the thoughts, the dicta, the suppositions, and the deductions of other men, but here he is to study disease in its ghastly truth for himself, by the aid of sight, touch, hearing, and smell, and to draw conclusions for himself. Here he is to seek the truth, and to learn from his teachers how to find it; not to accept as truth what those teachers believe to be such, not to strive to learn from their experience, but to collate facts and acquire experience for himself."

This is to be one great outcome of this clinic. But equally important results remain to be told, even without alluding to the self-evident one of the great blessing which will accrue to the poor of New York, who will profit by the immediate effect of the medical service now placed at their disposal.

And now I come to tell you of a singular coincidence in this exhibition of generosity and charity, which is not generally known, and of which I would make history did the power lie within me. Before the thought of the great gift made by Vanderbilt had entered into his charitable mind, one of the members of the Faculty of the College of Physicians and Surgeons, under the authority of a son-in-law of Mr. Vanderbilt, was searching for a location for a maternity hospital to be erected and equipped entirely at his personal expense. To-day the Sloane Maternity Hospital is in full working order, and with the Vanderbilt Clinic is put at the disposal of the college so richly endowed by the head of the house.

Even this is not all. The wife of this generous man, a true daughter of her house, apparently unwilling to be outdone in good works even by her own husband, has assumed in perpetuity the entire expenditure attendant upon the working of this magnificent charity.

What grand rivalry! What princely extravagance! What God-given inspiration!

Yet great as is this munificent offering to humanity and to science, greater, far greater, is the reward which, even in their life-time, must be meted out to these generous donors. This house of refuge and of mercy, built with all the cunning of the architecture of our day, will stand for centuries. What monarch's wealth could purchase a sweeter thought, a more sublime reflection, than that throughout that time the prayers of thousands of weary, sad-faced women, of thousands of grimy sons of toil, will constantly ascend for their benefactors in gentle murmurs to the judgment-seat of God?

"The prayer of the righteous man availeth much," but rather give to me the supplications in my behalf of the suffering, the friendless, and the poor to whom it has been vouchsafed me to have offered aid and comfort.

A favorite dictum of theologians of the olden time was this: "The blood of the martyrs is the seed of the church." So deeds, such as that of which I have just made grateful mention, are the seed of science. From the seed thus sown will spring up results throughout our broad land, from Maine to Texas, which will multiply an hundred-fold the generous act which we here acknowledge. He is short-sighted indeed who sees in the gift which we receive to-day a benefit to one institution or to one city. A noble example has been set, a fruitful hint been given which will redound to the advantage of science and humanity throughout our wide borders from the Atlantic to the Pacific shores.

Trustees and Faculty of the College of Physicians and Surgeons who are to-day made custodians of this princely gift, a weighty responsibility rests upon us so to administer it as to develop to its fullest extent the intentions of the givers. It is clear that their desire has been to elevate the standard of medical education in our country, to advance the science of medicine, and thus to benefit society and humanity. Let no narrow policy, no views bounded by

local interests, no ambitions less lofty than those to which allusion has just been made, enter our minds. But with a high and firm resolve let us strive, in the general cause of science and humanity, so to acquit ourselves of our stewardship that those who sit in judgment upon us after our mortal frames shall have become dust may pronounce upon each of our memories that verdict, so much to be desired, "Well done, thou good and faithful servant!"

The thought which entered the minds of the creators of this clinic—that in endowing the quiet, unobtrusive, and unobserved science of medicine they could benefit humanity, elevate art, and rear to their names an unostentatious yet pleasant memorial in these halls, "where charity and science so nobly meet"—was an original, a happy, a noble one. Whence came it? Not from a desire for fame. Half the gift elsewhere bestowed would have brought them more. Not for the advancement of worldly interests. What worldling craves the affectionate admiration of a guild like ours? It had its birth in some nobler, loftier, purer sphere.

History gives abundant evidence of man's desire to live in the memory of those whom he leaves in this life after he has crossed the dark and silent river; of his aversion to the chilling thought of being completely obliterated and fading from the minds of men like the baseless fabric of a vision, leaving not a rack behind. And history has taught us that it is not the column of brass or the statue of stone which best preserves the name intrusted to it. To live after death our monument must be erected in the grateful hearts of those who succeed us. When the arch of Severus shall have made dust for the streets of Rome, the simple prayer of the good Chrysostom, contained in ten short lines, will cause his memory to live for ages in the minds of men! Lorenzo de Medicis left his memory to the keeping of art—of art honored, elevated, and purified by him; his name shines more brightly to-day than it did even in his own time. *Ars longa; vita brevis.*

In whatsoever garb it may appear, there is a charm, a beauty about the God-like virtue charity which commands for it admiration, sympathy, and respect. How various are its manifestations! Here we behold the miser indulging in it as a posthumous duty because he can not carry his riches with him into the hereafter; bequeathing his cherished millions to the poor because "there is no pocket to a shroud"; here the ambitious demagogue hoarding wealth during a life-time to endow an institution or erect a statue to preserve his name from oblivion; and here the truly pious and virtuous leaving their goods for the advancement of religion and the spread of the gospel. In all these forms charity is ever the most God-like and radiant of the virtues. But how much more noble and more admirable does it appear when coming as a gift during the life-time of the donor, who then shares his possessions with his needy brother, and watches with tender solicitude the resulting benefit! To give with posthumous generosity to the heathen of distant lands, and beyond far-off seas, is noble indeed; but more noble, more beautiful is it far, to see wealth shared during a life-time with the beggar at one's door-step.

How beautifully is this idea illustrated in the charming poem of the "Vision of Sir Launfal," a knight of old, who, leaving untended the poor at his gate, sought to recover, for the love of God and at the point of his lance, the Holy Grail from far-distant Palestine! Returning disappointed and dejected, the Christian soldier sees at his castle-gate a leper, miserable, wretched outcast. Suddenly he feels "that one touch of nature which makes all mankind kin," and he is inspired with the impulse to pity and to aid him as he pleads for alms:

"And Sir Launfal said: 'I behold in thee
An image of Him who died on the tree;
Thou also hast had thy crown of thorns,
Thou also hast had the world's buffets and scorns,
And to thy life were not denied
The wounds in the hands, and feet, and side:
Mild Mary's son, acknowledge me;
Behold through him I give to Thee.'

"As Sir Launfal mused with a downcast face,
A light shone round about the place;
The leper no longer crouched at his side,
But stood before him glorified,
Shining and tall and fair and straight
As the pillar that stood by the Beautiful Gate.

"His words were shed softer than leaves from the pine,
And they fell on Sir Launfal like snows on the brine,
Which mingle their softness and quiet in one
With the shaggy unrest they float down upon;
And the voice that was calmer than silence said:
'Lo! it is I, be not afraid!
In many climes without avail
Thou has spent thy life for the Holy Grail;
Behold it is here, this cup which thou
Didst fill at the streamlet for me but now;
This crust is my body broken for thee,
This water his blood that died on the tree;
The Holy Supper is kept indeed,
In whatso we share with another's need;
Not what we give, but what we share,
For the gift without the giver is bare;
Who gives himself with his alms feeds three,
Himself, his hungering neighbor, and Me.'"

Generous donors of these most noble charities, sons and daughters of one whose name will never fade from the annals of American medicine, commissioned by my colleagues I come to you the bearer of threefold thanks! In the name of Science, for which you have shown so much solicitude; in the name of Medicine, for which you have so nobly pledged your appreciation; in the name of Humanity, which for cycle upon cycle will profit by your liberality, from the deepest depths of our hearts we thank you!

"*Tout lasse, tout casse, tout passe,*" says a quaint old French proverb. The only exception to the truth embodied in its simple alliteration is to be found in this world in the enduring pleasure which is born of good deeds done to our fellow-men. God grant that that enduring pleasure may be yours, and that it may abide with you to the end of life's pilgrimage!

May the wisdom, the resources, and the skill which centuries of labor have bestowed upon medicine be ever in their best and brightest estate when called for by you in

the hour of your sorest need. May the bread which you have so lavishly cast upon the waters be returned to you in prosperity in this world, and in life in that which is to come.

## Original Communications.

### ANALYSIS OF FIFTY CASES OF CROUP TREATED BY INTUBATION OF THE LARYNX.

By JOSEPH O'DWYER, M. D.,
ATTENDING PHYSICIAN TO THE NEW YORK FOUNDLING ASYLUM, ETC.

In the "Medical Record" of October 29, 1887, I published a summary of my first fifty cases of croup in private practice treated by intubation of the larynx. I also referred to the cases of sixty-five hospital patients who were operated on during the preceding five years while I was developing and perfecting the tubes and accessory instruments.

The following table comprises another series of fifty cases, also in private practice, treated during the past year, or from November 16, 1886, to November 18, 1887. Of several additional cases seen during the same period in which intubation was at one time considered necessary but that finally struggled through without operative interference, I will refer briefly to only two. Quite recently I was called in the night by Dr. E. Le Fevre to intubate a patient of his, a boy six years old, on the seventh day of croup. The stenosis was so marked that each inspiration suspended the pulse at the wrist, owing to the excessive quantity of blood sucked into the lungs. When I arrived the patient was somewhat better, and was still further improved by an emetic of turpeth mineral. I watched him for over an hour, and left without operating. We believed that if we could get him through that night the danger, in all probability, would be over, as the disease had already lasted about the average length of time, and the early morning, which often brings some relief, was near at hand. The sequel proved that this view was correct, as there was no recurrence of serious dyspnœa. The voice in this case was good, notwithstanding the marked obstruction, and this, together with co-existing expiratory dyspnœa, proved the stenosis to have been subglottic. This patient was also seen by Dr. Jacobi.

Another case occurring in my own practice about the same time was that of a girl, aged seven years, in whom the larynx was invaded almost coincidently with the appearance of the exudation in the pharynx. Urgent dyspnœa lasted throughout the second night and up to noon of the third day, at which time I visited the patient with the intention of intubating. I waited for the effect of five grains of turpeth mineral, which acted promptly, and gave so much relief that the operation was postponed. Croupy cough, with loss of voice and occasional attacks of spasmodic dyspnœa, continued for a week longer, but operative interference was never necessary. The air was kept moist by a constant supply of steam carried under a sheet thrown over the head of the bed, the latter being very high and the temperature of the room at about 75° F. Dover's powder in doses of two grains was found very effectual in relieving the painful irritating cough and the spasm of the glottis to which it gave rise.

Both of these patients took the bichloride of mercury from the very inception of the disease, and I believe that if this remedy were administered in all cases of croup from the beginning, with proper care, a larger percentage of recoveries, both with and without surgical aid, would be the result.

In my own case gr. $\frac{1}{48}$, diluted with two teaspoonfuls of water, was given every hour, but this proved too irritating and gave rise to pain in the stomach and repeated attacks of vomiting when administered for less than twenty-four hours. It was therefore suspended for several hours and then given more largely diluted, without further inconvenience. It was again suspended for several hours on the fifth day, owing to the occurrence of two or three loose passages, and subsequently given in half the dose.

Dr. Jacobi, who also saw this case in consultation, says that gr. $\frac{1}{50}$ should be diluted in half an ounce of water, and larger doses proportionately. While preparing this article I was called to intubate a girl five years old, croupy less than twenty-four hours, who was taking gr. $\frac{1}{40}$ of the bichloride in tablet form placed on the tongue every hour. She was complaining of severe pain in the stomach, the cause of which was not suspected. I find that this is the most common method of administering this drug, and the only reason that it does not more frequently excite gastritis or gastro-enteritis is the fact that the stomach usually contains more or less food or drink, and generally of an albuminous nature. Given in such concentrated form on an empty stomach, it must prove highly injurious.

By referring to the following table it will be noticed that out of the fifteen cases intubated during the past autumn there were eight recoveries. This I attribute in part to the bichloride of mercury which was used in the majority of them, and in part to a less fatal type of the disease than prevailed last winter and spring.

Case LI.—This case presents several interesting features. The patient was recovering from an ordinary pharyngeal diphtheria, the membrane having almost entirely disappeared, when she was attacked with measles. The exudation reappeared in the pharynx and rapidly invaded the larynx. Dyspnœa recurred on the fifth day after intubation, and a very thick cast of the trachea was expelled immediately after the removal of the tube, with complete relief. Two days later I was sent for again and found her suffering from extreme dyspnœa, expiratory as well as inspiratory, but having a good voice. I recognized it as a case of subglottic stenosis and was prepared to use some force in reinserting the tube, which I found to be necessary. The tube was again removed in two days and there was no recurrence of the dyspnœa, but complete paralysis of the muscles of deglutition soon developed and it was found impossible to give any kind of nourishment by the mouth. Feeding by the rectum was resorted to as long as it could be borne, but the stomach-tube could not be used owing to the opposition of the ignorant parents, and the patient died from inanition almost three weeks after the final removal of the tube.

| No. | Date | In consultation with | Sex | Age. | Duration, before intubation, of: Croup | Duration, before intubation, of: Pharyngeal diphtheria. | Urine. | Cause of death. | Complications before intubation. | Result. |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1886.* | | | | | | | | | |
| 51 | Dec. | Drs. Wallace and McLoughlin. | F. | 9 y. | 2 d. | 10 d. | Not exam. | Inanit'n, paralysis. | ..... | Died 3 w. aft'r remov'l of tube |
| 52 | " | My own case..... | M. | 3 y. 3 m. | 1 d. | Present. | No album'n. | Exten. to bronchi. | ..... | Died 3 d. 21 h. after intub'n. |
| | 1887. | | | | | | | | | |
| 53 | Jan. | Dr. O. P. Honegger..... | F. | 6 y. 5 m. | 1½ d. | " | Not exam. | " " | ..... | Died 5 d. 2 h. " " |
| 54 | " | Dr. J. M. F. Egan and Dr. J. P. Daly ..... | M. | 3 y. 5 m. | 1 d. | " | Albumin. | Not known..... | ..... | Died 4 d. 14 h. " " |
| 55 | " | Dr. B. G. Cook..... | F. | 3 y. 4 m. | 1 d. | " | " | Sepsis ..... | A hopeless, septic case. | Died 17 h. " " |
| 56 | " | Dr. J. F. Holmes ..... | M. | 4½ y. | 3 d. | " | " | Pneumonia..... | ..... | Died 9 d. " " |
| 57 | " | Dr. J. F. Holmes ..... | F. | 2 y. 10 m. | 1½ d. | " | " | Exten. to bronchi. | ..... | Died 1 d. 4 h. " " |
| 58 | " | Dr. J. H. Dew ..... | M. | 3½ y. | 1 d. | " | Not exam. | Pneumonia..... | Extensive pneumonia, measles. | Died 62 h. " " |
| 59 | Feb. | Dr. Glück..... | M. | 4½ y. | 1½ d. | None. | " | Exten. to bronchi. | ..... | Died 16½ h. " " |
| 60 | " | Dr. Hemingway ..... | F. | 2½ y. | 15 h. | 3 d. | " | " " | ..... | Died 14½ h. " " |
| 61 | " | Dr. Conrad Lange ..... | M. | 2 y. 8 m. | 4 d. | 5 d. | Albumin. | Pneumonia..... | ..... | Died 9 d. " " |
| 62 | Mar. | Dr. J. Lewengood and Dr. P. W. Cremin ..... | M. | 3½ y. | 3 d. | 6 d. | " | ..... | ..... | Recov'd; wore tube 1 d. 1 h. |
| 63 | " | Dr. G. C. H. Meier..... | F. | 2½ y. | 1 d. | None. | Not exam. | Exten. to bronchi. | ..... | Died 1 d. after intubation. |
| 64 | " | Dr. Robert Milbank..... | F. | 5 y. | 2 d. | " | Albumin. | ..... | ..... | Recovered; wore tube 6 d. |
| 65 | " | Dr. Feigenblattand Dr. Conrad. | M. | 18 m. | 1½ d. | 4 d. | No album'n. | ..... | ..... | Recov'd; wore tube 4 d. 4 h. |
| 66 | " | Dr. Janvrin and Dr. C. E. Billington ..... | F. | 4 m. | 2 d. | 7 d. | Not exam. | Broncho-pneumo. | ..... | Died 1 d. 16 h. after intub'n. |
| 67 | " | Dr. S. Meltzer..... | F. | 8 y. 9 m. | 4 d. | 7 d. | " | Exhaustion ..... | ..... | Died 1½ d. after intubation. |
| 68 | " | Dr. J. T. Deyo ..... | M. | 3 y. 7 m. | 2 w. | 2 w. | No album'n. | ..... | ..... | Recov'd; wore tube 3 d. 21 h. |
| 69 | April. | Dr. H. Hermann..... | M. | 23 m. | 3 d. | 1 d. | Not exam. | Exten. to bronchi. | ..... | Died 1 d. after intubation. |
| 70 | " | Dr. R. B. Burton ..... | M. | 2 y. 2 m. | 3 d. | None. | No album'n. | " " | ..... | Died 2 d. after intubation. |
| 71 | " | Dr. E. Elliot and Dr. A. Jacobi. | F. | 19 m. | 3 d. | " | Albumin. | Asthenia..... | ..... | Died 2 d. 2½ h. after intub'n. |
| 72 | " | Dr. Berghaus ..... | F. | 4 y. | 3 d. | 10 d. | " | Exten. & nephritis. | ..... | Died 2 d. 4 h. " " |
| 73 | May. | Dr. P. W. Cremin ..... | F. | 4 y. 9 m. | 3 d. | 3 d. | " | Nephr. & exhaus . | ..... | Died 7 d. " " |
| 74 | " | Dr. H. Bosch ..... | M. | 5 y. 9 m. | 1 d. | 4 w. | " | ..... .... | Scarlet fever with diphtheria four wks. before. | Recov'd; wore tube 4 d. 10 h. |
| 75 | " | Dr. L. Burgheim ..... | ... | 7 y. 1 m. | 12 h. | None. | No album'n. | ..... | ..... | Recov'd; wore tube 4 d. 10 h. |
| 76 | " | Dr. Rudisch .... ..... | F. | 3 y. 1 m. | 1½ d. | 14 d. | Not exam. | Exten. & pneumo. | ..... | Died 2 d. 5 h. after intub'n. |
| 77 | " | Dr. Bleyer and Dr. Reid .... | ... | 3 y. | 1½ d. | None. | " | Exten. to bronchi. | ..... | Died 1½ d. " " |
| 78 | " | Dr. J. F. Curry..... | M. | 4 y. 9 m. | 3 d. | 4 d. | Not exam. | ..... | ..... | Recovered; wore tube 4 d. |
| 79 | " | Dr. J. Baran..... | F. | 4 y. 8 m. | 1 d. | 3 d. | " | Heart failure ... | Sepsis ... | Died 17 h. after intubation. |
| 80 | " | Dr. V. Mravlag and Dr. J. S. Green † ..... | M. | 3 y. 2 m. | 2 d. | 5 d. | Albumin. | Exten. & pneumo. | ..... | Died 1 d. " " |
| 81 | " | Dr. Vedder and Dr. Wilcox . | M. | 7½ y. | 1½ d. | 2 d. | " | Nephritis, pneumo. | ..... | Died 1 d. 18 h. after intub'n. |
| 82 | July. | Dr. W. B. Anderton and Dr. A. J. Magnin ..... | M. | 2 y. 5 m. | 12 h. | 2 d. | Not exam. | Exten. & pneumo. | ..... | Died 22 h. " " |
| 83 | " | Dr. E. Sanders..... | M. | 2 y. 5 m. | 1 d. | 2 d. | " | Pneumonia ..... | ..... | Died 8 d. 19½ h. " " |
| 84 | " | Dr. R. Stein ..... | F. | 16 m. | 1 d. | 2 d. | " | Exten. to bronchi. | ..... | Died 26 h. " " |
| 85 | Sept. | Dr. J. M. F. Egan ..... | F. | 4 y. | 4 d. | 12 d. | Albumin. | Convulsions, exten. | ..... | Died 1 d. 22½ h. " " |
| 86 | Oct. | Dr. L. Conrad..... | F. | 5½ y. | 2 d. | 4 d. | " | Extension, nephritis, sepsis. | ..... | Died 1 d. 13 h. " " |
| 87 | " | Dr. A. H. Goelet ..... | M. | 4 y. 5 m. | 3 d. | Present. | " | ..... | ..... | Recov'd; wore tube 10 d. |
| 88 | " | Dr. Glück and Dr. Holthusen. | M. | 5 y. | 2 d. | None. | No album'n. | ..... | ..... | Recov'd; wore tube 5 d. |
| 89 | " | Dr. G. M. Vandegrift..... | M. | 2 y. | 12 h. | 6 d. | Not exam. | ..... | ..... | Recov'd; wore tube 3 d. 19½ h. |
| 90 | " | My own case..... | M. | 5 y. | 1½ d. | Present. | Albumin. | Exten. & pneumo. | ..... | Died 6 d. 18 h. after intub'n. |
| 91 | Nov. | Dr. Daniel Lewis ..... | F. | 4 y. 5 m. | 3 d. | None. | No album'n. | ..... | ..... | Recov'd; wore tube 6 d. 6 h. |
| 92 | " | Dr. W. G. Robinson ..... | F. | 5 y. | 1 w. | 1 d. | Not exam. | Exhaustion..... | ..... | Died 1 d. after intubation. |
| 93 | " | Dr. P. H. Pyne ‡ ... ..... | F. | 5½ y. | 3 d. | Present. | Albumin. | ..... | ..... | Recov'd; wore tube 7 d. 21½ h. |
| 94 | " | Drs. J. B. and B. C. McIntyre. | M. | 22 m. | 1½ d. | 1½ d. | Not exam. | ..... | ..... | Recov'd; wore tube 6 d. 21 h. |
| 95 | " | Dr. W. N. Guernsey ..... | F. | 4 y. 2 m. | 2 d. | 3 d. | Albumin. | Sepsis, extension. | ..... | Died 1 d. after intubation. |
| 96 | " | Dr. H. J. Schiff ..... | F. | 3 y. 2 m. | 2 d. | Present. | " | Double pneum'nia. | ..... | Died 9 d. 21 h. after intub'n. |
| 97 | " | Dr. A. Hodgman ..... | M. | 6 y. 7 m. | 3 d. | 10 d. | " | ..... | ..... | Recov'd; wore tube 3 d. 9 h. |
| 98 | " | Dr. C. E. Nammack..... | M. | 3 y. | 2 d. | 4 d. | ..... | Exhaustion..... | ..... | Died 3 d. 8 h. after intub'n. |
| 99 | " | Dr. C. H. Grube..... | F. | 4 y. | 1 d. | 2 d. | Not exam. | Exten. to bronchi. | Sup. of urine | Died 2 d. 9 h. " " |
| 100 | " | My own case..... | M. | 9 y. | 2 d. | Sever'l d. | Albumin. | ..... | ..... | Recov'd; wore tube 4½ d. |

| No. | Age. Yrs. | Age. Mos. | Recoveries | No. | Age. Yrs. | Age. Mos. | Recov'ries | No. | Age. Yrs. | Age. Mos. | Recov'ries | No. | Age. Yrs. | Age. Mos. | Recov'ries |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0 | 4 | 0 | 2 | 2 | 6 | 0 | 2 | 3 | 6 | 1 | 2 | 5 | 6 | 1 |
| 1 | 1 | 4 | 0 | 1 | 2 | 8 | 0 | 1 | 3 | 7 | 1 | 1 | 5 | 9 | 1 |
| 1 | 1 | 6 | 1 | 1 | 2 | 10 | 0 | 3 | 4 | 0 | 0 | 1 | 6 | 5 | 0 |
| 1 | 1 | 7 | 0 | 2 | 3 | 0 | 0 | 1 | 4 | 2 | 0 | 1 | 6 | 7 | 1 |
| 1 | 1 | 10 | 1 | 1 | 3 | 1 | 0 | 2 | 4 | 5 | 2 | 1 | 7 | 1 | 1 |
| 1 | 1 | 11 | 0 | 2 | 3 | 2 | 0 | 2 | 4 | 6 | 0 | 1 | 7 | 6 | 0 |
| 1 | 2 | 0 | 1 | 1 | 3 | 3 | 0 | 1 | 4 | 8 | 0 | 1 | 8 | 9 | 0 |
| 1 | 2 | 2 | 0 | 1 | 3 | 4 | 0 | 2 | 4 | 9 | 1 | 2 | 9 | 0 | 1 |
| 2 | 2 | 5 | 0 | 1 | 3 | 5 | 0 | 4 | 5 | 0 | 2 | 50 | ..... | ..... | 15 |

Total, 50; males, 25; females, 23; not stated, 2; recoveries, 15, or 30 per cent. Average age of patients that recovered, 4 yrs. 8 mos.; of patients that died, 3 yrs. 9 mos.

* The case referred to in a former table as having been overlooked I have transferred and, for my own convenience, numbered 170.

† This case was in Elizabeth, N. J.

‡ Yonkers, N. Y.

Note.—A boy, six years and a half old, seen with Dr. W. H. Hall, and intubated December 31, 1886, for the following reasons was not counted: On the second day following the operation he was progressing without an unfavorable symptom, but after my visit coughed out the tube. I had given particular instructions that in case this accident occurred there was no necessity for calling me as long as the breathing continued free. This advice often saves a hasty summons in the night, as in many cases the obstruction does not return for several hours after the rejection of the tube. On making my visit the next day, I found the patient moribund and reinserted the tube, but he never rallied. The struggle for breath had continued for about fifteen hours, and was fully recognized by those in attendance without any effort to notify me. I subsequently learned that the child was an orphan and probably very much in the way.

Case LV.—This was a septic, hopeless case with such extreme tumefaction of the epiglottis and aryepiglottic folds that it was difficult to locate the entrance to the larynx. The mother readily consented to the operation after being informed that there was no hope whatever of recovery, but that it would prevent death by slow strangulation.

Case LVIII.—The patient had extensive pneumonia following measles when intubated.

Case LXII.—This case is of interest as being the only one up to the present time in which I pushed down membrane in sufficient quantity to produce apnœa on the first introduction of the tube. As soon as it was removed by the string, which was still attached, a cast of the trachea was expelled, but the dyspnœa continued as before and reintubation gave complete relief. The tube was expelled in twenty-six hours and never needed again. With one exception, this is the shortest time the tube has been retained in the larynx with recovery in my own cases.

Case LXXV.—It is not known how long the tube was retained in this case. Dr. Burgheim believes that it was expelled from the larynx and swallowed during an attack of vomiting within an hour after its introduction. It was certainly not in the larynx the next morning—inserted at 10.30 P. M.—as both cough and breathing were croupy with considerable dyspnœa, which continued with loss of voice for almost a week, but no further interference was called for.

This case is of interest as being only the second out of 173 cases so far in which the tube after escaping from the larynx and without any interference entered the stomach; also for the length of time—ten days—required for its passage through the alimentary canal. The tubes are so long that when the lower extremity leaves the larynx the upper extremity is in close proximity to the front teeth. This accident can, therefore, occur in only one of two ways: (1) Coughing it out during sleep or semi-consciousness, and (2) by being projected up behind the soft palate in the act of coughing or vomiting. In the latter case it must of necessity enter the œsophagus. It is quite possible that some children intentionally swallow the tube in order to get rid of it and prevent its further use. I had one boy four years old who, with this object in view, dented the tube with his teeth. I have known others, on getting possession of the tube when no one was present, to throw it to a considerable distance or hide it where they supposed it would not be found.

I was recently requested by a physician who had had considerable experience with intubation to perform tracheotomy on a little patient of his for the purpose of removing a tube that had passed into the trachea. At the usual time repeated attempts to remove it were made without success. He possessed an unusual amount of coolness and dexterity, and was certain that he had not lacerated the larynx with the extractor, and I was equally certain that by no other means could the tube have entered the trachea. I found the patient suffering from extreme dyspnœa, which had recurred only after the last attempt at extraction, with croupy cough and croupy breathing, and, instead of opening the trachea, placed another tube of the same size in the larynx with complete relief. I then requested the physician to insert his finger and push it through if he could. This convinced him that the other tube was not in the trachea, and a more thorough search of the apartment resulted in finding it behind the bed, where the little fellow had concealed it, in all probability, several days before the attempt to remove it from the larynx had been made. This patient made a good recovery, notwithstanding the excessive irritation to which the larynx was subjected and the fact that he was obliged to take care of himself as best he could during the night, his parents being poor, hard-working people who could not lose their sleep and work during the day.

No doubt many cases similar to this have occurred, and it is not the first of this nature that has been reported. It teaches the important lesson that the extractor should never be inserted until the head of the tube is distinctly felt by the finger. The swollen epiglottis and ary-epiglottic folds may overlap its upper extremity even to the extent of producing serious obstruction in rare cases, but offer very little resistance to the entrance of the tip of an ordinary-sized finger, and one of extraordinary size should be used only in the less vital cavities.

Case LXXXVII.—Before the removal of the tube, which was very much obstructed, on the fifth day the respirations were sixty-eight a minute, temperature 104·5°, mucous râles all over the chest, urine loaded with albumin. Marked cyanosis showed itself in ten minutes, and the tube was cleaned and reinserted with great relief to the breathing. It was again seriously obstructed, and the patient suffered from severe dyspnœa during the greater part of the night preceding its final removal on the tenth day. The relief was immediate and permanent.

This case shows the importance of warning the parents or nurse to notify the physician immediately on the return of any difficulty in the breathing. As soon as the lumen of the tube becomes seriously encroached upon, the cough ceases to be effective owing to the great reduction in the amount of tidal air, expectoration diminishes or ceases altogether, and the secretions accumulate in the air-passages. In the case just quoted the numerous moist râles heard over all parts of the chest indicated that a fair amount of air was entering the lungs, and yet when the tube was removed there did not appear to be one fourth of its caliber free. Loose secretions that can be blown out, or that will wash out by allowing a stream of water to pass through the tube, do not cause obstruction.

Case XCVII.—I have already referred to several cases in which the retention of the tube for a few hours in the larynx relieved the dyspnœa for a considerable length of time. In this case it was retained on the first occasion for only five hours, and the dyspnœa was relieved for twenty three hours. The same tube was then reinserted, instead of a larger one, in order to favor its rejection again as soon as the pressure had reduced the swelling sufficiently to permit of this. This time it was retained sixteen hours, but had to be replaced in four hours. The third time it remained in the larynx nine hours, and the stenosis was permanently relieved. Had it not been expelled, I should have allowed it to remain in position about five days, instead of the thirty hours that it was actually required.

Besides the advantage of taking an ample supply of nourishment without difficulty that these intervals afford, it is the best means of getting rid of the tube at the earliest possible moment. There are still other advantages to which I have already called attention.

As a matter of course, nothing would be gained by using the same tube when the obstruction returns soon after its rejection. It is only in such cases as the foregoing, which are exceptional and very rare in young children, that this plan is advisable, except where loose membrane is known to exist below the tube.

I have already reported two cases in which the tubes suddenly became occluded with a cast of the trachea too large to pass through, and were promptly expelled.

I will briefly report the third accident of this kind in my experience where the tube was not expelled, and sudden death from apnœa resulted. It is not included in the table, and my object in referring to it now is to point out the means by which the accident may be avoided.

On the afternoon of November 25, 1887, I was requested by Dr. C. E. Bruce to see a little girl patient of his of delicate constitution, who had been croupy for only twenty-four hours. The tonsils were hypertrophied, and the mucous membrane presented the ordinary appearances of follicular inflammation, but no false membrane could be seen. As the dyspnœa was extreme, I immediately inserted the 5 to 7 tube, with prompt but not absolutely complete relief, such as always occurs when the obstruction is confined to the larynx. With the first cough I recognized the existence of loose membrane below the tube. I had encountered the same thing so often before without accident that I had ceased to fear it, and removed the string as usual. The breathing soon became perfectly free, and she fell into a quiet sleep. The night was passed comfortably, and on the next morning we found her free from dyspnœa and in fair condition, but the loose membrane had not been expelled. In the evening, or about twenty-seven hours after intubation, during a violent attack of coughing excited by swallowing some lemon-juice, she suddenly choked, became deeply cyanosed, and died, the nurse says, in two or three minutes.

The tube used was two inches and a quarter in length, and, in girls of this age, will reach within about half an inch of the bifurcation. The presence of false membrane so near the bronchi and so early in the disease is usually a fatal omen. I therefore gave a very unfavorable prognosis.

About half an hour after death I removed the tube, and as I did so a distinct hissing sound of escaping air was heard by Dr. Bruce and myself.

This case, aside from its other interesting features, is of particular interest as demonstrating the mechanism by which acute general emphysema, or overdistension of the lungs with air, which is found in a small percentage of the fatal cases of croup, is produced. That portion of the pseudo-membranous cast lying loose in the trachea which extended below the tube acted in precisely the same manner as a very thin piece of rubber tubing drawn over the lower end of the tube, and about half an inch longer than it. This, while offering no obstruction to inspiration, would collapse on the first pressure from below, forming a perfect valve, and thus prevent any air from escaping. With a few forcible inspirations, without expiring, the lungs become inflated to their full capacity, and death, in all probability, takes place more rapidly than in the opposite condition of complete obstruction to the entrance of air with free exit, because in the latter the carbonic acid is allowed to escape, while the residual air furnishes some oxygen to the blood.

Had this patient's chest been opened before the removal of the tube the lungs would have been found too large for their cavities, and containing less than the normal amount of blood, which was either squeezed out or prevented from entering by the pressure of the imprisoned air.

In order to prevent the accident that occurred in this case, where loose membrane was known to exist below the tube, several means may be resorted to; but the most important of these is using a smaller tube than that indicated by the scale of years. Had I, for example, removed the 5 to 7 size placed in this child's larynx and inserted the 3 to 4 size, which would have been perfectly safe, the chances would have been altogether in favor of its immediate expulsion, when occluded below, followed by a cast of the trachea, as the outward pressure of the abnormal amount of air in the lungs must have been very great.

Another precaution, and one which I have adopted in several cases, is leaving the string attached and fastening it behind the ear, so that the attendant can quickly remove the tube if necessary. It is objectionable on account of the irritation it produces and the difficulty of preventing the patient from removing it, or cutting it with the teeth. Clearing the trachea of false membrane with a suitable instrument would be the best safeguard against this accident, but it is useless to discuss it until its practicability has been demonstrated. Tiemann & Co. have recently constructed for me a set of membrane extractors which are introduced in the same manner as the tubes, and with the same instrument, but I have not had an opportunity to try them.

There is one other expedient that might prove effectual at the last moment in such cases as the foregoing, and in the extrusion of foreign bodies from the larynx also. It consists in causing a sudden escape of some of the residual air, or, if respiration is not completely suspended, of the residual and tidal air, by taking advantage of the beginning of expiration. This is accomplished by placing the patient across the knees, on the floor, table, or other hard surface, and, while with one hand firm pressure is made on the abdomen to prevent descent of the diaphragm, the other hand, open, is brought down with considerable force on the front of the chest.

A slight cough has repeatedly proved sufficient to lift a

metal tube weighing an ounce and three quarters from the adult larynx, and project it to some distance in front of the patient. The method just described accomplishes the same thing as the act of coughing.

The popular custom, so universally practiced, of striking a person on the back who is choking from a foreign body in the throat, can not have any appreciable effect in expelling air from the lungs, but if the blow were made on the front of the chest instead of the back, it would be attended with much greater success.

860 Lexington Avenue.

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# THE TREATMENT OF FUNCTIONAL NERVOUS DISEASES BY THE RELIEF OF EYE-STRAIN.*

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(*Concluded from page 6.*)

Case XI. *Chronic Epilepsy.*—Male, unmarried, aged twenty years.

*Family History.*—No consumption among the ancestors or immediate family. Several members of the family suffer from headaches.

*Eye-defects.*—Hyperopic astigmatism (0·75 Dc. and 0·50 Dc.); esophoria (manifest) of 6°; and latent hyperphoria of a very high degree. The latter has proved very persistent, and has only lately been satisfactorily corrected. The progress of the case has also demonstrated that a high degree of latent esophoria had to be corrected in excess of what he at first manifested.

This patient was a victim to the severest type of chronic epilepsy. His attacks were extremely frequent and severe. Going from light into darkness would invariably cause an attack and a total loss of consciousness. I personally attended him, in connection with Dr. G. W. Leonard, of New York, when he had fifty-two epileptic seizures in eight hours, each fit lasting exactly three minutes. All medicinal treatment had proved inoperative. His attacks began while he was at school as a child, and were preceded by a difficulty for months of keeping his place on a page while reading. He used to hold his finger on the line to aid him in reading.

His improvement, after repeated tenotomies upon both interni and the left superior rectus, has been most remarkable. His attacks have been decreased over 75 per cent. He is still under observation, with a prospect of still greater improvement, if not of a permanent cure. He has taken no bromides or medicine of any kind save an occasional diuretic (tincture of iron) for sluggish kidneys.

The photographs of this patient, which I now exhibit to you, hardly show the happy change which has occurred since the last was taken, in spite of the complete cessation of the bromides for about eighteen months.

In place of the dull, apathetic, and sluggish features which indicate the impaired mental state of the patient from the bromides, you can see in the second photograph the animated expression and the shortening of the face, which are much more apparent to-day even than when it was taken. The change in his general health and physical strength has been even more marked than his facial changes.

Case XII. *Chronic Epilepsy.*—Female, unmarried, aged nineteen years.

*Family History.*—Paternal grandmother died of phthisis. The mother has migraine. The brother has migraine. A paternal aunt was insane.

*Eye-defects.*—A high degree of myopia (3·75 D.) and myopic astigmatism (1·50 D.). Esophoria (manifest) of 9°. A high degree of latent hyperphoria was also discovered later.

Prior to my first examination this young lady was considered a hopeless epileptic. She had been for years under the care of several of our most noted neurologists and oculists. After a partial relief of her abnormal eye-tension by tenotomies, she went over seven months without an attack, and regained her mental faculties, which had been somewhat impaired by bromides. Within the past four months she has had six attacks of epilepsy, two of which followed fright, one an imprudence in eating salads very late and immediately before going to bed, and the fourth after the excitement attending a departure for a pleasure excursion. She has lately manifested a latent muscular defect which I have yet to overcome. From a letter addressed me by her father not long since I quote the following paragraphs:

"Nothing but an inability on my part to pay for your services would persuade me to remove my daughter from your care, and if I could not pay, I would ask you for charity to keep her.

"Her whole being has been altered, and her physical condition is better than for eight years."

The photographs of this patient, which I now exhibit, show a very marked alteration in her physical and mental states, as a result of the relief of the muscular errors detected in the orbits. She is now allowed to enjoy privileges which were considered impracticable prior to this treatment, such as an unrestricted diet, horseback exercise, visits to the city unattended, attendance at social gatherings, etc.

As this case is well known to some prominent medical men of this city, it may be proper for me to state that since October 10, 1886 (some fifteen months), this patient has had but eight epileptic seizures. Prior to that date my records go to show that, even when under bromides, from one to six fits a day often occurred, and that the nocturnal attacks (which were very frequent) were not always noted. It is safe, therefore, to say that, had she received no medicinal treatment or correction of her eye-defects during the past fifteen months, the total number of seizures would probably have been more than a hundred times this number. She had been known to have as high as seventeen epileptic seizures during one night. Her attendant has assured me that since my treatment was commenced all nocturnal attacks have ceased.

The point may be raised that a report of any epileptic case, until the full limit of three years has been passed without an attack and without the employment of any medicine which would control the epileptic tendency, must be considered as somewhat premature. In reply, I would say that the cases I have brought forward are not represented as cases of radical cure. They are adduced simply as a clinical evidence that the frequency of such attacks has

been greatly modified, and in two instances completely controlled for long periods of time without the aid of drugs. On the other hand, there are now to my knowledge several cases of chronic epilepsy similarly treated that might be brought forward (did I deem it necessary to quote from the experience of another) which have fulfilled all the requirements which would justify the belief in a radical cure of chronic epilepsy. One of these patients has passed over seven years without a fit, and several have exceeded the three-year limit.

We all admit, I think, that epilepsy is certainly the gravest of all the functional nervous maladies, and that it is, as a rule, incurable by drugs; hence, as I have remarked in a previous discussion concerning this subject, "one radical cure of epilepsy without the aid of drugs offsets a thousand failures as a scientific proof of a discovery."

It is impossible for any one not familiar with the difficulties encountered in the treatment of these subjects (already discussed) to appreciate the fact that, in some cases of epilepsy, eye-defects may exist which can not be thoroughly rectified; and that, even in favorable cases, time and patience are important factors in the treatment.

Epileptics usually present, in my experience, in addition to errors of refraction, anomalies in both the lateral and vertical movements of the eyes; and in some cases the oblique movements are probably at fault. Moreover, experience with these subjects demonstrates clearly to my mind that the muscular anomalies which exist are generally "latent" to a marked degree.

It should be remembered also that a victim to chronic epilepsy who is rendered by any treatment as free from attacks *without the bromides* as he was when under their deleterious influence, has been *very markedly benefited;* again, that if a marked diminution of the attacks has been effected, the patient has double cause for gratitude; finally, that if the attacks are arrested *in toto* without drugs, it is to-day one of the most remarkable facts recorded in medical literature.

There is a point where opposition to carefully made clinical statistics respecting new views ceases to be conservatism. True conservatism is the brake upon the engine of progress. It is to be used in checking its speed when going too fast, but not in preventing its advance, even if the country is an unexplored field. Too often in medicine the term conservatism has become a favorite synonym for bigotry and intolerance.

Respecting the *relationship of chorea to anomalies of the visual apparatus* I would make the following suggestions:

1. Choreic subjects belong to one of two classes: (1) Those who tend to get well under almost any treatment or even without treatment, and (2) those who fail to get relief from any medicinal aid. The latter tend to run a chronic course, usually one of unfavorable progression.

2. The chronic form of chorea is one of the most serious and hopeless of nervous maladies. It is not infrequently associated with epilepsy or with mental impairment.

3. Both forms of chorea are based, as a rule, upon a well-marked neuropathic or tubercular predisposition.

4. The pathology of chorea is not known. No one has ever proved that it was a "constitutional disease," in the sense that an organic lesion was essential to its development.

Now, the remarkable case which I report belonged, without question, to the class which I think is generally regarded by neurologists as incurable, and as offering but little hope of marked improvement under any form of medication. In this girl, at least, all such attempts at relief had proved of no benefit. The convulsive movements had persisted for over thirty years, and the condition of the patient has steadily grown worse in spite of the best medical care. She had probably had a few epileptic seizures in girlhood, but her mind had remained unimpaired.

When Dr. G. T. Stevens read his paper on the relationship between refractive errors and chorea in 1876, he advanced views that were new to the profession. Within a year a paper on the same subject was published by another,* in which the view of Dr. Stevens, that hyperopia constituted an important element in most cases of chorea, was very stongly combated. The latter paper has been quite extensively quoted. It may not be inappropriate for me, therefore, to carefully analyze the paper referred to in this connection, as I feel that the conclusions of the critical reviewer are misleading, and certainly not in accord with my own observations.

This observer drew his conclusions from an examination of thirty-one cases of chorea, most of which, if not all, were taken from dispensaries. It is safe to infer, therefore, that the patients were not well educated. They may not have even known their letters sufficiently well to be regarded as accurate in reading test-type.

In the second place, the ages of the thirty-one patients reported show that twenty-two were less than twelve years of age. Four were six years of age, and one was only three and a half; one was seven, three were eight, three were nine, four were ten, and six were eleven years old. The question naturally arises whether (at these ages) the tests of vision usually made by the aid of test-types when the patient is well under atropine are reliable in children that are presumably ignorant.

In the third place, seventeen out of the thirty-one patients were found to be emmetropic in one eye or both when atropine was used by this observer. This is certainly a very remarkable fact, as it is a proportion which is contradicted by statistics gathered by equally competent observers from the examination of children's eyes under atropine.†

In the fourth place, the percentage of hyperopia and hyperopic astigmatism combined constitutes, according to this observer, about 55 per cent. of the total number. No myopia or myopic astigmatism was detected in any of the thirty-one cases. The latter fact is remarkable, and seems

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* Dr. C. S. Bull, "Med. Record," June, 1877.

† Cohn shows that, in 299 eyes under atropine, no case of absolute emmetropia was detected. Hausen found but 26 emmetropic eyes in 1,610, and Dürr but 30 in 414. A. Randall states, in his article on "The Refraction of the Human Eye, a Critical Study of the Examinations of the Refraction, especially among School-children" ("Am. Jour. of the Med. Sci.," July, 1885), that only $7\frac{36}{100}$ per cent. of 1,834 eyes of infants and school-children were found to be emmetropic.

to cast further doubt upon the cases reported as "emmetropic."

Again, nineteen of the thirty-one patients are reported as having had "insufficiency of the interni." Now, I have examined within the last three years the eyes of a very large number of patients who were afflicted with various nervous disorders, and I have given special attention to the state of the eye-muscles detected by appropriate tests in these cases. I have found the condition of "insufficiency of the interni" to be a comparatively rare one when Graefe's test was employed with the test-object (preferably a candle-flame) at twenty feet from the eye. It is reasonable to infer, therefore, that the tests made by this observer were such as to require accommodative efforts (probably the line-and-dot test at fourteen inches). Such tests, if made under atropine, are certainly open to criticism and probable correction. Even if not made under atropine, this form of test is only of value in connection with the other.

The critical reviewer mentions a certain "Martin family" as a proof to his mind that a "neurotic taint" exists in choreic subjects. Now, the four choreics of this family were all hyperopic, while five who were not so had no chorea. This fact would seem to confirm Dr. Stevens's view. No one disputes the fact that a "neurotic predisposition" is present in most choreic subjects; but the view that eye-defect tends to create this tendency seems to be less generally accepted.

Finally, the paper here referred to notes a failure to relieve the chorea by the use of glasses, in a few cases where the patients were able to purchase them. If other serious defects existed besides the hyperopia (to the extent shown in the examinations reported by this observer), this is not to be wondered at. Hyperopic glasses will not relieve "insufficiency of the interni" (frequently noted by this observer in his choreic subjects); and the latter is certainly a well-accepted cause of reflex disturbances when it exists, as well as the latent hyperopia that was alone corrected.

In preparing this lecture I have looked carefully over the records of all cases of chorea which I have personally tested for anomalies of the visual apparatus. I have not found a single case where either "manifest" or "latent" hyperopia did not exist. I do not mean to assert that this statement proves anything—but it certainly seems a very strange coincidence, if such it is.

Respecting the "neurotic taint" to which this reviewer attributes the origin of chorea, I would respectfully refer my hearers to a study of this question and its dependency upon anomalies of the visual apparatus in a paper previously quoted from,* and also to tables of a similar purport published (since that article was read at the International Medical Congress) by Dr. George T. Stevens, in his work on "Functional Nervous Diseases." †

I feel that I must add one statement in reference to the *dependence of typical sick headaches and intractable neuralgias upon eye-strain.*

For ten years past I have stated in my lectures that I had yet to encounter a case of typical and periodical sick-headache in which the eyes themselves or the eye-muscles were not at fault. I have never seen any occasion to modify or retract this apparently sweeping assertion. Respecting chronic neuralgia, my experience teaches me that eye-strain is its cause in a very large percentage of such cases.

I would state, however, that I do not regard ophthalmoscopic tests for latent refractive errors as conclusive,* because I have too often found such examinations (even when made by those most skilled in that special line of work) to be in error. I have detected this error by means of the full effects of atropine upon the accommodation of the patient and the employment of Snellen's test-types. In very young children, and in the ignorant classes who can not read test-type, the ophthalmoscope unavoidably becomes the only means of determining refractive errors with an approach to accuracy.

* "Med. Register," November 19, 1887.

† D. Appleton & Co., 1887.

* There are two sources of error which are possible in all ophthalmoscopic examinations as a step toward the determination of refraction. The first of these is that the observer may not be able to perfectly relax his own accommodation while using the instrument. Most oculists of large experience believe that they can do this with certainty—a belief which is perhaps not always well founded. The second source of error lies in the accommodation of the patient. This can not always be relaxed by instructing the patient to look at an object twenty or more feet distant from the eye. I am satisfied that mistakes in the determination of refractive errors by the ophthalmoscope are far more frequent than are generally supposed. For the past three years I have examined the eyes of almost every patient intrusted to my care by the aid of test-type after the pupils have been fully dilated by atropine. I am not aware that I have ever lost a patient by the use of this drug. In my experience, intelligent persons are always willing to submit to a temporary inconvenience for the purpose of obtaining *positive information* respecting any point that is deemed of scientific value in relation to themselves. I have personally come to regard the ophthalmoscope as an unreliable instrument for the determination of refraction. Its use is rendered compulsory, however, in very young children, and in those who, from ignorance or feeble-mindedness, are unreliable in their reading of test-type. It is generally accepted, furthermore, among our best oculists that astigmatism (a recognized source of nervous perplexity) is always estimated more accurately with the pupil widely dilated by atropine than with the normal pupil. The reasons which I have already given must suffice to explain why the use of atropine constitutes a most important preliminary step to the detection and estimation of any error in the eye-muscles, although many other arguments might be brought forward to prove its advisability in some subjects. Again, the view is held that no examination for suspected muscular error in the orbit should be regarded as conclusive for diagnosis, or as a basis for any surgical procedure, until the eye has been proved to be free from refractive error, or rendered as nearly emmetropic as possible by properly selected glasses. It is, of course, advisable during the first interview with each patient to note and record any "manifest" defect in sight. If such exists, each eye should be provided with the glass which gives the best vision for each eye (the two eyes being always tested independently of each other). After such correction, the different tests employed to detect muscular anomalies should then be made, and the results of each test should be recorded as the "manifest muscular error." At the second interview, with the pupils fully dilated by atropine, the same steps should be repeated. We thus learn, in many cases, the existence of refractive conditions which the first interview did not reveal. We record such as "latent" refractive conditions. By the aid of suitable glasses any latent refractive error found is then to be corrected; subsequent to this correction the muscular movements are to be tested with each eye temporarily adjusted to distant vision by suitable glasses.

The muscular apparatus of the organ of vision is too intimately associated with sight-perceptions (because such perceptions serve to call the eye muscles indirectly into action and to regulate eye-movements) to be physiologically considered as an independent piece of mechanism from the eye itself; hence in all cases it is vital to success in treatment that the nearest possible approach to emmetropia should be obtained in every patient before the muscles are examined for disturbances of equilibrium. Very marked disturbances in the proper adjustment and tension of the eye-muscles which apparently exist in some subjects may be modified or be totally corrected in some patients by the fitting of a proper glass to each eye.

Now, I would call attention to a very important clinical fact—viz., that the amount of error detected in any given case, when the eye-muscles are tested, does not necessarily indicate the full amount of abnormal eye-tension that actually exists. The results of ordinary tests simply tell us *how much eye-tension exists which the patient can not overcome by any effort of which he is capable.* Upon this one point too great stress can not be laid, as it sheds much light upon the clinical history of many patients who suffer from eye-strain. All authorities recognize the fact to-day that a patient may have a very marked congenital shallowness of the eye, and apparently have normal vision, or possibly appear to be even near-sighted prior to the use of atropine. Subsequently to its use, the same patient will, however, show a high degree of far-sightedness (hypermetropia), because the ciliary muscle (temporarily paralyzed by the atropine) can not overcome or (to speak more technically) compensate for the abnormal shallowness of the eye. Unfortunately for science, we have as yet no drug which aids us in determining the existence of a "latent" muscular error in the orbit, as we are now able to do by the aid of atropine in case a latent refractive error is suspected to exist in a patient.

Yet are we justified in concluding that latent muscular anomalies do not exist? Most assuredly not. There is the strongest clinical evidence to the contrary. A few months ago I examined the eyes of a prominent physician on three consecutive days, and I was unable to detect (either before or after prismatic exercise of his eye-muscles) any change in his ocular condition from the one noted at the first examination. His symptoms, however, led me to believe that a greater muscular error existed than he showed, although the anomaly detected was a very marked and important one. I therefore instructed him to wear a prism until the next examination, which fully corrected the error then detected. Less than two hours later I accidentally had the opportunity of again examining his eyes. His muscular error was then, to my surprise, exactly double what it originally appeared to be. He was again given a full prismatic correction for the defect detected. Twenty-four hours later he was examined for the fifth time, and he still showed an excess of two degrees over the record of the day previous. He was again given a full prismatic correction; but from that time he failed to exhibit any further alteration in his ocular tests. The relief afforded by prisms* was so instantaneous and permanent (while they were worn) as to prove conclusively that the prisms were wisely selected, and that

* Prismatic glasses are not only inadequate as satisfactory remedial agents in most cases, but they may be positively injurious to certain classes of patients. Few, if any, of our prominent oculists have perhaps ordered as many prismatic glasses as the chief advocate of the method now under discussion. Yet, in spite of this fact, strict limitations upon their field of usefulness (not generally taught) seem to be rendered probable by late investigations. A careful study of the different movements of the eyeball, and of the combination of muscles required to produce some of them, must impress even the most casual reader with the idea that an agent (such, for example, as a strong prism) which tends to restrict the movements of any one muscle may do harm if persistently worn. Some patients are peculiarly susceptible to such influences. I have encountered a large number of patients whose eyes refused to tolerate a prismatic glass. Their symptoms were at once made worse whenever they attempted to correct an existing muscular anomaly by wearing a prismatic glass. On the other hand, many patients are benefited at once by the use of prisms, and suffer no inconvenience of any kind from them. What are we to infer from this statement? Are we to surmise that the prisms were either injudiciously selected or improperly placed, simply because the patient could not tolerate them? I think not! Such might possibly be the case in the hands of a novice, but presumably it is not the case in the experience of one skilled in eye examinations. My own experience in several such instances has shown me that a tenotomy of the muscle exhibiting the greatest tension has been followed by a complete cessation of the nervous symptoms for which the patient sought relief, in spite of the fact that prisms prescribed to correct the same error have proved intolerable to the patient, and have markedly aggravated the symptoms.

There is, however, a practical and important field for prismatic glasses. It is well to keep, as a part of a physician's office equipment, a large number of prisms of different angles. These can be slipped into a frame with the base inward, outward, upward, or downward, as the exigencies of any case seem to demand. They may be loaned from time to time to patients, for the purpose either of verifying a diagnosis or of developing a latent muscular error which the physician may be led (by repeated examinations of the patient) to suspect. When they are well tolerated, the physician may often learn a great deal by their protracted influence. When they are not well borne, it is advisable, as a rule, to discontinue their use at once. It is often wise to prescribe a prismatic glass, also, for a class of patients who are unable (for one reason or another) to submit at the time to tenotomy. Sooner or later, I find that such patients usually return. As a rule, they do so for one of the following reasons: (1) Because they have developed an additional "latent" muscular error, which the prisms naturally failed to correct; (2) because they do not tolerate them well, and are made decidedly worse by their use; (3) because they prefer a tenotomy to the inconvenience of a glass which has to be constantly worn; and (4) because they suffer from eye-fatigue on account of the disturbance to co-ordinate movements of the eyeball. There is no doubt that very many persons with nervous diseases are materially helped (if not radically cured) by the aid of prismatic glasses; but the question naturally arises to my mind in this connection, "Would they not have been more rapidly benefited and permanently relieved with far less inconvenience to the patient by tenotomy?" The view is held that *tenotomy is the only way of permanently relieving abnormal tension of a muscle in the orbit.* There are only two ways of overcoming an abnormal tendency of the visual axes to deviate from parallelism whenever the eyes are directed upon an object more than twenty feet off. One of these is by the aid of a prism; the other is by tenotomy of the muscle which directly aids in producing and perpetuating the deviating tendency. Whenever prisms are prescribed, they afford relief practically in the same way as a "rubber muscle" does in orthopædic surgery; in other words, they compel the muscle which is opposed to the base of the prism worn by the patient to overcome the antagonistic muscle, and also to so adjust the eye as to compensate for the refractive effect of the prism. They practically act, therefore, as a "pulley-weight"—a mechanical device seen in all gymnasiums. Now, if the wearing of prisms had no deleterious action upon those particular muscles, which, in each case, are not at all at fault, and if they invariably exerted only

the "latent" insufficiency which developed after their use more accurately represented his true condition than the original observations made at our first interview.

I mention this case not because it is at all unique (for many such instances have been observed), but because it illustrates admirably the existence of "latent" insufficiency, which happened in this case to be developed by the temporary use of correcting prisms.

In the second place, it is not at all uncommon to observe the development of latent muscular anomalies in the orbit, sooner or later, after a partial tenotomy has been satisfactorily and scientifically performed for the correction of a "manifest" muscular error. Sometimes quite a long interval elapses before latent insufficiency shows itself. Again, it shows itself almost immediately.

An epileptic upon whom I operated for eye-defect, who has now been free from attacks for over a year and a half, in spite of the cessation of all drugs, showed me originally only one degree of esophoria. This defect would, I think, have been heretofore regarded by most oculists as hardly worthy of correction, even by a prism. The subsequent treatment of this case demanded repeated tenotomies upon both of the interni, and proves not only that I had a high degree of "latent" trouble to correct (which a one-degree prism would not have helped), but also that the attacks have thus far been totally arrested by the relief of abnormal eye-tension.

In the third place, it has been proved that systematic daily exercises of the various eye-muscles (accomplished by teaching the patient to fuse images which have been rendered momentarily double by a prism held before the eyes) will, in some cases, develop latent muscular anomalies of the orbit.

Finally, it may be stated in this connection that one examination of the various eye movements is not, as a rule, sufficient for a positive diagnosis respecting muscular anomalies. Repeated tests have often to be made before a complicated problem may be satisfactorily solved, even by an expert in this line of examination.

Before I leave this subject it is but proper to say that the cases reported by me (while not a large number in the aggregate) were, without exception, well-marked cases of typical and intractable neuroses. The improvement noted in each case after well-directed treatment of the eyes or the eye-muscles tends to cast a doubt upon the existence of any organic disease. No other causes of reflex nervous disturbances outside of the eyes were detected after a careful search in any of these cases; otherwise it would have been my manifest duty to *relieve all that were found* in my efforts to benefit the symptoms manifested by each patient.

beneficial effects, this principle of treatment could be more generally applied with benefit. Even then the existence of "latent" insufficiency might, unfortunately, remain unrecognized for a greater or less period of time, possibly to the serious detriment of the patient. On the other hand, if it is satisfactorily demonstrated that tenotomy has been rendered a safe and accurate method of correcting muscular anomalies in the orbit, a fact has certainly been noted that opens a new and shorter route to relief. Such a step enables us, moreover, to decide the question of "latent" muscular defects in any given case.

It is not to be expected, nor do I anticipate, that views so radically opposed to the ordinary methods of treatment by medication, now generally advocated for functional nervous diseases, will be accepted at once by the profession at large, even if correct and satisfactorily demonstrated. No great advance in science has ever been made until time has tempered prejudice and modified the prevailing tendencies of thought.

Of late years we, as a profession, have had our attention drawn, however, more seriously than ever before to the clinical importance and the necessity of detection of remote sources of irritation to the nervous centers. We have already learned that the ovaries, the womb, the prepuce, the urethra, the rectum, the alimentary canal, etc., can, in some instances, induce serious nervous conditions which closely simulate the evidences of organic disease. Complete paralysis of both legs has been known to be cured in a child by circumcision. The operation devised by Battey for the removal of the ovaries in subjects attacked with hystero-epilepsy is to-day sustained by the profession, and often performed with the view of removing a merely supposititious source of reflex disturbance. This supposition, in many cases, is based, unfortunately, upon data much less scientific and therefore less reliable than the tests employed to detect anomalies of the visual apparatus. It is safe to question, therefore, if the source of reflex irritation in many patients of this class has been carefully sought for, and if it does not lie more in the eyes than in healthy ovaries,* which are not infrequently sacrificed. Personally, I should not feel justified in taking so serious a step with any patient until every other possible cause of reflex disturbance had been carefully sought for in vain.

There is no doubt that many physicians of prominence are devoting more attention to-day in their practical office work to the determination of latent refractive errors in the eye and disturbances of equilibrium in the eye-muscles than was their habit in years past.

This long-neglected but important element in the "neuropathic tendency" (and perhaps also in the "tubercular predisposition") is now receiving from many sides the most thoughtful consideration. Sooner or later, in my opinion, our views of the causes of functional nervous disease will no longer be those now advanced in most of the works devoted to that field. We shall in time more clearly recognize the fact that drugs do more harm in functional neuroses than good whenever any exciting cause of such a morbid condition persists and can be removed; just as we to-day rely, in case of a joint-disease, more upon mechanical separation of the surfaces of the inflamed joint than upon anodynes to relieve the pain. We shall learn to search more carefully and intelligently for obscure causes of reflex disturbances, and to try the effect of their removal before we resort to drugs. Medication must eventually, in my opinion, become the *dernier ressort* of the physician, in this particular class of nervous diseases, rather than the haven of refuge.

* Cysts in the ovary are seldom, if ever, wanting; hence they can scarcely be pronounced (when small) an evidence of disease.

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## EVIL FROM THE STANDPOINT OF FACT.

What is evil? Webster defines it, according to the customary meaning of the word, as "that which produces unhappiness; anything that directly or remotely causes suffering of any kind to sentient beings; disease; calamity; moral depravity." It will be perceived that it is a bold, significant reality, requiring the nicest tact and discrimination in its management. To know how to deal with it at all effectively, a knowledge of its true character and proper place in nature is of first necessity. The origin of evil has long puzzled sages, and fairly bewildered poor simple folk. Savages attribute it to the influence of malign spirits. Others have imagined two divine principles, opposite and antagonistic, one friendly and the other hostile to man. This view is fully as reasonable as that of the Greeks, who ascribed the misfortunes of mankind to the jealousies and other failings of their gods. Attempts to place the origin of evil outside the lines of nature have not met with marked success. Science—happily defined as the orderly arrangement of facts according to an underlying principle—comes to the rescue, and throws light that is positively electric across the path where philosophers, theologians, poets, and sages have groped in vain. She alone discovers, observes, classifies the fruits of good and evil, reduces their phenomena to law, and deals with them as fixed and certain entities that *must be* when the conditions that lead to them are permitted to exist.

A thoughtful consideration and patient study of facts reveal two natural causes for evil. First, there is the most wonderful of all wonderful phenomena, at present inscrutable, that physical and mental qualities, both good and bad, pass down from one person to another in parental or ancestral line, and this so truly that one generation implants into the generation following its virtues and vices, together with the varied combinations of these same strong points and weak points as well. This is descent of evil or of good, of evil *and* of good, phenomena of conception known as heredity. It is a marvelous factor and almost unknown quantity in the formation of structure, quality, and character. The gate of gifts closes upon a man as soon as he is born. "With high magnifiers, Fraunhofer and Dr. Carpenter might come to distinguish in the embryo at the fourth day—this is a Whig, and that a Free-soiler." Yet a certain kind of freedom is one part of fate. For ever wells up the impulse of choosing and acting, an impulse, a power, that may be defined as the vitality of nature always coming to the rescue, to equalize forces and maintain equilibrium, in spite of the tyrant circumstance.

Other physical and mental qualities which are not due to heredity are acquired by imitation at the period of life when imitation is easiest; and these qualities, called into being during the plastic age, good and not good, depend upon the shaping of the life, the mode of existence, the environment. The spirit makes its own house, but afterward the house confines the spirit. "Being made, 'tis circumstance that fashioneth us all." This fact is recognized by the Jesuits, who say that if they can have possession of a child till he is seven, they care not who has him afterward. They are in part right, for early impressions are the strongest. Environment is at once the most hopeful and the most hopeless of forces. There is no escape from its influence—at least not till the philosophic mind is acquired. Then plastic childhood is over, and habits of thought are more or less crystallized. Before that time—such is the vitality of kind, gentle, and just Nature—good environment will overcome poor inheritance, and make the *born* bad good in one generation of goodness. Whoever has strength enough to be wicked has force enough to be good, if only taken in time. Better a live dog than a dead lion—better anything than weakness, which is stagnant. "Send me bad boys," writes a Western farmer in need of help, "work will make men of them." Energy that finds its expression in deeds of violence may be turned into useful channels, and become, as by magic, a benefit instead of a curse to humanity. The innate qualities of some evils may thus be transformed, as when the child, let us say, of a clever forger is taught draughtsmanship, and his hereditary, instinctive faculty is directed into an analogous though healthy channel, thereby making him a skillful artisan and curing his tendency to crime. As force can not be destroyed, it is less expensive to utilize than to suppress it. Waste not, want not, is good advice to those dealing with disorderly energies. If the children of generations of pickpockets are taught to use their criminally deft fingers and delicate touch in some handicraft requiring special capacity of finger, such as watch-making, a healthy function is supplied for a nervous proclivity and a muscular aptitude that would otherwise prove a source of constant temptation. But to attempt to abrogate utterly any criminal tendency without utilizing it in some healthy direction is like trying to sweep back the waves with a broom. As well say "Don't boil!" to the kettle on the glowing coals. Bluff old King Hal was wise in his generation. When Gerald, Earl of Kildare, then in rebellion against him, was brought to London to be examined before the Privy Council, somebody said: "All Ireland can not govern this earl." "Then let this earl govern all Ireland," replied the king. So the rebellion came to an end. Perhaps evil is something like dirt as defined by Lord Brougham—a good thing out of place. At any rate, the force that produces evil is a good thing. It only needs a change of direction at the right time to make it good in its results.

What are the facts in the case? On one side is heredity, on the other environment, and somehow pervading both that mysterious something—called for convenience the vitality of nature—a force "that makes for righteousness" or equilibrium. This is all there is to life. These are its physiological bounda-

ries, and within these lines alone is to be found the vast and only scope of human effort. Heredity and environment are the natural sources of good and evil, the natural sources of power, will, freedom, thought, and necessity, the sum and substance of our being.

Evil is any sheath and clog of organization that man has outgrown. It is an expression of some energy of the kind the occasion no longer requires. Much present evil was once good, born of savage necessity in primitive times, now without reason for being, and destined to be driven forth by the further education of the will. The first and worst races are dead; poor races are dying or waiting to mature into higher. Evil contains within itself the elements of dissolution. It overcomes itself, it disperses. To carry on evil, to be evil, is to suffer disease and prematurely to die. There is not a single instance of a wicked man who is free from disease of body or mind, or who approaches to the attainment of a healthy life. "The wages of sin is death"—is dispersion. Nature removes by degrees whatever is out of harmony with the environment. If the wicked—that is, the undeveloped, the inharmonious—flourish like a green bay-tree, it is only for a time. Whoever plays ill at the game of life is checkmated—without haste, but without remorse.

How to live? That is the problem. What are we set on earth for? To toil? To wrestle, not to reign? Let us frankly say that the education of the will is the object of our existence. This education means incessant change; it is constant expansion from lower to higher forms of self-control. Joy, grief, success, daily dyings, the tongues of evil men, the love of pure souls, are alike means to this end. All there is educates. The vale best discovereth the hill, as Bacon has it; and to know great good means a close acquaintance with little ills. Who are these arrayed in white robes? asks the seer of the Apocalyptic vision. These are they which came out of great tribulation, is the answer; and they hunger no more, neither thirst, and all tears are wiped from their eyes. We speak of sufferings and trials as good, perhaps, in their results; but we hardly admit that they may be good in themselves. Yet they are knowledge—how else to be acquired unless by making men as gods, enabling them to understand without experience? Is there more than one law in nature? Listen to our own Emerson: "Let us build altars to the blessed unity which holds nature and souls in solution, and compels every atom to serve a universal end. Let us build altars to the beautiful necessity which secures that all is made of one piece; that plaintiff and defendant, friend and enemy, animal and plant, food and eater, are of one kind . . . to the necessity that rudely or softly educates man to the perception that there are no contingencies; that law rules throughout existence; that it dissolves persons; vivifies nature; yet solicits the pure in heart to draw on all its omnipotence." Again, what is evil? It is immaturity, ignorance, blindness. It is anything out of the order of time. It is the thing not needed or outgrown—erstwhile useful, perhaps, now useless in its present guise. Evil must either change or die. It does change and it does die.

### THE ANNUAL REPORT OF THE SURGEON-GENERAL OF THE ARMY.

The Surgeon-General's report for the fiscal year ending June 30, 1887, is a document of unusual interest. The subject of the health of the army, with its bearing upon the general health of the country, is treated of from a somewhat novel point of view founded upon a division of the United States into certain natural sections. These sections are eleven in number, and they are termed the Atlantic Coast, the Eastern Timbered Plains and Hills, the Appalachian, the Northern Lakes, the Central Timbered Plains and Hills, the Alluvial, the Gulf Coast, the Prairies, the Great Plains, the Cordilleras, and the Pacific Coast. The division is a modification of one made by Mr. Henry Gannett, of the Geological Survey, used in the compilation of the mortality and vital statistics of the Tenth Census, and is shown in a map accompanying the report. The army is so small and so broken up into small commands scattered over a vast territory that there is little if any ground for generalizations from a single year's observations of the influence of meteorological, geological, and other natural conditions upon its health, but similar observations continued for a number of years can not fail to put the Surgeon-General's office, and consequently the medical profession, in possession of data of the most available kind for forming conclusions. In one of these regions, indeed—the Alluvial—comprising the territory stretching along the Mississippi River and the Red River, no troops were stationed during the year 1886, and the mean strength of our entire army was only about half that of so small a nation as Belgium.

The territorial division mentioned is kept in mind throughout the report, in so far as it has any bearing upon the particular subject under discussion, and therefore it is in no narrow sense that the comparisons suggested are set forth; comprehensiveness of view characterizes the document from beginning to end. It is no easy task to make a report on such a plan, and all the more credit will be accorded to the Surgeon-General for having done it when it is remembered that nothing of the sort is demanded by law, precedent, or orders. It is a genuine and highly creditable contribution to a study that is destined to play a great part in the future sanitation of the country, civil as well as military.

In addition, the subjects usually treated of in the army medical reports are dealt with in a very satisfactory manner, and the whole report is well worthy of the careful attention of sanitarians.

## *MINOR PARAGRAPHS.*

### THE NEW YORK POST-GRADUATE HOSPITAL.

The annual report of this institution, for the year ending May 1, 1887, shows that 4,734 new patients were treated in the dispensary, and 172 in the wards, the latter number including 148 infants treated in the Babies' Ward. During the summer a large surgical ward for women was opened, and a new ward for the surgical diseases of men has been fitted up. The directors announce their purpose of adding a lying-in ward. The

hospital is in need of more room, and it is properly urged that, as it is not and never can be self-supporting, it is a fit subject for the munificence of those who are sufficiently enlightened to appreciate the great value of such institutions to the advance of the medical art and consequently to the welfare of the community.

### THE HENDON COW DISEASE.

In connection with the outbreaks of a disease supposed to have some points in common with the scarlet fever of the human subject that have occurred at Hendon, in England, mention of which will be found in our account of the proceedings of the New York Academy of Medicine at its meeting of December 1, 1887, it is interesting to note the observations and conclusions set forth by Professor Crookshank, of the Bacteriological Laboratory of King's College, London, in a communication made to the Agricultural Department of the Privy Council, an abstract of which is published in the "Lancet" for December 17th. Professor Crookshank, acting under directions to investigate an outbreak in the light of Dr. Klein's previous observations, found a disease which he concluded was nothing else than cow-pox.

### M. PÉAN.

A banquet was lately held in Paris in honor of M. Péan's nomination to the *Académie de médecine*. To judge from the accounts given in the "Bulletin médical" and the "Progrès médical," the occasion was notable for the attendance of a great array of distinguished men, including the ever youthful Ricord, now eighty-seven years old; also for the speech made by M. Lepage, who dwelt upon the fact that M. Péan was one of those hospital surgeons who were not afraid to give the *internes* opportunities to perform operations—a practice, he said, that was truly French and in marked contrast with the customs beyond the Rhine, where the policy was to keep the young men down, in the interest of various personages.

### APHASIA AND LEFT-HANDEDNESS.

An account of an interesting case of aphasia in a left-handed person has recently been published by Sir George Paget, the Regius professor of physic in the University of Cambridge, as our London correspondent informs us. The patient was a clergyman of great intellectual powers who had a transient attack of right hemiplegia with aphasia, recovery being complete in about thirty hours. Subsequently he had left hemiplegia, but no aphasia, and from the effects of this he ultimately died. As already stated, the patient was naturally left-handed and he used his left hand by preference in everything except writing, and he was in the habit of writing much. According to the ordinary rule he should have had aphasia with his left-sided paralysis, and not with his right; the reversal of this rule in his case may be assumed to be due to the fact that he wrote with his right hand, as it would be natural to suppose that the memory of words would go with the movements of the hand that wrote them.

### ITEMS, ETC.

**The New York Academy of Medicine.**—At the annual meeting, held on the 5th inst., it was announced that the general permanent fund amounted to $117,731.61, of which $106,218.00 were available for the erection of a new building. This was in addition to the value of the building now occupied by the Academy. One hundred and eighty new members had been elected during the year. Dr. Andrew H. Smith was elected vice-president, and Dr. Gouverneur M. Smith a trustee.

**A Legacy for M. Pasteur.**—The "Union médicale" states that Mme. Boucicaut bequeathed 100,000 francs to M. Pasteur, and the remainder of her fortune, said to amount to 10,000,000 francs, for the building of a new hospital in Paris.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 10, 1888:

| DISEASES | Week ending Jan. 3. | | Week ending Jan. 10. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 5 | 4 | 10 | 5 |
| Scarlet fever | 136 | 17 | 164 | 27 |
| Cerebro-spinal meningitis | 2 | 0 | 2 | 2 |
| Measles | 25 | 9 | 48 | 3 |
| Diphtheria | 143 | 62 | 210 | 57 |
| Small-pox | 1 | 0 | 5 | 0 |

**The Bellevue Hospital Training School for Nurses** graduated its fifteenth class, consisting of twenty-four young ladies, on Tuesday evening of this week. Dr. Charles E. Simmons, of the Board of Commissioners of Public Charities and Correction, gave an address to the class.

**American Adulterated Lard in Europe.**—A deserved rebuke has been given by the New York Produce Exchange in an answer to a communication from the *Société commerciale, industrielle et maritime*, of Antwerp, complaining of the quality of the lard received from the United States. The answer sets forth that the complaint has reference to the so-called "refined lard," over which the Exchange has no supervision, and says of this article: "Much of it is known as a compound of various substances, mostly of a fatty or oily nature, of which the major part is generally natural lard, put up by manufacturing firms in this city and the Western packing points to meet a demand principally from abroad, because of its cheapness compared with natural lard. The West Indies, the Continent of Europe, and notably the city of Antwerp, are large purchasers of this manufactured article. It does not come under the supervision of the Exchange or control of the Lard Committee in any way, but is made to order by the manufacturer to suit the requirements of the purchaser as to quality and price, and, although as a rule it is branded 'Lard' in some of its various qualities, it is so branded either by understanding or requirement of the purchaser, with full knowledge that it is an adulterated article. The *Société commerciale, industrielle et maritime* is laboring under a misapprehension when it supposes that the manufacturers of this compound are committing a 'fraud' upon the purchasers. They simply fulfill the terms of sale, and, while this committee disapprove of and condemn the practice of the manufacturer in branding this product as genuine when it is spurious, and thereby countenancing possible fraud by others, yet it must be said in justice to the American manufacturer that, if fraud, as charged by the respected society, is practiced upon the consumer, it must be so practiced after the produce reaches its Continental destination. While this committee was making this investigation it came to its knowledge that 'refined lard,' so called, was purchased with full knowledge as to quality for a Continental market at fully 25 per cent. less than the price of natural lard of contract standard on the day the contract was consummated. This tells its own story, and illustrates that, as far as Antwerp is concerned, the remedy lies with her merchants. If they will purchase from our manufacturers a genuine and not a spurious article, at its fair market value, the consumers of lard in that or its dependent markets will have no further cause of complaint."

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy during the week ending December 31, 1887:*

Biddle, C., Passed Assistant Surgeon. Detached from the Marine Rendezvous, Philadelphia, and placed on waiting orders.

Cleborne, C. J., Medical Director. Detached as member of Medical Examining Board, December 31st, and ordered to Norfolk Naval Hospital, January 5, 1888.

Bradley, M., Medical Inspector. Detached from Naval Hospital, Norfolk, January 5, 1888, and placed on waiting orders.

Clark, J. H., Medical Inspector. Detached from special duty at Portsmouth, N. H., and ordered as member of Examining Board at Washington.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the three weeks ending January 7, 1888:*

Bevan, A. D., Passed Assistant Surgeon. Resignation accepted to take effect January 31, 1888, and leave of absence extended to that date. December 31, 1887.

Bratton, W. D., Assistant Surgeon. Granted leave of absence for thirty days. December 30, 1887.

Murray, R. D., Surgeon. On being relieved at Ship Island, Miss., to proceed to Key West, Fla., and assume charge of the service. January 4, 1888.

Devan, S. C., Passed Assistant Surgeon. Relieved from duty at Port Townsend, W. T., to assume charge of Sapelo Quarantine. January 5, 1888.

Glennan, A. H, Passed Assistant Surgeon. Relieved from duty at Key West, Fla., to assume charge of the service at Port Townsend, W. T. January 5, 1888.

Carrington, P. M., Assistant Surgeon. Promoted and appointed Passed Assistant Surgeon from January 20, 1888. January 7, 1888.

**Society Meetings for the Coming Week:**

Monday, *January 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *January 17th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Franklin (annual), Kings (annual), Otsego (semi-annual—Cooperstown), and Westchester, N. Y.; Ogdensburg, N. Y., Medical Association; Connecticut River Valley Medical Association (Bellows Falls, Vt.).

Wednesday, *January 18th:* Alumni Association of the Woman's Hospital in the State of New York; Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society (clinico-pathological).

Thursday, *January 19th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *January 20th:* Chicago Gynæcological Society.

Saturday, *January 21st:* Clinical Society of the New York Post-graduate Medical School and Hospital.

## Obituaries.

**Wesley M. Carpenter, M. D.**—Last Saturday morning it was discovered that Dr. Carpenter had died suddenly during the preceding night, at the age of fifty. It was not generally suspected by his friends that his health was seriously affected, and it is said that he did not cease from his work for a single day. On Friday evening he went to bed early, on account of not feeling well, and was found dead in his bed the next day. Thus suddenly, without warning, a man whose powers had apparently not yet begun to wane, whose career of usefulness was at its height, was taken from among his fellows. The news of his death came as a personal grief, we venture to say, to all of his professional brethren who knew him, and they were many, not only in New York, where he had passed the later years of his life, but in almost every quarter of the country, for his duties had called upon him to attend many medical meetings in distant cities, and everybody whom he met on such occasions became his friend.

Dr. Carpenter was a graduate of the College of Physicians and Surgeons, of the class of 1863. Having obtained his medical degree, he entered upon the practice of his profession in a small town in the northern part of the State. After spending a few years there, he came to New York and undertook a laborious and most creditable literary career. He began by reporting lectures and the proceedings of medical meetings, and this work he kept up in a measure to the last. As a stenographer Dr. Carpenter was equaled by several medical men in the country, but not to our knowledge has any one ever approached him in the art of giving the substance of a speaker's remarks in plain and succinct language. It was his ability to do this that made him always a satisfactory reporter—one whose manuscript an editor could safely send to the composing-room unrevised. The same faculty led to his excellence also in purely editorial work, a great amount of which was done by him in his later years. In 1884 he became the editor of the "Quarterly Epitome of American Practical Medicine and Surgery." Referring to that event, we said, in our issue for April 12, 1884: "To the few who do not know Dr. Carpenter we have only to say that, if they will read the 'Epitome,' they will not be slow to discover that he knows the difference between an abstract and a clipping, and, furthermore, that he has the art of making unusually satisfactory abstracts. Add to this a wide knowledge of medicine and an exceptional conscientiousness, and we have the picture, both of Dr. Carpenter and of what the editor of such a journal should be."

When he undertook the management of that quarterly journal, Dr. Carpenter did not diminish his laborious work as a member of the staff of the "Medical Record," and he continued to contribute occasionally to our own columns. He had already written a most excellent book, "An Index of the Practice of Medicine," published in 1883. He also worked steadily in the pathological department of Bellevue Hospital, and taught in the Medical Department of the University of the City of New York, in which at the time of his death he was clinical professor of medicine.

He recognized that these manifold duties precluded his taking much part in private practice, and he forbore to seek for it. It was the general impression, indeed, that he was not in practice at all, but since his death it has become known that he did much in the capacity of a practitioner among the poor, to whom he gave his services freely and lovingly.

Dr. Carpenter was simple in his tastes, and led a very quiet life. He never made himself conspicuous, and he shrunk when conspicuousness was sought to be thrust upon him. But there was nothing of the recluse about him; he was hearty and genial in his manner, and sparkled with a quiet humor that made him a most attractive companion. On fitting occasions he showed a truly poetic fire, as was exemplified in a brief address in memory of the late Dr. Marion Sims which he delivered a few

years ago before the Medical Society of the County of New York. Under all circumstances he acted the part of a pure-minded Christian man, and of no man could it more truthfully be said that all who knew him were fond of him. His obsequies were largely attended by his professional brethren, and it is seldom indeed that, beyond the immediate circle of his family, a man's death has been so much deplored. A good man has left us; it is to be hoped that our sense of bereavement may urge us to follow the example of his blameless life.

OBITUARY NOTES.

**Samuel A. Raborg, M. D.**, of New York, died suddenly, on Wednesday, the 4th inst. The deceased was a graduate of the Medical Department of the University of Maryland, of the class of 1859. Although his death was sudden, he had for a number of months been so affected in health as to be obliged to discontinue his practice.

## Letters to the Editor.

THE TREATMENT OF HÆMORRHOIDS BY DILATATION.

27 East Forty-sixth Street, *January 7, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In the "New York Medical Journal" of August 30, 1887, p. 128, is a communication under the head "Treatment of Anal Fissure and Hæmorrhoids by Gradual Dilatation, with a Report of Cases," by H. O. Walker, M. D., etc. In this communication Dr. Walker says: "Gradual dilatation is not spoken of, as far as I know, by any writer as a means of cure in these cases."

The testimony of Dr. Walker in favor of gradual dilatation in the treatment of anal fissure and hæmorrhoids is valuable, but this method is not of recent date, as one might infer from what Dr. Walker says, but was practiced in just such cases by eminent men many years ago, as I will now attempt to demonstrate. In my treatise on the "Hæmorrhoidal Disease," published by W. Wood & Co., New York, in 1884, p. 226, I make the following remarks under the head "Gradual Dilatation":

"The treatment of hæmorrhoids by the dilatation of the anus and anal canal, by means of bougies gradually increased in size, was practiced many years before instantaneous or forcible dilatation was thought of for the same purpose. The bougie, as an efficacious local remedy in the diseases of the canal and orifice of the anus, was employed a century ago in Italy. Palletta thus briefly alludes to its use: 'Ma piu direttamente opereranno i locali remedii introdotti nell' ano: tra quali trovai protamente efficace una candeletta di cera spalmata di burro impastato con molta polvere di galla di quercia.' ('Instituzione Chirurgiche di Monteggia,' parte terza, sezione seconda, p. 521, 8vo, Milano, 1805.)

"In our own country I find that compression and dilatation were successfully practiced for the cure of hæmorrhoids by a physician of the State of Maryland in 1804. ('The Medical Repository,' 2d Hexade, vol. i, p. 339, 8vo, New York, 1804.)

"Mr. Copeland, of London, previous to 1810, successfully employed dilatation of the anus and anal canal by means of bougies in the treatment of numerous cases of hæmorrhoids. He highly recommended the practice. ('Observations on the Principal Diseases of the Rectum and Anus,' p. 67. Second edition, 8vo, London, 1814.)

"Mr. Quain also speaks in high terms of the use of dilatation of the anal canal by means of bougies in certain cases of hæmorrhoids. ('The Diseases of the Rectum,' p. 18. Second edition, 12mo, New York, 1855.)

"I have for a number of years employed dilatation of the anus and anal canal by the use of bougies for the treatment of the incipient stage of the hæmorrhoidal disease with good results. If judiciously employed at an early stage, before organized tumors have formed, it may prove the means of destroying the morbid condition of the vessels and overcoming any undue contraction of the anal sphincters, and thus preventing the further progress of the disease. For this purpose, besides using the English bougies, I have employed as a bougie my rectal exploring sound of different sizes. The influence of the bougie in removing the morbid sensibility and in relaxing the rigidity of the sphincters, as well as facilitating the return of the blood from the turgid, congested, and varicose vessels, is often surprising, and, if torpor of the rectum and obstinate constipation obtain, which are not unusual in such cases, it soon induces a natural action of the bowels, an object so very desirable in such instances."

On page 228 I say: "The able and ingenious M. Récamier, of the Hôtel Dieu, of Paris, employed gradual dilatation of the anal sphincters and inferior portion of the rectum, by means of bougies gradually increased in size, in the treatment of anal fissure and hæmorrhoids. He reports a number of cases in which this treatment was followed by complete recovery. ('Revue médicale de Paris,' Janvier, 1838.) It is very evident from the observations of M. Récamier that he did not contemplate, by either gradual, instantaneous, or forcible dilatation of the anal sphincters, any rupture of the muscular fibers, or any laceration or tearing of the mucous membrane of the rectum, as some authors have attributed to him. M. Monod, when discussing the subject of the forcible dilatation of the anal sphincters in anal fissure, and after explaining what he considered the *modus operandi* of M. Récamier's process to be, says that 'in it there occurs no rent of the mucous membrane, nor rupture of the fibers of the sphincters, but simply a modification, or a sudden change in the nervous state of the muscles, from which a momentary paralysis results, followed by the return again to the normal state.' ('De la dilatation forcée comme moyen de traitement de la fissure de l'anus avec constriction du sphincter,' 8vo, Paris, 1849.)"

On page 233 I remark: "I do not believe that, after regular organized hæmorrhoidal tumors are established, either gradual or forcible dilatation of the anal sphincters alone will, in the majority of cases, remove them. M. Verneuil, the distinguished surgeon of Paris, was one of the ablest advocates for the treatment of hæmorrhoids by the forcible dilatation of the anus; but, in order to succeed, he was compelled in the largest number of cases to combine with it the galvano-caustic method. The proceeding of Verneuil in such cases comprises two processes; first, the anal dilatation; and, second, the interstitial cauterization of the tumors. According to the testimony of M. Lartisien, M. Verneuil for several years employed forcible dilatation of the anal sphincters, combined with the galvano-cautery in the treatment of hæmorrhoids. ('Du traitement chirurgicale des hémorrhoïdes, et de la cauterisation interstitielle en particulier.' Thèse de Paris, 1873.) M. Gosselin also employed forcible dilatation of the anal sphincters in the treatment of hæmorrhoids. The cases, however, in which he used it were, it seems, complicated with anal fissure; and it was doubtless more for the cure of the fissure than for the cure of the hæmorrhoids that he employed it. ('Leçons sur les hémorrhoïdes,' 8vo, Paris, 1866.)

"Hæmorrhoids and anal fissure are two affections which often coexist, and the theory of the French surgeons is that, when such is the case, forcible dilatation of the anal sphincters cures both diseases. I have shown, however, that their theory and their practice do not correspond."

In my treatise on "Anal Fissure," published twenty years ago by W. Wood & Co., in 1868, p. 115, I say: "When the fissure is accompanied by spasmodic contraction of one or both sphincters of the anus, the healing of the ulcer is more or less protracted in consequence of such constriction, which, although a mere symptom, is nevertheless a source of considerable mischief, as it occasions much additional pain by compressing the fissure and preventing the healing of it as rapidly as it would otherwise do. This spasmodic state of the sphincter ani muscles should therefore be overcome by treatment, in addition to and separate and distinct from that of the fissure itself; not, however, by recourse to section of the sphincter muscles, according to M. Boyer, but

by the milder, safer, and equally certain method of distending them. The object of employing distension of the sphincters, by either the bougie, the fingers, or tents made of various materials, is not only to produce relaxation of the constricted muscles, but also, by the firm pressure, to render them less irritable and consequently less susceptible of the sympathetic impressions of the fissure which are in reality the cause of the spasmodic contraction. If the dilatation is carefully and gradually made, I have always found that the introduction of the bougie, excepting the first time, is attended with but little pain. Every time it is inserted the pain is less. The bougie should not be used when the patient is suffering; better wait several hours after stooling, or just before the evacuation, when all the parts are in a quiescent state. For the purpose of dilating the anus and anal canal, I use the English rectal bougies, commencing with a No. 3. The bougie must be passed through the contracted portion of the canal, and immediately withdrawn; but it should not be so large, neither should the force be so great, as to lacerate or rupture the mucous membrane or muscular fibers, this not being contemplated by the mild operation of gradual distension or dilatation. The gradual dilatation of the sphincters and inferior portion of the rectum, if judiciously performed, is speedily followed by great relief, and ultimately by complete recovery."

On page 135 of the same work I say: "In cases in which the sphincters are powerfully contracted the bougie must be laid aside and a different method adopted. In such severe cases the patient should always be first placed under profound anæsthesia, for the anal sphincters, in consequence of their functional activity in such cases, are, as a general rule, the last to relax or yield to the influence of anæsthetics. Instead of the thumbs, I then introduce into the anus the index finger of each hand, and forcibly dilate the contracted muscles, first anteroposteriorly and then laterally, at the same time taking care to preserve the integrity of the membranes."

WILLIAM BODENHAMER.

# Proceedings of Societies.

## NEW YORK CLINICAL SOCIETY.

*Meeting of December 23, 1887.*

The President, Dr. ROBERT ABBE, in the Chair.

**Multiple Neuritis following Diphtheria; Paralysis, Ataxia, and a Peculiar Deformity of the Neck.**—Dr. L. EMMETT HOLT presented two children of the same family, illustrating diphtheria in some of its more unusual manifestations. The first patient was a little girl, two years old, who had been under observation about three weeks. When she was first seen, the deformity of the spine was such as at first to lead to the suspicion that she might be suffering from Pott's disease of the cervical region. There was a very marked kyphosis extending from the fourth cervical to the second dorsal vertebra, and a compensatory lordosis of the lower part of the spine. The chin rested against the sternum. [A photograph taken at the time was exhibited.] The usual rigidity was absent, yet the parts were quite tender upon handling, and the girl was said to have cried much recently with pains about the neck. There was a smooth, nodular, bony prominence felt in the pharynx. The child had fallen down stairs, striking her head, about two months before. The friend who brought the child could give no clear history of the development of the symptoms. At the next visit it was learned from the mother that the patient had had diphtheria in August, but had escaped without complications or nervous sequelæ. About the middle of October she had a second attack, having taken the disease from a brother. This was tedious but not severe, and convalescence was slow. Except a nasal noise, no nervous symptoms appeared until about December 1st, when she was no longer able to hold her head up; this condition developed quite rapidly and was accompanied by severe pains in the neck. The gait had become somewhat unsteady. There was discovered at this examination well-marked ataxia. It was with considerable difficulty that the patient's equilibrium was maintained in walking. The gait was like that of one intoxicated, the body swaying; and falls were frequent. The pupils were normal, and there was slight convergent strabismus; the nasal twang to the voice had disappeared; the head could be slightly raised from the chest with difficulty; its habitual position was with the chin resting against the sternum. The muscles of the neck were very weak, and mobility was free in every direction. Pott's disease was positively excluded. No ataxia and no paralysis in the arms were present. The bowels were constipated; the pulse was full and regular; the general health was excellent; the knee-jerk was completely lost. An electrical examination a few days later showed good responses to a weak faradaic current in the muscles of the upper extremities. In the lower extremities a much stronger current was required, and so much pain was caused that the examination was not altogether conclusive; nor were the galvanic tests satisfactory for the same reason. There was now very marked tenderness over the sciatic nerve and its main branches. The present condition of the child showed marked improvement. The head was held almost normally, and was still freely movable; the ataxia was scarcely perceptible, although there was some unsteadiness in the gait, from weakness apparently; the tenderness along the nerve-trunks was still acute, and the feet and legs seemed generally hyperæsthetic. The treatment had been with strychnine, first in combination with belladonna and afterward alone, in doses increased up to $\frac{1}{45}$ of a grain three times a day.

The second patient, a brother of the first one, five years old, also had diphtheria in October, the attack being one of moderate severity. Nasal voice was noticed soon after convalescence began, with an occasional regurgitation of fluids through the nose. A few weeks later convergent strabismus was observed, with dilatation of the pupils. He complained of "seeing double" occasionally. As these symptoms of the throat and eyes began to pass off, decided weakness in the lower extremities developed. This did not come on until the middle of December. There was now very marked paresis of the lower extremities; he walked fairly on the level for a short distance, but going up and down stairs without assistance was impossible. There was, as in the sister's case, marked tenderness along the sciatic nerve and its large branches. In the feet and legs there was no loss of tactile sensibility. There did, however, seem to be a diminished sensibility to pain, as a strong faradaic current could be comfortably borne upon the legs, while on the thighs and upper extremities it could not be tolerated. The knee and plantar reflexes were abolished. There were good responses to a mild faradaic current in the muscles of the arms, one a little stronger was required for the thighs, still a stronger one for the anterior tibial group, while the calf group only responded to a very strong current. To galvanism good responses were obtained in all the muscles, but a strong current was required for the calf groups. There was no essential difference between the anodal and cathodal closure contractions. The pulse was regular and the general health good. He was also taking strychnine in $\frac{1}{45}$-grain doses three times daily. It was worthy of note that during the two weeks he had been taking the medicine his lower extremities had grown steadily worse. The improvement in the throat and eye symptoms had been progressing quite rapidly before any treatment was begun.

Dr. V. P. GIBNEY said that when the little girl was brought to him she had an ataxic gait, and there was prominence of the

dorsal spine, but not a sharp angle. It seemed to him that that amount of deformity occurring in so short a time could not be due to Pott's disease. The ataxic gait, of course, might arise from compressing myelitis, but the entire gait of the child was unlike that due to myelitis arising from pressure. The mother then told him that the child had had diphtheria, and it at once occurred to him that that was the origin of her trouble. The spine was quite flexible. The position of the head and some other symptoms favored the diagnosis of Pott's disease, but the ataxia and the brevity of the attack seemed to him to exclude that disease. When he saw Dr. Holt, two weeks later, and was told that the deformity persisted, he was somewhat doubtful, but subsequently, when he was told that the deformity had disappeared, his doubts ceased. He had not examined for the prominence in the pharynx. Indeed, it required some tact to feel such a prominence when it was present in children. When present a prominence might be due to position of the head in relation to the body. Regarding sensitiveness over the projecting portion of the spine, he had never regarded it as a very satisfactory feature in the examination for spinal disease. He could usually determine at once whether there was true torticollis or malposition of the head from Pott's disease by the fact that in the latter disease there was rigidity of the posterior cervical muscles. That condition was absent in this case. The speaker had seen several instances of ataxia following diphtheria.

Dr. Walter Mendelson thought ataxia was rather an uncommon symptom of the neuritis following diphtheria. Still, it was present in a number of cases, and it raised the question of diagnosis between locomotor ataxia and diphtheritic paralysis. But, since ataxia was not infrequent in peripheral neuritis from whatever cause, he was disposed to look upon it simply as one of the symptoms of general neuritis. Peripheral neuritis following diphtheria was rarely so extensive as in these two cases. As there were so many of the symptoms which were described as occurring in marked cases of peripheral neuritis, it was to be expected that ataxia would be among them.

Dr. A. A. Smith had always thought that tonics and time did more for diphtheritic paralysis than anything else. Like most practitioners, he used electricity and also strychnine, but it had always seemed to him that the effects of strychnine were general only, that it was a good tonic; and he had never been able to satisfy himself that electricity did any good whatever. At any rate, he knew that many patients had recovered without electricity. He had seen quite a number of cases of paralysis of various muscles following diphtheria, and he had become more skeptical regarding the effect of any special treatment. As a rule the patients got well, but, as in many other diseases, convalescence was perhaps hastened by appropriate treatment. At one time he had thought it possible that some functional change in the spinal cord, perhaps a faulty blood-supply, would account for some of the cases, but this idea had never been very satisfactory, and it seemed to him that the explanation on the basis of a peripheral neuritis was also not altogether satisfactory. He would like very much to know whether Dr. Holt had observed any specially good results from the use of strychnine in the treatment of these cases, or whether its action had only been that of a general tonic.

Dr. Holt replied that he had administered strychnine as Dr. Smith and physicans generally had done, but he was yet to be convinced that it possessed any specific value. He had seen a number of patients recover in about the usual time that had received no treatment whatever. Strychnine was of great value, no doubt, as a general tonic. As to the value of electricity, his own experience had not been sufficient with its use to justify an opinion. Dr. Thacher, of New Haven, had reported, two or three years since, a case in which galvanism had been used on the two arms alternately for a week at a time. It was invariably found that the arm receiving the electricity gained more rapidly than the one untreated, the strength being measured by the dynamometer. The alternation from week to week seemed to preclude the possibility of this being accidental.

The President asked Dr. Holt whether the loss of knee jerk was to be accounted for by the paralytic condition of the muscles, or by the peripheral neuritis.

Dr. Holt had always regarded it as a result of the nerve lesion. Bernhardt had recently made the statement that the knee jerk was lost after diphtheria in about half the cases. Angel Money had supported this opinion. The speaker was inclined, from some recent operations, to think this symptom much more frequent than was generally supposed.

Dr. W. H. Katzenbach thought that the use of electricity did not materially shorten the disease.

**A Study of Medical Errors.**—Dr. J. West Roosevelt read a paper with this title.

The President remarked that he would dislike to give up the use of local antiseptics applied to the throat in diphtheria as one of the small anchors in rather a hopeless disease, and be left drifting entirely.

**Very Early Syphilitic Headache.**—Dr. Curtis related a case of what was believed to be early syphilitic headache, although the history of syphilis was a little doubtful. The patient, aged about thirty-five, was infected by her husband with a sore, which was treated locally for two weeks in Charity Hospital, and she was there told that she had syphilis, but was given no medicine internally. The sore being cured, she left the hospital, and at about that time began to suffer from headache, for which a few days later she sought the speaker's advice. There was severe pain all over the scalp, but the forehead was not affected; there was marked tenderness on pressure. There was no eruption, there were no enlarged glands, and there were no symptoms except headache, which was so severe as to interfere with sleep. Syphilis was thought of as the cause, but the speaker had never seen a case in which the headache had occurred so early after the presumable initial lesion. Remedies for the correction of indigestion proved of no avail, the headache grew worse, and, after five or six days had been passed without sleep, she was given the "mixed treatment," with $\frac{1}{24}$ of a grain of bichloride of mercury and 4 grains of iodide of potassium three times a day. No effect following, about the fourth day the dose of the bichloride was doubled, and within two days more the headache and the tenderness over the scalp disappeared. She continued to take the medicine about a week, and then left it off two or three days, when the headache returned, and tenderness developed over the forehead and the bones of the face. There was closure of one eye from œdema, which lasted only a few hours. The headache was relieved by her resuming the use of bichloride of mercury. The speaker had still been in doubt regarding her having syphilis until about a week later, when characteristic syphilitic sore throat developed, a small sore appeared above the meatus urinarius, and two somewhat enlarged glands were found in the groin. The ulcer at the meatus had the appearance of a mucous patch. Infection was supposed to have taken place about six weeks before the appearance of the headache.

**Addison's Disease in a Negro.**—Dr. Thacher had discovered at an autopsy on a black negro what was presumably a case of Addison's disease. The suprarenal capsules were enlarged, which led him to examine the mucous membranes. The tongue showed quite distinct brown spots. The patient had died with some symptoms of slow heart failure. The heart was

found enlarged and apparently weakened in structure. A few tubercular deposits were present in different parts of the body.

**Fatal Pneumothorax caused by an Exploratory Puncture with the Hypodermic Needle.**—Dr. H. M. Biggs had quite recently made an autopsy and found pneumothorax, due, he thought, to perforation with the hypodermic needle. The patient had entered the hospital with some pulmonary trouble. A physician introduced a hypodermic needle on each side for diagnostic purposes. The following morning the patient was found dead in his bed. The orderly knew nothing about how death had occurred. At the autopsy the speaker found the left lung to be the seat of extensive interstitial inflammation, with tubercular foci, and occupying certainly not more than half the space usually occupied by it. The heart was drawn considerably to the left. The right lung had collapsed, and lay against the spinal column and to the left of the median line. The chest cavity was full of air. The right lung was found to be very emphysematous, and when it was inflated under water a pinhole perforation was discovered at its lower border. Nothing of a pathological nature was found about the perforation, and there was nothing further abnormal in the lung except a few very small tubercular nodules. There was not the slightest trace of inflammation in either the parietal or the visceral pleura on the right side. The speaker thought the most reasonable explanation of the case was that collateral emphysema had taken place in the right lung, that a bleb had been accidentally punctured with the needle, that the perforation did not afterward close, that the left lung had been rendered almost useless by pneumonitis, and that consequently when pneumothorax rapidly developed the patient died. He asked whether any of the members had observed any unfavorable results from puncture with the hypodermic needle for diagnostic purposes. He knew of three or four cases in which very serious results had followed, and in one or two there had been death. In the case just related the patient was about forty years old.

Dr. Thacher had seen a similar case a few months before. A child had some infectious disease, some pulmonary symptoms developed, and, in order to settle the diagnosis between broncho-pneumonia and pleurisy, the hypodermic needle was inserted on both sides. Within two or three hours intense dyspnœa developed and the child soon died. The speaker made an autopsy. Both lungs were collapsed, and a puncture was found through the lower edge of both at the site where the physician said he had introduced the hypodermic needle. There was a slight amount of broncho-pneumonia. The speaker could account for the pneumothorax in no other way than on the supposition of puncture of the lungs by the hypodermic needle.

Dr. Mendelson thought the size of the needle might have something to do with the results of puncture, but Dr. Biggs and Dr. Thacher said that an ordinary hypodermic needle had been employed in the cases related by them.

The President asked Dr. Biggs if it was easy to determine whether the air had entered the chest cavity before or after death.

Dr. Biggs thought it was not difficult, certainly it had not been in the case he had related. Besides the marked compression of the lungs, one was emphysematous, and collapse was less marked in an emphysematous lung from opening the chest cavity after death.

Dr. Roosevelt thought there might be some difficulty in deciding whether a case of pneumothorax had not occurred post mortem if it had existed only a few hours before death. The lung might easily be ruptured inadvertently while one was inflating it.

Dr. Thacher said that the possibility of the post-mortem occurrence of the condition in his case had occurred to him, but he had never seen such marked post-mortem collapse of the lungs, and felt quite sure that that was not the explanation of the case.

Dr. Roosevelt referred to a case of general peritonitis following puncture with an aspirator needle. The puncture was made for empyema by a competent man, and the needle passed through the diaphragm, probably carrying with it pus from the chest cavity, and set up general peritonitis.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of December 1, 1887.*

The President, Dr. A. Jacobi, in the Chair.

**The Foot-and-Mouth Disease as it affects Man and Animals, and its Relation to Human Scarlet Fever as a Prophylactic.**—Dr. John W. Stickler, of Orange, N. J., read a paper on this subject. He had endeavored for the past four years to develop a virus with which to inoculate children to give them immunity from scarlet fever, and a brief account of his labors was given in the paper. The symptoms of foot-and-mouth disease, as it appeared in man, varied somewhat according to whether its origin was in inoculation from the virus contained in the vesicles of the disease in the cow or in the drinking of milk from the affected animal. Some of the symptoms mentioned were sore throat, enlarged glands, and vesicles on the mucous membrane in the mouth. Sometimes the tongue became swollen to a considerable degree; in some instances there was an eruption on the hands and feet, and in others there was a scarlet eruption on the body. In the epidemic of sore throat which occurred at Dover, England, in 1884, it was shown that the milk which caused the sore throat came from cows which were affected with foot-and-mouth disease; the majority of these persons presented two prominent symptoms—namely, sore throat and enlargement of the lymphatic glands. The other symptoms, and the location of the eruption, ulcers, etc., varied. Through Dr. M. K. Robinson the author had learned that, of 183 persons affected during the epidemic, none had since had scarlet fever; and that members of eight families who had previously had scarlet fever escaped the epidemic, while others who had not previously had scarlet fever contracted it. Sixteen persons who were affected with the disease had had scarlet fever; of these sixteen, four had a mild form of the disease, and two of them had had their scarlet fever when they were young; it was doubtful whether six out of the remaining ten had really had scarlet fever. The author raised the question whether scarlet fever and the foot-and-mouth disease might not be for a time mutually protective. Believing that in the evidence furnished by the Dover epidemic there was an indication of what might be accomplished, he took virus from cows suffering from foot-and-mouth disease and inoculated three children, and subsequently exposed them to the contagion of scarlet fever. Detailed histories of these cases were given. In the first two cases the symptoms of foot-and-mouth disease developed, and the children were afterward thoroughly exposed in the presence of those who had scarlet fever, but failed to contract the disease. In the third case the symptoms of foot-and-mouth disease did not develop after inoculation, but three years afterward the child had not had scarlet fever, although exposed to it. It would thus appear that the virus of foot-and-mouth disease was protective against the contagium of scarlet fever, but the author was well aware that at this stage of the investigations no definite conclusions could be advanced.

The author referred to the experiments of Klein, who professed to have found the specific germ of foot-and-mouth disease, which by its general appearance could not be distinguished

from that found in the cows whose milk had caused the epidemic of scarlet fever at Hendon, England. There were other reasons for believing that there was a great similarity between foot and mouth disease and bovine scarlet fever. For four years the author had been trying to demonstrate whether scarlet fever could be generated in the lower animals by inoculation with the virus of human scarlet fever, and whether the disease thus produced in the cow would furnish a virus protective against scarlet fever in man. Among the symptoms which appeared after inoculating colts were sore throat, redness of the mucous membrane of the mouth and nostrils, elevation of the temperature above 101° F., and desquamation of the cuticle. From his experiments on colts, cows, dogs, cats, etc., it seemed fair to infer that the disease which was developed in them by inoculation with the virus of human scarlet fever was specific scarlet fever. The disease appeared to be mild, but he was aware that it might be the opposite. Early in 1883 he inoculated twelve persons with virus obtained from horses supposed to have foot-and-mouth disease. Since then none of the twelve persons had developed scarlet fever, although they had mingled freely with those who had it. Of thirteen persons inoculated with the virus of foot-and-mouth disease in the cow, all of whom had had scarlet fever previously, five developed the disease, and eight escaped. During the last year he had inoculated two children with the virus of scarlet fever in the cow developed from scarlet fever in man. In one around the point of inoculation an erythematous blush developed, and a scab formed, surrounded by a red areola; there was considerable fever; a rash similar to that of scarlet fever appeared on the upper part of the chest and spread to the arms; the scab fell, and a few days later the child was well. In the second case the only result was an erythematous blush, which disappeared after two or three days; there was no systemic disturbance. He also inoculated two other children from the virus of the cow, and they had not since developed scarlet fever, although exposed. The supply of the virus of foot-and-mouth disease could easily be kept up in Europe, where the disease was common in cattle. In this country it could be readily obtained by inoculating cattle with the virus of human scarlet fever, which produced exactly the eruption which occurred at Hendon.

Dr. H. C. McLean, of Brooklyn, said the foot-and-mouth disease, or aphtha, occurred in cattle as an epizootic. One attack did not afford immunity in the bovine tribe, but it did in the ovine. The author had spoken of the temperature in cattle rising to 102° F. The normal temperature in cattle was from 101° to 102° F.

Dr. S. T. Hubbard had seen one of the children inoculated by Dr. Stickler, and the symptoms had been in every way like those of scarlet fever.

Professor Law, of Cornell University, had seen a good deal of foot-and-mouth disease in Europe. When it started in a herd of cattle nearly all of them became affected, as did also the herdsmen. Considering the prevalence of the disease in England, he thought that, if it afforded protection against scarlet fever, the latter disease should be less common there. But he believed scarlet fever was as prevalent and as fatal in England as in America, where foot-and-mouth disease was scarcely known. One attack of foot-and mouth disease afforded but a short protection against another in cattle. Perhaps it would be different in men. A further cause for skepticism on his part was the fact that he had many times been exposed to foot-and-mouth disease in cattle and had not contracted it, but he believed that on the first occasion he was exposed to scarlet fever he took that disease. He was not susceptible to the one, while he was to the other. He thought experimentation with the virus of foot-and-mouth disease might better be carried on across the Atlantic, where the disease was prevalent. If it should become prevalent in this country it would depreciate the value of our many thousands of cattle five or ten dollars a head. Regarding the prophylactic value of virus obtained from scarlet fever proper, if it were employed, would it not be likely to prove the means of spreading that disease? He was a great admirer of Pasteur, and he believed that he had done a great deal for the science of medicine, but he feared Pasteur had contributed largely to the spread of anthrax by sending out the virus for experimental purposes. It was also true that hydrophobia in dogs was never so common as since Pasteur's experiments were begun. The speaker doubted not that he protected the dogs on which he experimented, but he spread the disease in sending out the virus.

Dr. J. Lewis Smith thought one could not fail to be convinced, on reading the account of the epidemic at St. Mary's Home, England, that there might be a disease in the cow which when communicated to children would produce scarlet fever; but he had not found evidence in the history of that epidemic that the disease in children was mild; that, being contracted through disease in the cow, it had been modified in severity.

Dr. McLean, Jr., of Brooklyn, denied that the epidemic of scarlet fever at Hendon had been proved to have its origin in the disease of the cows from which the milk-supply was obtained. But, granting that the contagion came from the milk, might not the milk have been diluted with contaminated water, or the virus of scarlet fever found its way to the cans? He had seen milk-cans drying in rooms where persons lay sick with measles, scarlet fever, and diphtheria. With two exceptions, he believed foot-and-mouth disease had never prevailed in this country. He did not wish the medical profession to think that veterinarians regarded the outbreak of scarlet fever at Hendlen as due to the disease in cows which furnished the milk, or that scarlet fever ever occurred in cattle or horses.

Dr. J. C. Peters thought that certain veterinarians had described scarlet fever in cattle and horses.

Professor Law said that that was true, but the disease was non-contagious and in no way resembled the scarlet fever of man. The name was unfortunate.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of November 23, 1887.*

(*Concluded from Vol. XLVI, page 750.*)

**Pyosalpinx.**—Dr. Penrose's paper being under discussion, Dr. J. Price said that the report afforded an excellent opportunity to discuss pelvic surgery. While he had been greatly interested in every case reported and knew the work to have been perfect from personal observation, he simply wished to speak of the present position of pelvic surgery, by whom, when, and where it should be done. 1. By whom? He would read a quotation from McDowell: "I think my description of the mode of operating, and of the anatomy of the parts concerned, clear enough to enable any good anatomist, possessing the judgment requisite for a surgeon, to operate with safety. I hope no operator of any other description may ever attempt it. It is my most ardent wish that this operation may remain to the mechanical surgeon for ever incomprehensible."

Dr. Penrose was a trained surgeon; the ovariotomist should be unsurpassed in surgical resource and ingenuity. Only skillful and trained hands should follow this calling. He should begin young. Many of the old-fashioned ovariotomists were dangerous; they vaccinated babies until they were forty-five or fifty years old, and then began the study and practice of surgery

in the abdominal cavity. Sad and sorrowful had been the results; but such was not the condition of affairs at present. The mortality now was almost *nil* in young and experienced hands, and with patients that were able to move about. The results now were very much better, even in those far advanced in the process of dying. Again, in a class of cases that were considered too dangerous to touch—he alluded to all forms of pelvic inflammatory trouble—a class of cases presented this evening, affording examples of a state of professional ignorance and prejudice which was a disgrace alike to the enlightened time in which we lived and to the enormous advances made by the art and science of surgery, we were far indeed from seeing the full application of these advances for the relief of suffering women. This operation saved life and relieved great suffering, restoring the patient to health and a life of usefulness.

2. As to the time of operation. Grave inflammatory troubles should be dealt with as soon as discovered; delay and repeated examinations were dangerous. We dreaded the delay of a day in suppurative cases. In conclusion, he would allude briefly to McDowell's work, and this would cover "the where," by a quotation from Dr. R. S. Sutton: "In the light of all recent advances concerning the environs of an ovariotomy patient, I ask you to listen thoughtfully, and inquire of yourselves: Have modern operators had better environments than McDowell did? Is their quarantine better than his was? Whether accident or necessity or the simplicity of border life provided these conditions so favorable to recovery, your orator will not inquire, but hopes to show that McDowell did operate under conditions as favorable as does Dr. Keith or Mr. Lawson Tait. 1. The patient was refused operation in her own home. 2. She was operated on in Dr. McDowell's own house. 3. History mentions but one assistant present at the operation. 4. The patient had never been tapped. 5. We may safely infer that the room in which the operation was performed contained at this early date in Kentucky no superabundance of furniture or upholstery. 6. That the room was ventilated by an open fire-place is more than probable. 7. The atmosphere was that of a healthy border town. 8. No sponges were introduced into the abdomen. 9. He ligated the pedicle and dropped it in. This operation will stand the criticism of the most exacting specialist of the year 1885 save in two particulars—viz., the ligature was not carbolized or scalded, the ends of it were left hanging out of the lower angle of the wound, and merely turning the woman on the side to permit all fluid to escape from the cavity of the abdomen was scarcely enough in that direction. Pause a moment! Think; at the end of almost three quarters of a century the operation stands almost where McDowell left it, with one solitary exception—viz., the ends of the ligature surrounding the pedicle are cut short."

Dr. J. M. Baldy said that, in a recent number of the "Pittsburgh Medical Review," the editor, commenting upon a report of cases of abdominal section done at the Philadelphia Dispensary, had said: "The fact that the operations were performed at the patients' homes with success should do away with the old idea that the only place to do abdominal section is in a private hospital." The vast majority of the Philadelphia Dispensary operations had been done at the patients' homes under conditions and surroundings which had been anything but desirable. If the immediate surroundings of the patient and the wound were aseptic, the operation could be done with perfect safety anywhere. In many cases of pyosalpinx, if a wealthy woman refused to take the risk of the knife, she could by proper treatment be made comparatively comfortable without great risk of her life. However, the majority of cases of pyosalpinx, even among the wealthy, demanded surgical interference sooner or later. If, on the other hand, the patient had to work for her living, and was suffering with recurring attacks of peritonitis, he thought the operation was always called for. The risks of the operation were comparatively slight. It could be performed by any general surgeon if he had a cool head and good surgical resources.

The use of salines in the treatment of peritonitis was a point of extreme interest. From what he had seen of such cases there was no doubt in his own mind that the treatment by opium was a great mistake. Where there were the signs of beginning peritonitis, the use of large concentrated doses of salines rapidly relieved them. While the use of opium favored the occurrence of adhesions, salines would naturally tend to do away with trouble of that kind. Opium shut up all the avenues of escape for the products of inflammation, and thus tended to increase the trouble rather than to alleviate it.

Dr. J. Price had been surprised at what Dr. Baldy had said with reference to pyosalpinx when he realized how much trouble might come from a little pus. Patients with pyosalpinx were always in danger. They suffered constant pain, went down rapidly, and died.

Dr. J. C. Da Costa could not agree with Dr. Price with reference to pyosalpinx. Others, who had had a large experience, when asked with reference to their method of treating this affection, also differed with him. One gentleman with a large experience in the removal of ovarian tumors had told the speaker that he had seen many cases of pyosalpinx, but that the patients had all recovered without operation. His experience was much the same. Dr. Price had said that it was never safe to allow the pus to remain. The speaker would state two cases. A lady had been suffering for fifteen years. The left Fallopian tube was as large as a small Bologna sausage. She was given the ordinary local and general treatment. One day a little bleb appeared on one side of the uterus. This was opened, and, on introducing the sound, it entered five inches and a quarter. During the next few hours a large quantity of pus was discharged. This patient finally made a complete recovery. Another case was that of a young married lady, suffering with salpingitis, who had come under his care. The ovary was quite large. Ordinary common-sense treatment, with rest in bed, caused great improvement. She began to go about too soon, and had a return of the trouble. At that time the ovary was as large as an orange, but in two months she had perfectly recovered. Would he in this case have been justified in removing the ovaries and thus destroying her hope of ever performing the duties which the Almighty had sent her into the world to perform?

In regard to the reports of patients cured by operation that were heard of, the question came up as to their reliability. The speaker granted that there was not the same mortality after abdominal section for salpingitis and other such troubles as after ovariotomy, but, even if there was a mortality of no more than one per cent., the question arose, Was it proper to perform this operation when the patient could be relieved by ordinary treatment? There were in Philadelphia a number of hospitals that would take these patients and treat them and cure them, so poverty could not be urged as a pretext. He believed that the gentlemen who made reports of their cases believed that the reports were correct at the time they made them. But he had had the opportunity of seeing a number of these patients some time after the operation had been performed, and the later part of the history had not agreed with the published report. He would mention two such cases in illustration. One patient was operated upon seven or eight years ago, and was reported cured. She was still a nervous, hysterical woman, who could not sleep without an anodyne, and had a voice like a poll-parrot. In the second case the operation was done several years

ago and reported as successful, but the patient had been wretched and miserable until a year ago, when she fell into the hands of a quack who cured her. Why did the reports and the results differ so? The women went to the surgeon in hope of relief, were told "the operation would cure them," believed it, were operated on, and, under the stimulus of hope, felt as if they were cured, and that the pains they still felt were due to the operation and would pass away, and so were reported cured. After a while the old pains came back and they realized that they were not yet well, spite of the operation and published cure. In a number of other cases of women reported well after the operation, the least of their troubles had been ventral hernia. In opening the abdomen, the operator was very apt to find what he was hunting for, and the speaker had seen ovaries extirpated which were not diseased enough to demand it. It was not necessary always to remove both ovaries, as was often done in operating for ovarian tumors. He had left a second ovary as large as a lemon, and had had no bad results, as in a case operated on about two years ago. The woman had menstruated regularly since the operation and had had no trouble. The ovary had diminished decidedly in size.

Dr. M. Price would challenge some of the statements made by Dr. Da Costa. He had said that salpingitis did not cause much trouble. The speaker could show him a case which had been under medical treatment for five years. Two years ago an abscess burrowed down through the cellular tissue and discharged between the bowel and the vagina. This patient had been operated on five different times for fistula in ano, with entire removal of the recto-vaginal septum by operations, and until four weeks ago it had not been suspected that hers was a case of pyosalpinx. These patients could not be cured by simple medical treatment. There was no single patient that he had seen operated on who had stood one chance in fifty of living six months if the operation was not done.

Dr. W. H. Parish had no doubt that those who advocated this operation would agree that not all cases of disease of the appendages demanded operation. August Martin had said that three fourths of the cases of disease of the tubes and ovaries did not require operation. There were also cases of gonorrhœal affections of the tube which did not demand it. The speaker had seen one case where the inflammation of the tubes followed the occurrence of gonorrhœal inflammation of the vagina, and in which the trouble subsided; the woman subsequently became pregnant. With reference to the removal of ovaries and tubes that contained pus, we all knew that these cases might continue for years, but the patient would suffer from repeated exacerbations of inflammation. They were always in danger from the thinning of the tubal or ovarian wall, the escape of pus, and the occurrence of general peritonitis. If we looked over the records of any hospital or board of health, he thought that we should now find few deaths, compared with the past, recorded as due to pelvic abscess and general peritonitis. He thought that many cases of pelvic abscess and of general peritonitis had been in their origin cases of pyosalpinx. He was strongly in favor of the removal of the tubes and ovaries where there was pus. While a patient might enjoy a certain amount of comfort with pus in the tubes, yet she would be liable to frequent exacerbations, and might have her life placed in great danger at any moment. He was sure that the operation for the removal of the tubes and ovaries in pyosalpinx or ovarian abscess had "come to stay," no matter what the future position of the operation for other conditions might be. He thought that those who urged the treatment of these cases without operation were doing great injustice to a considerable number of patients, and also no little injustice to the surgery of to-day. His own experience with the operation warranted his indorsement of it.

Dr. Penrose had only to say, in conclusion, that such tubes as he had shown were useless and dangerous to the woman. They could not permit the passage of spermatozoa or ova. He could not agree with Dr. Da Costa's statement about abscess of the lung or brain. He thought it proper to open an abscess wherever it occurred, and not to trust to nature; and, when possible, to make a complete removal not only of the pus but of the abscess-walls, as was done in pyosalpinx. In cases of pyosalpinx said to have been cured by medical treatment there was always an element of doubt with regard to the diagnosis. Such cases might sometimes occur. But there were few physicians skillful enough to make a positive diagnosis of pyosalpinx before the abdomen was opened. In all the cases in which he had operated the patients had had several months' or years' treatment in the hospitals before the operation was performed.

## Book Notices.

*Trattato della difteria.* Per il Cav. Dott. Vincenzo Cozzolino, Prof. pareg. della R. Università di Napoli, etc. 1° Volume. Statistica.—Biologia del virus difterico.—Batteriologia.—Igiene.—Storia epidemiologica dell' epidemia difterica di Reggio-Calabria nel 1884. (Guida per il pratico a letto del difterico.) Napoli: Stabilimento Tipografico dei Classici Italiani, 1887. Pp. xxvii–380.

This is rather a summary of the present unsatisfactory state of our knowledge concerning diphtheria than an exposition of any new facts or original views in relation thereto, save in so far as the author seems inclined to accept "antimicrobicism" as a complete definition and comprehensive boundary of hygiene, notwithstanding the discrepancy of bacteriological opinion (which he fully sets forth) regarding a specific microorganic ferment in the malady under consideration. To his compatriot, Dr. Tigri, he awards priority in demonstrating, in 1867, the specific causation of diphtheria by a "crittogama ramosa" which he christened "*Alga difteritica gutturale.*" Then follow descriptions of Letzerich's "*Zygodesmus*" or "*Tilletia diphtheritica*"; Cohn's *Micrococcus;* Talamon's mycelial growth; the theory of Wood and Formad, of the acquisition of active properties by inert micrococci; the latest conclusion of Klebs, that there are two distinct forms of diphtheria, one microsporine, the other bacillar; Loeffler's researches, tending to a similar result; the contradictory observations of Babes; Emmerich's cultivation experiments with the alleged bacillus of diphtheria in fowls and human subjects; Rutschorius's assertion that the disease is caused by the bacteria of putrefaction in a filth-polluted soil; and the investigations of many other writers, whose names are generally misspelled as only an Italian could misspell them. The pathological histology of diphtheria is well delineated, with its distinction from other exudative anginas of non-specific character. The directions for isolation and disinfection are clear and precise, though containing nothing new to readers of English medical literature.

*Gerhardt's Handbuch der Kinderkrankheiten.* Nachtrag ii. Die psychischen Störungen im Kindesalter. Von Dr. H. Emminghaus, Professor und Vorstand der psychiatrischen Klinik in Freiburg i. B. Tübingen: H. Laupp, 1887. Pp. viii–293.

This is the first systematic treatise devoted to the psychoses of childhood, if we may except the works of Ireland and the

elder Seguin, which are confined to idiocy and amental conditions. Beginning with general symptomatology, which occupies nearly a hundred pages, the author proceeds to discuss a very great number of acute and chronic mental disorders, among which is paranoia, which is exceedingly rare in early life. The article on acute dementia is most excellent, and those who are familiar with Crichton Browne's case and with his article on the same subject in the "West Riding Reports" will read this author's contribution with interest. The chapter on hysteria in early life is most valuable, not only to the specialist, but to the general physician. In fact, this is one of those works which are of interest to all, and it will make the mental symptoms of ordinary disease in infancy much clearer than they now are.

# Miscellany.

## SOUTHERN NOTES.

By W. E. B. Davis, M. D., Birmingham, Ala.

**The Alabama Medical Association.**—The profession of Alabama is doubtless the most thoroughly organized of any in this country. No other association so completely represents the profession of its State. This approximates a military standard in its organization and discipline. Here the profession is so united that the members can do most effectual work for the protection of the people and their own elevation. They work in harmony, and thus they wield great influence over all classes of society. By united and concerted action they have been enabled to bring about the enactment of the necessary laws to carry out their purposes, and to the association is intrusted the administration of the law to regulate the practice of medicine and the health laws of the State. The constitution of the association was adopted sixteen years ago, and amendments have been made from time to time as emergencies arose, but the body of the work has not been interfered with. Under this constitution the association is in many respects peculiar. Its membership consists of a college of councilors and delegates from the chartered county societies. Each county is allowed two delegates. The college of councilors consists of three classes: junior councilors, those who have served less than five years; senior councilors, those who have served not less than five nor more than fifteen years; and grand senior councilors, those who have served more than fifteen years. The number of councilors is limited to one hundred, and if any member fails to attend the meetings of the association or pay his annual dues, he is promptly dropped from the roll and another elected. The annual dues of the councilors are $10 each, and the delegate fees $5. In addition to a president, two vice-presidents, secretary, and treasurer, the association has a board of censors, consisting of ten members elected from the grand senior councilors, and this board is the executive committee of the association. The senior censor is the health officer of the State, and the board of censors acts for the association during the interval between meetings. As stated, the association has charge of the sanitary affairs of the State and the administration of the law governing the admission of physicians to practice. These are intrusted to the board of censors as the committee of the association which reports to the association for final action. This board becomes a State board of health and the State board of medical examiners. The county societies receive charters from the State association, and their members are *ipso facto* members of the State organization. Each county society has a president, vice-president, secretary, and treasurer, and a board of censors, which is the county board of health and the county board of medical examiners. This board elects a health officer, who receives a salary from the county. The health officer performs the ordinary duties of this office, collecting vital statistics, etc., and taking the necessary precautions in cases of contagious or infectious diseases. His reports are supervised by the State board, as also are the medical examinations of the county boards. Only graduates of regular medical colleges, however, are allowed to apply to the county boards. Those without diplomas must apply to the State board for certificates to practice. The county boards are to the counties what the State board is to the entire State, except that there is not so much power vested in them.

All applicants for examination who propose to practice in the State are examined in the following departments, namely: 1. Inorganic and organic chemistry. 2. Human anatomy. 3. Human physiology. 4. Natural history and diagnosis of diseases. 5. Physical diagnosis. 6. Principles of surgery and operative surgery. 7. Mechanism of labor. 8. Obstetric operations. 9. Public and private hygiene. 10. Medical jurisprudence. The minimum requirement for a certificate is 75 per cent. There is great inequality in the examinations, as the county boards differ very greatly in their attainments and ability to make the examinations. To remedy this defect and furnish more uniform requirements for the entire State it has been urged that the State board make all examinations, the county boards still retaining their functions as boards of health. This law is objected to by the State board on the ground that it will interfere with the compactness of the organization. While much has been accomplished by the present law regulating the admission of members to the profession, it falls very far short of meeting the necessities for a higher standard of medical education, and will in all probability be altered at no distant time. There are sixty-two county societies holding charters from the State association, with an aggregate membership of between nine hundred and a thousand members. Only four counties in the State have no organized societies. This work has been perfected since 1872, and is the result of the labors of that genius and indefatigable worker, Dr. Jerome Cochrane, who is at present senior councilor of Alabama and doing much to sustain the organization which he has established, and to whom nearly all the honor is due for this almost perfect system. Of course his success has been augmented by the support of the united profession, whose representative members have willingly followed their distinguished leader.

**The Alabama Surgical and Gynæcological Association.**—*Continuous Irrigation as a Means of arresting Septic Infection in Abdominal and Uterine Surgery, with Report of Cases.*—Dr. William D. Haggard, of Nashville, Tenn., read a paper full of practical suggestions on this subject at the second annual meeting. The paper illustrated the great benefit to be derived from continuous irrigation when there was septic decomposition going on in the uterus or abdominal cavity. In Case I a fibroid tumor was partially removed by crucial incision and enucleation with the fingers. A large part of the tumor could not be removed and was left to be thrown off by Nature. The patient lost but little blood and did well till the third day, when contractile efforts of the uterus became severe. Examination revealed a mass of fœtid disintegrating tissue as large as an orange, the remainder of the fibroid; this was removed. The patient had a chill during the day, and on the evening of the third day a temperature of 105° F. and a pulse of 145. The entire cavity of the uterus seemed a mass of disintegrating tissue. The evidences of pyæmia were unmistakable, and with further absorption must have proved fatal. Continual douches of carbolized water on the second day had had no effect, and were found to have but little effect at this time. Dr. Haggard adopted continuous irrigation at a temperature of 105°, such as he had used in external wounds, and there was prompt amelioration of the grave symptoms. The irrigation was kept up for seven days, by which time the patient was convalescent. Dr. Haggard said he would have done Battey's operation, but it was not known at that time.

Case II. *Diffused Sarcoma of the Broad Ligament.*—An exploratory incision four inches in length was made in the linea alba, midway between the umbilicus and the symphysis pubis. The omentum was so much thickened and altered in appearance as to render it unrecognizable. Cutting through this, Dr. Haggard found the tumor, which presented a dark, dirty-reddish hue. The tumor had adhered to everything in contact with it. He was able to separate it from its adhesions as far as he could reach with his fingers, and hence thought he could remove the growth in its entirety and enlarged the abdominal incision for that purpose. Passing his hand in on the left side, he readily detached the tumor from its adhesions until he came down to the brim of the pelvis, which was so completely filled with the growth that

he could not separate it from the adhesions. He passed his hand in on the right side, from which he was endeavoring to separate the tumor, when near the spinal column he came in contact with a soft, boggy, friable portion of the cyst-wall, which accidentally ruptured, giving exit to a large quantity of colloid matter, pus, and lymph, which, mixed with blood, was welling up in great profusion. As the adhesions of the tumor were so firm and the tumor was so soft and friable and easily torn, a complete removal was well-nigh impossible. The contents of the cyst having been removed, nothing remained but the torn, fragile cyst-wall, which at some points seemed so rotten as to be easily torn asunder. He tore away all of the cyst-wall that was possible, but left an unseemly mass of the cyst in the abdomen, and all of it in the pelvic cavity. The shock from the operation, augmented as it was by the profuse hæmorrhage, was now most profound. The abdomen was washed out with water as hot as the hand could bear it to stop the hæmorrhage and relieve shock. Dr. Haggard thought collapse was due to a collection of the blood in the abdominal vessels, and thought the use of hot water the best method of relieving it, as it contracted the vessels of the abdomen and forced the blood in the peripheral vessels. After the hæmorrhage was stopped the wound was closed and a glass drainage-tube left in the lower angle of the wound, which extended into the cavity of the cyst. The patient was rallied from her almost hopeless condition of shock by the hot water poured into her abdomen.

On the third day symptoms of septic absorption were unmistakable. The pulse in the evening ran up to 150, the temperature was 105°, the countenance was expressive of much discomfort, and the features were pinched, with a cadaveric hue of the skin. He adopted continuous irrigation as the best means available for averting further absorption of putrid matter. He brought into requisition a four-gallon bucket, with a small nozzle near the bottom, over which was placed a piece of rubber tubing with a long nozzle at the other extremity. A continuous stream of warm water was carried into the abdominal cavity. Soon after the flow of warm water was commenced there was great improvement in all the symptoms. The irrigation was kept up for twelve days. As the discharged water became clearer and free of blood-clots, etc., the irrigation was used less continuously. Dr. Haggard thought his patient would surely have died but for this constant washing away of decomposed and septic material.

**The Southern Surgical and Gynæcological Association.**—At the time this association was organized the Executive Committee of the Congress of American Physicians and Surgeons had not announced the time for the annual meetings of the Congress, and it was decided that the next annual meeting of the Southern Association would be held in Birmingham, beginning on the second Tuesday of September, 1888, and, as the Congress will meet in Washington on the third Tuesday of the same month, some of the members of the Southern Association will find great difficulty in attending both meetings. This was unfortunate, but, as both meetings were held in October, and as the committee for the Congress held its meeting only a few days before that of the organization of the Southern Association, the accident is easily explained. Many of the members of the Southern Association are already insisting that the time of the next meeting of the association be changed. It is impossible as yet to predict what will be the decision of the officers. A large number of its members belong to the Congress, and, if the time is not changed before the next meeting, at that session it will receive due consideration, and a time he selected which will not conflict with the Congress, and which will meet the convenience of the majority of its members. It is not absolutely necessary, however, to have a change in the time for the next session in order for the members to attend both meetings, as the Southern Association will meet the week prior to that in which the Congress meets. The leading men of the whole South have expressed great interest in the new organization, and promised their support and co-operation in whatever would forward its interests, and it is to be regretted that this obstacle confronts them and the association at the very outset. There is no doubt that everything will be done to meet the convenience of the Southern members of the Congress, and this will only prove a small bubble, which will disappear, leaving no traces whatever. Should the time for the next meeting be changed, many of the members have expressed themselves in favor of June. As no societies, either State or national, meet at that time, it would probably meet with universal approval. The association has grown in strength every day since its organization. Its doors are open to known workers in surgery or gynæcology, and membership can only be had by one's record, which must be passed upon by the judicial council, composed of such men as Dr. John T. Cain, Dr. Hunter McGuire, Dr. J. M. Taylor, Dr. De Saussure Ford, and Dr. R. A. Kinloch. These gentlemen are well known to the profession, and will be recognized as a very reliable guard for the protection of an organization of scientific men associated together for professional improvement and the mutual benefit of its members. It is the purpose of the association to be so organized that every member can carry into his discussions the weight of his own experience and authority, to be an organization where its members can come each year knowing that they will be benefited and with the well-founded hope that they will find something to learn. With the co-operation of the leading surgeons and gynæcologists of the South—whence have come those with but few, if any, superiors in the annals of surgery or gynæcology, and where their equals still reside—the success of the association is a foregone conclusion, and its organization can not fail to mark an epoch in the history of American surgery and gynæcology.

**The Texas State Medical Association.**—At the next meeting of the association, according to "Daniel's Medical Journal," there will be presented for consideration a new constitution and by-laws. The subject has been made the special order for the first day of the session. Under the present working one representative only from each county votes, whether there be in that county one physician or one hundred, and that delegate has a voice in the election of all officers. Hence the minority virtually rules in all elections. It is urged that the association should have a place of permanent abode and of annual meeting, for many good reasons. Should the association change its plan of meeting at a different place each year, Austin will doubtless be selected for its permanent home, and a State medical library will in all probability be established.

**The Medical Colleges of Louisville, Nashville, Atlanta, New Orleans,** and, in fact, all the medical institutions of the South, are unusually well patronized this year, and in a very few months hundreds of new-made doctors will be ransacking the country for suitable locations.

**The Question of Higher Medical Education** is receiving consideration by many of the State medical organizations of the South, and it is earnestly desired that at no very distant time this section will be able to protect itself against so many incompetents and quacks, and will receive only those indorsed by competent State medical examining boards.

**Dr. Thomas F. Wood,** editor of the "North Carolina Medical Journal," is again able to walk after a year's confinement to his bed, to favor the removal of an aneurysm, from which he suffered, caused by overexertion in a botanic excursion in the mountains of North Carolina.

**Dr. James E. Reeves,** of Wheeling, W. Va., has decided to remove to Chattanooga, Tenn., where he will devote himself to the treatment of renal and pulmonary diseases, in which classes of maladies his extensive knowledge of pathology, bacteriology, and microscopical anatomy must prove an inestimable advantage.

**Dr. William H. Anderson,** who died in Mobile on the 14th of November, was for a long time professor in the Mobile Medical College and dean of the Faculty.

**Dr. W. D. Haggard,** president of the Southern Surgical and Gynæcological Association, is untiring in his efforts for the success of the association. Dr. Haggard is a man of great ability, and the association could not have elected one more suitable for its highest office.

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**The "Journal of Nervous and Mental Disease."**—In the number of this excellent journal for November and December, 1887, completing the fourteenth volume, the editor, Dr. B. Sachs, announces his retirement from the editorial management, and expresses kind wishes for his successor, Dr. Græme M. Hammond. Dr. Sachs may well be satisfied with the career of the journal while it was in his hands, and we feel confident that Dr. Hammond also will prove an excellent editor.

**A Simple Classification of Insanity.**—The late Dr. John P. Gray ("Med. Record") gave the following: *Mania*, manifested by delusions

of excitement, expansive ideas, exaggerations, self-consequence, incoherence, etc. *Melancholia*, manifested by delusions of depressing character, painful ideas, and apprehensions. *Dementia*, representing conditions of mental failure and feebleness of mental action. All cases of insanity come under these three heads. Cases may be acute, subacute, chronic, periodic, paroxysmal, but they are mania, melancholia, or dementia.

**The Alumni Association of the Woman's Hospital in the State of New York** will hold its third annual meeting at the New York Academy of Medicine on Wednesday, the 18th inst. The programme is as follows: *Morning session*, 10 to 1.—"Clinical Notes on Uterine Displacements," by Dr. G. A. Kletzsch; "A Study of the Ætiology of Prolapsus Vaginæ et Uteri," by Dr. G. T. Harrison; "Septic Peritonitis following Laparotomy," by Dr. P. F. Chambers; and "On the Ætiology and Development of Caruncle," by Dr. J. G. Perry. *Afternoon session* 3 to 5.—"The Electrical Treatment of Fibro-myomata," by Dr. A. H. Buckmaster; "The Use of Galvanism in Gynæcology," by Dr. E. L'H. McGinnis; and "The Use of the Tampon in the Treatment of Pelvic Inflammation," by Dr. T. A. Emmet (the discussion to be opened by Dr. W. G. Wylie and Dr. J. B. Hunter).

**A Journal of Spiritualism.**—We have received a circular from Signor Giovanni Succi, of Florence, announcing the appearance this month of the first number of "Il corriere spiritico," a thirty-two-page monthly scientific review of spiritualism. Signor Succi promises that all the assertions made in the "Corriere" shall be substantiated by material facts of a convincing nature.

**The Northwestern Medical and Surgical Society** has elected officers for the year 1888 as follows: President, Dr. R. C. M. Page; vice-president, Dr. A. M. Jacobus; secretary, Dr. Edward S. Peck.

**The Health of Michigan.**—According to the summary prepared by, the secretary of the State Board of Health, Dr. Henry B. Baker, for the four weeks ending December 31, 1887, diphtheria was reported from thirty-eight places, scarlet fever from thirty, typhoid fever from twenty, and measles from eighteen.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending January 6th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending December 17th corresponded to an annual rate of 22·1 in a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 16·8, and the highest in Blackburn and Preston, viz., 35·7 in a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, and 1 in Preston.

*London.*—One thousand six hundred and twenty-two deaths were registered during the week ending December 17th, including 17 from measles, 38 from scarlet fever, 23 from diphtheria, 106 from whooping-cough, 18 from enteric fever, and 12 from diarrhœa and dysentery. There were 413 deaths from diseases of the respiratory organs. Different forms of violence caused 53 deaths, and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 20·1 in a thousand. In greater London 2,057 deaths were registered, corresponding to an annual rate of 19·8 in a thousand of the population. In the "outer ring" 9 deaths from diphtheria, 18 from measles, 10 from scarlet fever, and 20 from whooping-cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending December 17th in the sixteen principal town districts of Ireland was 33·1 in a thousand of the population. The lowest rate was recorded in Newry, viz., 14, and the highest in Kilkenny, viz., 42·3 in a thousand.

*Dublin.*—Two hundred and sixty-two deaths were registered during the week ending December 17th, including 5 from measles, 3 from whooping-cough, 12 from scarlet fever, 1 from typhus, 1 from enteric fever, and 2 from diarrhœa. Diseases of the respiratory organs caused 93 deaths. Three accidental deaths were registered, and in 37 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 37·7 in a thousand.

*Scotland.*—The deaths registered in eight principal towns during the week ending December 17th corresponded to an annual rate of 23 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 16·4, and the highest in Paisley, viz., 35 in a thousand. The aggregate number of deaths registered from all causes was 574, including 15 from measles, 9 from scarlet fever, 7 from diphtheria, 26 from whooping-cough, 9 from fever, and 9 from diarrhœa.

*Germany.*—The deaths registered in fifty-three cities of Germany, having an aggregate population of 6,831,222, during the week ending December 20th corresponded to an annual rate of 20·6 in a thousand. The lowest rate was recorded in Cassel, viz., 9·5, and the highest in Münster, viz., 38.

*Athens.*—The United States consul, in his dispatch dated December 10, 1887, says: "I am informed by the Greek Government that the quarantine restrictions on arrivals from Malta, Messina in Sicily, and from the coasts of the Italian peninsula between Gaëta and Cotrone have been discontinued. Intercourse is now free with all ports and countries."

*Callao.*—The United States consul, in his dispatch dated November 28, 1887, states that "on the 26th instant a cable message was received by the government at Lima from the Peruvian consul at Valparaiso, announcing that several cases of cholera had appeared at that port. A decree was then issued by the President ordering that all Peruvian ports be closed to vessels proceeding from those of Chili, with the exception of such shipping touching only at Punta Arenas (Sandy Point) in the Straits of Magellan; and this ordinance is to be held in force until the construction of the lazaretto on the island of San Lorenzo, in this bay, be concluded, and it is possible to establish a strict quarantine in accordance with proper sanitary observances. The work on the azaretto is being actively pushed under the supervision of the board of health."

*Santiago de Cuba.*—The United States consul reports, under date of December 24, 1887, that there are no new cases of small-pox, and yellow fever is declining at the military hospital. The harbor is completely free from contagious diseases.

*Montevideo.*—There were 377 deaths registered during the month of October, 1887, including 30 from small-pox and 5 from fevers.

*Havana.*—The sanitary inspector reports for the week ending December 24, 1887, 3 deaths from yellow fever and 77 from small-pox.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | December 17. | 2,280,045 | 954 | .. | .... | 5 | .... | 49 | 6 | 33 |
| Glasgow | December 17 | 545,678 | 251 | .. | .... | .... | .... | .... | 4 | 3 |
| Warsaw | December 10. | 439,174 | 193 | .. | .... | 12 | .... | .... | 7 | 7 |
| Calcutta | November 19. | 433,219 | 249 | 11 | .... | .... | .... | .... | .... | .... |
| Amsterdam | December 17. | 378,686 | 163 | .. | .... | .... | .... | .... | .... | 4 |
| Rome | November 19. | 373,356 | 173 | .. | .... | 5 | .... | 3 | 2 | 1 |
| Rome | November 26. | 373,356 | 153 | .. | .... | 3 | .... | 2 | .... | 3 |
| Copenhagen | December 6. | 290,000 | 134 | .. | .... | .... | .... | .... | 8 | 9 |
| Munich | December 3. | 269,000 | 126 | .. | .... | .... | .... | 3 | 2 | 4 |
| Edinburgh | December 17. | 258,629 | 100 | .. | .... | .... | 2 | .... | 2 | 2 |
| Palermo | December 18. | 250,000 | 141 | .. | .... | .... | .... | .... | 4 | 13 |
| Belfast | December 10. | 224,422 | 136 | .. | .... | .... | .... | 3 | 3 | .... |
| Belfast | December 17. | 224,422 | 160 | .. | .... | .... | .... | 3 | 2 | 2 |
| Genoa | December 17. | 179,534 | 100 | .. | .... | 5 | .... | .... | .... | 1 |
| Leipsic | December 17. | 170,000 | 64 | .. | .... | .... | .... | .... | 3 | 4 |
| Martinique | December 17. | 165,000 | .... | .. | .... | 20 | .... | .... | .... | .... |
| Trieste | December 10. | 150,157 | 80 | .. | .... | 10 | .... | 1 | .... | 2 |
| Bremen | December 10. | 119,000 | 56 | .. | .... | .... | .... | .... | 2 | .... |
| Havre | December 18. | 112,074 | 62 | .. | .... | .... | .... | 3 | .... | .... |
| Leith | December 17. | 72,297 | 23 | .. | .... | .... | .... | 1 | .... | .... |
| Mayence | December 3. | 65,701 | 20 | .. | .... | .... | .... | .... | 1 | 1 |
| Mayence | December 10. | 65,701 | 20 | .. | .... | .... | .... | .... | .... | 1 |
| Cienfuegos | December 19. | 35,464 | 34 | .. | .... | 24 | .... | .... | .... | .... |
| Gibraltar | December 11. | 23,621 | 9 | .. | .... | 1 | .... | .... | .... | .... |

**Hammond on Diseases of the Nervous System.**—Dr. William A. Hammond's "Diseases of the Nervous System" has made its appearance in Spanish and in Italian almost simultaneously. The Spanish

translation is by Dr. Federico Toledo y Cueva, and the Italian by Dr. A. Rubino.

## THERAPEUTICAL NOTES.

**Antipyrine as a Uterine Sedative.**—"M. H. Chouppe," says the "British Medical Journal," "has already called attention to the good effects of antipyrine in uterine pains after parturition or in dysmenorrhœa. In proof of this he relates the following case: A woman, aged thirty five, was suffering from a large myoma situated in the posterior wall of the uterus, accompanied by copious hæmorrhage, which reappeared after menstruation. Ergot checked the hæmorrhage, but caused such severe uterine pains that it had to be discontinued. Large doses of morphine were administered; these caused the pains to disappear, but at the same time the uterine contraction was relaxed and hæmorrhage reappeared. Ergot was again administered, with similar results. The attacks of uterine pains lasted two or three hours. M. Chouppe then had recourse to antipyrine. An injection containing 2 grammes [30 grains] of antipyrine was administered. At the end of twenty minutes the pains disappeared. M. Chouppe then tried the following experiment: An injection of antipyrine was given half an hour before the dose of ergot. The patient experienced no pain, although there was active uterine contraction; hæmorrhage was arrested. M. Chouppe concludes that antipyrine relieves the pain caused by the uterine contraction which is produced by ergot without diminishing the contraction. He believes that it acts upon the spinal cord, and might be administered with advantage during parturition to women of an irritable temperament."

**Large Doses of Olive-oil in the Treatment of Hepatic Colic.**—Dr. J. Touatre, of New Orleans ("Arch. roumaines de méd. et de chir."; "Lancet"), gives an interesting account of his own cure of biliary colic and gall-stones. The method of procedure was as follows: At seven in the evening a blue pill of the weight of 2¼ grains was taken, and this was followed twelve hours later by a draught of twelve tablespoonfuls of olive-oil; a quarter of an hour later a similar dose of olive-oil was taken, and then the patient addressed himself to sleep on his right side. At nine o'clock the blue pill acted, producing a copious bilious evacuation, but no gall-stones were passed. At three o'clock in the afternoon there was another bilious stool without stones, but from seven in the evening till midnight six stools were passed; the first two contained seventeen calculi of the size of a large pea, of conical shape, gravish-yellow aspect, and soft consistence. Altogether sixty stones were passed, and six of these had the volume of an olive, and were of a black color. The passage of these calculi by the cystic and biliary canals was for the most part unattended with pain, a few spasms being felt, probably at the time of the movement of the large calculi. An inexpressible relief was obtained from the pains over the liver and shoulder, which had previously caused much distress; the liver also diminished in size. For three months Dr. Touatre enjoyed perfect health, when the trouble began again; the olive-oil was repeated in similar fashion, and with the result that eighteen more calculi were discharged by the bowel. Since then he has enjoyed excellent health. He admits that some courage is required to swallow the large doses of olive-oil.

**A Gargle for Stomatitis.**—Professor Roberts Bartholow ("Am. Jour. of the Med. Sci.," Jan., 1888) says that the following is an excellent formula for a gargle for stomatitis, caries of the teeth, etc.:

| | |
|---|---|
| Tannin | 2 drachms; |
| Tincture of iodine | 4 scruples; |
| Iodide of potassium | 1 scruple; |
| Tincture of myrrh | 4 scruples; |
| Rose water | 8 ounces. |

A dessertspoonful, in a small glassful of warm water, is used to wash the mouth with thoroughly every morning.

**An Enema for Infantile Convulsions.**—M. J. Simon ("Lyon méd.," Dec. 18, 1887) recommends the following enema:

| | |
|---|---|
| Musk | 3 grains; |
| Camphor | 15 " |
| Chloral hydrate | 7 " |
| The yolk of 1 egg; | |
| Distilled water | 1½ oz. |

The rectum should first be emptied by means of a large watery or oily enema.

## ANSWERS TO CORRESPONDENTS.

*No. 123.*—We are not aware that a definite period of service is required. Details concerning the examination can be ascertained by calling at the office of the Civil Service Commission, in the City Hall. In its last annual report sets of questions are given which have been asked at the different examinations, and they show the general tenor of the examinations. It is advisable for an applicant to familiarize himself with the functions of the different city departments, officials, etc.

*No. 124.*—The theory has been very generally assented to, and is undoubtedly very ingenious, but attention has lately been called to certain facts in embryology which tend to make it untenable.

*No. 125.*—We believe that gonorrhœa is a specific disease. Ordinarily such a prognosis as you mention would be justified by the progress of the case, but it is well to remember that a simple urethritis may be the prelude to a genuine gonorrhœa, both having been contracted at the same time.

*No. 126.*—The term is, as you say, absurd, but it has been accepted, and a precise meaning attaches to it.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# THE RADICAL CURE OF HERNIA,
## WITH SPECIAL REFERENCE TO OPEN TREATMENT OF THE OPERATION WOUND.*

BY CHARLES McBURNEY, M. D.

OPERATIONS for the radical cure of hernia in non-strangulated cases have now been done sufficiently often, and enough reliable reports have been collected, to justify one in saying that, in any excepting extraordinary cases, the operation is one involving but little risk to life. Referring, for convenience, to the list of cases by different operators collected by Weir,† it is seen that in a total of 379 cases there was a mortality of a little over four per cent. It may fairly be expected that, in the hands of careful operators, this percentage will in the near future be largely reduced, and in fact the mortality has already notably diminished, as is shown by the recent reports of Macewen, Ball, Banks, Weir, Abbe, and others. The great majority of deaths have occurred from two preventable causes, hæmorrhage and septic complications.

Greater care in the ligation of omental pedicles will render hæmorrhage a very rare occurrence, and sepsis will certainly seldom be seen under proper antiseptic precautions, and also, I would suggest, when the practice of treating the operation wound by the open method is more generally adopted. I have myself operated for the radical cure in non-strangulated cases twenty-seven times, the first operation being done in 1882, and various methods having been practiced. One patient died from shock a few hours after operation. He was fifty-two years of age and a hard drinker, and I only operated upon him because his hernia was irreducible and so large and painful that he was unable to move about. In no other case have I observed hæmorrhage, high temperature, or other symptom such as to give me the slightest anxiety.

In this connection I desire to call the attention of those who look upon the radical operation as a dangerous one, and as one only to be adopted under exceptional circumstances, to the fact, which is often ignored, that every patient who has a hernia is already in a dangerous condition.

This is a very trite observation, and yet how often does one hear and read, in reports of cases of incarcerated or strangulated hernia, that by careful taxis in this or that method "the hernia was reduced and the patient dismissed with a suitable truss"! Trusses will doubtless improve and patients will become more careful in their use, but certainly, at present, a truss is, to the average man, an unreliable guard against a strangulation of his hernia. This statement is supported by the experience of every surgeon who has met with many cases of strangulated hernia, not a few of the worst of such cases having occurred in individuals who have persistently and successfully worn a truss up to the time of some accidental breakage of the truss, or some unusual exertion. It might fairly be said that probably in most of these cases the trusses were inferior, or imperfect, or badly worn; nevertheless, the fact remains that the average man who has a hernia, and who depends for safety upon the usually imperfect truss, does continually run a positive risk. If, then, a safe operation for a non-strangulated hernia could offer to the patient a probability of permanent radical cure, thereby avoiding the future risks of strangulation, the mortality record of the operation should be viewed from a different standpoint than if the operation were done for the relief of an infirmity that could never in itself prove dangerous to life. It should rather be compared to the mortality following operations for the relief of close stricture of the urethra, a condition, when neglected, liable to result in retention and extravasation of urine. The condition first spoken of—that the operation should offer to the patient a probability of permanent radical cure—is certainly now the one which especially interests the surgeon, the question of the reasonable safety of an operation having been settled in its favor, and the question of the permanence of the cure after operation being still an open one. I shall not occupy the time of the society in describing the various operations which are now being done, and with which you are all familiar, but I must refer to certain steps in these operations in order to explain the reasons that have led me to adopt a particular method.

Certainly no operative procedure is worthy of the name of radical cure that does not, at least in the very large majority of cases, secure to the patient not only a permanent relief from his malady, but also a freedom from mechanical appliances used to prevent its return. A method such as Heaton's, which does not even purport to obliterate the hernial sac or its communication with the general peritoneal cavity, but only to excite a variable amount of condensation of the areolar tissue outside of the sac, does not deserve the name of radical cure. Moreover, the percentage of failures by this method, generally acknowledged to be about 70 per cent., and the necessity for using after it some appliance in the form of a truss or bandage to prevent recurrence, justify one in calling Heaton's method at best an uncertain palliative procedure. No one who has watched the steady advance of a hernial protrusion in a case of recurrent hernia will believe that a mild thickening of tissue outside of the sac will often prove to effect a permanent cure. Nor do I think that a patient who is obliged to wear a truss after such an operation can be more properly called cured than one who wears an elastic stocking for the relief of varicose veins, or a splint over a half-united fracture. To the same objections are open all operations which depend upon plugging the canal with an inverted pouch of skin, or upon narrowing the canal by sutures passed subcutaneously. Apparently some permanent cures have been effected by means such as these, but no surgeon will deny, I think, that so long as a communication exists between the general peritoneal cavity and a hernial pouch, no matter how small the latter may be, just so long

* Read before the New York Surgical Society, December 28, 1887.

† "Medical Record," March 5, 1887.

is there danger, not only of a hernia, but of a strangulated hernia.

It is true that, if the hernial canal were a tube with unyielding walls, a firm plug of any kind pushed into that canal, either within or without the sac, would prevent anything from descending through it; but, as the canal has boundaries which are capable of enormous distension under the steady pressure of the hernial wedge, one would not often expect a permanent cure from the insertion of a barrier which does not obliterate the sac, and which itself tends by atrophy to become constantly smaller.

That a communication between the general peritoneal cavity and a hernial sac may exist for a long time without the occurrence of a hernia has been noted by many. In two of my own cases, both patients being adults, the hernial pouches were found to be congenital, and yet in one case the hernia had existed for only three years, in the other for three weeks. Yet, undoubtedly, either of these patients had been liable at any time, under proper provocation, to the sudden development of a strangulated hernia.

The great real advance in attempts to cure hernia radically was made by Riesel, Czerny, Nussbaum, and others, who appreciated not only that the exposure of the sac by a cutting operation was a sufficiently safe one, but that it was the *only* method by which that all-important end, the complete obliteration of the sac, could be attained. In most of his cases Riesel tied the neck of the sac as high up as possible, leaving the sac below the point of ligature to help fill the distended canal. Nussbaum, Sewel, and Czerny tied the sac high up, but they removed the sac below the point of ligature. And it is now generally accepted by surgeons that the most important step in the attempt to cure a hernia radically is the complete obliteration of the hernial pouch of peritonæum. To illustrate the truth of this proposition, I refer to the histories of three cases in which the sac was not removed:

Case I.—M. M., aged sixty-five, a large-bellied man, with flabby abdominal wall, was admitted to St. Luke's Hospital under my care on May 31, 1886. This patient had been operated upon by one of my colleagues six months before for the relief of a large left inguinal reducible hernia.

He came to me for relief on account of a ventral hernia on the left side, situated above the internal ring about half an inch, and opposite the middle of Poupart's ligament. The hernia consisted of a protrusion of about the size of a half-egg. The base of the tumor was much larger than the apex. I dissected out the hernial sac, to which, of course, there was no neck, and its greatest depth was less than one inch. Freely exposing the edges of the opening in the abdominal wall, these were very strongly brought together. On June 24th the wound had firmly healed, and a strong cicatrix had formed. This patient was seen by me a week ago. Both the scrotal and ventral hernia had recurred, according to the patient's account, very soon after operation.

Case II.—A. F., aged twenty-four, came under my care on February 5, 1887. Patient had a right inguinal reducible bubonocele. I operated on February 14th. The entire sac returned to the abdominal cavity during etherization, and it was impossible to draw it down. The wound was treated by the open method, and a very strong sound cicatrix formed. On March 13th the wound was entirely healed. In less than a month the hernia had returned, and was at least half as large as it had been before operation.

Case III.—P. H., forty-two years of age, came under my care at Bellevue Hospital on December 23, 1886. Patient had a left inguinal reducible hernia of moderate size, which had existed for only four weeks. The tumor entirely disappeared in the recumbent posture. I operated on December 30th, and, as in the preceding case, found that the sac had entirely disappeared. A careful search failed to discover it. The wound, on February 14th, was soundly and strongly healed. The patient was examined by me about a month ago, and the hernia found to have recurred, and to be considerably larger than at time of operation.

As already stated, these cases are cited to show how important it is to completely obliterate the sac in attempts to obtain a radical cure. They are the only cases I have operated upon in which the sac has not been found and removed.

The method of closing the sac by ligature is clearly better than the other plan of cutting it off and closing the communication with the peritoneal cavity above by suture. It is more rapid, it is more even, and the great danger is absolutely avoided of having the intestines suddenly forced out through the wound by an unexpected effort of coughing or vomiting. Two other methods of shutting off the sac remain to be referred to—one that by torsion of the sac, the other that of Macewen.

By whom the first suggestion of twisting the sac was made I do not know, but the application of the method has recently been described by C. B. Ball,* who reports twenty-two cases with no deaths, and only three failures or "partial" recurrences. This method does not, I think, appeal to one as absolutely safe, for there must in its application be some danger that a portion of intestine adherent near the mouth of the sac be drawn into the twisted canal. Nor could one be certain that the twisting process would not rupture the peritonæum at one or more points. Macewen retains the entire sac, doubling it up by means of a suture passed first through and through it, and then through the abdominal wall above and to the outer side of the internal ring. This suture, being fastened to the lower end of the sac, when drawn upon from above puckers the sac up longitudinally, and forms, as Macewen calls it, "a boss or bulwark on the peritoneal aspect of the internal ring."

That this method obliterates the sac is evident from the brilliant results obtained by Macewen† in a large number of cases, but I question its superiority in ordinary cases over the carefully applied ligature, and in larger herniæ it makes no provision at all against the great laxity of peritonæum which exists in all such cases around the internal orifice of the canal.

It seems to me clear that we should endeavor to restore to the peritonæum at the internal ring the naturally smooth surface that exists where no rupture has occurred, but that we can not depend upon a thickening of peritonæum at this point, as by Macewen's method, to give strength to the abdominal wall. Strength is to be obtained by closing

* "British Med. Journal," December 10, 1887.

† *Ibid.*

the gap existing between the lower edge of the combined internal oblique and transversalis muscles and Poupart's ligament.

As a substitute for this complete repair of a vitally weak spot, much labor has been lost in sewing up the pillars of the external abdominal ring. This has been done, and is still done, by many operators, different forms of suture being used—silver, catgut, silk, etc.—each suture being especially praised by one operator or another. One reads still of "freshening" the borders of this external ring—the edges of which are formed by tendinous fibers only, and are not much thicker than a sheet of paper—with a view to their ultimate union.

It is evidently impossible to cause the edges of the external abdominal ring to grow together, for, in the first place, they are too thin, and, in the second place, the ordinary movements of respiration alone, to say nothing of the numerous other occasions when the external abdominal muscle is rendered tense, pull the edges apart. The truth of this statement can easily be tested, as I have done it, by drawing the pillars of the ring together on the cadaver and then imitating the contraction of the muscle by tension applied in the direction of its fibers. This is doubtless a provision of nature to avoid compression of the cord and its vessels. Sutures, whether permanent, as of silver or silk, or temporary, as of catgut, must soon become loose, as in other parts of the body when subjected to any tension. The value, then, of sewing up the external abdominal ring must depend entirely upon the amount of *permanent* union that is formed between its edges. It is evident that between thin sheets of diverging tendinous fibers no strong union can be effected in this manner. Another vital objection to trusting to the practice of sewing up the external abdominal ring is this: It makes no provision for the portion of canal existing between the internal ring above and the external ring below. If a recurrence commences at the internal ring the distended canal is still there ready to receive it, and sooner or later the advancing wedge must break down the feeble tissue below.

To repair the damage that has occurred, the whole track from the internal ring downward must be narrowed and its walls strengthened. This has been attempted in various ways, of which Riesel's method, that of Macewen, and the healing of the wound by granulation are the chief representatives. Riesel * split the anterior wall of the canal—that is, the external abdominal aponeurosis—as far the internal ring. He then removed a portion of the anterior wall and applied transverse sutures from the internal ring downward, so as to close the canal as completely as possible, trusting that the union occurring would remain permanent. In most of his cases Riesel also, after tying the sac high up, left the empty sac below, believing that as this shriveled up it would give additional protection. The superficial wound was then united over the deep sutures. Macewen's † method of strengthening the weakened abdominal wall depends (to use his own words) upon "carrying the conjoint tendon outward" (by means of buried catgut sutures) "toward the fixed, unyielding ligament of Poupart, and uniting it with the transversalis and internal oblique muscles." He says again: "The canal having been refreshed by the finger and the handle of the scalpel during removal of the sac therefrom, its walls are brought into direct contact." While the results of operations as given by Macewen are the best that have been published, I must believe that these results are due to the careful obliteration of the sac, and not to the treatment of the conjoint tendon. The refreshing process with the finger or the handle of the scalpel, which can only mean the breaking up of areolar tissue, would not in any other part of the body result in strong union, *when the parts are afterward carefully covered up with neatly adjusted skin, and treated under a close dressing*, for this amounts to a subcutaneous suturing, as in Wood's operation. To obtain firm *primary* union, tissue must be laid bare with the knife, and surfaces that are actually raw brought in contact. If tension exists, these buried catgut sutures will cut their way through as readily as silver ones, and the tension that will afterward be applied in the erect position will certainly break down any feeble union.

It seems to me, therefore, that this part of Macewen's operation is fairly open to criticism. In the same author's reports of cases of femoral hernia the statement is made that "the falciform process was united to Gimbernat's ligament." How these two thin sheets of tendinous fibers, which occupy planes nearly at right angles to one another, can be made to unite by suture, I am unable to understand.

The conditions for obtaining closure of the canal, or rather union between the separated parts, being very unfavorable, I have come to believe that granulation of the wound, only to be obtained by treating it openly, is the means to which we must look for strong repair. I became convinced of this about a year and a half ago, and since that time I have treated the operation wound in all my cases of hernia by the open method. I was also led to do this on reflecting that the natural method of closing the weak umbilical opening in the infant by the cicatricial process is usually a very satisfactory one. Doubtless it would be more so if the recumbent posture could in the infant be maintained for a longer time.

The method adopted has been this: With the usual antiseptic precautions, a free incision is made, beginning opposite the internal ring and extending to the lower end of the sac. The incision is rapidly deepened at the outer concave edge of the external ring, as, when that is freely exposed, it is easy to follow the sac downward. The sac is then dissected out to its lower end and stripped from all its attachments to the cord, this stripping process being most easily begun at the upper end of the sac. The outer wall of the canal is then split up to the internal ring, thereby enabling one, as Riesel * has pointed out, to lift the sac, neck and all, vertically from the body, and so apply a ligature most evenly and perfectly at the junction of the sac and the general peritonæum. The sac should, I think, always be opened before applying the ligature, as, when this is

* Otto Riesel, "Deutsche med. Wochenschrift," Berlin, 1877, pp. 449 and 467.

† "Annals of Surgery," vol. iv, p. 91.

* Otto Riesel, "Deutsche med. Wochenschrift," Berlin, 1877, pp. 449, 467.

done with care, no additional risk is run, and, the sac being open, it is easy to demonstrate that no portion of intestine or omentum is adherent to the interior. The operator's left forefinger being then introduced into the neck of the sac, and the sac drawn thoroughly out by the right hand, the ligature can be tightened by an assistant over the tip of the operator's finger. This insures positively that the sac is tied high up, and that no intestine or omentum is included. If adhesions exist between the wall of the sac and intestine, these should be broken down if this can be easily done; if not, a thin layer of sac-wall, including the intestinal adhesion, should be dissected off. If any but a very minute portion of omentum is in the sac, whether it is adherent or not, I tie it off very securely with catgut and return the stump (which should be large to avoid slipping of the ligature) to the general cavity.

In the case of femoral hernia, the process thus far is the same, excepting that none of the short anterior wall of the femoral canal is cut, as it is very easy in these cases to carry the ligature as high as Gimbernat's ligament and there tie it. There now remains a long wound in the case of inguinal hernia, which includes the whole length of the canal to the internal ring. The bottom of this wound is formed by the fascia transversalis with the peritonæum behind it, and the conjoined tendon and the two deeper muscles above; Poupart's ligament and a strip of external abdominal aponeurosis below. My aim being to mat all of these tissues together by a firm cicatrix, I now sew together, on each side of the wound, from the internal ring to the spine of the pubes, the various layers forming the abdominal wall, excluding, of course, the fascia transversalis and the peritonæum. Six or eight interrupted stitches on the upper side of the wound bind into one thick edge the skin, the external abdominal aponeurosis, including the inner pillar of the ring, and the transversalis and internal oblique muscles and conjoined tendon. As many more stitches on the lower side of the wound bind together the skin and Poupart's ligament, including below the outer pillar of the ring. This stitching is done to insure patency of the wound throughout its entire depth and to provide against the possibility of the formation of a feeble union between any two layers on opposite sides of the wound. The whole canal, including the stump of the tied-off sac, must now be filled up by granulation.

That the wound may not be unnecessarily wide, three or four large catgut stitches are now carried through the thick edges of the wound, the cord being left below them, and the edges loosely brought together. Below the site of the external abdominal ring the wound in the scrotum is closely sutured and, if necessary, drained. The wound being open above, no drain is required there. A strip of iodoform gauze is then packed in the wound, a firm pad of the same material above that, and then a complete and very firm antiseptic dressing with spica bandage applied. This dressing is left on from ten days to two weeks. At the end of this time an irregular granulating wound is left which is slow in healing, six weeks or more being usually required to produce a firm cicatrix. I look upon the length of time spent in bed as a valuable aid in securing strong repair. When the wound is soundly healed, I have allowed patients to get up and go about, always telling them *not* to wear a truss, for I am sure that a repaired wound placed between two compressing forces—the truss without and the abdominal distension within—must necessarily become thin and weak.

In the case of femoral hernia, the sac having been tied as high up as possible, the tissues forming the walls of the wound are stitched in a similar manner. Supposing the wound to extend from above downward, it is easy to stitch the upper angle of the skin wound by two strong sutures to the lower border of Poupart's ligament. The skin at the inner side is stitched to the iliac portion of the fascia lata, and that at the outer side and below to the fascia lata forming the outer and lower edge of the saphenous opening. This process inverts the skin very markedly, and here also a few stitches from one side to the other partially close the wound and relieve tension. The wound is then closely packed with iodoform gauze, and a firm compress applied.

The advantages maintained for this open method of wound treatment are:

1. That in inguinal hernia one is able, after laying open the canal, to very evenly and completely tie off the sac.

2. That, the wound being open, no drainage is required, and the risk of abscess and septic complications is reduced to a minimum.

3. That the walls of the canal are united throughout by strong cicatricial tissue.

I am aware that no one of the cases which I present for inspection could be spoken of as a test case of radical cure. Far too short a time has elapsed since the date of operation in every case. But I have brought some of my patients here merely to illustrate the condition of the parts at different stages after operation.

Case IV.—R. S., a woman, thirty-one years old, admitted into my service at St. Luke's Hospital, May 30, 1887. This patient had a left femoral hernia of five years' standing, and a right femoral hernia of a few months only. Both tumors were the size of a small egg.

*Operation on June 3d on Both Sides.*—A mass of omentum was found in either sac. These were tied off and the stumps returned. The sacs were then tied with strong catgut very high up and the sacs removed. The wounds were then treated in the manner already described. The repair of the wounds was unusually slow, two small sinuses refusing to heal for a long time. Sound healing was secured, and the patient discharged without a truss on September 3d. Patient examined by me on December 22d. Cicatrix found deeply inverted and very strong.

Case V.—O. L., thirty-three years old, admitted into St. Luke's Hospital on March 22, 1887. Patient had a left inguinal omental hernia of three weeks' standing.

*Operation, March 30th.*—The sac was found full of omentum, which was adherent on all sides. This hernial sac proved to be a congenital one, the omentum and testicle lying in contact. The canal was split up to the internal ring, at which point, owing to the impossibility of stripping the sac from the cord, its neck was tightly sewed with catgut. By the same method a tunica vaginalis was formed by sewing the lower portion of the sac. The wound was treated as before described. Patient discharged without a truss on May 18th, with the

wound soundly healed. Patient seen on December 17th, and condition found perfect.

Case VI.—T. G., aged forty, admitted into St. Luke's Hospital, October 19, 1887. Had a left indirect inguinal hernia filling the scrotum. This hernia had existed for twenty-five years. It was easily reducible.

*Operation on October 21st.*—The canal was split to the internal ring and the sac ligated at that level, after being opened and found empty. The wound was treated as in other cases, and healed in the seventh week.

This patient is shown simply to demonstrate the appearance of the parts after a recent operation.

Case VII.—S. K., aged seventeen, had suffered for some years from retained testicle on the right side. For a year past the testicle had given trouble by occasionally appearing in the scrotum and then becoming caught in the canal. For the last six months a mass of intestine difficult of reduction had come down from time to time. On one occasion the hernia had become strangulated, and the attending physician had regarded an operation as inevitable. Reduction was, however, effected finally. I operated for radical cure on May 8th. The canal was split its entire length, and the cord and sac tied at the level of the internal ring. The wound was treated as in the other cases, and was soundly healed at the end of six weeks. At the present date the parts appear absolutely strong and sound.

Case VIII.—A. K., aged fifty, female, was admitted into St. Luke's Hospital on November 14, 1884. The patient had an irreducible omental femoral hernia on the right side of two years' standing. I operated on November 17, 1884, by the Czerny method, opening the sac, tying off a large mass of omentum, tying the sac high up, and closing the superficial wound with catgut stitches. This patient was discharged, a small sinus still being open, on December 15th. She returned on May 2, 1887, and was found to have a full recurrence of the hernia.

*Second Operation on May 3, 1887.*—The sac was found to be empty. It was tied off high up in the femoral canal, and the wound treated as in other recent cases. Patient seen one week ago, and a very strong, sound condition of the parts found.

Case IX.—M. P., aged twenty-four, admitted into St. Luke's Hospital April 19, 1887. Patient had a right partially reducible inguinal hernia of five years' standing. The tumor in the scrotum was of the size of a large egg. Operation on April 23d. The sac was found filled with adherent omentum. This was tied off and the pedicle returned. The canal was split up to the internal ring and the sac tied off as evenly as possible. The wound was treated as described before. On May 27th the patient was discharged without a truss and with the wound soundly healed. At the present time the parts are as strong as ever, with no indication of weakness.

Case X.—F. Y., aged thirty-nine, had suffered from a right omental hernia of small size for some years. I operated on May 21, 1887. The sac was dissected out and opened, the canal split its entire length, the omentum tied off, and the sac ligated at the level of the internal ring. The wound was treated as before described. Sound healing occurred in the seventh week. Patient now reports by letter a perfectly sound and strong condition of the parts.

Case XI.—H. T., aged thirty-two, admitted into St. Luke's Hospital February 1, 1887. Patient had a large left inguinal reducible hernia of three years' standing. Operation February 7th. Sac found to be congenital and empty. The canal was split to internal ring, the sac tied off at that point, and the wound treated as in the other cases. April 4th, wound soundly healed. Patient discharged May 4th without a truss. I have been unable to trace this patient.

Case XII.—R. M., aged sixteen, admitted into St. Luke's Hospital on December 23, 1886. Right inguinal hernia of nine years' standing. Hernia intestinal and of the size of a large egg. It had been reducible up to three weeks ago, since which time the tumor has been constant. Operation on December 28, 1886.

*February 3d.*—The wound is found completely healed, and the patient was discharged without a truss.

This patient was seen by me three days ago and the condition of the parts found perfect.

Case XIII.—E. B., aged forty-three, with a reducible femoral omental hernia of the left side of three years' standing, admitted into St. Luke's Hospital on January 22, 1886. This patient I operated upon on March 5th according to the usual Czerny method, the sac being opened, the omentum tied off, the sac ligated high up, and the superficial wound closed tightly with catgut sutures. A recurrence of the hernia took place in January, 1887, and on February 26, 1887, I operated again. The sac, having been dissected out, was found empty. It was ligated as high as possible and the wound treated as in other recent cases, the integument being stitched to the edges of the saphenous opening. The stitches did not hold well, though the wound was healed by April 6th, and the patient was allowed to be up. I examined this patient on December 23d and found that a very slight recurrence had begun.

This is the only case operated upon by this method where the slightest sign of recurrence has occurred.

Case XIV.—A. N., female, twenty-eight years old, admitted into St. Luke's Hospital on May 5, 1887. Patient had a right irreducible inguinal hernia of fourteen years' standing.

*Operation, May 7th.*—At the bottom of the sac in the right labium the ovary was found. The canal was split to the internal ring and the sac and ovarian ligament were tied off at that level. Wound soundly healed on June 15th, and patient discharged without a truss. Patient seen by me on December 26th and parts found absolutely strong and sound.

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# THE MODERN TREATMENT OF STRANGULATED HERNIA.*

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Encouraged by the remarkable successes in the treatment of cases of strangulated hernia by the methods suggested by Mitchell Banks, Czerny, and others, surgeons have latterly paid special attention to the radical-cure operation as applied to cases in which strangulation exists. In consequence, the operation of kelotomy has been practically revolutionized, and in the lessened mortality as well as the capital results obtained the new operation presents a most gratifying contrast to the old.

The contributions to the clinical literature of this subject have been exceedingly valuable of late, and it has occurred to me that a brief paper on the general principles which underlie the operation, and upon the verity of which its

* Read before the New York Academy of Medicine, December 15, 1887.

position as a legitimate surgical procedure depends, would not be altogether uninteresting. These are:

1. A more general recognition by the profession of the value of time in the earlier stages of the strangulation. The day is not far past when surgical aid was scarcely called before the second, third, or fourth day of the strangulation, or until after most serious and often fatal complications had supervened. Earnest protest against this habit of procrastination has to a great extent changed all this, so that now surgical relief can generally be rendered before pathological changes in the tissues that are irremediable have taken place.

2. Modern kelotomy, furthermore, implies an abandonment of those uncertain and pernicious methods of medication and practice which, founded on a false pathology, sought to relieve the strangulation by producing a condition of systemic relaxation. It is now recognized that spasm as a causative agent in the production of strangulation never exists.

3. Modern kelotomy restricts the employment of taxis to within limits that are rational and safe. Necessary as properly directed taxis is in the reduction of hernia, by its indiscriminate and reckless use irreparable damage has been done the intestine. Who among us that sees much of these things has not had the operation reveal a contused and lacerated condition of the gut that was due not to the original constriction, but to the senseless and brutal manipulation (done under the mild term of "taxis") which it had received? In this connection I can but feel that it has been a misfortune to designate by a special appellation the manipulations we make in reducing hernia. The practice has exaggerated their importance in the treatment, and been a fruitful cause of abuse.

4. Modern kelotomy implies the *early* resort to a cutting operation. Inconsiderateness and rashness are nowhere to be more severely reprehended than in the practice of surgery, and yet nowhere do we meet with more conspicuous illustrations of the folly and crime of temporizing than here. Many lives had to be sacrificed before the profession seemed to realize that the gangrene and ulceration, the fæcal extravasation and stercoraceous vomiting, the peritonitis and the collapse, were not necessary and integral factors of the primary condition of strangulation, but *secondary complications*, developing later on in the progress of the disease, the legitimate result of delay in affording relief to the original constriction. Let the strangulation but be relieved before inflammation or necrosis of the gut and adjacent tissues supervenes, and these graver dangers are avoided.

In this connection I may be pardoned for saying that a criticism which savors more of malice than of justice was made not long since, that the author of this paper "cuts every case of strangulated hernia that is unfortunate enough to fall into his hands." This is far from the truth. The author, however, frankly admits that he cuts, and expects to continue to cut, in every case of strangulated hernia in which gently applied taxis, under anæsthesia, preceded as a rule by the application of ice, does not yield reasonable expectations of success within a comparatively short time. By a comparatively short time I wish to be understood as meaning about an hour after positive symptoms of strangulation present themselves. Nothing is gained by delay. Everything is risked. It has so happened that I have never had occasion to cut until six hours had elapsed after strangulation had occurred; but in seven cases in which I have operated during the sixth and eighth hours after strangulation I have in every instance found local disorganization sufficient to justify the operation.

5. Modern kelotomy is an antiseptic operation demanding the fullest application of Listerian principles.

6. Modern kelotomy requires in the disposition of the hernial sac the freest impartiality of judgment. "What shall be done with the sac?" was at one time a prolific theme for acrimonious discussion. Certain cases require incision, and in such cases incision should be made. In other cases the strangulation can be readily reduced without opening the sac. And in such cases it would be folly to complicate the operation, unless other ends were aimed at, by exposing the patient to greater and unnecessary dangers.

7. Since Mitchell Banks, of Liverpool, has urged the possibility and expediency of perfecting the old operation of kelotomy, so as to add to the operation done for the relief of *strangulation* the inestimable advantages of an operation for *radical cure*, the strongest possible encouragement is given for the performance of an early, thorough, and perfected operation.

*Treatment of Strangulated Hernia.*—Regarding the special treatment of strangulated hernia I have nothing new or novel to add to the excellent recommendations of the later writings on the subject. A considerable experience with the disease in question during the past fifteen years has led to the adoption of a plan of treatment substantially as follows:

1. Pain is allayed, vomiting quieted, and nervous tranquillity secured by the hypodermic administration of morphine with atropine.

2. After the latter object has been in a measure attained, a careful examination is made of the hernial tumor, any attempt at reduction being carefully avoided.

3. If evidences of local inflammation are present, or if there is much swelling of the tumor, a poultice of linseed-meal and cracked ice or Leiter's ice-coil is at once applied. Should the strangulation be of long standing or the patient be feeble, with poorly nourished tissues, these are dispensed with.

4. A stimulating enema of turpentine and oil, or a large emollient one of thin flaxseed-tea, is now administered and the rectum thoroughly washed out. Should it be required, the patient is catheterized. If the tumor is at all distended, no attempt at taxis is made until

5. The patient is anæsthetized, and this is never done until permission has first been obtained to proceed with the operation in case taxis should fail. As the result of this treatment, many, perhaps a majority, of the strangulated herniæ which I have seen in their early stages have been successfully reduced by a manipulation so gentle and *persuasive* as hardly to merit the distinctive title of taxis.

In this connection I desire to emphasize the advantages to be gained by putting the patient under full anæsthesia (preferably, in this instance, by chloroform), covering the tumor with a rather large and heavy ice-poultice, elevating the lower extremities, and keeping the hands entirely off for a period of from twenty to forty minutes.

In a number of instances thus treated I have had the satisfaction of seeing the tumor almost imperceptibly slip back of itself, even after prolonged taxis had been unsuccessfully employed.

*Taxis.*—Just how long the attempt at taxis is justifiable no absolute rule can be laid down. Every case is a law to itself. To the practiced touch a moment sometimes is sufficient to decide the possibility of a successful reduction. Again, the trial may be prolonged twenty, or even thirty minutes, provided always that the gentlest manipulations are employed.

Taxis being unsuccessful, the operation should be at once undertaken, every antiseptic precaution being observed.

*The Operation.*—By careful dissection the sac should be freely exposed. If the strangulation is of recent occurrence, and the sac free from inflammation and of normal appearance, an effort may be made to secure its return by gentle taxis into the cavity of the abdomen.

Should adhesions bind down the sac, if not too extensive, they may be broken up, precautions being taken that all bleeding has been effectually checked before the sac is returned. Should constricting bands girdle the neck of the sac and prevent its return, these, if possible, should be divided. Adhesions around the neck of the sac must be treated with deliberation. In the first place, they are apt to hold back the strictured portion, suffering the sac itself to slip through, thus conducing to *reduction en bloc*—a condition I had the utmost difficulty in preventing in one of my cases. Secondly, such adhesions are apt, by closing or partially closing the internal abdominal aperture, to divert the course of the retreating hernia out of the canal and into the intramuscular septa or the subserous areolar tissue. Thirdly, such adhesions, when strong, favor, as I have personally observed, an easy rupture of the wall of the sac. Fourthly, they not only are prone to bleed freely themselves, but, by their contraction, they can draw down important blood-vessels, as I had opportunity of witnessing last winter. I was assisting a friend in an apparently simple kelotomy—an indirect inguinal. The stricture which the doctor was about to divide was at the internal ring. Desiring to inform myself of the condition of the parts, with the doctor's permission I passed my finger up to the ring (the sac not being opened), and found an unusual amount of adhesive material crowding the canal on all sides. Careful examination revealed the deep epigastric artery, enveloped in a mass of inflammatory material, skirting the *outer* and *upper* border of the ring, where it would certainly have been divided had the customary incision been made.

Serous effusion within the sac may be safely got rid of by puncturing the sac with a capillary hypodermic needle. If now the sac can not be readily reduced, it should be carefully opened.

Unprejudiced surgeons, I believe, now agree that in all those cases where it would be safe to replace the hernia by simple taxis—if *that* were possible—the same thing may be done after restraining adhesions of the sac or constricting bands around its neck have been divided by the knife. But in those cases in which the symptoms are suggestive of an aggravated condition of the bowel, and on account of which it would be hazardous to attempt to reduce it by taxis, the sac must be opened. The sac being opened, the stricture should be sought for and divided according to established surgical rules.

One or two points of interest in connection with the return of the gut suggest themselves just here. Of course the primary object for which the operation was undertaken was to liberate the constriction and return the gut to its natural cavity. Certain conditions, as we all know, may be found upon examination that would not render its immediate return advisable.

Dependent partly upon the constriction that was the original cause of the strangulation and partly upon the violence that has been inflicted upon the hernial tumor in efforts at reduction, the walls of the gut are found to be more or less swollen, infiltrated, ecchymosed, softened, or gangrenous. These pathological changes vary through every degree from a pinky congestion to extensive sphacelus with fæcal extravasation.

In some cases a deep groove or sulcus will mark the seat of the constriction. Again, a line of ulceration may be found only at that end of the strangulated bowel directly continuous with the upper and distended portion of the alimentary canal, while the parts below are normal. This was well illustrated in a case in which I operated last week, fifteen hours only after strangulation. Or, again, the surface of the bowel lying within the sac may be dotted over with innumerable minute gray points of necrosis, or the gut may be softened, of vinous or purplish hue, and easily torn.

Now, under these conditions, what should be done? In cases of simple congestion and sphacelus the answers are simple. Return the gut in the one case, and make an artificial anus in the other. In cases of deep congestion a serious perplexity often arises. How far the vitality of the bowel is consistent with change of color, drying of the secretions, emphysematous crackling, and fæcal odor, I must confess I do not know. I have seen two cases, both occurring in the practice of the late James R. Wood, in which gut that was actually purple was replaced, and in both instances with the best possible results.

That distinguished surgeon was a firm believer that "the belly was the best place for the bowel!" I have been interested to note in two cases of my own, in which my attention was specially engaged in this matter, that in one case, where a deep furrow marked the seat of the stricture and where the gut itself was of a dark maroon shade, the condition of the gut did not warrant its reposition for nearly three hours after the operation, whereas in another case of more prolonged strangulation—graver constitutional symptoms—the conditions of the gut being almost identical, only without the furrow or groove, the circulation was restored in one fourth the time. I do not know if these

observations show anything of themselves, but with others they may help us in deciding one of the many perplexities that arise.

I do not feel that we are ever justified in returning strangulated intestine until it gives some evidence of reanimation. It is perfectly feasible to keep it enveloped in moist flannels and rubber tissue for several hours.

Regarding ulcerations, if they are small and covered with a layer of fibrinous lymph—as not infrequently they are—they should be left alone, although I do not think it is wise to replace the intestine if there is reasonable ground to suspect that ulceration extends through the wall of the gut. I knew a case, under just such a condition, to terminate on the second day in rupture, fæcal extravasation, and death.

If the condition of the gut warrants it, and sometimes it may not do so until several hours after the operation, partial excision may be practiced and the intestine successfully reduced. In some experiments I made several years ago upon dogs I was surprised to notice the remarkable vitality the intestine displayed after very serious local bruising. The arterial supply is so abundant it could hardly be otherwise, and, in the light of these experiments, I have maintained a favorable prognosis in the face of serious discoloration, dryness, crackling, and even a fæcal odor, provided the parts were kept warm and moist and left alone. Extensive perforations and lacerations occurring in herniated bowel necessitate the formation of an artificial anus.

*Adhesions.*—Adhesions have been to me a source of great vexation. They may be acute or chronic. If acute, and simply binding down the body of the sac, they may be gently broken down. If they surround the neck of the sac, binding the intestine to the upper end of the sac, or the intestine to the cord, or the intestine to an undescended testis, as in one of my cases, the separation must be accomplished with the greatest possible gentleness and circumspection, on account of the extreme friability of the tissues.

Chronic adhesions may be divided with more boldness, provided no traction is made on the inflamed intestine. In all cases the intestine, both above and below the strictured portion, should be carefully examined after the operation.

Regarding the return of the intestine and the treatment of the omentum I have nothing of interest to add to well-established surgical rules.

*Treatment of the Sac.*—The modern operation finds its greatest advantage in the radical cure it favors by the complete closure of the sac and permanent obliteration of the hernial canal. After the old operation the enlargement of the ventral apertures necessitated by the operation actually left the opportunity for the occurrence of hernia far greater than before. Availing himself of the immunities against inflammation afforded by antisepticism, Mitchell Banks suggested the propriety of completing the operation of kelotomy by replacing the gut, ligaturing and removing the sac, and closing the canal by deep sutures passed through the abdominal walls, thus approximating the sides of the canal and obliterating its cavity. As a result of his investigations, not only was a decided stimulus given the subject of kelotomy, but it was speedily demonstrated that such operations were signally more successful regarding mortality not alone, but especially in the capital results obtained. The operation has been successfully performed upon all forms of hernia—inguinal, femoral, and umbilical—and with equally satisfactory results.

Without treading on the ground of my fellow-essayists, of whom I must beg pardon for occupying so much of the evening, I would beg to add that in the present light of hernial surgery no operation for strangulated hernia can be said to be properly and surgically performed without the final closure of the hernial canal. By this practice five decided advantages are gained.

1. Complete isolation of the peritoneal cavity and its permanent closure.

2. Permanent closure of the open and patulous orifices through which the gut escaped.

3. Shortening of an abnormally elongated hernial canal.

4. Prevention of septic percolation into the cavity of the abdomen in case suppuration should ensue.

5. *The inestimable advantages that would result to a patient from a permanent cure.*

In the performance of the operation the clinical requirements are, first, a safe and satisfactory disposition of the sac, and, second, a total obliteration of the hernial rings and an accurate coaptation of the sides of the canal.

*Disposal of the Sac.*—The sac may be dealt with in one of several ways.

1. The sac may be reduced within the abdominal cavity and the canal then obliterated.

2. The sac may be left within the canal (especially when firm adhesions prevent its safe return), and the superficial tissues and the skin be firmly approximated over it.

3. The sac may be ligatured, the hernial investment amputated, and the stump returned.

4. The sac may be ligatured, amputated, and then invaginated in the canal.

5. The sac may be drawn up upon itself and fixed as a bulwark against the internal ring, as in Macewen's operation.

6. My friend, Professor J. D. Bryant, suggests, in his recent surgery,* dividing the abdominal wall longitudinally and parallel to the pillars and then weaving the sac into the fibrous structure.

The first method, except in very acute hernia, should be dismissed from consideration. A thickened and partly inflamed sac thus reduced may readily light up a peritonitis. Adhesions, with attendant pain and discomfort, are apt to form to a much greater degree than in cases where the sac has been ligated and removed.

The objections to the second method are that with the sac remaining *in situ* complete obliteration of the canal can not be effectually secured. A canal thus treated becomes exceedingly sensitive and a truss can scarcely be worn. Between the comparative advantages of the third, fourth, and fifth methods a choice can sometimes be made only after mature deliberation.

I have operated in nine cases of strangulated hernia in which I have been enabled to carry out the operation in all

* "Manual of Operative Surgery," D. Appleton & Co.

its details. Eight of the patients recovered; one developed delirium tremens on the second day, and died from that cause on the fourth.

Of the nine patients so operated upon, all were cut within the first twelve hours of strangulation—two during the sixth hour, four during the seventh, two during the tenth, and one during the eleventh. Seven were males, two females. Among the males six had inguinal hernia, one femoral; the females both had femoral hernia. Of the inguinal variety, four were indirect entero-epiploceles, two were direct enteroceles. Of the femoral variety, one was an incomplete enterocele, in the man. In the women both were complete femoral enteroceles.

In two cases of the femoral variety, and in two cases of the inguinal, after the sac had been freely exposed and opened and adhesions broken, the intestine was at once reduced. The sac was drawn down and transfixed by a double ligature, which was tied with Tait's Staffordshire knot. The distal portion was then removed. The sac (in two cases slightly charred by the application of the actual cautery) was then pushed up into the abdominal cavity. A drainage-tube was introduced and the wound closed by sutures.

In one case of femoral hernia and in three of inguinal the sac was first securely caught at the opposite sides by hæmostatic forceps, just enough of the tissue being seized to prevent the possibility of the sac slipping back into the abdominal cavity. Amputation was then performed. Bleeding was at once arrested, catgut ligatures, if necessary, being employed. The divided extremity was now firmly united by the shoemaker-stitch, strong and reliable catgut, as recommended by my friend, Dr. Henry O. Marcy, of Boston, being used. The stump, dusted with iodoform, was now returned into the cavity of the abdomen, care being taken to push it as far as possible from the internal orifice of the canal, a procedure I should not countenance had I not absolute confidence in my sutures. The canal was now closed over a drainage-tube and the dressing applied. In one case, owing to the unusual size of the canal, instead of returning the stump, it was purposely retained within the canal, and the method as advocated by Macewen, of Glasgow ("Annals of Surgery," August, 1886), employed. The sac was freed from all adhesions. Its free extremity was then firmly tied to one end of a straight catgut ligature, which was carried by a curved needle several times through the sac and ultimately through the abdominal wall about one inch above the internal ring.

By making traction on the ligature the sac was puckered into a ball-like mass (Mr. Macewen says, "folded upon itself like a curtain"), which was drawn completely within the cavity of the abdomen, where it is supposed to act as a bulwark against the future descent of the hernia.

This is the only case in which suppuration of any material consequence occurred. Had I ever seen the operation performed, or had I had previous experience with it, I might have secured a better result. As it is, the cicatrix is very painful, and a hardened mass at the site of the internal ring will scarcely tolerate the slightest pressure.

*Sutures.*—Wire, catgut, and silk are used for closing the canal, and each has enthusiastic advocates. In all ordinary cases I prefer a strong, firm catgut prepared by Kocher's method, passed deeply within the tissues, and drawing by lateral traction the tissues from either side. In introducing them I begin at the internal ring with a long ligature armed with a strong needle at either end. This I employ exactly after the fashion recommended by Emmet in closing a deep laceration of the cervix uteri.

To insure absolute coaptation the needles must be passed deeply, and firm pressure is often required. After the canal has been satisfactorily closed, an independent set of silk sutures is passed through the integument.

If, now, the slightest doubt exists of the accurate adjustment of the canal, two or three silk sutures should be passed deeply through the walls of the abdomen and fastened by buttons or quills at the side. Under most circumstances, and especially if adhesions have been divided around the sac, a drainage-tube should be introduced. Needless to say, the fullest attention to antiseptic details should be employed in all stages of the operation.

Two points of a practical nature suggest themselves: First, in case of stercoraceous vomiting and collapse, nothing has equaled in my experience the use of hot water, employed as a stomach douche after the suggestion of Mr. Tait.

A long soft-rubber tube should be passed into the stomach and a stream of hot water should be very gently injected in a continuous current by means of a fountain, or, still better, by an alpha syringe. By this means the stomach is not only thoroughly washed of its fæcal contents, but hot water so employed is the best possible stimulant in cases of hernial collapse.

Secondly. As a factor in the production of acute general peritonitis, concealed herniæ in exceptional localities are apt to be overlooked.

In an experience of over one hundred cases of acute general peritonitis occurring in hospital and consultation practice, I have twice found an unrecognized strangulated hernia the exciting cause of the disease—in one case an inguinal bubonocele of the direct variety occurring in a very corpulent old man, and in the other a concealed femoral hernia in the young wife of a fellow-practitioner, in a near town, that I have seen only this week. The first patient was relieved; in the case of the latter, however, death occurred before assistance could be rendered.

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## HOW SHOULD THE SAC BE TREATED IN A KELOTOMY?*

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In considering whether, in performing a kelotomy, a surgeon should attempt to bring about not only relief to the strangulation, but also a possible cure of the hernia, three points can be profitably dwelt upon in the brief time allotted to me in this discussion. They are these:

* Remarks made in a discussion on strangulated hernia before the New York Academy of Medicine, December 15, 1887.

1. Is the mortality increased by the additional surgical procedure required to effect this?

2. How is this additional operation to be done?

3. How reliable is this procedure?

For the solution of the first point only incomplete statistics can be furnished. By the old method of operation, and before the days of antiseptics, the mortality was very great. According to Konig,* it reached in 1,350 operations to 39 per cent. Benno Schmidt,† in also a large number of collected cases, reports a mortality with the old operation of 45 per cent. The use of antiseptics did not improve the death-rate very much at first. Schmidt, out of 308 kelotomies performed under antiseptic precautions, had a death-rate of 36·6 per cent., only 8·4 per cent. less than without these precautions. There are good reasons why antiseptics primarily have not more satisfactorily reduced the mortality in this operation. One is that, at the time a kelotomy was then done (1870 to 1880), the parts were, by the common delay at arriving at this point, more or less in an infectious condition from the long strangulation, and, after the constricting band had been relieved, the general peritonæum was exposed to inoculation by the replacement of the damaged intestine, or the same effect was produced by the wound secretions leaking into the abdominal cavity through the left-open sac. The first of these risks may now be partially guarded against by freely washing or disinfecting the loop of intestine before replacing it, or by tying off the omentum if this is in the hernia. That the latter risk—that is, the one coming through the open sac—is the greater of the two, is shown from the improved results that have been furnished by the surgeons who have within a few years practiced in kelotomy the removal or closure of the sac. Banks,‡ of Liverpool, for instance, gives 26 cases of strangulated hernia treated radically, as it is called, with but one death.# Andaregg‖ presents 71 cases with 11 deaths. Leisrink△ likewise publishes 188 cases with 33 deaths. Footing these up, without fatiguing you with further quotations, a total of 285 cases with 45 deaths is obtained which have all been treated radically, and which give a lessened mortality of 15·8 per cent.

This great saving of life of nearly 25 per cent. I would not assert to be due to the use of the radical method alone, though this has, in my estimation, been of much value in the production of this excellent result. Another very important factor should be counted. This is the fact that there is nowadays a readier acquiescence in prompt surgical interference, both in the professional and in the lay mind, than existed fifteen or twenty years ago. Such may be considered the indirect influence of antisepsis, and is not without much effect on the success of this and other operations where delay proves most disastrous.

Having plainly but not exhaustively set before you the benefit of the radical treatment of the sac in an operation for strangulated hernia, I will pass to my second point, as to the mode of procedure, and will occupy here but a few words, as this subject has been elsewhere fully dwelt on by me.* There are two well-known ways of dealing with the sac. After it has been opened, and the hernial contents liberated† and appropriately treated, and if gangrene is not present or threatened, the sac is stripped up to the level of the peritoneal cavity, when it can be either pulled down, transfixed, and tied with a doubled piece of strong catgut, and then cut off, as Nussbaum and Czerny have suggested (see Fig. 1), or, instead of doing this, treated according to the method which has been advised by Macewen, of Glasgow, in whose hands it has had a remarkable success. By this plan the sac is wrinkled or crumpled up in curtain-like folds into a pad or irregular mass (see Figs. 2 and 3), which is placed and secured in a little pocket that has been previously made by the finger stripping up the peritonæum from the fascia transversalis for half an inch all around the internal ring, if the hernia is an inguinal one, or around the femoral ring if the hernia has appeared below Poupart's ligament. This is easily understood by glancing at these diagrams taken



Fig. 1.—Tying the neck of the sac close to the internal ring. (Nussbaum, Czerny.)



Fig. 2.—Folding up the hernial sac. (Macewen.)

from the article just alluded to, to which, to save time, I beg to refer you for further details of this and other steps of the operation; or, better yet, I would ask those about to

* "Lehrbuch der speciellen Chirurgie," Bd. ii, S. 300.

† "XII. Congress d. deutsch. Gesellschaft f. Chirurgie."

‡ "Med. Times and Gaz.," July 5, 1884.

# In the "British Medical Journal" for December 10th, received since my remarks were made, there is a report by Banks and Macewen on the subject of the radical operation for hernia. Banks gives 38 cases of strangulated hernia, with 3 deaths. Of the 35 patients who recovered, 15 were permanently cured, 8 were not cured, 9 could not be traced, and of 3 nothing is mentioned.

‖ "Die Radicaloperation der Hernien." "Deutsch. Zeitschrift f. Chirurg.," 1886, Hft. 3, 4.

△ "Die moderne Radicaloperation der Unterleibsbrüche," 1883.

* "On the Cure of Reducible and Irreducible Hernias by Heaton's Injection Method and by Radical Operation," by Robert F. Weir, M. D. "Medical Record," March 5, 1887.

† This has been found to be difficult or impossible at times in femoral hernias, and in inguinal hernias Banks and the writer have both encountered large intestine of which the partial peritoneal coat formed part of the hernial sac.

perform it for the first time to read Macewen's original article in the "Annals of Surgery" of August, 1886.*

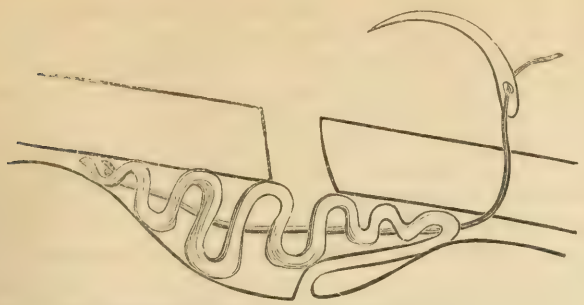


FIG. 3.—The subperitoneal tucking up of a folded hernial sac. (Macewen.)

There are other methods which have been suggested to accomplish the thorough obliteration of the depression of the peritoneal surface at the mouth of the hernial opening, which both of the preceding plans seek to do. Some twist the sac into a rope and fasten it in this condition. Barker, of London,† in an article just published, recommends, after cutting off the sac, to pull it up the canal as far as possible, and secure it by sutures passed through the abdominal wall, as Macewen does (see needle in Fig. 3). All surgeons, however, are agreed in closing, in some way, the mouth of the hernial sac, though on other points differences exist. Variations, for example, occur in the method of diminishing the size of the inguinal canal, whatever may be left of it. Macewen and Franks‡ endeavor, by sewing the inguinal canal in a peculiar manner, to offer a valve-like obstacle to the egress of the reduced hernia, while, on the other hand, Andaregg questions strongly whether it is necessary to sew up the canal at all. In the six cases of strangulated hernia in which I have myself resorted to the radical operation I have used the Czerny and Nussbaum method of cutting off the sac and sewing up the canal in all save one case, where Macewen's method was followed. I can only state from this small experience that the first-named plan was to me the simpler one, and the one most rapidly performed, a point worth taking into consideration in any important operation, and such a kelotomy evidently is. It is, however, true that increased dexterity in the Macewen method—I having until now only performed it some eight times—might cause at some subsequent time a revocation of this remark. My own feeling concerning the use of sutures is to put them as close to the abdominal opening as possible. Most operators resort to catgut as a suture material, though silk and silver are likewise employed. If the latter is used, but a single twist should be given to hold it (Banks). I prefer myself to use heavy catgut.

The only other point that I will take time to allude to is whether or not a truss should be used after the operation. A growing sentiment is opposing itself to the resort to this appliance or to any compressive means beyond, perhaps, a suitable pad and bandage. Macewen, Andaregg, and Barker recommend decidedly that no instrumental support be used unless the hernia should reappear. In my own later cases of the radical operation for non-strangulated hernia I have employed flat trusses with very light pressure, but my experience leans more and more to their abandonment, and tends toward the support, for a month or two at the furthest, of a simple bandage.

As to the third division of my remarks, on the permanent results of the radical operation in strangulated hernia, I must again quote from the exhaustive article of Andaregg, in which is a detailed series of 61 long-observed cases of strangulated hernia where kelotomy was resorted to. In all these the radical operation by Nussbaum's method was performed save in six instances, which, by reason of gangrene, etc., of the intestine, were not suited to this procedure. Out of these 55 patients radically operated on, 38 were free from any return of the hernia; in fact, were cured completely and remained so for periods ranging from six months to nine years, or during the time they were under observation.* Macewen also furnishes us the statement that out of 23 cases of strangulated hernias treated by his plan of reposition of the sac and closure of the canal, all the patients recovered, and 18 remained cured between one and four years; the 5 other cases were either recent or had passed from under observation.

Reichel,† whose brochure contains much that is interesting concerning hernia, was able, out of 54 patients who recovered after the radical operation for strangulated hernia, to trace for a long time the history of 21, and found that in 7 of them he had met with a complete cure.

Leisrink has made the statement that the radical operation is less apt to be followed by a relapse when performed for strangulated than for free hernia. This is hardly supported in the summing up of the foregoing cases, 138 in all, where it will be seen that the relapses amounted to 68, or 49 per cent. While I have shown in a previous article that the number of relapses in free or non-strangulated hernias amounted to 47 per cent., Macewen, whom I have there quoted incorrectly, has had the remarkable success of no relapses in 25 cases of free hernias. This peculiarity connected with strangulated hernias, if it really exists, is not readily explained. It may be that the slight local peritonitis excited by the constriction, etc., may form adhesions enough after replacement to either anchor the too long omentum or mesentery or to broadly cover over and guard, so to speak, the region of the abdominal opening. But this is speculating on a small margin. When the foregoing results, though succinctly placed before you, are taken in connection with the well-known fact that after a kelotomy, as it is ordinarily done, the return of the hernia is the rule, the value of the

* Reproduced in substance in the article in the "British Medical Journal" before alluded to, with a report of 81 cases treated by the radical operation, of which 29 were cases of strangulated hernia. No deaths followed the operation. Of these 29 patients, 27 were free from subsequent hernial protrusion, and 2 passed beyond observation. Of the 51 with non-strangulated hernia, 33 remained cured for periods extending from 6 months to 5 years.

† "British Med. Journal," December 3, 1887.

‡ *Ibid.*

* Of these 38 patients, 4 were observed from six to nine months after the operation, 13 from one to two years after, and 21 from two to nine years after. Relapses were very uncommon in both free and strangulated hernias after the second year.

† "Die Lehre von der Brucheinklemmung," Dr. Paul Reichel, 1886.

radical operation will, I think, at once be appreciated in bringing about a permanent cure.

In concluding these brief remarks advocating the use of the radical operation, I venture again to state that, while it is a marked improvement in the treatment of hernias, whether free or strangulated, yet it can not be considered as a perfected operation. The relapses are sufficiently numerous to show us that the methods employed are still unsatisfactory. Whether the bolder method of Riesel, of splitting up the canal to the internal ring in inguinal hernias, with its ready suturing of this ring and its subsequent narrowing of the canal by taking away a section of the anterior wall, and then suturing together what is left—whether all this is efficacious as well as free from risk remains to be proved, but this plan is ideally correct. It has been tried too seldom to speak of its value, and indeed the other methods just detailed have also as yet been too little tested to be laid aside for any other. Time and increasing experience will, without doubt, bring the desired wisdom. The former will not be long, for the latter is rapidly increasing. Surgeons are everywhere practicing the operation, and I fear too freely in non-strangulated hernias, for, though the risk is small in this variety by a percentage estimate, it should be remembered that it may nevertheless come to the patient last under the surgeon's knife.

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## THE CONSERVATIVE TREATMENT OF IRREDUCIBLE AND INCARCERATED HERNIA.*

By W. B. DE GARMO, M. D.,
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The treatment of irreducible and incarcerated hernia, it would appear, follows two extremes, according to the particular practice of the medical man who sees the case.

If seen by the general practitioner, the patient is usually informed that very little can be done, and that he must get along as best he can with his infirmity. If seen by the active surgeon, he is assured that in an operation lies his only hope of relief.

Now, while in some instances one of these lines of practice may be right, the following cases are intended to show that, in a fair number at least, they may both be wrong.

At the outset I wish it distinctly understood that these remarks apply *exclusively* to hernia where the protruding mass is not in a state of strangulation nor in an inflammatory condition—to herniæ which, from their size and shape, or from adhesions formed, can not be reduced, and, while they are not constantly painful, are productive of inconvenience, discomfort, and at times dangerous symptoms of strangulation.

I shall try to maintain that the abandonment of these cases, after a hasty examination, is entirely unjustifiable, and that to decide upon operative measures after a few moments' consideration is equally unjust for the reason that a good percentage can be relieved by safer means.

* Read before the New York Academy of Medicine, December 15, 1887.

The following cases, while few in number, illustrate the facts in a striking manner:

Case I.—September 10, 1879. Mr. C., merchant, forty-two years of age, short and corpulent, had for ten years had a small inguinal hernia of the left side, which gave him very little trouble. During the last five years, however, he had noticed a tumor in the scrotum, which was increasing in size, and remained there at night. This tumor was painless, except at intervals, when symptoms of strangulation would threaten. After each attack of this kind there followed an inflammatory action which seemed to involve the whole mass. Six different physicians have, after brief examinations, pronounced it irreducible hernia.

The case as first seen presented a tumor in the left scrotum, of about the size of two adult fists, extending by a neck of two finger-breadths into the abdominal cavity through the inguinal canal. In addition to this mass there was at times an additional protrusion through the canal and into the upper part of the scrotum. The portion remaining in the scrotum was believed to be omentum, while that which descended last presented the characteristic indications of intestine, and it was also noticed that the symptoms of strangulation were only present at such times as this secondary protrusion took place. The gentleman was almost wholly disqualified for business, and quite willing to submit to an attempt at reduction. On the first day an hour was spent in making taxis, in the manner which I shall describe farther on, with very little apparent effect, except that the mass seemed softer and more movable within the sac. On the second day about a quarter of the mass was reduced after forty-five minutes' manipulation. Very little was accomplished on the third day, but on the fourth the entire protrusion, except the thickened hernial sac, was returned to the abdominal cavity, and a strong truss was so adjusted as to prevent its return to the scrotum. Some discomfort followed, which gradually increased to the pains of a sharp attack of colic. The truss was then removed, and the hernia allowed to redescend, when all disagreeable symptoms soon subsided. On the day following, the hernia was reduced without any great difficulty, and the truss was worn for four or five hours, and by the fourth or fifth day the hernia was retained twelve hours without unpleasant symptoms. From this time on the patient experienced no difficulty.

Case II.—January 15, 1883. J. M., laboring man, sixty years of age, referred to me by the late Professor A. C. Post for the relief of an enormous scrotal hernia of the left side of the size of a full-term fœtal head. The patient was unfitted for work. The hernia had existed ten years, and had not been fully reduced for seven years. By taxis a portion of the tumor was reduced, and its gurgling sound indicated that it was intestine which had returned. After about an hour's manipulation the larger part of the mass was returned to the abdomen. Remaining, however, was a piece of what was believed to be omentum, of about the length and size of two fingers, so firmly attached to the hernial sac, which also remained down, that no judicious effort could dislodge it.

No truss that the patient could tolerate would retain the hernia at this time when he was standing, so he was put into bed and a truss kept on. No unpleasant symptoms arose, and at the end of a week he was allowed to get up, the hernia being retained without great difficulty. The piece of omentum which was irreducible eventually disappeared under the influence of truss pressure.

Case III.—April 10, 1885. J. A., a robust milkman, forty-two years of age, referred to me by Dr. M. H. Williams for the relief of a large scrotal hernia, which was first noticed five

years since. It had not been treated, and the patient had made no attempt to return it to the abdomen. During the past year he had been subject to severe attacks of colic, which had been relieved by the recumbent position and hot applications to the abdomen. These attacks have increased in severity and frequency, but not until quite recently has the patient suspected that they were in any way associated with his hernia, as no local pain had occurred. The tumor is in the left side of the scrotum, and larger than a man's fist; it is hard, unyielding, and connected by a broad pedicle with the abdominal cavity; the contents are believed to be mostly omentum, but loops of intestine, which are reducible, are also present.

Several attempts at reduction failed, although the tumor became softer and more movable than formerly, and, as the patient declined to be confined to bed without a positive promise that the hernia should be reduced, an operation was suggested and decided upon. As this was not to be done until the advent of cooler weather, he was instructed how to use taxis upon himself, and advised to continue it daily.

The time having arrived when arrangements for the operation were to be completed, a final attempt at reduction was made, and proved successful, the entire mass being returned to the abdominal cavity. During the time intervening between his first visit and the reduction of the hernia—two months—he had worn a truss which compressed the neck of the tumor, retained the reducible part of the hernia, and entirely relieved him from attacks of colic. After reduction the hernia was securely retained by a truss, and no disagreeable symptoms occurred.

One year later he believed himself cured, and wished to leave his truss off. He was strongly advised against this course, but, as I afterward learned, became very careless about wearing the support, and one morning, in jumping from his wagon while without it, forced the hernia down, and it became strangulated at once. Assisted by Dr. Stone and Dr. Williams, I operated upon him at eleven o'clock the same day. He made a rapid recovery.

Case IV.—January 20, 1886. C. H., mechanic, aged twenty-eight years, a man of unusual muscular development and good health. Seven years ago he noticed a tumor in the right groin; for a time it disappeared at night, but during the first year became fixed in its position, and has gradually increased in size up to the present time. The tumor now distends the right side of the scrotum to half the size of a child's head, and connects with the abdomen by a broad pedicle, extending through the inguinal canal. The greater bulk of the tumor is irreducible, but within this mass, which is thought to be omentum, is an additional reducible portion, believed to be intestine. Until recently the patient has suffered from the inconvenience of the bulky tumor only, but now he is having almost constant discomfort in the epigastric region and irregular attacks of colic.

This patient was put through the usual course of taxis, except that he was not put to bed, but without the hoped-for result. From the first the reducible part was retained by a truss, which compressed the neck of the tumor, and by this means he was relieved of the discomfort in the epigastrium, and from the attacks of colic.

Case V.—April 6, 1886. M. B., merchant, fifty-five years of age, referred to me by Dr. Lange, had a left-side scrotal hernia, as large as his two fists, of several years' duration. He was diabetic, and his general health is very poor. The hernia was very troublesome, and he was anxious to obtain relief before his intended departure for Europe. It was soon found that in this case manipulation could not be tolerated, nor could the patient wear a truss to retain a portion of the hernia which was reducible. An elastic suspensory bag was applied, which would not only support the weight of the tumor, but produce compression of its entire surface.

Case VI.—Mrs. M. S., sixty years of age, cook, applied at my clinic, September 20, 1886, for the relief of an enormous inguinal hernia. Six years previously she had found a tumor in the right groin, which had gradually increased to its present size, nearly as large as an infant's head. Attempts at reduction at this time produced no perceptible effect, and she was ordered to bed, and seen either by my clinical assistant, Dr. Stone, or myself each day for four successive days. On the third day Dr. Stone reduced a portion of the protrusion, and on the fourth I succeeded in reducing the remaining parts. No abdominal disturbance resulted from the return of the mass to the cavity of the abdomen.

Case VII.—February 19, 1887. W. P. S., electrotyper, thirty years of age, referred to me by Dr. William Hailes, of Albany. The patient had caused hernia ten years before by lifting, had worn no truss, and never attempted to return the hernia to the abdomen. It was a right-side entero-epiplocele. The intestine was reducible, with the characteristic gurgling sound, but a prolongation of omentum larger than a hen's egg occupied the scrotum and appeared closely adherent to the surrounding tissues. By careful manipulation it was somewhat loosened from its position in the scrotum, but the patient was not able to remain in the city long enough to decide whether or not reduction could be accomplished. A truss was therefore applied, and the protruding intestine retained. This patient was advised either to return for thorough trial at reduction, or to have an operation.

Case VIII.—March 4, 1887. H. S. F., merchant, aged twenty-eight, also referred by Dr. Hailes for advice respecting an irreducible scrotal hernia of the left side. It was a pear-shaped tumor of about the size of a goose-egg, entering the abdomen through the inguinal canal by a pedicle of about the size of the little finger. This had been irreducible for many years, and had been examined by a number of physicians, who pronounced it irreducible hernia. Upon the first day very little attempt was made to reduce the tumor, but it was, by very gentle manipulation, separated from the tissues in the immediate vicinity of the testicle. On the second day other adhesions were overcome in a similar manner, and on the third the entire protrusion was reduced. A suitable truss was applied, and a protrusion has never taken place since.

Case IX.—On June 18, 1887, I was asked by Dr. Griswold and Dr. Kemp to see Mr. L., aged fifty, who was supposed to have an irreducible hernia. The patient had had a reducible inguinal hernia of the right side for twenty-five years, which was controlled by an ordinary truss and gave him very little inconvenience. Owing to his truss getting out of repair, an increased protrusion had taken place, and it was found impossible to return it to the abdomen. No symptoms of strangulation had occurred, but there were at one time indications of a low grade of inflammation in the protruding omentum.

When I first saw the patient most of the active symptoms had subsided, but recent adhesions seemed to keep the omentum from returning to the abdomen. By carefully separating the adherent tissues, the hernia was again converted into a reducible one, which has since been retained within the abdomen by a suitable truss.

Case X.—December 3, 1887. Mrs. K. R., sixty years of age, sent to me by Dr. E. H. Gerow, of Poughkeepsie, for the relief of a large umbilical hernia of fifteen years' duration, which has not been reducible for the past ten years. The protruding mass was larger than the clinched fist and contained both omentum and bowel, the latter reducible and the former not. She had suffered symptoms of strangulation repeatedly, and was quite

disabled by her hernia. She was ordered to bed on December 9th and seen twice daily for four successive days. By the fourth day the entire hernia was reduced and a suitable truss for its retention has been applied. Nothing but the most gentle manipulation was resorted to.

The patient was examined, both before and after the reduction, by Dr. W. Gill Wylie, of this city.

Of these ten patients, eight were males, two females. Three were sixty years of age; two, fifty; two over forty, and three about thirty. Nine had inguinal hernia, the contents being almost uniformly both omentum and intestine; one had umbilical hernia irreducible for over ten years. The duration has been in five, ten years or over; in four, over five years; in one, one year. The results have been: seven reductions, one abandoned on account of diabetic condition, and two failures.

The preceding ten cases were all, with one exception, old so-called irreducible hernias, while the following were of quite recent incarceration, and only the merest outlines will be given:

Case XI.—A male infant, six months old, with a large scrotal hernia, which had ordinarily been reducible, was brought with greatly distended scrotum and incarceration of twenty-four hours' duration. The bowels had moved naturally and the child did not seem to suffer pain. Cold applications were made, and on the following day the hernia returned to the abdomen while the child was asleep.

Case XII.—A man, thirty-five years of age, with a large scrotal hernia for many years, had an unusual protrusion while his truss was off, and incarceration occurred. There was no pain nor inflammatory action, and the bowels were not obstructed. Taxis proved of no avail. The patient was confined to bed, ice was applied, and in forty-eight hours the hernia was reduced.

Case XIII.—An infant, ten months old, had incarcerated hernia for two days before reduction could be accomplished. No urgent symptoms presented.

Case XIV.—A man, fifty years of age, had a large scrotal hernia which became incarcerated and was irreducible for twenty-four hours, after which time it again became reducible. No pain or inconvenience was experienced.

Case XV.—A man, eighty-four years of age, who had had a small scrotal hernia, forced down a piece of omentum which became incarcerated and could not by judicious taxis be returned to the abdomen. At first some inflammation was present, but this soon subsided. Systematic attempts at reduction were not deemed advisable owing to the extreme age of the patient. A support which prevents the protrusion of the bowel is now being worn.

I will now speak, as briefly as possible, of the manner of converting these so-called irreducible into reducible hernias. Taxis, as ordinarily used and described in the books, has not been resorted to to any great extent. I first see that the mass is freely movable within the sac, and then reduce the tumor more by compression than by taxis. If the tumor is large and tense, the first step is, if possible, to reduce a portion of it by compression and taxis combined. As a rule it will be found that a sufficient amount can in this manner be returned to relieve the pressure upon the interior of the sac.

This accomplished, the next step in the procedure is to separate the tumor from the vicinity of the testicle, if the hernia is scrotal and adherent in this region, gradually increasing the distance between them with the thumb and forefinger of one hand, while the testicle and scrotum are held down with the other—in other words, stripping the tumor from its connections from the bottom of the sac upward, gradually carrying it up over the external abdominal ring. Nothing but the gentlest manipulation is admissible in this undertaking, and haste would be very apt to result in actual harm. Expressions of pain from the patient are sure indications that too much force is being used. Frequently the yielding points of adhesion will be plainly felt beneath the fingers.

I have found it best to grasp the tumor with one hand, and make strong compression upon it without any forcible attempt to push it through the abdominal ring, while with the thumb and forefinger of the other hand I manipulate the neck of omentum which passes through the canal. This neck is kept as small as possible, and gradually worked back as it yields. No amount of force should at any time be used.

Deep abdominal pressure immediately above the inguinal region has also been found to aid in the return of the omentum. This is done by depressing the abdominal walls sharply with the ends of the fingers to the fullest extent possible, just above the internal abdominal ring. This, in some instances, will make quite strong traction upon the protruding omentum, and aid materially in its reduction.

In some instances, where reduction is prevented more from the bulk of the tumor than from adhesions formed, I have found that often repeated taxis will soften the tumor, so that by firm but gentle compression of the bulb-shaped mass it may be reduced.

To carry this out I have found it advisable, in some instances, to instruct the patient in self-applied taxis.

In most old chronic cases there will remain in the scrotum, after the reduction of the hernia, the hypertrophied hernial sac and the surrounding thickened tissue. This thickening, which in some cases is so great as to lead the inexperienced to believe that the hernia has not been completely reduced, requires no special attention. If the hernia is perfectly retained by a suitable truss, it will gradually disappear.

During these attempts at reduction it is better that the patient should be confined to bed, although I have succeeded in three or four of the cases reported without any confinement to bed. I have usually continued the attempts at reduction for from fifteen to forty-five minutes at a time, repeated once a day. No patient has been confined to bed more than a week, although I should not abandon a case within two weeks unless I saw some special reason for so doing.

Now, regarding the management of those cases where reduction can not be accomplished, my practice can be stated in a few words. If the intestine is reducible, I put a truss on with the pad compressing the neck of omentum. I have found not only that the omentum will tolerate this pressure without inflammatory action, but that atrophy of its substance is usually the result of strong truss pressure.

I have seen quite large prolongations of omentum disappear, slowly, it is true, under such pressure. The patient should also wear a strong suspensory support. I have had such a support made out of silk-covered rubber cord, woven to the size and shape of the tumor, so arranged that it gives equal compression to the entire surface.

It is important to distinguish the contents of a hernia that is irreducible. If palpation and percussion fail to reveal the presence of bowel, the history of the case may do so.

It has been my experience that the protrusion of even a large quantity of omentum into the scrotum is usually not attended by any amount of pain or discomfort, but that just as soon as a loop of bowel enters into the formation of the tumor the patient experiences a sense of discomfort in the epigastrium, and usually is subject to "colicky" pains throughout the abdomen. If the bowel is reducible, and can be retained by a suitable truss, these unpleasant symptoms are relieved; if, however, the bowel is not reducible, and the truss is applied, the trouble will most certainly be increased, and to persist in the treatment would be to subject the patient to the risk of strangulated hernia.

I have not, as yet, met with a case where the intestine was adherent, nor one where I could not so adjust a mechanical support as to be a relief to the patient, but I must confess that some cases have given me a great amount of trouble before success was attained.

56 West Thirty-sixth Street.

## ON STRANGULATED HERNIA IN CHILDREN.*

By ARPAD G. GERSTER, M. D., etc.

Strangulated hernia in children is a very rare condition, and, although my experience therewith is not very great (only four cases having come to my notice), yet, on account of the rarity of the difficulty, it may be justifiable to take a little of the time of the Fellows in its consideration.

Regarding the formation of strangulated hernia in children there is nothing special to be said. I shall only direct your attention to that part of the treatment of these cases which differs from the treatment of strangulated hernia in adults. After sufficient time has been spent in attempts at reduction to prove that they are useless, the operation for strangulated hernia must be undertaken. After its performance a very important question—that of how to treat the wound—will arise. It is extremely difficult to prevent infection by fæces or urine, or both, and subsequent inflammation of the wound in small children, and I wish to dwell principally upon this part of the subject.

Most cases that occur in children take place in a congenital hernia. Usually the neck of the sac is not very wide. In one of my cases, however, it was very wide, and my colleague, Dr. Schottky, who had charge of another case, had to resort to an extraordinary method in order to prevent recurrence of the hernia. Under ordinary circumstances the first indication to be fulfilled after liberating the gut would be to occlude the abdominal opening, and thus prevent the inflammation, which is apt to develop from soiling of the wound by urinary and fæcal matters, from extending to the abdominal cavity.

Supposing the neck of the sac and the inguinal canal to have been occluded, the second question which arises is how to treat the external wound. It has been maintained by Dr. Weir that it would give greater security against the non-recurrence of hernia if, after the performance of the ordinary operation for strangulation, the external wound was not sutured, but was allowed to heal by granulation, the idea being that the formation of a dense and massive external scar would help in withstanding the intra-abdominal pressure. Regarding the cases of grown persons I do not share that opinion, but in cases of children I should certainly advocate an open treatment of the wound. This view is based on the fact that in all of the cases which have come under my observation, and in which the external wound was closed by suture, primary union did not take place. The wound became soiled, the margins fell apart, the stitches had to be removed, and the wound afterward healed by granulation. In view of these facts, I believe it is better, after occlusion of the sac and inguinal canal, not to unite the edges of the external wound, but to pack it with iodoform gauze, and treat it as an open wound in a manner similar to that employed in other wounds in the neighborhood of natural orifices—such as the nose, the anus, and the vagina.

In this manner we can assure antisepsis of the wound, and prevent those disagreeable consequences which we observe in cases of deep-seated septic inflammation. Packing the wound with iodoform gauze will form a secure bulwark against inflammation.

As to the histories of cases, one especially deserves attention because of an error in diagnosis. I think it is our duty to bring our errors before the profession, because they are generally most instructive. The case referred to was as follows:

A boy, aged two years and three months, was presented December 11, 1881, at the German Dispensary, with a fluctuating scrotal swelling on the left side which had existed some time. The tumor could not be reduced in size by pressure; it was translucent, and hydrocele was diagnosticated. To render the diagnosis sure, puncture with the hypodermic needle was made, and intestinal contents were withdrawn. Thereby we saw that we had to deal with a hernia which contained serum. It was an incarcerated hernia, the general symptoms of strangulation being absent. The child did not vomit; it had passed stools to within a short period before it was presented at the clinic. Nothing special was done, as there were no urgent symptoms, and the child was sent home. The next day all the symptoms of strangulation, with rather high fever, developed. Kelotomy was performed at the German Dispensary. In opening the sac the intestine was inadvertently incised because it was adherent to the anterior wall of the sac. It was found that local peritonitis, with extensive adhesions, due to the fæcal extravasation at the point of puncture with the hypodermic needle, had formed. The parts were well disinfected with a two-percent. solution of carbolic acid. The strangulated band was cut, the intestine replaced, and the wound sewed up, drained, and

* Remarks made before the New York Academy of Medicine, December 15, 1887.

dressed. Primary union failed to follow, and the wound gaped on account of soiling by feces and urine. Nevertheless, the healing of the wound progressed favorably, and on January 12, 1882, the patient was discharged cured.

I would relate one other case, which occurred in the practice of my partner, Dr. Schottky:

A boy, one year old, was brought to the dispensary with strangulated hernia in 1883. The case was one of congenital hernia. An immediate operation was performed. It proved that external kelotomy was sufficient—that is, restricting bands situated outside of the sac were incised, after which the gut could be replaced easily. Dissection and separation of the sac was after this practiced in such a manner that the testicle, together with the sac, was freed from its scrotal attachments. Of course, the cord was also contained in it. These were turned outward, the sac being folded upon itself, and the skin was united over this mass. The reason for this procedure was the fact that the inguinal canal was very wide indeed, and a speedy relapse would have followed the operation if something had not been done to occlude the sac. The wound healed by granulation, and the patient ultimately recovered.

In these cases I should have preferred to incise the sac and perform the ordinary operation, because that would have been, I believe, followed by better results; or, if that had proved impossible on account of the difficulty of separating the cord from the sac, then I should, perhaps, have preferred to remove the testicle in the last case.

The third case presented nothing unusual. In the last case kelotomy was performed on account of a peculiar condition of things, which I will mention in a few words:

A child, two or three months old, was subject to attacks of eclampsia. At each of these attacks the gut protruded and became strangulated, and the physician had to administer chloroform in order to reduce the tumor. The gut having been reduced in this manner four times, I was called in consultation on the fifth occasion, and suggested, after reduction under anæsthesia, an operation for the obliteration of the sac. The operation was performed, and since that time no recurrence of the hernia has been noticed.

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**Axillary Adenitis.**—"It is believed by M. Grancher," says the "Lancet," "that tubercular diseases of the lungs may, through the mediation of the pleura, infect the ganglia of the axilla. This peculiarity does not appear hitherto to have attracted much attention, and it is thought that the occurrence of such axillary adenitis may not be rare. The knowledge of these facts is regarded as having much importance, not only from a doctrinal point of view, but also from the standpoint of diagnosis, and M. Grancher advises that henceforth every case of phthisis should be examined for axillary swellings, and, conversely, that every case of axillary adenitis should be examined for the signs of pulmonary mischief."

**The Urine in Tabes Dorsalis.**—The "Lancet" says: "The following facts are set forth by MM. Livon and Alezais as the result of a series of researches on the urine of patients affected with an apyrexial disease of the cord—namely, tabes dorsalis: A tendency to diminution of the urea eliminated in the twenty-four hours; a diminution in the total daily discharge of phosphoric acid, with a tendency to proportional augmentation of the discharge of earthy phosphates; a great variation in the elimination of chlorine, with a bias in favor of hypercbloruria. Intravenous injections of tabetic urines appear to be sufficiently toxic in their action, since it has been found that from twelve to twenty-four cubic centimetres of urine per kilogramme of body weight of animals was sufficient to kill dogs."

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## IS LEPROSY CONTAGIOUS?

This question has gained fresh interest in this country from the appearance recently in Philadelphia of two cases of undoubted leprosy, and from the action which the Board of Health saw fit to take in the matter. The physician in attendance was fined $100 for failure to report the cases, as was stated in a former issue of this Journal. To any one who has seen much of leprosy, as the present writer has, it seems strange that there should be a division of opinion upon the contagiousness of the disease. It can only be accounted for on the supposition that even medical men frequently fail to discriminate between contagion and infection. Leprosy is certainly not infectious, but there is a mass of incontrovertible evidence to be found in medical literature which ought to place its contagiousness beyond question. In the Sandwich Islands, where the disease is endemic, the physicians have a strong belief in the communicability of the affection. The lepers (from 700 to 800) are separated upon an isolated area on one of the islands, and it is the firm conviction of all who have given the matter close study that, if the natives could be induced to work in harmony with the authorities, leprosy on the islands would in a short time be stamped out. The failure to eradicate the disease is due to the fear the natives have of being sent to the leper settlement and to the expedients to which they will resort in order to escape banishment to the leper colony. This colony is provided with medical attendants, who when first appointed are usually skeptical as to the contagiousness of the dire affection, but a few months' residence makes such converts of them that they will not go near a leper without having their hands protected by gloves. At the time of the writer's visit, a Belgian priest, M. Damien, had recently come to the settlement and had made himself beloved by all—Protestant, Catholic, and Pagan alike—by his impartial care and fatherly attention, which he even carried to the extent of nursing with his own hands the poor wretches when they were too ill to take care of themselves, and the number of attendants, who were themselves lepers, was insufficient. Since then he has contracted the loathsome malady, and it is sad to reflect that one who had truly given himself up to his high mission should have fallen a victim to the disease he so much dreaded, and the frightful and disgusting ravages of which he had constantly before his view. On the islands scarcely a year passes but one or two Europeans who have been living promiscuously in very close contact with the natives become subjects of leprosy.

In a recent number of the "British Medical Journal" a short review is given of the literature upon the question under consideration. A commission appointed by the Royal College

of Physicians in 1867 gave expression to the belief that leprosy was not contagious. As a result of this followed the publication of several cases in which contagion seemed either probable or certain. Dr. Monro, in a work on the "Ætiology and History of Leprosy," quotes several authors of repute who have each recorded a case of a European infected by cohabitation with a leper woman. A study of the history of leprosy at Cape Breton shows that in that district the disease has been spread by intimate contact and by heredity. Mr. Fletcher, in an article published in the "Canadian Journal of the Medical Sciences," September, 1881, cites instances in that epidemic which show unmistakably that the disease was transmitted from one person to another. The history of leprosy in Louisiana, as related by Dr. White, corresponds in the main with the features of that furnished by the Cape Breton epidemic.

In the face of all this reliable evidence a reasonable doubt can scarcely be entertained of the contagiousness of leprosy. In its power of contagion leprosy may well, as it often has, be compared to syphilis, and, like that disease, it is frequently contracted through sexual intercourse, and is also just as frequently transmitted to the offspring.

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## ELECTRICITY IN THE EARLY DIAGNOSIS OF EXOPHTHALMIC GOÎTRE.

The recognition of exophthalmic goître in an advanced form is an easy matter even for a mere tyro in medicine, but to be able to detect its earliest manifestations, during the stage in which remedial measures are the most efficacious, often tries the skill of the acutest diagnostician. Then there are cases which present enlargement of the thyreoid gland associated with obscure nervous symptoms, and it is extremely important as well as difficult to decide whether the case is one requiring surgical or medical treatment. Such being the case, it is of great practical value to discover any sign or symptom which may serve as a means of differential diagnosis or as a sentinel to warn us of the insidious approach of the malady. It is not long since Charcot drew attention in a clinical lecture to the fact that in this disease the electrical resistance of the body was considerably diminished. "In every case of this disease examined by M. Vigouroux," said M. Charcot, "this condition has been present, and he has found it in certain cardiac affections, notably asystolism."

To test the accuracy and the value of this statement, Dr. R. Norris Wolfenden, of London, has undertaken a number of clinical experiments, the results of which he presents in a recent number of the "Practitioner." All that he found necessary for carrying out the experiments were a constant-cell battery, a resistance coil (of 1,000 ohms), a galvanometer graduated in milliampères, and a pair of electrodes. The "standard electrodes" recommended by De Watteville should be used, so as to insure uniformity in the method of examination, and the same points on the patient's body should always be taken, one electrode being applied, for example, to the nape of the neck and the other over the top of the sternum. Dr. Wolfenden examined a number of healthy persons in this manner, and he found that on an average the bodily resistance ranged from 4,000 to 5,000 ohms. But in eight cases in which exophthalmic goître was well marked it was only between 500 and 700 ohms, and in twelve other cases presenting unmistakable early symptoms of the disease it ranged between 1,000 and 1,300 ohms. Consequently he attaches great value to the sign, and quotes Charcot's remark that cases of the undeveloped form would sometimes be very difficult to diagnosticate were it not for the palpitation, the tremor, and the diminution of the electrical resistance which reveal their true nature. Wolfenden emphasizes the fact that in ordinary goître the electrical resistance is not diminished; he has never found it less than 5,000 ohms, and in one case of malignant disease it was as high as 5,000 ohms. He gives the results of his examinations in cases of hemiplegia, epilepsy, cerebral softening, paraplegia, general paralysis, and hystero-epilepsy; in all of them, except one case of general paralysis, the resistance was diminished—most decidedly in epilepsy and hemiplegia, to as low a point as 1,300 ohms in one instance.

The explanation of the lessened electrical resistance of the body in exophthalmic goître is not very clear, but Wolfenden suggests that it may be connected with the dilatation of the cutaneous capillaries which obtains, rendering the skin saturated with liquid and thus reducing the thickness of the ill-conducting epidermis to the minimum. Like Silva, he has noticed an increase of the electrical resistance coincident with improvement in patients under treatment. If the facts noted by the different observers mentioned turn out to be at all constant, evidently electrical investigation will prove to have added another to the many aids it has put into the hands of clinicians.

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# *MINOR PARAGRAPHS.*

## LARGE DOSES OF OLIVE-OIL IN THE TREATMENT OF HEPATIC COLIC.

In reference to the note which was published under this title in our last issue, a well-known Ohio physician, deservedly one of the most esteemed and influential members of the American profession, writes to us that he has never had a long-continued case of gall-stones in which the treatment with large doses of olive-oil (half a pint, instead of twelve tablespoonfuls) has not been suggested or urged by some officious neighbor. On two occasions, he says, patients have come to him in triumph after taking such a dose, bringing a dozen or twenty round bodies looking very much like gall-stones, but examination has shown them to consist of stearin. "Now is it possible," our correspondent asks, "that a physician, the author of the paragraph alluded to, could have been deceived in this way? It would seem so from the fact that these calculi (?) were of 'soft consistence' and six of them were of 'the size of an olive' and yet 'passed without pain'!"

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## THE RETENTION OF A TAMPON IN THE VAGINA FOR TWENTY-NINE YEARS.

In the January number of the "American Journal of Obstetrics," Dr. F. E. Beckwith, of New Haven, gives an account of the case of an unmarried woman, seventy years old, who was admitted into the New Haven Hospital last June, in a very weak condition from long-continued diarrhœa and tenesmus. In a few days the nurse saw a foreign body within the vagina,

and the patient was transferred to the gynæcological service, where Dr. Beckwith found that the foreign body was a plug of coarse cotton or woolen stuff contained within a shell of calcareous deposit, the whole amounting to several ounces, and giving out an abominable odor. Free hæmorrhage attended attempts at its removal, so that the poor creature had to be relieved of her plug at different sittings. The neck of the uterus and the vault of the vagina were then found to be in a state of cancerous degeneration, and the patient shortly died of progressive asthenia. It was ascertained that the tampon was inserted by a midwife in Germany, twenty-nine years before, and that the patient did not again report to her or consult a physician. The mass must speedily have become offensive, and it is not easy to understand how the patient could have remained ignorant of its presence; yet such things do happen now and then, and they teach the lesson that nothing of the sort should ever be left in the vagina without something projecting externally to call attention to its existence.

### THE "LANCET" AND THE "BRITISH MEDICAL JOURNAL."

The "British Medical Journal" comes out every week with a chip on its shoulder, so to speak, in the shape of some such announcement as this: "The average issue of the 'British Medical Journal' now amounts to over 14,500 copies weekly, which will be found, tested, to show an excess of considerably more than a quarter of a million copies annually over that of any other medical journal in Great Britain." The limit within which the "Lancet" can stand this in silence seems to have been reached. It now says: "The subscription to the 'Lancet' is larger by many thousands than that enjoyed by any other medical journal; there is also this significant condition to be credited to its account, that, notwithstanding its price is higher than that of any other medical journal, every copy is directly purchased, which is a very different matter from the mere distribution of a journal as the organ of an association." It then goes on to state its impression that it is "read by five sixths of the entire profession at home and abroad." There are journals in this country that continually boast of their circulation, but their contemporaries contrive to maintain their equanimity, and we think the "Lancet" might rely on its readers' common sense to take boasting at its proper value, especially as it is itself so handsomely sustained by those who subscribe to it "voluntarily and solely because they wish to read it."

### AMERICAN PORK AND FRENCH WINES.

Our consul at Havre has called the attention of the Chicago Board of Trade to the continued prohibition of American pork and other products into France, and has expressed the opinion that it would please the people of Havre if Congress were to take the matter up and threaten retaliatory legislation in the shape of a prohibition of the importation of French wines. Retaliatory legislation is usually to be deprecated, except under extreme provocation, but we think Congress might adopt the course indicated on grounds quite consistent with our national policy and thoroughly in consonance with equity.

### THE VACANCY IN THE FISH COMMISSION.

Among the persons mentioned as likely to be appointed to fill the vacancy caused by Professor Baird's death is Dr. Jerome H. Kidder. Although Dr. Kidder has stated that he does not wish to be considered a candidate for the position, and naturally feels annoyed that in certain newspaper correspondence he has been made to figure as a candidate, it is none the less to be wished that the choice may fall upon him. His career as a medical officer in the navy, as the naturalist of the transit-of-Venus expedition, and more recently in the work of the Fish Commission itself, has been such as amply to guarantee his earnestness and efficiency in any public position calling for a man of scientific training, and we believe that his selection for the commissionership in question would prove peculiarly acceptable to the medical profession.

### FACTITIOUS FRENCH BRANDY.

The "St. James's Gazette," of London, recently alluded to certain information from the British vice-counsel at La Rochelle as to the well-known industry of manufacturing "brandy" in France from potato spirit imported into that country from Germany. It seems that a London firm — not, the "Gazette" hopes, "one of the respectable ones"—is engaged in the business. This is sufficiently lamentable, but still more so is it to find a journal of the "Gazette's" presumed influence saying of such a vile product that "no doubt it is wholesome enough." Palatable it may be, but wholesome it most certainly is not. If only the reform advocated by the "Gazette" were to be carried out—that of putting this factitious French brandy on the market under its proper name and at a low price—its ruinous work would be all the greater, for it would then be consumed by the poor, who now have to content themselves with spirits that, we may hope, are less injurious.

### A NEW JOURNAL OF GENITO-URINARY DISEASES.

We have received the first number of the "Gaceta de las Enfermedades de los Órganos Génito-urinarios," a bi-monthly journal of thirty-two pages, edited and published by Dr. Alejandro Settier, of Madrid. The opening article, by the editor, is on "Calculi of the Prostate and of the Prostatic Urethra." It is followed by an article by Dr. Thomas Oliver, of Newcastle, on "The Relation between Lead Poisoning and Renal Inflammations." Clinical histories, abstracts, and bibliographical notices complete the number. The new journal is attractive in appearance, and bids fair, we should say, to prove of distinct advantage to the profession in Spanish-speaking countries.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 17, 1888:

| DISEASES. | Week ending Jan. 10. | | Week ending Jan. 17. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 10 | 5 | 7 | 2 |
| Scarlet fever | 164 | 27 | 144 | 20 |
| Cerebro-spinal meningitis | 2 | 2 | 2 | 1 |
| Measles | 48 | 3 | 39 | 2 |
| Diphtheria | 210 | 57 | 167 | 57 |
| Small-pox | 5 | 0 | 4 | 0 |

**The Medical Society of the State of New York.**—The eighty-second annual meeting will be held at Albany on Tuesday, Wednesday, and Thursday, February 7, 8, and 9, 1888. The programme includes the following papers and discussions: The President's Inaugural Address, by Dr. A. L. Loomis, of New York; "Idiosyncrasy," by Dr. R. Hopkins, of Buffalo; "The Use of Alcohol in certain Forms of Fever," by Dr. H. Kretzschmar, of Brooklyn; "Neuro-therapeutic Memoranda," by Dr. J. L. Corning, of New York; "Reflex Nervous Disturbances," by Dr. W. E. Ford, of Utica; a paper by Dr. W. S. Ely, of Roches-

ter (title to be announced); "Notes on the Treatment of Lupus," by Dr. H. G. Piffard, of New York; "The Extraction of Cataract without Iridectomy, with a Short Report of 100 Successive Cases," by Dr. H. Knapp, of New York; "Demonstration of New Urethral and Bladder Instruments," by Dr. F. N. Otis, of New York; "A Case of Forward Dislocation of the Ulna," by Dr. S. Wight, of Brooklyn; "Hernia," by Dr. W. B. de Garmo, of New York; "The Removal of Laryngeal Growths with O'Dwyer's Snare, in Conjunction with Intubation of the Larynx," by Dr. C. C. Rice, of New York; "The Action of Caustic Applications on the Nasal Mucous Membrane," by Dr. F. H. Bosworth, of New York; a discussion on "Acute Bright's Disease," in which the "Pathology and Clinical History" will be discussed by Dr. F. Delafield, of New York: "Acute Bright's Disease in Children," by Dr A. Jacobi, of New York; "Changes in the Eye in Acute Bright's Disease," by Dr. D. B. St. John Roosa, of New York; "Cardiac Changes in Acute Bright's Disease," by Dr. R. Van Santvoord, of New York; "Acute Bright's Disease in the Puerperal State," by Dr. Fordyce Baker, of New York, and Dr. C. Jewett, of Brooklyn, and "Treatment," by Dr. W. S. Ely, of Rochester; "Intubation of the Larynx of an Adult, Exhibition of New Instruments," by Dr. J. O'Dwyer, of New York; "Bovine Tuberculosis," by Dr. E. F. Brush, of Mount Vernon; a discussion on Salpingitis, in which Dr. W. Goodell, of Philadelphia, and Dr. P. F. Mundé, of New York, will discuss the "Pathology and Symptoms," Dr. C. C. Lee, of New York, "The Causes," Dr. M. D. Mann, of Buffalo, "Differential Diagnosis," Dr. G. Seymour, of Utica, "Prognosis," Dr. F. A. Castle, of New York, "Medical Treatment," Dr. W. M. Polk, of New York, "Surgical Treatment," and Dr. W. G. Wylie, of New York, and Dr. A. Vander Veer, of Albany, "The Results of Operative Treatment"; "The Management of Pelvic Inflammations in Women," by Dr. W. W. Potter, of Buffalo; "The Influence of Obesity in Young Women upon the Menstrual and Reproductive Functions," by Dr. A. F. Currier, of New York; "Vaginal Hysterectomy, with a Report of Eight Cases," by Dr. W. M. Polk, of New York; "The Treatment of Complete Procidentia of the Womb by Alexander's Operation," by Dr. C. C. Lee, of New York; "The Distinction between Functional and Organic Disease of the Nervous System," by W. H. Thomson, of New York; "The Dietetic Treatment of the Gouty Diathesis," by Dr. W. H. Draper, of New York; "Cardiac Medication," by Dr. E. V. Stoddard, of Rochester; "The Treatment of Penetrating Gun-shot Wounds of the Cranium," by Dr. J. D. Bryant, of New York; "Demonstrations with the Induction Balance and Telephonic Probe," by Dr. J. H. Girdner, of New York; "Extensive Compound Cranial Fracture, Considerable Loss of Brain Substance complicated with Fungus Cerebri; Recovery," by Dr. A. R. Matheson, of Brooklyn; "The Interdependence of Local, State, and National Health Boards; a Plea for their Unification," by Dr. C. Stover, of New York; a discussion on "Intestinal Obstruction, What constitutes Intestinal Obstruction? its Anatomical Relations," by Dr. L. A. Stimson, of New York; "How long should Cases be treated Medically?" by Dr. W. C. Wey, of Elmira; "When should Operative Measures be resorted to?" by Dr. A. Vander Veer, of Albany; "The Choice of Operations," by Dr. R. Park, of Buffalo; "How should the Operation be Conducted?" by Dr. R. F. Weir, of New York; "Results obtained by Operative Interference," by Dr. B. F. Curtis, of New York; a discussion on the "Treatment of Tubercular Affections of Joints"—"Mechanical," by Dr. A. M. Phelps and Dr. V. P. Gibney, of New York, "Surgical," by Dr. A. G. Gerster, of New York; the President's Address; "Biographical Sketch of the late Dr. Edwin R. Hutchinson, of Utica," by Dr. T. R. Pooley, of New York; "The Surgical Treatment of Skin Diseases," by Dr. P. A. Morrow, of New York; Remarks on the "Chian Turpentine Treatment of Cancer," by Dr. D. Lewis, of New York; "The Frequent Dependence of Persistent and So-called Congestive Headaches upon Abnormal Conditions of the Nasal Passages," by Dr. J. O. Roe, of Rochester. The annual dinner will be served at the Delavan House at ten o'clock on the evening of the second day.

**The Alumni Association of the Woman's Hospital in the State of New York.**—The annual meeting of this society, held at the Academy of Medicine on Wednesday of this week, under the presidency of Dr. W. H. Baker, of Boston, was of a character to indicate its continued and even increased activity. Judged by the value of the papers read and by the interest displayed in the discussions, the meeting was the most successful in the history of the organization. Dr. George T. Harrison was elected president for the ensuing year, and Dr. Ernest F. Tucker secretary.

**The New York Ophthalmological Society.**—At the recent annual meeting, officers for the coming year were elected as follows: President, Dr. John D. Rushmore; vice-president, Dr. W. Oliver Moore; secretary, Dr. W. S. Dennett.

**The German Hospital and Dispensary.**—We are glad to learn that a concert given lately by the Liederkranz and Arion societies in aid of this excellent institution was so well attended as to yield receipts that will add handsomely to its funds.

**Small-pox in Sheffield, England.**—Press dispatches state that the outbreak of small-pox in Sheffield is the most serious that has occurred there for many years. It is gratifying to learn that the immense preponderance of cases among the unvaccinated, who constitute but a small fraction of the population, seems to be having its due effect in brushing away the vagaries inculcated by the anti-vaccinationists.

**The late Dr. Adams C. Hoffman.**—At the regular quarterly meeting of the District Medical Society, for the County of Hudson, held in Jersey City, N. J., December 6, 1887, the following preamble and resolutions were unanimously adopted:

*Whereas*, It has pleased an All-wise Providence to remove our brother and co-worker, Dr. Adams C. Hoffman, from the scene of his earthly labors, therefore be it

*Resolved*, That while we bow with humble submission to the will of the Most High, we feel the loss of a sincere friend and a competent physician.

*Resolved*, That this society tender its heartfelt sympathies to the friends and relatives of the deceased in this their sad affliction.

*Resolved*, That a copy of these resolutions be presented to the bereaved family, and that each of the city papers and the "Medical Record" and the "New York Medical Journal" be furnished a copy for publication.

[Signed] William Perry Watson, M. D., I. N. Quimby, M. D., F. D. Gray, M. D., } *Committee.*

**The New York Maternity Hospital.**—Dr. Henry C. Coe has been appointed an obstetric surgeon to the hospital, succeeding Dr. E. L. Partridge, resigned.

**The French Academy of Medicine Prizes.**—According to the "Gazette hebdomadaire de médecine et de chirurgie," the following are among the subjects announced for the year 1889: *The Academy prize* (1,000 francs).—The physiology of the pneumogastric nerve. *The Capuron prize* (1,000 francs).—The various methods and processes of performing the Cæsarean operation. *The Civrieux prize* (800 francs).—Sensory disturbances in tabes. *The Daudet prize* (1,000 francs).—Congenital neo-

plasms. *The Godard prize* (1,000 francs), to be awarded to the author of the best essay on external pathology. *The Louis prize* (400 francs).—Antithermic medication. *The Meynot prize* (2,600 francs), to be awarded to the author of the best essay on diseases of the eye. *The Portal prize* (600 francs).—The pathological anatomy and physiology of the suprarenal capsules. *The Pourat prize* (900 francs).—The experimental determination of the mode of contraction and the innervation of the lymphatic vessels.

For the year 1890 the following subjects are announced: *The Academy prize* (1,000 francs).—Alopecia. *The Amussat prize* (800 francs), to be awarded to the author of that work, or of those researches, based at once on anatomy and on experiment, which may appear to have accomplished or furthered the most important advance in surgical therapeutics. *The Capuron prize* (1,000 francs).—Habitual abortion, and the means of preventing it. *The Civrieux prize* (800 francs).—The neuritides. *The Daudet prize* (1,000 francs).—Leukæmia. *The Falret prize* (1,000 francs).—Diathetic insanities. *The Ernest Godard prize* (1,000 francs), for the best work on internal pathology. *The Herpin prize* (1,200 francs).—The abortive treatment of anthrax. *The Lefèvre prize* (1,800 francs).—Melancholia. *The Perron prize* (3,800 francs), for the essay most contributory to the progress of medicine. *The Portal prize* (600 francs).—Perforating disease of the foot. *The Pourat prize* (900 francs).—A precise experimental solution of the question as to the existence of one or more respiratory centers. *The Stanski prize* (1,800 francs), to be awarded to whoever best demonstrates the existence or non-existence of miasmatic contagion by infection or by remote contagion.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 1 to January 14, 1888:*

Cleary, P. J. A., Major and Surgeon. Granted leave of absence for one month. S. O. 138, Department of Arizona, December 25, 1887.

Ebert, R. G., Captain and Assistant Surgeon. Ordered from Fort Custer, Montana, to Fort Pembina, Dakota Territory. S. O. 301, A. G. O., December 30, 1887.

Appel, A. H., Captain and Assistant Surgeon. Granted leave of absence for twenty days. S. O. 1, Department of the Missouri, January 3, 1888.

Ewing, C. B., First Lieutenant and Assistant Surgeon. Granted one month's leave. S. O. 137, Department of the Missouri, December 27, 1887.

Banister, William B., First Lieutenant and Assistant Surgeon. Ordered from Fort Lowell, Arizona, to Fort Wingate, New Mexico. S. O. 3, A. G. O., January 5, 1888.

Tesson, Louis S., Captain and Assistant Surgeon. Relieved from duty at Headquarters, Division of the Missouri, and as examiner of recruits at Chicago, Ill., and ordered for duty as Post Surgeon at Watervliet Arsenal, N. Y., relieving Captain Henry G. Burton, Assistant Surgeon. S. O. 5, A. G. O., January 7, 1888.

Barnett, Richards, Captain and Assistant Surgeon. Ordered from further duty in Division of the Atlantic, to duty at Fort Riley, Kansas, to take effect at the expiration of his present sick leave. S. O. 5, A. G. O., January 7, 1888.

**Society Meetings for the Coming Week:**

Monday, *January 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement.

Tuesday, *January 24th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Putnam (semi-annual), N. Y.

Wednesday, *January 25th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Philadelphia County Medical Society (conversational); Berkshire, Mass., District Medical Society (Pittsfield); Middlesex, Mass., North District Medical Society (Lowell); Gloucester, N. J., County Medical Society (quarterly).

Thursday, *January 26th:* New York Academy of Medicine (section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland).

Friday, *January 27th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *January 28th:* New York Medical and Surgical Society (private—annual).

OBITUARY NOTES.

**Samuel A. Purdy, M. D.,** died on Thursday, the 12th inst. at his house in Morrisania. The deceased was in the seventy-sixth year of his age. He was a graduate of the College of Physicians and Surgeons, of the class of 1834. At the time of his death he was a member of the Academy of Medicine and of the Medical Society of the County of New York.

# Proceedings of Societies.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of December 15, 1887.*

The President, Dr. A. Jacobi, in the Chair.

**A Discussion on Hernia.**—Dr. T. H. Buchard read a paper entitled "The Modern Treatment of Strangulated Hernia" (see page 61); Dr. R. F. Weir followed with remarks on the question, "How should the Sac be treated in a Kelotomy?" (see page 65); Dr. W. B. De Garmo read a paper entitled "The Conservative Treatment of Irreducible and Incarcerated Hernia" (see page 68); and Dr. A. G. Gerster spoke on "Strangulated Hernia in Children" (see page 71).

Dr. Gibney said, regarding strangulated hernia in children, that he could not recall in a long experience a single case in which the hernia could not be reduced under chloroform. If it could be reduced it could afterward be treated satisfactorily with a truss. There were conditions which made kelotomy more serious in children than in adults.

Dr. Jones demonstrated Macewen's method on a manikin.

Dr. Wylie had found that cicatricial tissue in the line of a laparotomy wound might be strong, and afford effectual resistance to intra-abdominal pressure for a time, but with age the cicatrix thinned out, and left only a thin, bluish membrane, which invited hernia. For this reason he now used as small a drainage-tube as was consistent with the necessities of the case.

Dr. Weir had had only two cases of strangulated hernia in children. In one he had effected reduction in a manner which

to him was novel. By introducing the finger into the rectum he found that in a child under two years of age he could sweep it over the whole inguinal region, and thus with the aid of the other hand over the abdomen he was able to hook down the loop of strangulated intestine. He might incidentally mention the fact that hernia occurring at the site of an operation for peritiphylitis was exceedingly rare. He had never seen such a case.

Dr. FRUITNIGHT mentioned a case of strangulated hernia in a child in which there was absence of the usual symptoms of that affection as it existed in the adult. He asked if such was the usual history.

Dr. GERSTER said that there was usually a history of vomiting, suppression of stools, and the other symptoms that were present in the adult. In one of his cases any attempt at taxis it was thought would be dangerous, and at the operation the appearance of the parts showed that these fears were well founded.

Dr. DE GARMO had never met with strangulated hernia in children, but he had seen a number of cases of incarcerated hernia in this class of subjects. He did not attempt taxis, but sent the parents home with instructions to bring the patient the next day, when he always found the tumor reduced.

Dr. GERSTER wished to make a few remarks on the paper read by Dr. Burchard. They would be directed principally against one of his recommendations, which had not been made in a direct manner, but made nevertheless in such a way that he could not overlook it. It was known that the dangers of kelotomy when performed on a subject whose gut was in a healthy condition were very slight, and were confined almost exclusively to the use of a general anæsthetic and the consequences thereof. In cases in which there was necrosis of the gut, or in which necrosis would take place, although it might not yet be recognized as such, if the strangulated portion was treated in the manner recommended by the older writers—he would mention only the classical method of invaginating the sac with the finger or the introduction of a probe such as Dr. Burchard had exhibited—the patient would, to say the least, be subjected to a very dangerous procedure. Every one who had seen the necrosed, brittle, soft gut, which was likely to break down at the slightest touch or traction, would admit that the insertion of an instrument like this probe alongside of it was apt to do harm. If the finger was inserted, and the probe-pointed knife recommended for kelotomy was introduced, the same accident might happen, and one of the chief points in antiseptic kelotomy would thereby be violated. The contents of the gut would escape and enter the abdominal cavity. The much safer method in cases in which there was a strong suspicion that the gut was diseased was not to liberate the gut by the classical method of invagination and incision from within outward, but rather to cut down from without inward, dividing layer by layer, cutting through all the constricting bands, until finally the gut was exposed without having been touched. Then it could be withdrawn and examined with the greatest delicacy, thereby avoiding laceration. But, if the other method was adopted, it would be necessary to make some traction upon the gut to free it from adhesions, and there was great danger, on account of its having lost its normal cohesive power, of tearing it. A further danger which would be avoided by an open incision was that of hæmorrhage—hæmorrhage from division of the epigastric artery, which in a case described by Dr. Burchard lay in the line of incision.

Dr. BURCHARD said the probe should be handled with great delicacy, and in none of the few cases in which he had employed it had any bad result occurred. In a certain class of cases it seemed necessary to use that instrument.

Dr. GERSTER, speaking on Dr. De Garmo's paper, said that, of twenty-six cases of kelotomy for strangulated and non-strangulated hernia, he had found adhesion in the neighborhood of the testicle in only one, a case of congenital hernia in a grown person. In the other cases there was no adhesion at the bottom of the sac, the adhesion being only in the vicinity of the neck, where inflammatory changes had taken place as a result of wearing a truss. He asked Dr. De Garmo whether he was sure that in his cases there had been adhesions in the bottom of the sac in the vicinity of the testicle.

Dr. DE GARMO replied that in only one had it appeared that there was adhesion in the vicinity of the testicle.

## NEW YORK SURGICAL SOCIETY.

*Meeting of December 14, 1887.*

The President, Dr. LEWIS A. STIMSON, in the Chair.

**Nephro-lithotomy.**—Dr. LANGE presented a patient with the following history: John S., aged twenty-one, was admitted into the German Hospital on August 24, 1887. About three years before, he had passed a small stone with his urine. Its passage was accompanied with much pain and some hæmaturia, and preceded by a good deal of pain in the right lumbar region, lasting for eight days. His health subsequently continued good for two years, when he began (about a year ago) to suffer again with pain in the right lumbar region, which was sometimes so severe that, as he said, "it bent him to the right." The urine was usually cloudy, and sometimes contained blood. In May his pain became more continuous, and in June he noticed a swelling in the right lumbar region, which gradually increased, until it had reached the size of a large apple at the time of his admission.

On August 27th nephro-lithotomy was performed by the lumbar method. The kidney was found to be imbedded in a very thick and resistant layer of tissue, which it was necessary to divide in order to gain access to the organ. It was impossible to find a direct communication between the abscess and the pelvis of the kidney or the kidney itself. The abscess extended downward to the pelvis in the direction of the ureter. In the lower portion of the kidney a soft spot was detected by the touch, which was incised. A stone of irregular shape, about 3 ctm. long and from 1 to 2 ctm. in width, flattened, and having sharp edges, was extracted. Examination showed a small fractured surface. On exploring the cavity, another small concretion was found, which, however, did not correspond in size to the one sought for. The organ was carefully palpated, but it showed everywhere a normal consistence; it was not possible by puncturing it to discover another stone. The patient made a somewhat slow recovery on account of his poor condition, but he now felt quite well and his general health was good. His urine still contained some pus, and it was apprehended that another calculus might still be present in the kidney. As the rest of the organ seemed to be normal, the speaker could not resolve to sacrifice it entirely. The calculi were composed of uric acid; unfortunately, in passing through various hands, they had been lost.

In reply to questions by the president, Dr. LANGE stated that the wound had closed by granulation, no sutures having been used. There had been no infiltration of urine.

**Removal of Nearly the Entire Clavicle; Reproduction of the Bone.**—Dr. BULL presented a patient upon whom he had operated two months previously at the New York Hospital. The man had syphilitic necrosis of the left clavicle. There was a large fungous mass at the inner extremity of the clavicle, in-

volving the articulation, which resembled sarcoma, but improved under antisyphilitic treatment, which was continued for two months. At the operation three fourths of the bone were removed. It was now two months since the operation, and the wound was healed except for a small superficial ulcer, the contour of the shoulder was perfect, and the motions of the arm were satisfactory. The tissues over the site of the portion removed were still too much thickened and indurated to make any bony outline perceptible or palpable on examination; but, from the preservation of the outline of the shoulder and the function of the arm, it was fair to assume that the bone was being actively reproduced. The arm had been kept quiet with adhesive-plaster dressing for six weeks after the operation.

The operation had been a very simple one, as the necrosed bone lay loose in the sheath of periosteum. An incision was made over the bone, the soft parts were reflected with a periosteal elevator, and the bone was lifted out and divided with a key-hole saw. This was the second case in which the speaker had performed this operation. In the first he had removed the inner half of the clavicle for sarcoma, no effort being made to preserve the periosteum. There was a very slight deformity in this case, due to falling forward of the shoulder. A dense fibrous tissue took the place of the bone, and the muscular power of the arm and its movements were perfectly satisfactory.

Dr. Wyeth said that he had removed the inner three inches, the outer one inch, and the upper half of the middle segment of the clavicle in a boy aged fourteen, leaving only one inch of the bone in position. The bone was reproduced, and now, after six years, the function of the arm was perfect. The operation was performed for traumatic osteitis. The most interesting feature in the case was a fracture of the new bone that occurred during the healing process. The patient was simply kept in bed without any special apparatus being used.

Dr. Sands said that, according to his recollection, the elder Dr. Mott had removed the clavicle for osteo-sarcoma. There was the greatest possible difference, as regarded the difficulty of the operation, between removing simple necrosed bone and bone tumors. Surgeons had boasted of exsecting the entire upper jaw, but nothing could be easier if the bone was separated from the periosteum by necrosis. But when a tumor was present and the mass was very adherent, the procedure was difficult. The speaker had found great difficulty in removing a small portion of the lower jaw for a tumor, and none at all in detaching more than one half the jaw when necrosed. Since the periosteum was spared in the latter case, the bone was more likely to be reproduced.

Dr. Bull said that, in the case reported by him, antisyphilitic treatment had been pursued from before the operation until the present time, the patient having taken as much as thirty grains of iodide of potassium thrice daily. He was surprised at the rapid restoration of function in the arm, and attributed it to the presence of the thickened periosteum.

The President thought that the inner end of the outer fragment moved slightly, showing that union was not perfect.

Dr. Bull said that the man from whom it was said that the elder Dr. Mott had removed the entire clavicle had died recently, and it had been found, on making a post-mortem, that about one fourth of the outer end of the clavicle remained intact, so that this was not a true case of total excision. There were, however, a number of authentic cases on record.

Dr. McBurney thought that the portion of the clavicle found might have been reproduced if a portion of the periosteum was preserved.

The President did not believe that much care was exercised to save the periosteum by the early surgeons.

Dr. McBurney said that he had seen Dr. Valentine Mott, Jr., remove the entire clavicle for syphilitic necrosis. The elder Mott had performed the same operation, though with greater difficulty on account of the profuse hæmorrhage. In the latter instance the patient was nearly forty, and the bone was reproduced.

The President said that in the days of the elder Mott it was unlikely that any attempt was made to preserve the periosteum.

**Acetabular Coxitis.**—Dr. F. Lange read a paper on this subject (to be published hereafter).

Dr. Wyeth said that many operations similar to that described by the author had been performed by McNamara, of Glasgow. The speaker had operated only once, upon a little boy who was supposed to have osteitis of the head of the femur. He cut through the trochanter and bored into the head of the femur and introduced a drainage-tube, but it was impossible to tell if there was any tuberculous material among the *débris*. The patient was neither better nor worse after the operation.

Dr. Gerster said that the idea of attacking tuberculous foci located in bone near one or another joint had in it much to tempt surgeons. Luecke had proposed a method of diagnosticating such foci in the vicinity of joints. Kocher had reported a number of cases in which he had cured such cheesy foci by ignipuncture. It was very difficult to locate them. The treatment proposed by the author was quite rational, provided they could be found. When a cold abscess existed, it would be easy to adopt this treatment, but the joint was usually invaded before the circumarticular abscess had formed. He hoped that our methods of diagnosticating such foci would become more exact; at any rate, it was frequently legitimate to operate and to search for them.

Dr. Lange said that he was under the impression that cases of hip disease were more likely to be of acetabular origin when, while other symptoms were present, the motions of the joint remained comparatively free. There had been in the cases he had reported a contrast between the extent of the disease and the severity of the symptoms. Complete fixation was never present; fixation at an early stage of the disease would point more probably to some primary lesion in the head or neck of the femur. He thought that pain in the knee was absent in the cases reported.

Dr. Sands said that there were two reasons why operations on tuberculous hip joints were of doubtful expediency. In the first place, the joint was so deeply seated and so covered by soft parts that it was often doubtful if the disease would be thoroughly removed. It was a comparatively simple matter to expose the knee or the elbow joint, and to a less degree the shoulder and the ankle, but with the hip it was different. He had performed and witnessed many operations upon the latter joint in which it seemed as if the disease had not been entirely extirpated. Until recently writers on this subject had lost sight of the fact that the soft parts might be extensively infiltrated. Another objection was that spontaneous cure of hip disease was more frequent than in the case of other large joints, such as the knee, white swelling of which was rarely cured. Children with hip disease, if placed under proper hygienic conditions, often recovered without an operation. These remarks, the speaker explained, were not intended as an argument against the operation described by the reader of the paper, which was in itself entirely rational.

**Periosteal Sarcoma of the Tibia in a Child aged Nine Months; Amputation of the Thigh.**—Dr. Hartley presented a specimen for Dr. Sands, and stated that the tumor had only been noticed four weeks and a half before the child was ad-

mitted into the Roosevelt Hospital. The family history was negative. The child had had no pain, but began to lose flesh two weeks before admission. The thigh was amputated on December 10th. Examination of the growth showed that it was a mixed round-celled and spindle-celled sarcoma springing from the periosteum.

Dr. SANDS added that the child had been brought to him two weeks before with a note from Dr. Beattie, of this city, who said that he had opened a supposed abscess on its leg. Dr. Sands thought at first that the case was one of tuberculous disease, and asked Dr. Hartley to lay open the sinus. Examination of the material removed showed that it was sarcomatous. When he saw the child again, at the time of the operation, the tumor had increased in size considerably. He had never before seen a case of sarcoma of the leg in so young a child. The operation was performed on Saturday, the flaps being approximated by means of catgut sutures, no drainage-tube being used. On Monday the temperature rose to 104° F., and the dressings were removed, but the wound presented a healthy appearance. The child was quite restless. The temperature fell to 101°, and subsequently became normal.

In reply to a question by Dr. McBurney, Dr. SANDS said that he would not necessarily look for an hereditary taint in this case.

**Papilloma of the Bladder; Removal by Suprapubic Cystotomy.**—Dr. LANGE presented a specimen of papilloma, and read the following history: Mr. S., aged sixty-four, previously healthy, had been suffering from hæmaturia for eighteen months before he consulted me last May. He had pain only at rare intervals, when clotted blood or lithic deposits were passed, with more or less straining. At times the loss of blood was such that he became weak, but he always recovered his former strength very soon, and presented the appearance of a man in vigorous health. An examination of the bladder revealed nothing. The urine contained old and fresh blood. Renal symptoms were absent. During the summer and autumn the patient's symptoms became more and more marked, and he began to be decidedly weakened by the loss of blood. Although exploratory cystotomy had been proposed to him long before, he continued to reject it, until his condition became so desperate that he consented. On October 15th suprapubic cystotomy was performed, a rubber tampon being inserted into the rectum, while the patient was placed in Trendelenburg's posture, with the pelvis elevated. On the posterior and lateral aspect of the bladder, somewhat above and in front of the entrance of the right ureter, this papillary growth was found, together with a large, firm blood-clot containing a quantity of gravel; the latter had an offensive odor. The operation was tedious, and was somewhat prolonged on account of the depth of the wound, the stoutness of the patient, and the unfavorable ether-narcosis. The tumor was removed with scissors, its base being thoroughly cauterized with Paquelin's cautery. The growth was about as large as a half-dollar, was a centimetre in thickness, and slightly pedunculated. Numerous small elevations, of the size of a pin's head and smaller, were scattered over the surface of the vesical mucous membrane. These seemed to be isolated papillary projections. The patient made a good recovery, though the suture in the bladder failed to hold. The urine is now almost normal, and contains no blood, and the pain has ceased. The tumor shows on microscopical examination the ordinary appearance of a papilloma — ramifying papillæ, composed of connective tissue, containing blood-vessels, covered by several layers of epithelium; in many places the connective tissue is filled with small round cells.

**A New Instrument for Performing Internal Urethrotomy.**—Dr. LANGE showed a series of small knives designed for dividing impermeable strictures from behind. A filiform bougie was first introduced into the stricture through the wound made in posterior urethrotomy; to this was attached a thread on which were strung one or more knives, which were then drawn through the stricture and out at the meatus. The knives could be arranged so that their blades would look in different directions, and thus divide the stricture at several points.

In reply to Dr. Wyeth, Dr. Lange said that he had used Bangs's dilating filiform bougie, but found that the present instrument could be used successfully in cases in which no bougie would pass from before, and where false passages were present.

Dr. MCBURNEY said that he had passed a filiform bougie up through a stricture to the meatus, attached a piece of silk to it, and then pulled a Maisonneuve instrument into the bladder.

Dr. LANGE said that in very tight strictures it was not very easy to pass a Maisonneuve in the manner described. The advantage possessed by the knives shown was that they could be *drawn* from behind forward, instead of being pushed. They were constructed on the same plan as the Maisonneuve knife.

*Meeting of December 28, 1887.*

The President, Dr. LEWIS A. STIMSON, in the Chair.

**Multiple Vesical Calculi—Nine, weighing 1,260 Grains; Suprapubic Cystotomy, according to Petersen's Method; Recovery.**—Dr. C. K. BRIDDON presented a patient with the following history: D. M. W., aged fifty-five, a farmer by occupation, entered the Presbyterian Hospital on November 9, 1887. He had suffered for seven years with severe pain in the bladder and urethra, more marked during and after micturition; it had become so incessant of late as to require a frequent resort to the use of opium for its alleviation. For two years he had not been able to empty his bladder without the aid of a catheter; he could begin to urinate, but not relieve himself of the entire contents of the organ except by introducing a soft-rubber instrument, which he used himself. The urine had for a long time been turbid when passed, depositing a quantity of tenacious mucus and occasionally blood. In April last his meatus was incised (for what reason it was not clear), but no benefit was experienced. His appetite was good, his bowels being somewhat constipated. On admission his general condition was good.

On the introduction of a sound, a stone was readily detected; from the fact that the characteristic click was obtained on turning the instrument in different directions, it was inferred that more than one calculus was present. The patient was kept in bed, his bladder being washed out daily with a 3-per-cent. solution of resorcin. Buffalo lithia-water, No. 2, was administered internally, and the bowels were regulated. Previous to the operation an examination under ether revealed the presence of several calculi and an enlarged prostate. Ether was administered on November 19th, and the speaker operated. The pubes having been shaved and the parts thoroughly cleansed, the bladder was washed out with a solution of boro-salicylic acid; then, Petersen's rectal bag having been introduced, the rectum was distended with twelve ounces of warm water, after which eight ounces of boro-salicylic solution were retained in the bladder, causing it to rise above the symphysis, where it formed a prominent projection. An incision, three inches in length, was made in the median line, extending down to the symphysis. The prevesical space was found to contain a number of large veins having a vertical course; it was necessary to tie most of these on account of persistent oozing. The lower edge of the peritonæum was recognized at the upper end of the incision, but it was not injured. The bladder-wall, having been exposed, was incised, and nine fawn-colored calculi, weighing

two ounces and five drachms, were removed. The incision was then partially closed at its upper end by sutures of silk-worm gut, and two long drainage-tubes were passed through the opening to the most dependent portion of the bladder, in order to prevent the urine from infiltrating the parts in the neighborhood of the wound. They failed to drain, but no mischief resulted, as the bladder simply drained into the dressing. No febrile reaction followed the operation. Urine escaped through the abdominal wound, but none came away through the tubes. The patient had no unfavorable symptom. Irritation of the skin was prevented by the application of oxide-of-zinc ointment, and after four days the tubes were removed, no urine having escaped through them. The upper part of the wound healed primarily.

*November 28th.*—The bladder is being irrigated with a 3-per-cent. solution of resorcin.

*30th.*—Granulation appearing.

*December 17th.*—The abdominal wound is now a small sinus, through which all the urine is voided. The patient can retain it about two hours and a half.

*26th.*—A week ago a soft-rubber catheter was introduced and tied in place; all the urine then passed through it, the sinus being covered by a scab. The catheter was removed to-day, the patient being instructed to introduce it himself every two hours.

The patient was now free from pain, and, although the wound had not entirely healed, no urine escaped through it. In two days he would be permitted to dispense with the instrument, and would be discharged from the hospital cured. In reply to a question by Dr. Weir, the speaker stated that he did not see the prostate during the operation. There was no enlargement of the middle lobe.

Dr. Gerster asked if the kidneys were healthy.

Dr. Briddon replied in the affirmative. The pus from the urine could be entirely accounted for by the presence of cystitis.

Dr. Weir asked the reporter if he had been able to recognize the openings of the ureters. In two instances in which he had performed epicystotomy he had failed to find them, though in one case very diligent search was made.

Dr. Briddon replied that he had not only been unable to find them at the operating-table, but in more than one case he had not succeeded in finding them at the autopsy.

Dr. Weir remarked that he had some time ago removed a kidney in the case of a woman in whose bladder Dr. T. A. Emmet had made a large opening. In this instance he had been able to identify under ether the openings of the ureters, from which urine could be seen to issue in spurts, instead of in a steady stream, as had been described by some observers. He had never found them in the male, nor had he been able to perceive in these cases the intermittent urinary flow.

Dr. Gerster said that it was natural to expect suppression of urine during ether narcosis. He had never succeeded in finding the ureteric openings, but Dr. Willy Meyer, formerly an assistant to Trendelenburg, had stated in a recent paper that the spurting of urine from the ureters had frequently been observed at the operating-table.

Dr. Abbe asked if any of the members of the society had had experience in suprapubic lithotomy in children. He had seen Mr. McCormac operate upon a child with ease and rapidity. That surgeon believed it to be the proper operation in that class of patients.

Dr. Briddon said that he had frequently seen the operation performed in the case of children.

The President believed that suprapubic lithotomy was first performed upon a boy by Franco three centuries ago.

Dr. Briddon stated, in conclusion, that he had made no attempt to suture the bladder, as the stitches usually tore out.

**The Radical Cure of Hernia, with special Reference to the Open Method of treating the Wound.**—Dr. Charles McBurney read a paper with this title (see page 57).

Five patients were presented by the reader.

Dr. Briddon asked if there was really any advantage in the supporting sutures over the simple tamponade.

Dr. McBurney said that the sutures not only secured positively the granulation of the wound throughout, but they also secured the involvement in the cicatrix of all the layers of tissue forming the abdominal wall, including the conjoined tendon. He thought that he would in future use additional quilting sutures, a quarter of an inch from the edge of the wound. The tampon was, moreover, difficult to keep accurately in place.

The President asked if the skin was not inverted to the bottom of the wound.

Dr. McBurney said that it was not, as the deepest tissue was naturally partly everted by the sutures.

Dr. Weir had been struck by the doubt cast by the reader of the paper on the efficacy of a well-fitting truss. He himself had vainly tried to settle this point in going over a number of cases of strangulated hernia in which the previous use of a truss had been mentioned, but the facts bearing on the point were too imperfect to be of much avail. In his own experience he had not met with a case of strangulation following the use of a properly applied truss. He had, however, as many other surgeons had done, encountered strangulation with ill-fitting trusses. Feeling yet confidence, therefore, in a truss, so long as this was comfortably worn and fulfilled its purpose, he should feel that to such a patient the radical operation should not be advised, even though the risk was less than 2 per cent. between ten and forty years. Where there was distress, incapacity, or serious impairment resulting from work, and where failure of a truss existed, then the operation might profitably be employed.

In a recent article on this subject, published in the "British Medical Journal" of December 10th, Barker had been credited with twenty-five cases and no deaths, Franke with twenty-four and no deaths, Macewen with fifty-four and no deaths, and Banks with fifty-two and two deaths, the total being one hundred and sixty-two cases. Out of all these cases, moreover, there were 89 per cent. of recoveries. Every surgeon agreed that the essential point in the operation was to get rid of the sac, either by tying it off or by tucking it up, as Macewen did, but opinions differed as to the best method of disposing of the canal. Socin did not suture this at all, and used no truss afterward; Banks and Macewen both sewed up the canal to a greater or less extent. One must have more extended experience before one could be prepared to state which was the best method. So far the preponderating evidence was in favor of closing the canal. The speaker had performed the radical operation between thirty and forty times; he considered Riesel's method radically the most perfect one, but too little experience was yet connected with it. It was better to leave the wound to close after suturing the canal by granulation, so as to obtain the advantage of the cicatrix. It would be, however, he feared, necessary to experiment for a long time before one could attain a perfect method.

Dr. Abbe thought that Dr. McBurney's results were quite satisfactory, although not absolutely perfect. In closing the median incision after laparotomy surgeons were now careful to suture all the tissues, so that ventral hernia was comparatively rare. He had seen only one, and that was in a case in which a large-sized drainage-tube had been inserted at the lower angle of the wound, at which point the latter had closed by granulation. He thought this process analogous to Dr. McBurney's method.

It was not easy to obtain a firm cicatrix in the suturing methods unless a large mass of tissue had been included in the sutures. It was not enough to suture the pillars of the ring; if several layers of tissue were brought together, as was done by Macewen, a more solid cicatrix was obtained. The speaker said that he was now accustomed to perform all his operations after this method, except where the tissues were so thinned that a sufficient amount could not be obtained. During the past year and a half he had performed Macewen's operation twenty-five times, and had never seen a recurrence of the hernia, although several of the patients had been kept under careful observation. The resulting cicatrix was linear and without surrounding induration. He had adopted other methods in about eighty cases, having operated fifty-six successive times without an accident. Some of these cases were very bad ones; in two instances a considerable portion of the colon was contained within the scrotum, being so adherent to the sac that it could not be stripped off.

As regarded the imperfect union between planes of cellular tissue, he thought that this union would take place if the connective tissue was brought together between them. Macewen's method was an excellent one if properly followed, but that suggested by the reader was perhaps the best for the general surgeon, who operated infrequently for the cure of hernia.

Dr. McBURNEY said that the deepest tissue was naturally partly everted by the sutures. He admitted the justice of Dr. Weir's remark that there was certainly *some* danger in any cutting operation for hernia. He was by no means prepared to say that all hernias should be operated upon. He would not urge the operation upon a well-to-do patient who had a small hernia which was satisfactorily kept up by a well-fitting truss, provided the patient was so situated as to be always within reach of skilled assistance in case of accident. But for workingmen, for those whom trusses did not suit, and for those who by their residence or occupation were out of reach of good assistance, a radical cure was a very desirable end to attain. He did not see the force of Dr. Abbe's reference to the healing of the wound in a case of laparotomy, since the conditions were entirely different from those present in an operation for the cure of hernia. The former wound was made through fresh tissues, and the different layers, including the peritonæum, were brought together and united naturally, as in any incised wound. When this was carefully done a ventral hernia rarely resulted. Hernia following the use of a drainage-tube after laparotomy was not an analogous condition, since the tube extended through the peritonæum, and on its removal invited the escape of intestine. The most important step in the operation for hernia was the complete removal of the peritoneal pouch. It was interesting to note that good results had been obtained by so many different methods. Not long ago many surgeons would have said that the suturing of the pillars of the ring was an important step. Now few would hold that opinion. If a section of the tissues were made three or four months after the performance of Macewen's operation, it was doubtful if any firm union would be found in the deeper parts, as raw surfaces were not brought together in this operation, and the sutures were practically subcutaneous. There was no probability that union occurred under such conditions. In reply to a question by Dr. Weir, the reader said that, while the obliteration of the sac was probably the most important point in the operation, yet this alone was not sufficient, for this removal of the sac alone would leave the patient with a weak abdominal wall.

The PRESIDENT asked regarding the condition of the cord after operation.

Dr. McBURNEY said that it had not been compressed by the cicatrix in any of his cases.

Dr. WEIR said, in reference to the case of ovarian hernia mentioned by the reader in his paper, that two weeks before he had operated at the New York Hospital for the relief of a non-strangulated but troublesome irreducible femoral hernia in a woman. The sac was universally adherent and contained omentum, and apparently a loop of intestine. The latter resolved itself finally into an oblong cystic tumor, about three inches in length. It was punctured with a hypodermatic needle, and clear fluid was withdrawn. On opening the cyst its lining membrane presented a number of longitudinal folds that suggested a dilated Fallopian tube. The diagnosis was confirmed by making traction upon the hernial mass, when the uterus was felt by an assistant to be decidedly tilted toward the corresponding side of the pelvis. The tube was thereupon tied at its point of entrance into and emergence from the hernia, and was cut off; a portion of omentum was likewise removed. The sac was disposed of after Czerny's method, and the falciform edge was sewed to Poupart's ligament. On the day following the operation the patient complained of severe general pain in the abdomen, and her temperature rose to 101° F., so that general peritonitis was feared. After a brisk purgation with a double Seidlitz powder the temperature fell, she became entirely relieved, and had since progressed favorably.

**Fracture of the Sustentaculum Tali, Os Calcis, and Scaphoid.**—The PRESIDENT presented a specimen showing fracture of the sustentaculum tali, the anterior portion of the os calcis, and the inner part of the scaphoid. The patient, a man thirty years of age, was injured by jumping from a height of thirty feet during a paroxysm of delirium tremens, and died soon after he was brought to the hospital. The appearance of the left foot closely resembled that of splay-footed valgus; the internal border in front of the ankle was lowered, and the front of the foot was somewhat abducted. The head of the astragalus was prominent on the internal border. The region of the internal malleolus was apparently normal, except so far as it was involved in the general swelling; the external malleolus was prominent, and its appearance suggested that the fibula had been broken above the ankle. A piece of bone, freely movable with crepitus, could be felt in front of the astragalus on the inner border, and there was marked crepitus just in front of the external malleolus. On dissection, the astragalus was found to be displaced forward upon the tibia about a quarter of an inch, its head being somewhat adducted, projecting internally beyond the scaphoid. A fragment of the scaphoid, including the entire height of its inner border and having an average thickness of an eighth of an inch, was broken off. The sustentaculum tali was detached and the anterior portion of the calcaneum was fractured transversely and crushed; its anterior articular surface was fissured, but the fragments were not separated. It seemed as if the fracture must have occurred during abduction of the front of the foot, by the violent propulsion of the astragalus downward, forward, and inward, during which movement the prominent wedge-shaped angle below the external articular surface was driven into, and thus crushed, the anterior part of the calcaneum. The fracture of the scaphoid was apparently effected by the pressure of the head of the astragalus, possibly aided by the tension of the tibialis posticus and the anterior portion of the internal lateral ligament. The mechanism of the fracture of the sustentaculum tali was not easily comprehended. In the few reported cases of fracture of this process alone the cause had been inversion of the foot, while in this case everything pointed to the presence of abduction and eversion. An explanation that seemed plausible was that the fracture was effected by avulsion through the internal lateral ligament, made tense by eversion, the fracture of the process being aided by that of the adjoining portion of the calcaneum.

**Everted Dorsal Dislocation of the Hip.**—The President reported a case of this rare injury, which occurred in a woman aged fifty-five, who was knocked down by a horse car. The (right) injured lower extremity was parallel with the other and with the long axis of the trunk, and was so far everted that the foot rested on its outer border as the patient lay in bed. The limb could be adducted and flexed, but could not be abducted or rotated inward. There was shortening of an inch and three quarters. The trochanter was prominent, and was elevated; the head of the femur could be distinctly felt below and rather to the outer side of the anterior superior spinous process of the ilium. By flexing and adducting the limb, and then rotating it inward, the dislocation was easily transformed into the common dorsal variety. On increasing the flexion to a right angle, abducting and rotating outward while lifting, the original form was reproduced. After two or three such failures reduction was made with a distinct sound by maintaining the inward rotation after flexion to a right angle, and slight abduction, and lifting the limb steadily and with considerable force. During the night following reduction the dislocation recurred; it was again reduced, and the limb was kept in a position of abduction by traction with a five-pound weight. It again recurred, was reduced, and recurred; finally the bone was kept in place by a traction with a fifteen-pound weight, a broad bandage being drawn tightly around both hips. No crepitus was felt during the many manipulations, and each reduction was accompanied by a distinctly audible snap. The facility with which recurrence took place suggested, in the absence of fracture of the acetabulum, that a portion of the capsule remained interposed between the articular surfaces. The patient had, in addition to the dislocation, a fracture of the humerus and of two ribs, a laceration of the perinæum, and an old cavity in each lung.

## Book Notices.

*Functional Nervous Diseases:* their Causes and their Treatment. Memoir for the Concourse of 1881–1883, Académie Royale de médecine de Belgique, with a Supplement on the Anomalies of Refraction and Accommodation of the Eye and of Ocular Muscles. By George T. Stevens, M. D., Ph. D., Member of the American Medical Association, of the American Ophthalmological Society, etc. New York: D. Appleton & Co., 1887. Pp. xiii–5 to 217. [Price, $2.50.]

In the beginning of Dr. Stevens's book (page 21) we find the following: "Difficulties attending the functions of accommodating and of adjusting the eyes in the act of vision, or irritations arising from the nerves involved in these processes, are among the most prolific sources of nervous disturbances, and more frequently than other conditions constitute a neuropathic tendency." This, of course, is far too sweeping. It is an undoubted fact that the ocular difficulties referred to may aggravate the condition of those in whom a predisposition to nervous trouble already exists; but it is equally certain that manifold derangements of the apparatus of vision may be present without the co-existence of any noteworthy neurotic symptoms.

It can not be denied, however, that ocular and indeed all other peripheral disturbances may greatly aggravate the condition of one whose central nervous system is morbidly predisposed and unstable, by reason of hereditary or other causes. Thus, in chorea, the removal of an irritating and pendulous foreskin may facilitate, but does not always by any means accomplish, a cure. The same may be said of irritations propagated from the genito-urinary canal or from the intestinal tract, or from the eyes (or indeed from the nose or ears).

In view of such facts, an extreme view of the importance of peripheral irritation, and much more of one exclusive class, in relation to the ætiology of neurotic disturbances is not admissible.

Still, when we have thus narrowed down the pathogenetic importance of those peripheral disturbances involving the organ of vision, enough of value still remains to afford an ample *raison d'être* for Dr. Stevens's book. It is a notorious fact that previous to the appearance of Dr. Stevens's writings those more occult disturbances of the ocular muscles which Stevens groups under the generic term of heterophoria had received but slight attention from either ophthalmologists or neurologists. It is all very well to talk about unpublished exploits, now that Stevens's papers have been incorporated in medical literature, and are thus accessible to criticism. For careful work in systematizing the whole subject of insufficiency of the ocular muscles and showing the importance of correcting these anomalies when found in conjunction with nervous disturbances, Dr. Stevens deserves much credit. In conceding this it is not necessary to admit that operations upon the muscles of the eye are always or even often sufficient in themselves to cure such protean affections as epilepsy, migraine, chorea, and the like. On the other hand, operations of this kind, when undertaken conscientiously with a view to removing insufficiencies, may *sometimes* prove valuable aids to internal treatment, about in the same way that the operation of circumcision sometimes aids recovery in chorea.

Dr. Stevens has written a suggestive little book, and the mere fact that it has excited criticism is pretty fair proof that there is good in it. For our own part we confess that we have derived much pleasure from its perusal.

Finally, the book is written in a style which is decidedly fascinating. Dr. Stevens knows much about English prose, he has a well-developed perception for rhythm both in ideas and in words, and hence he makes his meaning very plain. His monograph should be read by those who are interested in the problems of neuro-pathology.

### GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—Malgaigne, "Manuel de médecine opératoire." Ed. by Le Fort. 1st part. (16*fr.*) —— Péan, "Leçons de clinique chirurgicale." (25*fr.*)

A. Delahaye & Lecrosnier, Paris.—E. Bourgoin, "Traité de pharmacie galénique." (15*fr.*) —— Ferraud, "Leçons cliniques sur les formes et le traitement des bronchites." (4*fr.*) —— P. Gaudin, "Sur la pathogénie des accidents nerveux consécutifs aux explosions de grisou." (2*fr.*)

O. Doin, Paris.—Bardet and Egasse, "Formulaire des nouveaux remèdes, 1887. (4*fr.*) —— A. E. Selle, "Le guide maternel ou hygiénique de la première enfance." (1*fr.* 50.) —— T. Cruard, "Hygiène de l'enfance." (1*fr.* 50.) —— A. Corre, "Traité clinique des maladies des pays chauds." (15*fr.*) —— A. Étienne, "Ruptures de l'urèthre chez l'homme et leur traitement." (2*fr.* 50.) —— G. Dupont, "Étude de la syphilis du nez et des fosses nasales." (2*fr.*)

Bureaux du "Progrès médical," Paris.—Kojewnikoff, "Ophthalmologie nucléaire." (0*fr.* 50.) —— A. Sollier, "De l'état de la dentition chez les enfants idiots et arriérés." (2*fr.* 50.)

J. F. Bergmann, Wiesbaden.—O. Seifert and F. Müller, "Taschenbuch der medicinisch-klinischen Diagnostik." 4th ed. (2*M.* 80.)

Heuser, Neuwied.—J. G. Sallis, "Ueber hypnotische Suggestionen." (1*M.* 50.)

C. F. Schmidt, Strassburg.—S. Rabow, "Arzneiverordnungen zum Gebrauche für Klinicisten u. praktische Aerzte." 13th ed. (2*M.* 40.)

URBAN & SCHWARZENBERG, Vienna.—"Recepttaschenbuch, klinisches, für praktische Aerzte." 9th ed. (2*M.*)

## BOOKS AND PAMPHLETS RECEIVED.

Doctor and Patient. By S. Weir Mitchell, M. D., LL. D. Harv., Member of the United States National Academy of Sciences, President of the College of Physicians of Philadelphia, etc. Philadelphia: J. B. Lippincott Company, 1888. Pp. 5 to 177. [Price, $1.50.]

Practical Lessons in Nursing. Fever Nursing: Designed for the Use of Professional and other Nurses, and especially as a Text-book for Nurses in Training. By J. C. Wilson, A. M., M. D., Visiting Physician to the Philadelphia Hospital and to the Hospital of the Jefferson College, etc. Philadelphia: J. B. Lippincott Company, 1888. Pp. viii–11 to 210. [Price, $1.]

The Middlesex Hospital. Reports of the Medical, Surgical, and Pathological Registrars for the Year 1886. London: H. K. Lewis.

The Treatment of Uterine Fibroids by Electrolysis. By W. E. Steavenson, M. D., M. R. C. P., etc. London: J. & A. Churchill, 1887.

De las Fracturas del Cráneo y de la Trepanación. Estudio clinico por el Dr. D. Enrique de Areilza. Barcelona: Tipografia "La Academía" de la Viuda é Hijos de Evaristo Ullastres, 1887.

The Peritoneal Relations of the Cæcum. Rectification of an Historical Error. By R. Matas, M. D. [Reprinted from the "New Orleans Medical and Surgical Journal."]

Wounds, their Aseptic and Antiseptic Management. By David Prince, M. D., Jacksonville, Fla.

The Radical Treatment of Trachoma. Paper read before the Central Illinois District Medical Society, October 19, 1886. By A. E. Prince, M. D., Oculist to Wabash Hospital, etc. [Reprinted from the "St. Louis Courier of Medicine."]

Proceedings of the Connecticut Medical Society, 1887. Ninety-sixth Annual Convention, held at Hartford, May 25th and 26th. New Series, Vol. III, No. 4. Published by the Society. D. B. St. John, M. D., secretary, Hartford, Conn.

Remarks on Classification of Vertebrata. By Burt G. Wilder. [Extracted from the "American Naturalist."]

Eighteenth Annual Report of the Manhattan Eye and Ear Hospital with Throat and Nervous Departments. No. 103 Park Avenue, New York.

Progressive Muscular Atrophy beginning in the Legs. By J. B. Marvin, M. D., Professor of Principles and Practice of Medicine and Clinical Medicine in the Kentucky School of Medicine. [Reprinted from the "Practitioner and News."]

Report on Progress in Medicine. By J. B. Marvin, M. D., etc. [Read before the Kentucky Medical Society at Paducah, June 14, 1887.]

# Miscellany.

**A Prize for North Carolina Physicians.**—The publishers of this journal have offered an annual premium of medical books of the value of $25 to the candidate who passes the most creditable examination before the State Examining Board of North Carolina; the books to be selected from their medical publications by the successful competitor when the secretary of the State Medical Society notifies the firm of the result of the examinations.

**The Coating of Pills to Order.**—Messrs. Eli Lilly & Co., of Indianapolis and Kansas City, announce their readiness to make pills from formulas furnished to them by individual physicians—sugar-coated in lots of 3,000 or more, and gelatin-coated in lots of 1,000 or more. They state that a small number of pills can be coated with gelatin more economically than with sugar, but that for large lots sugar coating is the less expensive. They add that, the larger the number coated at a time, the better will be the finish.

**The New York Post-graduate Hospital.**—Quoting from the annual report of this institution, we stated last week that the whole number of patients treated in the wards during the year ending May 1, 1887, was 172. We are now informed that the number was 320.

**The New York Academy of Medicine.**—At the next meeting of the Section in Laryngology and Rhinology, Tuesday evening, the 24th inst., Dr. Carl Seiler, of Philadelphia, will read a paper on "Ecchondroses of the Septum Narium and their Treatment."

At the next meeting of the Section in Pædiatrics, Wednesday evening, the 25th inst., Dr. A. Jacobi will read a paper on "Sepsis of the Newly Born," and Dr. A. Seibert "A Contribution to the Study of Cerebral Paralysis in Infancy."

At the next meeting of the Section in Obstetrics and Gynæcology, Thursday evening, the 26th inst., Dr. Hubbard W. Mitchell will report "A Case of Complete Procidentia Uteri, with Operation," Dr. H. J. Boldt will read a paper on "Interstitial Salpingitis," and Dr. James R. Goff will report "A Case of Ovarian Tumor simulating Extra-uterine Pregnancy."

At the next meeting of the Section in Materia Medica and Therapeutics, Friday evening, the 27th inst., Dr. P. H. Kretzschmar will read a paper on "Dettweiler's Treatment of Pulmonary Consumption."

The nomination and election of officers are announced for all these meetings except that of the Section in Pædiatrics.

**The Health of Boston.**—During the week ending Saturday, January 14th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 21 cases and 7 deaths; scarlet fever, 34 cases and 10 deaths; typhoid fever, 9 cases; measles, 20 cases and 1 death. There were also 22 deaths from consumption, 36 from pneumonia, 2 from whooping-cough, 17 from heart disease, 16 from bronchitis, and 6 from marasmus. The total number of deaths was 224, against 199 in the corresponding week last year.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending January 13th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending December 24th in the sixteen principal town districts of Ireland was 31·2 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 14·4, and the highest in Newry, viz., 59·7 in a thousand.

*Dublin.*—One hundred and ninety-nine deaths were registered during the week ending December 24th, including 3 from measles, 8 from whooping-cough, 4 from diphtheria, 4 from scarlet fever, 2 from typhus, 2 from enteric fever, 3 from diarrhœa, and 1 from dysentery. Diseases of the respiratory organs caused 43 deaths. Three accidental deaths were registered, and in 31 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 29·4 in a thousand.

*Callao.*—The United States consul, in his dispatch dated December 9, 1887, states that "the latest report received by the Government here from Dr. Matto, sent officially to Chili to observe the progress made by the cholera, is to the following effect: 'Santiago, December 7, 1887. I have visited the lazarettos and sanitary establishments at Santiago. The epidemic is stationary. Sixty new cases; one third die. Treatment has happiest effect. At Valparaiso, 10 cases. An increase at Rancagua. At Concepcion, none.' The sanitary regulations established here, and stated in my recent dispatches, are rigorously observed. The lazaretto on San Lorenzo Island is approaching completion. Health of city and coast satisfactory."

*Havana.*—The sanitary inspector reports as follows, under date of January 3, 1888, that "there were 712 deaths in this city during the month of December. Fifteen of those deaths were from yellow fever, 312 from small-pox, 3 from typhoid fever, 1 from bilious fever, 9 from so-called pernicious fever, and 3 from diphtheria. Small-pox has steadily increased since its commencement over eight months ago, and the above statement of deaths from it does not include the large mortality from said disease in the adjacent towns of Regla and Guanabacoa. I am informed that small-pox has been declared epidemic in Cardenas."

The same officer reports 8 deaths from yellow fever and 69 from small pox during the week ending December 31, 1887.

*Buenos Ayres.*—One thousand and seventy three deaths were registered during the month of October, 1887, including 80 from small pox, 19 from enteric fever, 5 from scarlet fever, and 53 from diphtheria.

Mortality Table, Foreign Cities.

| Cities. | | | | Deaths from— | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Warsaw | December 17 | 439,474 | 240 | .. | .... | 10 | .... | .... | .... | 9 | 6 |
| Calcutta | November 26. | 483,219 | 218 | 11 | .... | .... | .... | .... | .... | .... | 1 |
| Copenhagen | December 13 | 299,000 | 147 | .. | .... | .... | .... | .... | 1 | 9 | 6 |
| Munich | December 10. | 269,000 | 114 | .. | .... | .... | .... | .... | 1 | 2 | 6 |
| Munich | December 17. | 269,000 | 131 | .. | .... | .... | .... | .... | 1 | 4 | 7 |
| Genoa | December 24. | 179,503 | 113 | .. | .... | 8 | 1 | .... | .... | .... | 2 |
| Trieste | December 17. | 150,157 | 82 | .. | .... | 8 | .... | .... | .... | 1 | 3 |
| Stuttgart | December 24. | 125,510 | 37 | .. | .... | .... | .... | .... | .... | .... | 1 |
| Bremen | December 17. | 119,000 | 45 | .. | .... | .... | .... | .... | .... | 1 | 2 |
| Havre | December 24. | 112,071 | 50 | .. | .... | 1 | .... | .... | 1 | .... | .... |
| Pernambuco | December 6 | 110,000 | 45 | .. | .... | .... | .... | .... | 1 | .... | .... |
| Barmen | December 17 | 108,000 | 38 | .. | .... | .... | .... | .... | .... | .... | 1 |
| Reims | December 17. | 97,903 | 50 | .. | .... | .... | .... | .... | 2 | 1 | 1 |
| Mayence | December 17. | 65,701 | 35 | .. | .... | .... | .... | .... | .... | 1 | .... |
| Merida | December 13. | 48,711 | .... | .. | .... | .... | 1 | 1 | .... | .... | .... |
| Merida | December 20. | 48,711 | 18 | .. | .... | .... | 4 | 1 | .... | .... | .... |
| Merida | December 28. | 48,711 | 18 | .. | .... | .... | .... | .... | .... | .... | 4 |
| Cienfuegos | December 26. | 35,464 | 28 | .. | .... | 16 | .... | .... | .... | .... | .... |

United States.

*San Francisco, Cal.—Small-pox.*—The number of cases of small-pox in San Francisco during the year 1887 was 166, and during the period from January 1 to 5, 1888, there have been 25 cases. Of these, 14 were among the Chinese. The disease was brought to San Francisco early in May by one of the China steamers, but did not prevail to any extent until November. On December 29th the disease was declared to be epidemic by the board of health. All cases, on being verified, are immediately sent to the hospital, with their bedding and clothing; the premises are fumigated, and all persons living in the neighborhood are vaccinated if possible. Vaccination offices have been opened in various parts of the city. No children are admitted to the public schools without having been previously vaccinated. Over thirty thousand vaccinations have been made at the office of the board of health during the past six months. Under the circumstances, the board of health is of the opinion that the disease will soon be stamped out.

*Port Townsend, Wash.*—Passed Assistant Surgeon S. C. Devan, M.-H. S., reports, under date of January 1, 1888, that because of the action of the Board of Health of San Francisco, Cal., in proclaiming the existence of small-pox as an epidemic in that city, the board of health at this port have issued instructions, under cover of date December 31, 1887, to their health officer to subject all vessels from the port of San Francisco to rigid examination. He also reports that there are three accredited cases of this disease at Seattle, Wash.

*Tampa, Fla.*—Dr. J. P. Wall reports that the rumors of the presence of yellow fever at Tampa are without foundation.

## THERAPEUTICAL NOTES.

**Bryonia Dioica in Uterine Hæmorrhage.**—Professor Petrescu, of Bucharest ("Progr. méd.," Dec. 24, 1887), recommends a wine of *Bryonia dioica* as far superior to ergotine in the treatment of metrorrhagia. Three hundred grains of the root are macerated for eight days in a quart of white wine. Dose, a tablespoonful every hour until the hæmorrhage stops.

**A Mode of Administering Cod-liver Oil.**—M. Dupré ("Clinique," "Progr. méd.," Dec. 17, 1887) recommends the following formula, the advantages of which are, he says, that the mixture may be prepared at home, that it is cheap, and that, while masking the disagreeable taste of the oil, it promotes its digestion:

| | |
|---|---|
| Cod-liver oil | 25 parts; |
| Powdered white sugar | 2 " |
| Powdered salt | 1 part; |
| Rum | 6 parts. |

Shake briskly.

**Savine in the Treatment of Cancer.**—Dr. Lucae, of Berlin ("Therap. Monatsh.," "Rev. gén. de clinique et de thérap.," Dec. 22, 1887), reports a case of cancer of the external ear cured by the persistent application, three times a week, of a powder of equal parts of savine leaves and burnt alum.

## ANSWERS TO CORRESPONDENTS.

*No. 127.*—You will find an article on the subject in this issue of the Journal.

*No. 128.*—The Hospital for the Relief of the Ruptured and Crippled, corner of Forty-second Street and Lexington Avenue, New York.

*No. 129.*—One part of sugar of milk should dissolve in seven parts of cold water.

*No. 130.*—We do not think you will need a more elaborate instrument than the one you mention for ordinary work.

*No. 131.*—Dr. Noeggerath's views on latent gonorrhœa in women are fully set forth in his book, "Die latente Gonorrhöe im weiblichen Geschlecht," Bonn, 1872, and in his paper entitled "Latent Gonorrhœa especially with regard to its Influence on Fertility in Women," published in the first volume of the "Transactions of the American Gynæcological Society."

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### SOME OF THE CAUSES OF VOCAL DISTURBANCE.*

BY HENRY SCHWEIG, M. D.

IN reviewing the history of laryngology of the last five years, one can not fail to be impressed with the rapid forward strides in the direction of a more exact localization of the causes of many throat ailments. While the measures calculated to bring relief are numerous, and while the advocates of certain modes of treatment appear to obtain satisfactory results in most cases, still their ideas, when viewed from an impartial standpoint, are, to say the least, conflicting and much at variance.

The labors of Hack and others have done much to throw light on the reflex phenomena due to structural changes in the nose, and many brilliant results are recorded, showing conclusively that a proper recognition is due certain nasal conditions in their relation to impairment of the voice which formerly were considered of very little if any significance. In fact, so sanguine were many observers who followed the results obtained by Hack, Bresgen, and others, that the great majority of laryngeal, pharyngeal, and nasal ailments was referred to some structural change in the nose.

While the destruction of nasal hypertrophies or the correction of a deflected septum was in many instances quite effective in restoring, or at least favorably influencing, an impaired voice, still cases began to multiply which, though subjected to careful local treatment, failed to improve or show any change for the better, though the theories governing reflex phenomena of nasal disease were well borne in mind during the application of surgical measures.

I do not desire to reflect on the good work done in this direction by laryngologists, both here and abroad, and far be it from me to underestimate the importance and utility of those surgical measures calculated to render both nasal passages symmetrical and clear, but I strongly urge a more careful study of cases with a view to the better understanding of the facts that stand in causative relation to certain affections of the throat.

It is of almost daily occurrence in the practice of the laryngologist, more especially where he is brought in frequent contact with vocalists, public speakers, etc., that he is consulted and asked to minister to a rough voice, or one that is commencing to lack in power. An examination of the upper respiratory tract generally reveals some structural changes which justify the opinion that either the galvano-cautery, nasal trephine, snare, or saw will be of benefit. While it is orthodox to interfere surgically in many of these cases, still I hold, and experience has borne me out in the correctness of my views, that asymmetry, or the presence of hypertrophic folds or a deflected septum, does not necessarily imply vocal disturbance, or in fact any subjective symptoms. I have time and again examined the throats of persons who had not then and never had had any throat ailment, and discovered quite enough to justify very heroic measures had there been any subjective symptoms, and I have had occasion frequently to learn the wisdom of looking farther than the nose and throat where impairment of the voice was concerned.

In fact, I know that in a certain proportion of cases surgical interference and topical remedies went far to call into life complications that had not previously existed. Persistent topical measures, when not indicated, may, and frequently do, produce serious mischief, and one is too apt to fall into the error of viewing complaints referred by the patient to the upper respiratory tract as affections purely local.

The laryngologist, like his co-laborers in other special branches, is prone to lose sight of the fact that the field cultivated by him is only a small portion of a complex organism, and it is only too true that it is the rule to search merely in that portion of the body which subjectively seems to be at fault.

During the past few years I have, with a gratifying measure of success, placed reliance on constitutional measures in a number of cases, and have taken a full history of the patient, embodying not alone the complaint for which I was then consulted, but also a general history since birth. This has been of great service to me. In not a few instances in which local measures proved of no avail, the correction of co-existing ailments proved of signal benefit to the voice. More especially is this true where uterine or ovarian complications are present. The sympathy which exists between the uterine system and the throat is very marked, and it frequently happens that uterine complaints of a nature not sufficiently prominent to call for interference will, if remedied, prove to have been the source of an impaired voice.

The disheartening experience, to which we must plead guilty, of seeing a patient week after week and month after month, and hearing the oft-repeated complaint, "Doctor, I am still hoarse, my cough annoys me, singing fatigues me, and my voice is not reliable," need not be so frequent if only a trifle more attention were paid the general condition of the patient.

A troublesome cough, for instance, will sooner or later bring in its train marked changes in the lining membrane of the throat, which then will stand as an effect and *not* as a cause of the cough, as might be inferred from a mere instrumental and visual examination. Where the origin of such a cough is traced and found to be in the ear, for instance, no relief and certainly no cure can be expected unless the aural complaint receives its full measure of attention.

I have known persistent hoarseness to be due to gastric disturbance, and one patient, whose case I recall, where I faithfully cauterized and practiced local medication until the symmetry and good color of the upper air-tract were beautiful to behold, persisted in not improving until salicin and nux vomica were employed to correct a long-standing dyspepsia. As the dyspepsia gave way to treatment, so the hoarseness grew gradually less until both ailments finally

* Read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, December 27, 1887.

disappeared. I may here add that, with the exhibition of the stomachic, local treatment of the throat was entirely abandoned. The patient, who occasionally becomes hoarse, informs me that she relies entirely on the capsules of salicin and nux vomica, and that they never fail to give her relief. I am not ready to assert that had no surgical measures been adopted recovery would still have taken place, but I know that without constitutional measures success would have been doubtful, if not impossible.

In cases of paresis of the vocal bands, where there is more or less phonatory leakage with consequent vocal disturbance, much reliance was formerly placed (and with good reason) on local stimulation by electricity and otherwise. But, while in a certain series of cases this proves of benefit, in others again it is of no avail.

I find that where the general health is at a low ebb very satisfactory results are obtained from energetic constitutional measures, strychnine, combined with the hypophosphites of calcium and sodium, giving me the best results. Persistent constipation, especially if of long standing, may do much to impair the power and quality of the singing voice. Here a more prompt and certainly more rational proceeding would be the use of some remedy looking to the correction of the constipation.

It is a simple matter, and one (aside from its more agreeable aspect as far as the patient is concerned) far more useful, to correct any existing constitutional trouble and defer surgical measures until such time as may appear proper from a failure of constitutional remedies to give relief.

I trust that I may not be understood to recommend constitutional treatment to the exclusion of local. On the contrary, I wish to warn against the error of relying too much on any one line of procedure, as one-sided views are calculated to clog the wheels of progress.

There is a class of cases that I desire to call attention to, as they do not always receive that attention which is their due. Given a patient who presents himself showing a sufficient amount of deviation from the normal to account for his complaint—namely, an impaired voice. Steps are taken and local measures instituted calculated to do away with all pathological elements. Relief is not forthcoming. The patient is carefully questioned regarding any former illness which he may have had, and an effort is made to discover some ailment that might account for the want of success of local measures. Let us assume that sufficient has been learned to justify active constitutional interference, which after a fair trial also proves unavailing.

It is here that a careful investigation into the mode of living of the patient becomes necessary, and in not a mean number of cases will it be found that the abuse, or even the moderate use, of tobacco or alcohol is at the bottom of the disturbance. In fact, it is good practice to forbid the use of tobacco while a patient is suffering from any of the lesions of the upper air-passages that come under the care of the laryngologist.

That the voices of many well-known singers have been ruined by the abuse of alcohol no one will deny, and it is a delicate question to decide what constitutes abuse. Alcoholic stimulants, taken at the proper time and in moderate quantity, do not generally exert any deleterious influence. But quantities in excess of that which the patient should have, do much to ruin a voice. That which may be proper for one may be excessive for another, and it is always well in prescribing or permitting the use of alcoholics to exercise great care and judgment, so that, if at all, we may err on the side of safety.

The influence of syphilis on the vocal organs is too well recognized to require more than brief mention. I do not refer so much to the coarser lesions which can be recognized at a glance as I do to the slow changes in the structure of the lining membrane of the throat which are often found. A form of marked vascularity of the pharynx which is frequently met with where there is a specific history fails, as a rule, to disappear, unless those remedies which come under the heading of antisyphilitics are employed.

The ulcerative sequelæ of syphilis which are met with in a certain proportion of cases require both local and constitutional measures where there is a disturbance of the voice. Even marked ulcerative processes in the upper air-tract do not necessarily impair the voice, but, when this result does obtain, that course of treatment should be adopted which will, while favorably modifying the disease, also speedily restore the voice. In conjunction with the internal remedies I have found nothing to act so well locally as the galvano-cautery, carefully employed. A thorough destruction of the morbid material is all that is required. If we fall into the error of cauterizing too deeply, nothing will be gained, but the risk of exciting troublesome cicatricial contraction will be very much heightened, and in this way the very object which we wish to attain will be defeated. The voice will not improve.

Malaria, even when none of its characteristic phenomena are present, may act as a disturber of the human voice. Cases may present themselves in which only the history of the case furnishes us with malarial data, if I may so term them, and still, though nothing in the patient's general condition would warrant the belief, quinine and arsenic often act promptly in bringing about a favorable change in the voice.

The "lumpy" voice associated with tonsilar affections can, in a certain proportion of cases, be traced to an underlying rheumatic diathesis, and the good results which have lately been obtained from the local as well as general use of salicylic acid in these cases can be, I think, safely referred to the antirrheumatic action of the remedy.

There are instances where one feels tempted to discard almost everything connected with the local treatment of throat disease, and here I refer in the main to those cases in which there is a disturbance of the voice. According to the individual preference of the practitioner, the spray, the sponge probang, the cotton wad, or the insufflator may have been employed. Or, perhaps, the galvano-cautery, the saw, or the snare may have been resorted to, but still the ailment will not yield. Inspection discovers nothing which could count in keeping up the existing trouble, but still it will not disappear. Now, it is in just such cases that close questioning and investigation, as well as the best judgment on the part of the medical attendant, are called for.

It will *not* do to act hastily, and conclude that the discovery of any one existing ailment other than that in the throat means the discovery of a road leading to the successful issue of the case, but it *will* be incumbent on the careful and conscientious physician to carefully weigh every evidence of existing abnormal conditions, and judge as to their possible bearing on the throat complaint. If such a course were more generally adopted, I make bold to assert that success would be far more frequent than if local symptoms were combated by local measures alone.

I mentioned above, and did so with a full consciousness that diverse views may be held, that surgical and instrumental interference in dealing with impairment of the vocal function might, in a proportion of cases, exert a deleterious influence. The throat is not a tolerant organ that can be disturbed with impunity, and the persistent local medication which is so generally resorted to may do much to call into life new complications. When, two years ago, I called attention to a number of cases which had come under my observation, showing large dry patches in the anterior nares where the galvano-cautery had been too freely used, I did not realize their full import in determining changes in the voice by reason of the loss of function of the erectile tissue beneath. And occasionally a patient whose septum has been deflected will show the results of a too heroic treatment, in the shape of a more or less extensive perforation which may give rise to abnormal sounds during inspiration or expiration.

A too free use of destructive agents in the pharynx where follicular enlargements exist may lead to ultimate cicatricial contraction, and this is likewise true where the posterior pillars have been too freely cauterized for an hypertrophy or for something else. The tonsils, when enlarged, may come under the care of one who is opposed to amygdalotomy, but favors destructive agents in the form of either Vienna-paste, chromic acid, or the galvano-cautery. Such tonsils are sometimes seen, after a course of cauterization, with their surfaces broken by many perforations, but with their size very little reduced. It is needless to remark that cicatricial contractions of the pillars, irritation of the tonsils, etc., may do much to interfere with the proper tone-production, and it is a question whether in some of these cases it would not have been better to abstain entirely from the use of local measures.

Of late the opinion has gained ground, and its acceptance rests on good foundation, that, to use a paradox, laryngeal disease is frequently not laryngeal disease, but merely an expression of a general disturbance. Here local measures would be worse than useless, as the introduction of medicinal agents—such as astringents, for instance—would not alone be uncalled for, but absolutely harmful. The only proper course here would be to remedy the underlying pathological condition. I simply desire to warn against the danger of accepting that which is discovered by the laryngoscope as necessarily a primary ailment.

The causation of throat ailments, and I refer more especially to those affecting the voice, covers a broader field than the upper air-passages. Further, there are many cases of asymmetry of the nose due to structural changes which are accidentally discovered and which do not give rise to any vocal disturbance, but still present those prominent features which would call for surgical measures were there any subjective symptoms.

The administration of one or two doses of compound licorice powder, where constipation or an overloaded bowel is present, has often yielded results quite as brilliant as could be desired. And purgation in plethoric subjects, or stimulation and tonic measures in anæmic patients, have often been productive of much good. It is not my wish to underrate the value of local surgery in the class of cases under consideration, and I may be permitted to express my admiration of the many and ingenious mechanical contrivances in this direction of Elsberg, Curtis, Bosworth, Jarvis, Goodwillie, and others, but I trust that a more general appreciation of the possibility of favorably modifying vocal derangements by systemic remedies may be acknowledged. Given, then, a case of voice disturbance, it should be our duty to inquire carefully into the patient's history, and leave no question unasked which might disclose the presence of anything out of the normal.

Brilliant as have been the results of laryngoscopy, still it sometimes fails to lay bare the causes of a derangement of the voice, and the practitioner who relies on its evidence entirely, to the exclusion of other data, will not serve the best interests of his patients, and will have but poor success in the management of his cases.

26 East Twentieth Street, *December 27, 1887.*

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## THE DETECTION OF CONCEALED INSANITY BY NITROUS-OXIDE GAS AND OTHER ANÆSTHETICS.

*PRELIMINARY CONTRIBUTION.**

By ALLAN McLANE HAMILTON, M. D.

The use of anæsthetics for the detection of malingering is an old and familiar medico-legal measure. In most of the works upon medical jurisprudence we are directed, in suspected cases of feigned paralysis or contracture, to give some anæsthetic agent, and there is no doubt of the wisdom of this procedure when the person is unusually cunning, though, thanks to electrical diagnosis, the recognition of fictitious paralysis is now comparatively easy. I am not aware, however, that any agent of the kind I mention has been used for the diagnosis of mental disease, real or shammed. It is true that Westphal † endeavored to determine the reality of delusions that were supposed to be feigned in a murderer by making him drunk with brandy, but, in spite of the intoxication, the patient consistently adhered to his false beliefs. Beyond this case I have been unable to find any record of the employment of agents which affect the higher consciousness, or rather the inhibiting intellectual center, for the purpose of extorting confession, or for the production of what Dr. Hammond calls syggignoscism.

The primary effect of most anæsthetics in the majority

* Read before the Section in Neurology of the New York Academy of Medicine, December 9, 1887.

† "Vierteljahrschrift für gerichtl. Med.," July, 1879.

of individuals is to produce at a certain stage a reminiscent condition, or a state of mentality when ideation is stimulated, with abolition for the time of the controlling or regulating faculties which in the completely conscious state enable the patient to accommodate himself to his surroundings and preserve his conventional poise. Those who have used ether are cognizant of a state of mind which is sometimes an early manifestation of anæsthesia. I allude to the stimulation of expectant attention, and the use of language which betrays the formation of more or less coherent ideas in relation to the operation or the condition of the patient. The subject may be perfectly unconscious of his surroundings, and the presence of his friends or physician, so far as his perceptions are concerned. There is in reality a state of ideational activity with some degree of sequential order of expression, such as we find in hypnotism or somnambulism, but perhaps it indicates a more complex process than in either.

Besides the abolition of conscious perception, chloroform is stated by different observers to have a variety of psychical effects. These statements are, however, to be taken with some allowance, for they are generalized. In the first stage, says Ott, "the physical forces are increased, attended with singing, profanity, laughing, and so on." Anstie * describes the intellectual changes that indicate the effects of chloroform, and agrees that there may be a primal excitement of ideas; but I will not occupy your time with reference to facts so familiar to all.

For ten years or more I have studied the effects of nitrous-oxide gas, besides having used it in a great number of cases,† and I have come to regard it not only as very valuable in the treatment of insomnia and allied states, but as a psychopathic agent of the greatest value in hysteria and certain forms of insanity. Dr. Mitchell, ‡ of Edinburgh, whose experiments have been varied and complete and whose observations are reliable, calls attention to its peculiar effects upon the mind.

Where no suggestion is made, the effect in melancholic cases is usually of an exhilarating kind—not only during the administration, but afterward. I noticed this some years ago at Blackwell's Island, and Dr. Mitchell, of England, reports four cases of melancholia where happy ideas took the place of those of a depressing nature. Simple questions were asked, but none of a suggestive character. It would be quite likely, as was the case with a patient who was asked if she was not happy, for an affirmative reply to be given. In cases of dementia the subjects, when under the influence of the gas, referred to past events, even after a long period of incoherence and apparent vacuity, but when the effects of the gas had passed away the ordinary dullness and mental confusion returned.

Mitchell alludes to the susceptibility of the mind to suggestion, the exaggeration of mental or bodily activity, and the tendency "to dwell on and intensify any power or thought, or series of automatic acts."

The value of nitrous-oxide gas as a means of diagnosis was suggested accidentally to me by a case of insanity with concealed delusions. I have invariably found, when the patients studiously avoided betraying their mental weakness from fear of asylum detention or commitment, or when there was no such restraint—in one case the simple suggestion of the suspected condition, and in the other the mere establishment of the first grade of intoxication—that they would give prompt expression of not only delusions, but sometimes hallucinations. The particular form of monomania would be intensified, and even new applications of the dominant false idea would be made.

I will refer to two cases of undeveloped insanity in which the diagnosis was a difficult one until I used nitrous-oxide.

Case I.—Mrs. ——, a woman of forty, has been under my care for nearly a year. She has suffered from migrainous headaches, which were most intense and frequent after menstruation. She was nervous, in the popular sense, and emotional, and vented her superabundant energy in a variety of little acts, such as clinching her hands, biting her lips, and changing her seat frequently. There was an intensity which suggested a restrained mental excitement. She was very fearful of becoming insane and of sequestration in an asylum. Repeated conversations failed to show any intellectual weakness, and there was no irregularity in her behavior that would warrant any interference with her liberty. She seemed to entertain rather bitter feelings toward her husband and brother, but under ordinary circumstances no one would attach any importance to her statements. I ascertained that there was no great cause for her animosity, though the husband was rough and uneducated, and the brother was rather selfish. At nearly every visit, however, she expressed her feelings upon this subject, but I was unable to get her to give any substantial reason for her dislike. As she was troubled with insomnia, I determined to use nitrous oxide and air, in the proportion of two parts of the former to one of the latter, a number of hypnotics having failed to procure sleep. After she had taken a little more than two gallons of this mixture she became slightly excited in manner, talking to herself, and suddenly seizing her dress she drew it up and looked intently at it, saying rapidly and excitedly, in a high-pitched voice: "There it is! blood! blood! They will kill me! Save me!" When I remonstrated with her and asked her to whom she referred, she said: "John and Edward" (her husband and brother). "They are trying to kill me because I will not do what they wish me to. Oh, they are after me day and night. I see it! blood! blood!" I tried to reassure her when she refused to change her false beliefs, and she talked with me irrationally but coherently for some time. When the gas was pressed she became quiet, lapsed into a deeper condition of unconsciousness, and awoke without any recollection of what had occurred, but was apparently her ordinary self.

I tried diligently to ascertain whether she had ever made any attempt upon her life, but was met with persistent denials. When under the influence of the gas she upon one occasion admitted that one night she had in desperation tried to cut a blood-vessel, but had become frightened by the sight of blood and the pain. She quite willingly raised her sleeve and showed me a red cicatrix.

In the course of a few months her morbid mental condition became so marked that she was sent to an asylum, and is a violent and I fear incurable patient.

Case II.—Mary P. is a young Irish girl. She has, according to her friends, been "queer" for several years, and, though she has done nothing of a decided character, has alarmed her friends

* "Stimulants and Narcotics," p. 304.

† I have administered it several thousand times.

‡ "West Riding Lunatic Asylum Reports," vols. i and ii.

because of her religious depression. She came to my office twice, and upon both occasions was on her guard. When taxed with the behavior which had led her friends to seek medical advice, she not only denied it, but laughed at their interpretation. She admitted having done some queer things, but explained them in a way that made me regard her case as purely hysterical. Dissatisfied with an interview of nearly an hour, I administered the gas, giving her a half-bagful, when she burst into tears and wrung her hands. She declared that the priest had selected her specially for condemnation and that she did not dare to go to church, that she was damned, and, though I argued with her, I could not influence her. She talked freely, and I was able to make a diagnosis of religious melancholia. In both these cases my conclusions were borne out by ascertained previously expressed delusions and by subsequent mental disturbance.

In other cases the suggestion of a train of ideas just before the gas is administered is likely to develop into the expression of the dominant but concealed delusions. The philosophy of this is explained by Dr. W. C. Bunker,* a dentist of Oregon, Ill., who details his own experience with nitrous oxide while in the dentist's chair:

"Requiring the extraction of a tooth from my own mouth, I went to a brother dentist and had the gas administered. While taking it, and while under its effects, I was perfectly conscious; heard every word said, but was powerless to move a muscle. I knew when the inhaler was removed and the forceps taken up and adjusted, but felt no pain. The tooth was broken off, and two more ineffectual efforts were made to extract it. Still there was no pain. At this instant I regained control of myself, retaining a knowledge of all that had transpired.

"This experience impressed me with the conviction that if patients heard and understood, they could be made to obey. It had been the habit with me to test the condition of my patients during the inhalation of the gas by requesting them to raise the left arm. They usually responded, some continuing to raise and lower the arm until the effect of the gas passed off, seeming to be impressed with the idea that they must do so.

"The next occasion I had to administer gas I made the usual examination of the mouth, and, after learning which teeth I was required to remove, I turned abruptly to the patient and said: 'If, while you are under the influence of the gas, you hear me request you to open your mouth, do so. You can, if you understand now that it will be necessary.' I said nothing about raising his arm, but just as I thought he had inhaled enough gas, I said: 'Raise your left arm,' and was surprised to see that, instead of doing so, he promptly opened his mouth wide. As his breathing indicated that he had enough gas, I dropped the inhaler and extracted the teeth. After he regained consciousness I said: 'Did you hear me ask you to raise your arm?' He said: 'I heard you tell me something, and as you had charged me to open my mouth if asked, I thought that was what you wanted."

"I have taken advantage of this experience ever since—some three years—and have yet to meet the first failure. After charging a patient to respond by opening the mouth when told, I proceed to administer the gas, and just before he passes under its influence I say: 'Remember and open your mouth when I tell you to.' Thus, the last thing the patient thinks of is opening his mouth, and almost invariably it is the first thing he does. I have tried the command without previous instruction and failed to obtain a response."

* "Dental Cosmos," October, 1886.

One advantage of this procedure is, that the patient who before the administration of the gas is able to be at large and retaining considerable self-possession, knows nothing of his behavior while under the effect of the nitrous oxide unless told. It must be seen how valuable is this method of examination not only in medicine, but as a medico-legal test. Hypnotism at best is unreliable and inexact, and a scientific amusement. Its use is in some ways unjustifiable, and in the event of failure makes the operator ridiculous. I suggest the primary anæsthesia of nitrous oxide in cases of suspected insanity, and believe many lives could be saved and much mischief averted by the early recognition of suicidal and homicidal delusions in persons now at large. I have not tried it as yet in puerperal insanity of the light type, but believe it will often reveal the delusions and mental states which so often result in explosive acts of violence, and which lead to infanticide—a crime which is so often supposed by ignorant juries to bring with it responsibility when such is not the case.

These cases are simply presented to call attention to the very important advantages of this agent, and to urge its trial upon the members of this section. I hope, however, that the point I insist upon will be borne in mind—viz., that the gas is not to be used for the mere production of an undefined and chaotic mental state. With this as well as any anæsthetic we may produce mental confusion, when the utterances of the patient are ill-regulated and valueless. It is the primary stage of mental exaltation that is to be produced, which does not necessarily bring with it complete abolition of consciousness. In a future paper I hope to detail cases which demonstrate how valuable a therapeutic measure it is in various mental disturbances, when the good is effected by the diversion of morbid thought or the temporary suspension of memory.

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# THE INTERNAL ADMINISTRATION OF BICHLORIDE OF MERCURY

## AS AN ADJUNCT TO THE LOCAL TREATMENT OF CIRCUMUTERINE INFLAMMATIONS.*

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Any one who has any experience with minor pelvic troubles soon learns that a great many cases are met with in which the usual local treatment, combined even with tonics internally, fails to bring about relief of the distressing symptoms, to say nothing of effecting a cure. The great majority of these cases usually offer a history which shows that the trouble came on insidiously after parturition, a miscarriage, or lifting a heavy weight, and the woman is unable to state definitely when she began to feel ill. On examination, there may or may not be a discharge from the cervix, which perhaps exhibits an insignificant tear and a scarcely perceptible degree of hypertrophy. The uterus may not

* Read before the New York Academy of Medicine, Section in Materia Medica and Therapeutics, December 23, 1887.

be in ideal position, but still there is no marked displacement. Its mobility, however, is usually impaired, and to one or other side or behind it is commonly found a fullness or induration, which is moderately sensitive. In a great number of the cases one or both ovaries may be easily reached with the examining finger. They are found apparently enlarged and extremely tender. On one side of the uterus, usually the left, an oblong, irregular mass is not infrequently detected. This is commonly looked upon as a dilated tube, but, in my opinion, from the great frequency of its being on the left side, is just as often the sigmoid flexure. The patients have many and varied complaints to make, the most prominent and constant of which is of pelvic pain. One is at a loss to account for the number and variety of subjective symptoms depending upon such ill-defined physical signs. Should the case be diagnosticated as oophoritis, salpingitis, pelvic cellulitis, pelvic peritonitis, endometritis, or laceration of the cervix? I venture to say that the diagnosis of each of these conditions would be made according to the fancy or theory held by the consultant. In order not to enter upon the vexed question of the pathology of these cases, I will call them chronic circumuterine inflammations, as, in my opinion, the root of the affection consists of a diffuse or circumscribed effusion of inflammatory products into the various structures surrounding the uterus. I should concur in the main with the description given by Professor Polk in a recent masterly paper on "Peri-uterine Inflammation" ("Transactions of the Association of American Physicians," 1886, pp. 145–170): "They consist," he says, "of pelvic masses composed of the tubes and ovaries, and sometimes adjacent viscera, the whole being united by recent or organized lymph, the interspaces in acute cases, and sometimes in chronic cases, being filled with a serous exudation."

Regarding the cure of these complaints by local treatment, let us hear what Dr. A. F. Currier, a former interne of the Woman's Hospital, has to say ("New York Medical Journal," March 6, 1886):

"In many of the chronic cases of pelvic inflammation we are powerless to produce a cure by the ordinary means of local treatment. All honor to Dr. Emmet for suggesting* the continued application of moist heat to relieve such conditions, and no man can spend eighteen months in the Woman's Hospital without being convinced of its great value. Similarly no man can pass through that experience without seeing patients in whom this as well as other means of local treatment is ineffectual." I could, if it were necessary, quote many others to corroborate the concluding statement in the last sentence, but I deem the foregoing observation sufficient for my purpose and of particular value, inasmuch as it was made in an institution where local treatment is carried out more systematically and scientifically than in any similar institution in the world.

My attention was first directed to the value of the internal administration of bichloride of mercury in pelvic inflammations by the striking results of a case that was under treatment at the gynæcological class of the out-door department of the New York Hospital.

I must here express my indebtedness to Dr. J. H. Emerson, the attending gynæcologist, for allowing me to make use of the case records and for the privilege of carrying out my observations. The history of the case referred to, briefly, was as follows:

N. M., thirty-six years of age, married ten years, had her first and only child nine years ago. The child was born at full term, but lived only an hour. A year afterward she had a miscarriage at eight weeks without any apparent cause. This was followed by pelvic cellulitis, which resulted in an abscess that opened spontaneously into the rectum. On recovering from this, she enjoyed good health for three months, and then began to suffer with nausea and vomiting, but had no pain nor fever. She was now treated as an inmate at the Woman's Infirmary, leaving it at the end of three months, restored apparently to perfect health. She remained in a state of good health for five years, gaining flesh and strength, and never having felt better in her life. In February, 1885, on walking across the cold floor one night in bare feet, she was suddenly seized with pain in the right groin extending to the back. A few days afterward metrorrhagia set in. On presenting herself for treatment at the dispensary on February 21, 1885, a physical examination showed the uterus to be slightly restricted in its mobility and in a position of retroflexion. There was some discharge from the cervix, which was moderately lacerated. She improved but very slowly under the local applications of iodine, glycerin tampons, hot-water douches, and the internal employment of tonics. She ceased attending in July of the same year, and returned for treatment the second time on May 15, 1886, with the statement that she had been feeling somewhat better for a time and then gradually grew worse. The following symptoms were now present: Anorexia, cough, hectic fever, night-sweats, great debility, pain in both groins, and frequent and painful micturition. A digital examination detected closely connected with the uterus and surrounding it on all sides an extensive exudation, which was excessively tender and as hard as a cricket-ball. From this date up to the following December local treatment was faithfully carried out, and the patient was given internally cod-liver oil, iron, quinine, strychnine, and other tonics. But, in spite of all these, she gradually grew worse, both as to her local and as to her general condition. She was becoming unable to do her household duties, which were light, and a state of invalidism was slowly gaining upon her. In sheer desperation and partly on account of a superficial anal fissure she was sent to the out-door surgical department of the hospital. There the attending surgeon thought he detected evidence of syphilis, and accordingly placed the patient upon a mixture containing one sixteenth of a grain of bichloride of mercury and eight grains of iodide of potassium in each dose, to be taken thrice daily. From this on the patient began to improve, coming occasionally to our department to have a local application made.

*May 12, 1887.*—The patient has improved considerably and is gaining flesh. The pelvic exudation seems to have undergone some absorption. It is certainly less extensive, and is not nearly so hard nor so tender as it was. The most careful examination detects no fluctuation. She continued taking the foregoing mixture off and on during the summer, and I saw her again

* The term "suggesting" is a mild expression for Dr. Emmet's labors in this direction. Honor and credit *are* due him for his persistency at every opportunity in fully impressing the profession with the value and importance of hot-water douches to promote the absorption of pelvic inflammatory exudations and to improve the circulation of the pelvic blood-vessels. Others may have made the suggestion, but he alone is entitled to all the glory which attaches to the incalculable good the method has wrought for suffering womankind.

about two months ago, when she was still improving, growing stronger and gaining in flesh. She was now doing her housework with comparative ease, and, unless she worked very hard, she was free from pain. Of course the pelvic mass was far from being entirely absorbed. It is questionable if anything short of a laparotomy would completely remove it.

I repeatedly interrogated the patient afterward, who was both frank and intelligent, regarding indications of a syphilitic taint, but failed to find any, excepting the early death of her child and the subsequent miscarriage. These events, as we know, do not necessarily point to syphilis in the mother. On the other hand, the seizures of pelvic inflammation were brought on by well-known causes—the first by a miscarriage and the second by exposure to cold. In the light of these facts, though with all deference to the diagnosis made by the surgeon, the conclusion was forced upon me that the patient's improvement was due to the resolvent powers of the drugs she was given and not to their antisyphilitic properties. Admitting, even for the sake of argument, that she had been the subject of syphilis at a former period, she was then suffering from an extensive plastic exudation which surrounded the uterus on all sides, like a thick wall of hardened plaster of Paris, and this was gradually sapping her life. The mass was hard and sensitive, and behaved exactly like inflammatory exudations which are known for a certainty to be non-syphilitic. If the administration of the bichloride of mercury and the iodide of potassium proved so efficient in this patient, I ask myself, Why should these drugs not prove equally efficacious in pelvic exudations in patients without a suspicion of syphilis? At any rate, I determined to supplement the local treatment of every case of circumuterine inflammation that came under my care by the internal employment of one of the drugs—the bichloride. Accordingly, during the past summer, during Dr. Emerson's absence, while in sole charge of the class, I gave the bichloride in thirty odd cases, besides giving it in several cases in private practice.

I will narrate the histories of a few cases condensed from full notes made during treatment.

Case I.—R. H., thirty-nine years of age, married twelve years, presented herself at the dispensary on August 12, 1887. She had had one child eleven years before. For the past five or six years she had been suffering with pain in the left groin, frequent micturition, a sense of fullness in the vagina, and a slight cervical discharge. Headache was almost a constant symptom. These symptoms came on gradually some time after having lifted a heavy weight. This was the only cause she could assign to them. Of late her household duties were becoming very irksome. Walking was particularly painful and had almost to be given up. Two years before she had been treated for two months at the clinic of the Woman's Hospital with temporary benefit. On examination, the uterus was found in fair position but restricted in its mobility. Behind and to the left of the uterus an indistinct induration, which was excessively tender, could barely be reached by the examining finger. The routine local treatment was carried out, and the patient was given gr. $\frac{1}{24}$ of the bichloride three times a day. She took the medicine continuously, and was treated twice weekly until September 1st, when the following note was made: Patient is entirely free from pain and able to do her duties without discomfort. The mobility of the uterus is found much freer, and no trace of the sensitive induration can be discovered. On December 7th I called at the patient's house and learned that she had remained free from pain excepting when having walked a great distance or having worked unusually hard. She voluntarily remarked that she had not been so free from pain and nervousness since her trouble began, six years before.

Case II.—L. B., thirty-two years of age, a strong, healthy-looking woman, came to the dispensary on April 21, 1887. She had been married seven years, but had not lived with her husband for some time past. Shortly after marriage she had a miscarriage at three months, which was followed by chills and fever for a week, but, as far as she knew, there had been no abscess formation. For the past two years she had complained of pain in the left groin and in the back, of a feeling of heaviness in the limbs, and of tiring very easily. Latterly she had been unable to follow her occupation of making artificial flowers, by which she had earned her livelihood. She was very nervous and depressed in spirits in consequence. Examination showed the uterus to be freely movable, measuring three inches, and in normal position. The cervix looked healthy. The left ovary could easily be felt in Douglas's *cul-de-sac*, and was enlarged and extremely sensitive. During the first month the routine local treatment was assiduously carried out at the dispensary and by the patient herself at home. There was little or no improvement. At one visit she might be better, but at the next she would be as bad as ever. The bichloride in $\frac{1}{24}$-grain doses, combined with five grains of iodide of potassium, was then ordered. From this on improvement became decided. The potassium salt was left out of the mixture after a few weeks, as it was producing coryza, and she continued taking the bichloride alone for about two months longer, having the local applications made once a week or once every two weeks. After she had been under the combined treatment for a month, the pain and tired feeling had entirely disappeared, she grew less nervous, became quite buoyant, and said she felt like another being. She now resumed her former occupation, and starvation no longer stared her in the face. She continued, however, coming to the dispensary at very long intervals, until October 25th, partly to be treated for slight gastric disturbances, but chiefly to let me know how well she was getting on and how grateful she felt for the improvement. On October 4th it is noted: The left ovary can scarcely be felt with the finger. There is still some slight tenderness in Douglas's *cul-de-sac*.*

It would probably be going too far to say that the patient is entirely cured, but she has been rendered free from pain, and she has been able to follow her occupation for a period now extending over six months. Removal of one or both ovaries might not have done as much for her. Those eager to perform that operation would have found ready at hand the usual reasons urged as justifying it, in the long-continued pain, in the great nervousness and mental depression, in the inefficacy of local treatment, and in the inability to earn a livelihood (which was a necessity with her) that the case presented.

Case III.—L. W., twenty-six years of age, a thin, delicate married woman of a highly strung, nervous temperament, came to the dispensary, May 10, 1887, complaining of pain in both groins, pain in the back, leucorrhœa, great weakness, and inability to do her household duties, which were not very onerous. These symptoms had first manifested themselves five years before, after the birth of her first and only child, and had been

* I saw the patient again on January 5, 1888, and she then declared herself entirely free from pelvic pain.

aggravated by an induced miscarriage the previous June. She had been treated at various times and places with temporary benefit only. On examination, the left ovary, considerably enlarged and extremely tender, was found low down in Douglas's *cul de sac*. Apart from some erosion of the cervix, nothing else of an abnormal nature could be detected in the pelvic organs. The usual local treatment was followed out, and various devices were adopted to hold up the enlarged and prolapsed ovary until August 27th, with but slight relief. She was now given gr. $\frac{1}{24}$ of the bichloride, with ten minims of tincture of chloride of iron, three times daily, the local treatment being kept up. The patient is still under observation. She is quite free from pain, peforms her household duties, and has improved in every respect, but she has not by any means been made a strong and robust woman. I am quite certain, however, that no operation devised by human skill would consummate that much-desired state.

Case IV.—E. R., single, eighteen years of age, presented herself at the dispensary, December 4, 1886, for severe dysmenorrhœa, which was found to be attended with vaginismus. This condition was successfully treated by gradual dilatation, and the dysmenorrhœa ceased. On July 30th of this year she returned, saying that three weeks before, while bathing in the surf, she had been seized with pain in the left groin, which had continued ever since. Metrorrhagia had set in shortly afterward, and she was flowing at the time of the visit. She was instructed to go to bed and have hot-water douches given her twice daily, and was ordered suppositories of opium and a mixture containing gallic acid.

*August 2d.*—The flowing ceased on the 31st of July, but the pain in the groin is no better. The uterus is fixed, and the vaginal vault feels as hard as card-board and is extremely tender. She was now given the bichloride mixture, and told to remain quiet at home for a week.

*August 29th.*—The pain left her in a few days, but was brought on again last night by dancing a great deal. There is still considerable tenderness of the vaginal vault, but it does not present nearly the same hardness as when first examined. In about a month later all tenderness and hardness of the vault had disappeared, and any one examining the patient for the first time could have detected no evidence of a former attack of pelvic exudation.

In such cases as the foregoing, where the products of inflammation seem to be poured out into the submucous tissue and into the cellular tissue and peritonæum contiguous to it, local treatment of itself, combined with rest, is commonly followed by tolerably rapid resolution.

But in my experience it is seldom that the resolution is so complete as it was in that instance in the short space of two months. Some tenderness and hardness usually remain for a long time. When it is borne in mind that the patient had been on her feet and about excepting a few days, and that she even had attended dances, it will scarcely be denied that the absorption of the inflammatory material was unusually rapid.

The next case is instructive in that it shows that a short course of the remedy may serve as an important means to distinguish between the pelvic pain caused by hysterical hyperæsthesia, by neuralgia, and by inflammatory exudation.

Case V.—L. B., thirty years of age, married five years, sterile, came to the dispensary on May 3, 1887. Menstruation was regular and only moderately painful. Ever since marriage she had suffered with pains in the left groin and in the hypogastrium. She was a healthy looking woman, with good digestion and circulation. A physical examination revealed a freely movable uterus, but in a position of retroversion. There was considerable hyperæsthesia in the left parametrium, but no fullness or induration was appreciable. She had been treated for a considerable time at the Woman's College Infirmary without any relief to her symptoms. The uterus was easily replaced. A suitable hard-rubber pessary was adjusted, and the patient was ordered to take hot-water douches daily. Although the pessary gave rise to no local discomfort, and retained the uterus in good position, the patient continued to complain of the pain in the left groin and in the hypogastrium. Suspecting a neurotic or hysterical tendency, her nationality and race—she was a Galician Jewess—favoring that opinion, various antispasmodics and nervine tonics were administered until July 28th, a period of ten weeks. But the subjective symptoms remained uninfluenced. The bichloride mixture was now ordered. At the next visit, a week later, the patient, of her own accord, declared herself to be freer from pain than she had been before. A week still later she was entirely free from pain, and ceased attending.

Whether the improvement has been permanent or not I can not positively say, for I have not been able to find the patient at the address she gave. But it may be fairly assumed that the relief from pain has continued; for, if she persisted in attending nigh three months without obtaining relief, it is more than likely that she would come back for treatment in the event of a return of the pain, after having it once entirely removed.

Bearing on the same point of differential diagnosis as the foregoing case, the following history of a private patient is of considerable interest. The result, however, was different; the bichloride proved of no avail, while antispasmodics had the desired effect:

Case VI.—D. S., twenty-six years of age, married six years, consulted me on April 19, 1887. Shortly after marriage she thought she had had two very early miscarriages, but since then she had been sterile. At about the same period she began to suffer with great nervousness, with pain in the left groin, which radiated to the hip of the same side, and she said that she noticed a fullness in the left groin which would come and go. She had a profuse discharge, and micturition was frequent and painful. Other symptoms, to any number, could be furnished on the mere asking. She was, however, well nourished, and presented anything but an invalid appearance. She had been for over a year under the care of a recognized gynæcologist of this city, who on one occasion examined her under ether and told her that she had an abscess in the left side, for the removal of which laparotomy would be necessary. This advice, I think, I rightly interpreted as meaning the removal of one or both uterine appendages, the abscess doubtless referring to the diagnosis of pyosalpinx. A very careful and thorough examination detected nothing more than an anteflexed uterus, with a long cervix, from which exuded an abundant thick tenacious discharge, and an ovary which perhaps was somewhat enlarged. Bimanual palpation was easily carried out, as the abdominal walls were flaccid and the patient offered no resistance, but after the most careful search neither tube could be palpated. The patient attended faithfully all summer, and I tried one thing after another, some of which were dilatation of the cervix, local applications, the adjustment of a pessary, and hot douches *ad nauseam*. The bichloride internally was also given for a period of two or three weeks. The cervical catarrh was very much improved, the flexure in the canal was considerably

reduced, but the patient still complained of the same subjective symptoms. I then determined to make a trial of antispasmodics. The administration of asafœtida and valerianate of zinc for two weeks was followed by the disappearance of the pain and of most of her complaints. She continues coming to the office to be treated for the cervical catarrh, but beyond this there are no symptoms referable to the pelvic organs.

It is difficult to speak dispassionately of the advice given in this case. It would have been a criminal act, in my mind, to remove the uterine appendages from that patient.

Time will not permit me to narrate the histories of all the cases in which I have used the bichloride internally, but the majority of them resembled in most respects those cited. The remedy combined with local treatment cured some of the patients, and certainly improved all where the symptoms could be definitely traced to circumuterine inflammation. When a patient failed to improve under the combined treatment, I looked upon the diagnosis as unsound, and accordingly changed it and the plan of treatment, and mostly with good results. Of course, when there is any considerable degree of inflammation around the uterus, the diagnosis offers no difficulties, but cases often present themselves in which even the most skilled gynæcologist fails to detect any induration and yet the symptoms may be due to a circumscribed inflammatory process situated deeply within the pelvis. Every one knows how extremely hard it is at times to decide whether a pelvic pain is due to a neurotic condition of the patient, to neuralgia, or to an inflammatory exudation. It is just in such cases that I found valuable assistance in forming a diagnosis from a two or three weeks' administration of the bichloride.

On looking up the literature of the internal employment of resolvents, especially mercury, in pelvic exudations, I was struck with the fact that, while the men of the past generation had put great faith in them, the gynæcologists of to-day—with some notable exceptions—either spoke of them with faint praise, condemned them, or mentioned them with ill-concealed contempt and scorn. It would thus seem that fashion rules medical men almost as much as it does the milliner's art. And it would also appear that skepticism in the medical mind in one direction leads to over-abundance of belief in another. Topical applications and the removal of the uterine appendages are in the ascendancy at present. Their advocates sneer at the idea that a small quantity of a drug given systematically can have an alterative or a resolvent effect, though the accumulation of past and present experiences makes such a supposition reasonable. But these same men place implicit faith in the efficacy of the removal of apparently healthy ovaries for the relief of obscure nervous troubles and of pelvic pain, because, they argue, we know so little of the influence of these organs upon the nervous system. But there are other organs in the economy besides the ovaries whose influence upon the nervous system is still involved in obscurity. Why should they escape? What radical means shall we adopt for the cure of hysteria, epilepsy, and other ill-understood nervous affections in the male? No man has yet been bold enough to suggest castration; but the turbinated bones in the male subject have been made to suffer a double punishment.

I do not think that I underestimate the value of local applications in promoting the absorption of inflammatory exudations situated within the pelvis. But it is no more difficult for my mind to comprehend the *modus operandi* of resolvents given by the mouth than it is that of iodine and boro-glyceride applied to the vaginal mucous membrane in influencing the products of inflammation situated at some distance from the surface to which the application is made.

A few words on the mode of administration. In dispensary as well as in private practice the following mixture was usually given: Bichloride of mercury, 1 grain; tincture of gentian, 1 ounce; water to 3 ounces. Dose, a teaspoonful, in water, three times a day after meals. The patients took the mixture readily, and no complaint was made on the score of its taste, with only one or two exceptions. Some of the patients took the remedy in the stated dose continuously for four or five weeks without the slightest evidence of mercurialism. It was usually then omitted for a week, more for precaution's sake than on account of any untoward effect of the drug. On the contrary, the appetite of the patients while they were taking it usually improved, as did also their digestive functions. When anæmia was present, the bichloride was combined either with tincture of chloride of iron or with reduced iron in the form of a pill. In some cases I gave as much as one sixteenth of a grain—a dose which the patients seemed to bear as well as the smaller one.

From the foregoing observations the following conclusions, I think, are warranted:

1. The use of bichloride of mercury internally forms a valuable aid to the local treatment of circumuterine inflammations.

2. In the doses necessary for its resolvent effect the drug may be given for several weeks without any untoward constitutional manifestations.

3. In some cases where the inflammatory products are deeply situated within the pelvis the internal use of the drug seems to be more efficacious than the most approved local treatment.

4. A short course of the drug often serves as an important means for the differential diagnosis of the various obscure conditions which give rise to pelvic pain.

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**Rabies among Children.**—"Alarmed at the increase of rabies among children," says the "British Medical Journal," "the Board of Health in Paris recently appointed a committee to inquire into the matter. The report by Dr. Ollivier, recently published, attributes the frequency of hydrophobia among children to the fact that children, as a rule, are fond of teasing and playing with dogs, and that dogs suffering from rabies are peaceful during the incubation period provided they are left alone, but their bite is none the less serious if irritated. To remedy this it has been decided by the authorities to issue a circular throughout both Paris and the provinces, enjoining parents, under various penalties enacted by the law, to keep a strict watch over their children, to prevent them fondling or teasing dogs, and in every case of biting to report the fact immediately to the commissary of police, who will proceed at once to have the animal seized, and, if necessary, killed. But would it not be easier and more effective in France as in Germany to carry out a universal muzzling order, effective over the whole country, and continuing for a considerable space of time?"

# A CASE OF LARGE CYSTIC TUMOR OF THE KIDNEY REMOVED BY ABDOMINAL SECTION.

*RECOVERY.**

By A. VANDER VEER, M. D.,

PROFESSOR OF SURGERY AND CLINICAL SURGERY, ALBANY MEDICAL COLLEGE.

Miss B. D. B., aged twenty, single, native of Ireland; occupation, domestic. Admitted into the Albany Hospital, September 17, 1887. Residence, Ballston, N. Y. Family history, no diathesis could be determined. The whole family were remarkable for robust constitution and longevity. The history derived from the patient was that she had always been well and strong. She first menstruated at fifteen; the flow was scanty and painless, but regular. An enlargement of the abdomen was first noticed five years ago. She states that the tumor commenced in the middle of the abdomen, and was hard. Three years later the tumor had grown very much, and was tapped five times at frequent intervals, and a large quantity of dark, frothy fluid drawn each time. After the last tapping the sac did not refill until the spring of 1887, when she began to enlarge rapidly. When first ill she suffered from amenorrhœa for a year, since which she has been regular. Since the tumor appeared the patient has passed but little urine, and during the summer had a complete suppression for three days.

*Operation, October 3, 1887.*—The patient was removed to a private room, previously thoroughly cleansed, and the abdomen opened by Dr. Vander Veer, assisted by Dr. Boyd, Dr. Townsend, Dr. Hoadley, and Dr. McDonald, Dr. Grant Bey, of Egypt, and others being present.

The cyst was exposed, found adherent, but tapped in the ordinary way, and five quarts of clear fluid were withdrawn. It had been diagnosticated as ovarian. The process of enucleation was very tedious, a large number of ligatures was introduced, and when working for the pedicle the right kidney was reached, and the cyst's origin made out. The pelvis of the kidney, together with the vessels, was included by a single ligature—the Tait knot—the kidney and cyst were removed, and the pedicle, which was made up of renal vessels and was very large, was returned to the abdomen. The pelvic organs were bound down by adhesions, but otherwise were healthy. No great oozing from the adhesions took place. The abdomen was closed with nine deep sutures, and dressed with iodoform strips and Gamgee pads. Time of operation, one hour and forty minutes.

The patient reacted nicely from the operation, but complained of some little pain. At 6.20 P. M. she voided ten ounces of urine, and slept two hours and three quarters during the afternoon. During the night she slept five hours and a half without an anodyne. On the evening of the second day there were some rise of temperature and a quickened pulse. She was given one minim of tincture of aconite every hour, which was continued for thirty-six hours. On the third day the patient complained of little tenderness on the right side of the abdomen. The bowels were moved by an enema. Wound dressed. There wat little staining of the dressing. The patient was able to pass gas freely during her whole illness. An ice-bag was used for a few days to combat the slight rise of temperature. The turpentine enema was necessary to move the bowels. On the evening of the sixth day the temperature rose to 101° F., probably due to irritation produced by the removal of the deep sutures. Once, on the fifth day after the operation, a single evacuation of urine contained albumin and pus, after which is was free. A careful estimation of the urine voided daily for two weeks showed an average of twenty-one ounces a day. The quantitative estimation of urea showed an average excretion of three hundred grains a day.

After she was transferred to the ward she did not do so well for a few days. Afterward, under the use of tonics, she did well, rapidly gaining in strength and flesh. Her urine has been examined several times since and found normal, the daily excretion being about twenty-four ounces. The fluid drawn from the cyst was dark, of a specific gravity of 1·010 and neutral in reaction, and contained albumin, also paralbumin, and abundant chlorides, but no apparent amount of bile pigment. No cholesterin; urea approximately 2 per cent. Microscopically, nothing was determined. Subsequent to the operation, after diligent inquiry, it was found that the case had been previously treated by Dr. Lyman Rogers, of Bennington, Vt.

The following are extracts from a letter received from the doctor in response to inquiries made by myself:

"Miss B. D. B. was brought to my office some time in September, 1885, for examination. I found a large tumor in the abdomen. It evidently had its origin on the right side, in the vicinity of the liver, and extended down to a point on a line with the crest of the ilium, and across to the left side of the abdomen, some distance beyond the median line. The outlines of the tumor could be distinctly felt, particularly at the lower portion. I could feel the rounded form of the tumor so plainly that I thought it could not be ovarian, and the history that the attending physician and the patient gave me showed that it had grown from above downward. I first thought it was an enlarged liver, but after further examination satisfied myself that fluctuation existed. I thrust a hypodermic needle into the tumor, and brought out a syringeful of clear, colorless fluid. Two days later I saw the patient at her own home, when, upon examination, the tumor seemed less well defined. However, the needle of the aspirator was plunged into the tumor, and the fluid drawn off. Some three or four weeks later I was called to see her again, and found that the tumor had reappeared of about the same size as before. I aspirated again, and drew off about five quarts of clear serum. I think it was aspirated three or four times subsequently, at intervals of four weeks, when the tumor ceased to grow, and the patient regained her usual strength and vigor. I saw her, I think, about six months afterward in apparent good health. She showed no evidence of tumor. I learned subsequently that she had become insane, and was sent to an asylum, since which I had heard nothing of her until I received your letter. I regarded the tumor as a cystic growth, but from what organ it had its origin I had no positive opinion, except that it could not be ovarian or a parovarian cyst."

Could we have obtained from this patient the history that was given us by Dr. Rogers later on, I can not think that there would have been any possibility of our having been led astray in an early and prompt diagnosis. As it was, our patient has made a good recovery, and one has but to consult the London "Lancet," "The British Medical Journal," and our own American medical journals to find in them similar cases reported within the past year.

That the patient made so excellent a recovery I believe is largely due to the improved method of doing this operation employed at the present time.

* For valuable notes kept of this case I am indebted to Dr. W. G. McDonald, of the Albany Hospital.

**Oxynaphthoic Acid.**—This acid is a powerful antiseptic, retarding putrefaction of the blood and urine even more effectively than salicylic acid, with which it agrees closely in chemical composition.—*Lancet.*

# THE THERAPEUTICS OF PULMONARY CONSUMPTION

## BY DEBOVE'S METHOD OF SUPER-ALIMENTATION, AND BY BERGEON'S METHOD.

By HENRY B. MILLARD, A. M., M. D.

It is not entirely creditable to medical practitioners to discard, *violenter repenteque*, as absolutely useless, because they do not fulfill all expectations, methods of treatment which have repeatedly been found to be of value by physicians with the most extended facilities for judging, whose names are above reproach as regards the likelihood of supporting their theories by false pretensions, and whose favorable experiences have been publicly demonstrated by them. This willingness to decide against the practicability of the two methods designated in the title of this article, and unwillingness to employ them in certain cases where they are feasible, are sometimes undoubtedly to be attributed to the amount of time required for their employment and to the comparatively small number of cases to which they are applicable. Without the bestowal of considerable study and care, Debove's method can not be easily employed. The preparation of the beef powder so as to make it acceptable to the patient, the skillful use of the stomach-tube when it is employed, the regulation of the dose, the toleration of the treatment by the patient, and willingness as well as ability to submit to it, demand a great deal of time and patience on the part of the physician.

The literature, too, upon this subject in the English language is very limited, my own paper,* published in the "New York Medical Journal" of April 19 and 26 and May 10, 1884, being the only full or accurate exposition that has appeared. Some valuable accounts by Dr. Dujardin-Beaumetz, to which I shall allude again, have also been published recently. The advantage of intimate personal friendship with Dr. Debove and yearly visits to Paris have enabled me to represent the theoretical and practical features of his treatment correctly.

Another reason of the limited employment of this method in America is undoubtedly the fact that the *poudre de viande* made by Ferré is, on account of the cost of importation, duties, etc., somewhat expensive, and that it has been kept only, at my solicitation, by a few druggists. These last two difficulties, as I shall show, have, however, been quite overcome.

As to the value of Debove's method in some cases there can be no question. In the summer of 1883 I passed considerable time at the hospital of La Pitié and saw the *poudre de viande* administered through the tube by Debove, and also so administered it myself. I not only heard from him the clinical history of the cases, but questioned the *internes*, and also corroborated the testimony thus obtained by oral and physical examination of the patients. Some of these seemed nearly cured, and others had gained from fifteen to twenty pounds in weight. In many of these cases I saw verified what Debove states—namely, that, under the influence of super-alimentation,

1. Sweatings cease.
2. Cough and expectoration diminish and then disappear.
3. Patients gain in weight.
4. The strength returns.
5. Physical signs are modified; the signs due to pulmonary indurations or cavities subside, while those dependent on pulmonary secretions disappear. In acute and galloping consumption this treatment is useless. Fever is a contra-indication, unless it come on in evening exacerbations.

Further than this, several of my own patients have within the last four years recovered or been greatly benefited under this system of treatment. Artificial alimentation is not always easy—often, indeed, impossible; especially is this the case when there is ulceration of the larynx and the patient is very weak.

And here I will allude to the main features of Debove's system, as my paper, published a long time ago now, must have escaped the observation of many physicians. It was, however, republished by Parke, Davis, & Co., of Chicago, who I find have yet some copies on hand, which they will send free in case it is desired to study the subject thoroughly.

The essential features of Dr. Debove's system may be mentioned as:

Artificial alimentation by the œsophageal sound (*gavage*).

Super-alimentation, or alimentation by considerable doses of aliment, which, according to Debove, can be effected only by the sound, and

*Lavage* (washing or rinsing the stomach).

"Super-alimentation differs from artificial alimentation: by the latter we propose to nourish the patient, and to prevent the disastrous results of anorexia or vomiting; in the former, to introduce into the economy considerable quantities of food, and to increase organic combustion."

Anticipating somewhat at this point the description of aliments used by Dr. Debove, I would mention that the powder of the muscular fiber of beef is usually employed by him, being mixed with milk or hot water, so as to be of about the consistence of cream. Upon the excellence of the powder employed, and its proper preparation when administered, depends, most of all, the success of the treatment.

Other aliments than the powder of beef may be given by the sound, such as eggs in beef-tea, milk, etc.

Debove was led to the invention or preparation of powdered beef by the difficulty he experienced in making other articles of nutriment pass through the sound.

The two methods of administration consist in direct alimentation and forced alimentation, by the former method the food being given as any other food would be, with certain precautions and restrictions; by the latter, the food being introduced into the stomach by the œsophageal tube or sound, this being employed when anorexia, nausea, or vomiting exists to such an extent that nourishment can not otherwise be taken. Dr. Debove employs for the introduction of the mixture into the stomach a soft elastic tube,

* "Super-alimentation, Artificial Alimentation and Gavage, and the Employment of Alimentary Powders, according to the Method of Dr. Debove."

about three quarters of an inch in diameter, and having at the bottom two fenestræ; this part of the tube is twenty-two inches in length, and, although flexible, is of sufficient firmness to be introduced easily; at the opposite extremity to that which enters the stomach there is a joint, and the tube after this is of a softer consistence, this part being thirty-nine inches long and terminating in a funnel-like expansion; in this end a large glass funnel is placed, into which the liquid is poured. This tube is a modification by Debove of Faucher's, who invented it in 1878. It may also be used for rinsing the stomach (*lavage*), the principles and methods of which are given in another place.*

I will not here enter into detail as regards the mode of introduction of the tube and food, but will refer the reader to the reprint I have mentioned. Dr. Dujardin-Beaumetz, in his works entitled "Diseases of the Stomach and Intestines"† and "New Medications,"‡ both translated by Dr. Hurd, gives a valuable though not very full exposition of Debove's method, mode of using the sound, etc. This author concludes his chapter on this subject as follows:

"Thanks to gavage, we see the appetite return, the bodily weight increase, the strength come back, and the facts which Debove has published and those which I have noted indicate the great future in reserve for this kind of treatment, which is applicable to all cases where nutrition is at fault, and especially to tuberculosis."

Dr. Beaumetz in the above-mentioned works describes a modification of Debove's tube, rendering it, he thinks, easier of introduction, the modification consisting in a diminution of its length and caliber.

The powder can in many instances be administered *directly*—that is, without the intervention of the sound, but not usually in such full doses as when given by the latter.

"The question is often asked," says Debove, "if the sound is indispensable, and if super-alimentation can not be employed without it. It seems to me impossible to obtain super-alimentation, continued a sufficient length of time, if one simply forces the patient to *eat;* and precious time is thereby lost."#

Dr. Amanieux, of Paris, published in 1883 an elaborate treatise upon the direct administration of the powder of beef ("De la poudre de viande, son administration directe"), and his own experience is that it can always be given without the sound.

I am led to review rapidly some of the features of Debove's treatment in part by the perusal of an editorial article in the "Therapeutic Gazette" of September 15, 1887, entitled "A New Method of treating Phthisis by Super-alimentation," which in turn is inspired by a paper in the "Pharmaceutische Zeitschrift für Russland," 1887, No. 24, by Dr. Langowai, of the clinical staff of Professor Ostroumoff, of Moscow. This article describes Debove's method: "In his investigations, Dr. Langowai selected five cases of phthisis in the Moscow Clinic in whom every means of diagnosis proved the existence of the disease in pronounced form. It was found that those cases in whom the parenchyma of the lung was not badly diseased sometimes recovered perfectly, while the worst cases were maintained for a long time. He gave his patients (daily) an amount of the beef powder equivalent to three pounds of beef."

After this outline of the character and effects of Dr. Debove's treatment, I will now describe more fully the character and preparation of the powder to be employed, its therapeutic and physiological effects, etc. Debove prepared it by selecting beef as free as possible from fat, separating it from the tendinous portions, and passing it through a chopping machine, making a coarse paste, which was then spread on plates and dried in stoves at a temperature of 90° centigrade (226° F.). The beef, hardened by drying, is triturated in a mortar, and then passed through a fine sieve. The powder thus prepared is impalpable, dry, and can be preserved indefinitely, if carefully kept from humidity, and is almost without odor. To make one pound of the powder, about six pounds of fresh beef are required, and one pound of the powder is equal to at least four of pure muscular fiber. Of this, as much as 400 or 600 grammes have been given by Debove daily, the latter quantity being equal to five pounds of beef. This is *literally* super-alimentation, and, unless provocative of some disturbance, could scarcely fail to bring about all the changes attendant upon thorough nutrition. Such large quantities as 600 grammes are, however, not often attained, and only, I believe, by the sound.

Simple as its preparation seems, practically it does not appear so. I was shown at La Pitié numerous samples made by various chemists; they were either strong-smelling, nauseous, or unpleasant to the taste; some had putrefied, and showed under the microscope numerous living organisms; one, made from horse-flesh, had a repulsive odor, but not more than one of the other preparations made from beef.

That the qualities of purity and freedom from disagreeable taste and odor are important, especially when the powders are used for direct alimentation, is evident when it is considered that they are usually administered where there is antipathy to food, with perhaps nausea and vomiting. Dr. Debove used exclusively for a considerable time a preparation made by J. Ferré, a distinguished *pharmacien* of Paris; he considered it perfectly satisfactory, and even better than that made by himself. I have had a package in my possession for two years, and, although it has for a year lain open in my office, it has undergone no deterioration.*

I am glad to be able to state, however, that Parke, Davis, & Co., after experimenting nearly two years, have succeeded in making an article in all respects equal to that of Ferré. The retail price is one dollar a box of half a pound. It must be considered that eight ounces of the powder are equivalent to two pounds and a half of the fillet of beef, which would not be sold at less than fifty cents the pound.

Other modifications of the powder recently manufactured by Parke, Davis, & Co. are a mixture of this powdered fibrin with a small quantity of chocolate, and also

* The author (*loc. cit.*).

† New York, William Wood & Co., 1886.

‡ Detroit, George S. Davis, 1887.

# The author, *loc. cit.*

* The author, *loc. cit.*

powdered beef, which represents the fibrin, together with all the salts and all the extractive contained in fresh beef.

It is not my purpose in this article to recapitulate fully the theories and experiences of Debove, nor my own account as drawn from my observations and from various French writers. The reprint I have mentioned, and the writings of Dujardin-Beaumetz, will afford all the information required. I desire simply to bring to the notice of my fellow-practitioners the fact that Debove's method is none the less promising and useful than when first introduced, and to awaken in them a new interest in it. Certainly to its employment some of my patients are indebted for great relief or recovery.

I will conclude this article by an extract from Dr. Dujardin-Beaumetz relative to this subject (*loc. cit.*):

"As for alimentation, the method first brought into vogue by Debove has proved to be of the highest utility, and it is to-day generally admitted that, in certain cases where the integrity of the digestive tube is complete, one may, by super-alimentation, obtain amelioration and even cure in pulmonary consumption. The important communications of Broca and Wins have given us many conclusive observations to this effect, and my pupil, Dr. Pennel, published in 1882 a series of cases where the beneficial action of forced feeding was most manifest."

Bergeon's Method.—The difficulties and objections in the way of the proper employment of this method are many, while the proportion of cases likely to be benefited is small. It would, nevertheless, be a defective mode of practice, and not in accordance with the requirements of our profession, to withhold even from one patient the means of saving life because those means were not suited to all cases. And this we should all hold: That it is our duty to cultivate catholicity in our practice, to familiarize ourselves with every proper means of cure, and to add it to the *armamenta* of our resources, even should we find it available only in rare and exceptional cases. Aside from the therapeutic value of this method, its thorough employment is troublesome and, in cases of ladies, repulsive. A greater objection is that patients easily become discouraged, and rarely have the courage and perseverance to pursue the treatment with care enough and for a sufficient length of time.

Another important objection to its use, at least as generally employed here, has been the uncertainty of graduating the quantity of sulphureted hydrogen thrown into the rectum. Here, at least for a time, almost every variety of natural sulphureted-hydrogen water was brought into requisition, some varieties containing so little of this gas as to be comparatively inert, and, indeed, so much would the natural and artificially made preparations vary that the quantity of the gas administered could often not be known at all. This looseness could not but make the therapeutics uncertain, and, as a rule, the results attained were not logically proved.

The formula which I have invariably used, after a few unsatisfactory trials with others and with various sulphur waters, with perfect satisfaction is the one employed by Dr. Dujardin-Beaumetz in the Hospital Cochin. It is as follows:

℞ Sulphide of sodium, pure, 10 grammes, or 10 parts by weight;
Distilled water, enough to make 100 cubic centimetres, or 100 parts by weight.

One cubic centimetre of this liquid liberates exactly ten cubic centimetres of sulphide of hydrogen when there is added to it one cubic centimetre of the following solution:

℞ Tartaric acid, 25 grammes, or 25 parts by weight;
Salicylic acid, 1 gramme, or 1 part by weight;
Distilled water to make 100 cubic centimetres, or 100 parts by weight.

Thus a drachm, equal to about 4 grammes, of each of these liquids gives 40 cubic centimetres of the gas. At the Hospital Cochin about 150 cubic centimetres of the gas were used at a *séance*.

I have employed this method in four cases; in three of these it was quite useless; in one case, in which there was sensitiveness of the intestinal canal, its use was always followed by severe pain and diarrhœa. I will not dwell upon the features of the other cases, but proceed to the fourth, in which I observed the most gratifying results:

The patient was a lady, single, aged thirty-seven. Family consumptive. She came under my care in May, 1886. Left lung anteriorly dull on percussion, with diffused râles; strong bronchophony, limited expansion, with some pleuritic adhesion. Right lung dull posteriorly, with bronchial respiration; menses scanty, and occurring only once in two months. Emaciation, night-sweats, and diarrhœa. Severe cough, with purulent expectoration. A summer spent partly in the mountains of Virginia and partly in the Adirondacks produced but little improvement. Two months, February and March, 1887, spent in the South, were of more benefit: cough, weight, and general strength somewhat improved; expectoration less, but the same pathological conditions existed.

*June 7, 1887*, I commenced the use of Bergeon's method. It was well borne, and was used twice daily for a month. About two quarts of the carbonic-acid gas and eighty cubic centimetres of the sulphureted hydrogen, according to the formula, were used each time. When I went abroad, July 6th, the patient had already derived great benefit from the treatment: she continued it daily until my return, toward the 1st of October, and gained in that time nearly eighteen pounds. It has not been used since my return. Cough and expectoration now very slight; no perspirations; no moist sounds; but little expectoration; appetite and digestion good. I think that, with advantages of climate, complete recovery may be hoped for. Undoubtedly the summer she passed at the Thousand Islands, and the air (the elevation being about 1,200 feet), conduced greatly to her improvement.

There were in this case two features peculiar and necessary to success: First, Bergeon's treatment seemed from the first to be beneficial and to agree with the patient, and, second, the patient was most conscientious and persevering in following out by herself (she did not consult a physician during my absence) a troublesome and laborious course of treatment. As to whether the favorable air and climate for three months did not accomplish the benefit independently of the treatment, I would say that the first real improvement commenced with the employment of the latter, and continued *pari passu* with it. At the same time I am not an enthusiast as regards this system.

It has been suggested that sulphur-water taken by the stomach would effect the same benefit. The objections to this are that, to introduce into the system this way as much hydrogen sulphide as can easily be administered by the rectum, a quantity of sulphur-water great enough to derange the digestion would have to be swallowed. I think, too, there is no doubt that the gas thrown directly into the intestines is with much more readiness and certainty admitted into the blood and lungs.

## UNCOMMON AURAL CASES.

By FRANK DUDLEY BEANE, A. M., M. D.

The interest of the following cases centers upon their comparative rarity. Many authorities, notably v. Tröltsch, Politzer, and Roosa, cite cases of long-retained foreign bodies within the external auditory meatus, but in nearly every instance marked pathological effects had resulted from their presence.

Cases of mycomyringitis aspergillina were first observed and have been recorded in relatively large numbers by European writers; nevertheless, observers in this country have contributed a liberal bibliography.

Case I. *A Large Bean within the External Auditory Canal for Ten Years without Signs of its Presence; Removal.*—E. S., aged twenty years, a native of the United States, clerk, consulted me on October 24, 1886, giving the following history: Four days previous he had felt a little itching in his left ear-canal, used the head of a good-sized pin to afford relief, and, during the manipulation, felt as though he had "touched the drum of the ear." Soreness, then pain, ensued. Attributing the result to mechanical violence from the use of the pin, and expecting its speedy disappearance, not till the evening of the third day did he consult his family physician, who announced the presence of a foreign body within the ear, and, after more than an hour's very painful use of probes, hooks, forceps, etc., failed to dislodge it. Thereupon the physician declared that partial detachment of the auricle was the only remaining resource. The next morning the patient called, suffering a moderate amount of pain in the ear. I found the left canal at its outer part slightly red and swollen, and its inner two thirds filled with a black mass much resembling very hard cerumen. Touching the body with a probe caused pain. Three minutes' careful syringing removed a black bean, ten millimetres long, eight millimetres wide, and six millimetres at its thickest part, slightly softened on its surface, and covered with a little cerumen at its proximal end. At sight of this body the patient recalled the fact that a little more than ten years before, while in Sunday-school, he was playing with such a bean, and had ended his pranks by forcing it into his ear. By forcibly shaking his head, while turned sideways and downward, he supposed he had removed the offending substance. Reporting his experience to his parents, they credited his statement of successful removal. For *over ten* years no sign of his undesirable guest had declared itself. Careful syringing with warm borated water and inflation completed the treatment. Three days later an examination demonstrated the absence of abnormity.

The salient comments upon this case refer to the carelessness of the parents, the large size of the ear-canal, the favorable site so long occupied by the body, and the emphasis which should be laid upon the *harmlessness and superior value of syringing* as against the *dangers* and (often) *futility* of employing forceps, probes, hooks, and the like for the removal of most of the foreign bodies from the external auditory meatus. Despite the almost unanimous advocacy of the syringe by writers of text-books, too much or too often repeated stress upon this point can not be made.

Case II. *Myringomycosis Aspergillina Flavescens; Otitis Media Catarrhalis Chronica.*—E. A. E., aged twenty years, a native of the United States, clerk, came to me on November 5, 1883, complaining of "buzzing" in his left ear, accompanied by a slight yellowish (watery) discharge and deafness, which had lasted about three weeks. There had been and was no pain. Having been annoyed by naso-pharyngeal catarrh for a long time, he had used, about four weeks before, a proprietary catarrh snuff a few times with the result of considerably aggravating the original trouble. After a few days the tinnitus and deafness declared themselves in a mild way, and had since slowly increased in severity. The discharge had existed about a week.

Examination.—*A. D.* = normal (acoumeter, voice, and fork). *A. S.* = acoumeter, $\frac{1}{15}$ m.; voice, $\frac{8}{15}$ m.; fork, louder; all uninfluenced by inflation. *Meatus*, *D.* = normal. *S.* = inner half thickly coated with a slightly yellowish-white substance, resembling wet paper or leather. Nearly the whole mucosa decidedly red and moist after the removal of the false covering. *Membrana tympani*, *D.* = normal. *S.* = a deep-red disc, without distinct blood-vessels, greatly swollen and infiltrated; no circumscribed bulging or blistering. *Eustachian tube*, *D.* = inflatable. *S.* = obstructed. *Naso-pharynx* = chronic congestive, dry catarrh.

Microscopic examination of the substance removed showed it to be composed of the mycelium, hyphæ, sporangeia, and conidia (light yellow) of *Aspergillus flavescens*. The forceps as well as the syringe was required for the removal of this very tenacious substance, which took three sittings to accomplish. Five weeks' after-treatment was necessary before the membrana tympani had resumed a normal appearance and movement, and the *p. a.* = $\frac{15}{15}$ m. (normal) acoumeter and voice.

Case III. *Aspergillus Nigricans in a Case of Otitis Media Catarrhalis Chronica.*—N. H. N., aged forty-one years, a native of the United States, merchant, first consulted me in January, 1886. Years ago he had suffered with chronic suppurative otitis, left, the result of a severe "cold in the head," which had healed only after prolonged treatment at the hands of a prominent aurist of this city. For a year past he had noticed a little deafness in the same (left) ear; during the last few months tinnitus (now a buzzing, then a ringing) had been added; both symptoms aggravated by a cold.

Examination.—*A. D.* = normal (acoumeter, voice, fork). *A. S.* = acoumeter, $\frac{4}{15}$ m.; after inflation, $\frac{6}{15}$ m.; voice, $\frac{7}{15}$ m.; fork, louder. *Meatus*, *D.* = thin, transparent, very small "cone," slightly retracted. *S.* = thickened, dull, greatly retracted, and adherent to promontory; old cicatrix behind the handle of the malleus. *Eustachian tube* = inflatable. *Naso-pharynx* = smokers' congestive catarrh.

Treatment at irregular visits during a period of eight weeks resulted in *p. a.*, *A. S.* (acoumeter) = $\frac{7-5}{15}$ m., and almost complete relief of the tinnitus. On the 12th of last May the patient called again, having been suffering for several days with subacute rhino-pharyngitis and pain in the left ear. Examination revealed the existence of a mild external otitis and subacute myringitis, the former being confined to the inner third of the canal. Salted hot-water douches, gentle inflation, and a borax

gargle had relieved the condition in two days, when the patient went traveling. Four days later the pain returned, when he applied several drops of laudanum on cotton to the canal, but the next day the pain was worse, and so remained until his return to the city two days afterward. I then found the inner two thirds of the canal packed with a felt-like substance of loose texture, with here and there small, irregular black dots. The membrana tympani could not be seen, of course. Microscopic examination of the mass removed revealed a beautiful specimen of *Aspergillus nigricans*, with its sporangeia and conidia ranging from a moderately light yellowish-brown to a dirty black. Simple syringing was insufficient, so that four sittings under the combined use of the forceps and syringe, in the interval a (1 to 2,000) sublimate solution, were required for its complete removal. The parts beneath the mold were red, swollen, and tender, and an additional six days' treatment was continued before the parts were restored to their original condition.

The exciting cause in the second case I could never determine, as the patient was in health, in good circumstances, had applied no medicament, and had not been especially exposed to dampness. The same conditions obtained in Case III, except as related to the application to the ear. The laudanum had been freshly purchased, but may have been somewhat old; still, considering its extensive innocuous use in cases of earache, we may well question its ætiological relation to this case.

Below is appended a fairly complete

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261 West Eleventh Street.

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## REPORT OF A CASE OF LARYNGEAL STENOSIS DUE TO COMPRESSION BY GOÎTRE.

*OPERATION; RECOVERY.*

By GEORGE H. BOSLEY, M.D.

The extreme rarity with which goître causes laryngeal stenosis, and the very few cases on record in which it has become dangerous to life, induce me to give the history of a case occurring in my practice in 1883. In looking up the literature of the subject, I find an article published by Demme in the "Würzb. med. Ztschr," ii u. iii, "Ueber Stenose der Trachea durch Compression"; also one by Mettenheimer, in the same journal, iii, iv, and v, under the title of "Tracheostenose durch eine compacte Geschwulst der Thyreoidea." In this country, in November or December, 1883, Dr. A. G. Gerster reported a case of laryngeal stenosis caused by "a fibro-sarcoma of the entire thyreoid gland." Several others also of carcinoma have occurred, but, so far as I know, the case now reported is the first of its kind in this country, at least in which the laryngeal stenosis caused by the compression of an hypertrophied thyreoid gland necessitated operative interference for the preservation of life.

E. S., a girl, aged sixteen years, consulted me at my office, April 4, 1883, for an enlargement at the base of her throat, which she had first noticed about two years previously. The following winter she was troubled with shortness of breath and some dyspnœa, especially in the night. She had but little trouble with the tumor during the summer until the past winter, when her breathing became worse, especially on going up stairs, or on slight exertion. She was very restless at night, with frequent suffocative attacks. At this time physical examination showed an enlargement of the thyreoid gland of moderate size. There was no stridulous breathing, but the voice was somewhat weak. On April 17th I was sent for, as "Emma had a bad cold." I found her in bed, with a hoarse, croupy cough and considerable dyspnœa; her voice was very faint. They said she had taken cold, and had been much worse for the preceding three days. Thinking it a catarrhal attack, I prescribed accordingly. Not feeling at all anxious about the case, I did not visit her until the following afternoon, April 18th, when, on entering the room, I found her suffering from extreme dyspnœa, breathing with the greatest difficulty. On attempting to walk to the

window, that I might have a better light, she was taken with a suffocative attack, crying out in a whisper that she could no breathe. Thinking it possibly an œdema glottidis, I ran my index finger down her throat and passed it into the larynx; she had no œdema. The patient becoming rapidly asphyxiated and apparently dying, I picked her up and, laying her on a sofa, took out my scalpel and speedily made an incision down on to the trachea, at the upper border of the tumor, but cutting through fully an inch of the enlarged gland, from which the blood poured in torrents. Turning her on her face, with her head off the sofa, so that the blood could not so readily enter the trachea, with my finger in the wound as a guide I made an opening. No air entering, I reversed the scalpel and, with the handle in the tracheal opening, turned it crosswise, with the same result. It then flashed across me that there was probably collapse of the tracheal walls lower down. Casting about for an instrument to pass down through the constriction, I bethought me of my Jacques catheter; so, cutting off the lower end, I passed it into the trachea and pushed it past the obstruction. During this time she had ceased to breathe, when, calling her father to my assistance, for I was wholly alone, I had him compress the bleeding vessels with his fingers while I turned her on her back and made artificial respiration until, in a short time, that function was partially re-established. Then I sent a messenger to the nearest druggist for the largest gum catheter procurable, and he brought me a No. 10 *English*. During this time she had only with the greatest difficulty obtained air enough through the No. 9 Jacques to live, with constant help by artificial respiration; but after the introduction of the No. 10 she speedily recovered consciousness, and was able to again recognize her surroundings.

I then sent for counsel, but it was not until several hours had elapsed that Dr. H. B. Sands was able to see her. Under the continued compression all hæmorrhage had ceased, and she was breathing very comfortably through the tube. Dr. Sands kindly suggested a Koenig's silver tracheal tube, and in the mean time as large a gum catheter as I could find. Early the following morning I introduced a No. 13 English catheter, one-fourth-inch internal caliber (as I was unable to find a silver tube which would answer, the ordinary tracheotomy-tube not being of the slightest use), cutting it to a length of five inches and a half. She could now breathe with perfect ease and slept well—better than for a month past. When the tube was taken out for cleansing, the following morning, the trachea immediately collapsed, but respiration was again restored by the introduction of another tube. The first one was found to be badly compressed laterally, for a space of an inch and a half, three inches from the top and an inch from the bottom; there was also an antero-posterior constriction about an inch below the point where it entered the trachea. Two days later Messrs. Tiemann & Co. had the Koenig silver tube ready, and I introduced it; it corresponds to a No. 15 sound, English scale, in caliber, and is about five inches and three quarters long, with a flexible spiral tube joining the top and bottom of what would otherwise be a common tracheotomy-tube. There was a good deal of inflammatory swelling of the wound, becoming at one time almost erysipelatous. Steam was constantly kept up in the room, and the tube occasionally sprayed to facilitate the expulsion of thickened mucus. After the subsidence of the inflammation, at a consultation with Dr. Sands, it was decided to try a radical cure by the injection of tincture of iodine deep into the tissues of the gland. At the time of beginning the injections (May 21st) the circumference of the neck over the goître was seventeen inches; in one month it had been reduced an inch and three eighths, the mass becoming much firmer and denser, some spots being almost fibrous. The amount usually injected was fifteen minims into each lobe of the gland, the injections being made at intervals of four or five days. A curious result of the injections, although they were made *very* slowly, was a feeling of faintness with a strong taste of iodine in the mouth. At these times the patient speedily recovered by lying down and taking a little whisky. Early in the following December she had a severe attack of acute croupous tracheitis and bronchitis. One day, when she was suffering from much dyspnœa, I removed the tube, thinking it might have become obstructed; although she had worn the tube almost eight months, the trachea immediately collapsed, and she was only saved from suffocation by its prompt reintroduction; after this she was kept upon the use of lactophosphate of calcium to hasten the hardening of the cartilaginous tracheal rings, and, as she was very anæmic, she also took acetate of iron, with generous doses of quinine. Early in the spring of 1884 the tracheal rings were found to be in better condition, and on July 3, 1884, the long tube was removed; but, as a matter of precaution, a short one was left in until the 6th of August following, when that too was dispensed with. On August 13th the tracheal wound was completely closed, and the neck of normal size. Laryngoscopic examination showed the larynx and trachea perfect in every respect.

229 West Fifty-second Street.

## Correspondence.

### LETTER FROM CINCINNATI.

*Medical Legislation.—A State Sanitary Convention.—The "Journal of the American Medical Association."—The Obstetrical Society of Cincinnati.—The Coming Meeting of the American Medical Association.*

Cincinnati, *January 20, 1888.*

With the reassembling of the Legislature comes another effort at medical legislation. This has come to be a somewhat threadbare topic, but gentlemen who have at heart "the elevation of the profession and the protection of society," etc., manifest a pronounced persistency in the cause which they have espoused. The agitation has been going on for eleven years since the Illinois act went into effect and drove nearly eight hundred quacks and charlatans either out of that State altogether, or at least out of practice. In Ohio the movement was finally championed by the State Medical Association, which indorsed two bills—one for a State board of health and the other for a State examiners' board. The board-of-health bill passed, but the examiners' bill never became a law. This was two years ago. Another examiners' bill was presented last winter. It provided for the examination of all candidates for practice; none but college graduates in medicine were to be eligible to examination; and, by express provision, medical college men were to be rigorously excluded from the examining board. Some of the college men resented this provision and the bill was defeated. The matter came up again before the State society last June on the report of the committee on medical legislation. The failure of the bill to pass was charged home upon the college men. One teacher of some prominence from this city retorted by saying in effect that the failure of the bill to pass was to be charged rather to the inefficiency of the State Board of Health, which the committee had succeeded in establishing the year before. No personal reflections were intended so far as the individual members of that board were concerned, but, it was urged, the fact remained that it was a political body, and as such fell

far short of the purposes for which it was created. It is but fair to say that the criticism was, to say the least, premature, as the board of health has since demonstrated a high degree of efficiency.

But the opposition of last winter is taking the aggressive this season, and will soon come to the front with a bill which, even though it may fail of passage, will yet show that the former opposition was not actuated by selfish motives. The title of the proposed bill is, "A bill to provide for the registration of all practitioners of medicine and surgery in the State of Ohio, and the organization of the College of Physicians and Surgeons of Ohio, and to define the duties of the medical colleges of the State."

Sections 1, 2, 3, and 4 provide for the registration of physicians now in practice. The language employed is practically that of the Pennsylvania law, which has been found to act so well.

Section 5 provides that any person who may hereafter desire to commence the practice of medicine in the State of Ohio "shall lay his diploma before the faculty of the College of Physicians and Surgeons of Ohio"—a purely examining body created by the act—upon whose indorsement the diploma may be registered. The further provisions are as follows:

SECTION 6. The practitioners, registered as provided for in Sections 1, 2, 3, 4, and 5, shall constitute the College of Physicians and Surgeons of the State of Ohio, invested with ordinary corporate powers, and shall meet annually in general session to consider such questions as may pertain to the interests of the profession and the welfare of society. The business of the college shall be managed by the board of trustees as hereinafter provided.

SEC. 7. The registered practitioners shall meet in their respective counties at the court-house, or the usual place for the meeting of the county medical society, on the second Saturday after the expiration of the time for completing the registration, and organize by electing a president and such other officers as they may deem necessary, who shall hold their offices until their successors are duly elected and qualified; and the presidents of the county organizations shall constitute and be known as the trustees of the College of Physicians and Surgeons of Ohio. Each county organization may, in the name of the College of Physicians and Surgeons of Ohio, sue and be sued, plead and be impleaded; but such organization shall not involve any other organization in litigation or subject the same to financial loss, and each and every county organization shall discipline its members for gross unprofessional conduct and expel those who may be convicted of using the knowledge or skill of the medical profession in the commission of crime, and direct the county clerk to remove their names from the county medical register; but the accused shall have the right to appeal first to the trustees of the college and afterward to the courts for redress. And the county organizations shall do and perform such other duties as may be required of them by this act, or the rules and regulations of the trustees as provided for in Section 8 of this act.

SEC. 8. The trustees of the College of Physicians and Surgeons of Ohio shall, thirty days after their election, meet in the capitol of the State and organize by electing a president, secretary, treasurer, and such other officers as they may deem necessary, who shall hold their offices for one year and until their successors are elected, and the president shall be the executive officer of the college. In their corporate capacity they may establish additional county organizations in counties having more than one hundred and fifty registered practitioners, and in such capacity they shall receive and act upon all resolutions, appeals, and other communications from county organizations; make rules and regulations for the government of the college, which shall be in force and binding on all registered practitioners on and after their adoption by a majority of the county organizations; appoint a faculty of which the president, secretary, and treasurer of the college shall be members and officers; provide and use a seal, and annually publish the proceedings of the college, including a correct list of the registered practitioners of the State as reported to the county organizations by the county clerk, of which each registered practitioner shall be entitled to a copy sent to his address.

SEC. 9. The faculty of the College of Physicians and Surgeons of Ohio shall annually meet on the call of the president of the college, at such time and place as he may name, to inspect the diplomas and pass upon the qualification of all persons who may appear before them, as directed in Section 5 of this act. The president of the college, when the faculty is not in session, or the president of each of the county organizations, may direct the county clerk to register persons whose diplomas have not been inspected by the faculty, but such registration shall be void after the next annual meeting thereafter, unless approved by the faculty. The faculty of the college shall serve without compensation, but the trustees shall provide for their reasonable expenses during their annual meeting, to be paid out of admission fees, and the president of the college shall receive such reasonable compensation as the trustees may direct for his services as executive officer of the college, to be paid out of funds arising from admission fees. And the trustees of the college shall serve without compensation, but their respective county organizations may provide for their reasonable expenses during the annual session.

The State Board of Health, efficiently officered by Dr. John D. Jones, president, and Dr. C. O. Probst, secretary, has inaugurated a series of sanitary conventions similar to those which have proved so popular for a number of years in Michigan. The next one is to be held in Akron, January 25th and 26th. A series of very interesting papers is announced. Among the essayists are Dr. George G. Baker, of Akron; Dr. J. W. Shrady, of Kent; Dr. R. Harvey Reed, of Mansfield; T. C. Reynolds, Esq., of Akron; Professor M. C. Reed, of Hudson; Professor A. E. Jones, of Massillon; Professor E. Fannfelter, of Akron; Dr. Josiah Harzell, of Canton; Dr. W. C. Jacobs, of Akron; the Rev. Thomas Nahar, of Akron; Dr. E. O. Portman, of Canton; General A. C. Voris, of Akron; Professor W. J. Scott, of Cleveland; Dr. S. P. Wise, of Millersburg; Dr. B. B. Longhead, of Ravenna; and Dr. G. C. Ashman, of Cleveland. The occasion promises to be one of interest and value, particularly to the people of Akron and the Western Reserve, and local sanitary interests figure largely among the topics announced. The tendency to drop the abstract and deal with the concrete is a healthy one in all scientific organizations.

The "Journal of the American Medical Association" has established a local business agency in Cincinnati. It has been fortunate in securing the services of Dr. J. C. Oliver as correspondent, as he not only is a talented young physician and a facile writer, but commands the *entrée* to all the professional circles of the city.

The Obstetrical Society of Cincinnati held its annual meeting last week and elected Dr. Giles S. Mitchell, president; Dr. James G. Hyndman, vice-president; Dr. W. H. Wenning, secretary; Dr. George E. Jones, treasurer; and Dr. T. P. White, corresponding secretary. Dr. Apostoli, of Paris, was elected a corresponding member.

The Committee of Arrangements, under the efficient presidency of Dr. W. W. Dawson, is already well at work preparing for the meeting of the American Medical Association in this city in May next. Dr. William Judkins, of the Committee on Hotels and Transportation, informs me that the ample hostelries of Cincinnati are manifesting a lively disposition to do the hospitable thing, while the railroads offer the usual concessions. Apropos of the railroads I have a pleasing bit of news for the New Yorkers. Mr. Rinearson, of the Erie, informs me that his line purposes making special efforts not only for the comfort but for the pleasure of delegates from New York. These efforts will probably materialize in the form of the elegant new hotel cars of the line, which will be placed at the exclusive disposal of the medical party.

THE
YORK MEDICAL JOURNAL.
*A Weekly Review of Medicine.*
ished by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JANUARY 28, 1888.

## RETROVERSION OF THE UTERUS AND TUMORS.

In a recent issue of the "Centralblatt für Gynäkologie," Dr. Ziegenspeck, of Munich, discusses this subject at some length, excluding from consideration those tumors of the uterus or ovaries which develop toward the abdominal cavity. Such tumors, he says, usually displace the uterus to the side opposite to that in which they are situated; exceptions to this rule occur, but they are neither of diagnostic nor of prognostic import. He has reference to submucous growths, or, to speak more definitely, polypi, which, growing toward the vagina, bring about certain displacements of the uterus; but he discards a class of cases described by Schultze in which the tumor, after passing out of the uterus, grows rapidly and presses against the vaginal wall. In so doing it naturally elevates the uterus, which at the same time must undergo a displacement depending upon the site of the insertion of the pedicle of the tumor; if this is on the anterior wall, the uterus is retroverted, while, if it is on the posterior wall, it is anteverted.

The class of cases to which the author draws attention, which are far commoner than those just mentioned, are those in which the polypus reaches the vagina, but does not grow so rapidly as to elevate the uterus, and yet produces retroversion of that organ, no matter whether the pedicle is inserted on its anterior or its posterior wall. In such cases the tumors are of a diameter of from two to three inches, spherical, and surrounded by the margin of the os externum. The pedicle is drawn tense, and consequently the uterus is straightened and retroverted; it moves with the tumor as a whole, the fundus being carried in the opposite direction to that which the tumor is made to take. But the pedicle must have its insertion beyond the internal os, or the uterus will not be fully put on the stretch and will not undergo the necessary straightening. It is immaterial, however, as already stated, whether the pedicle is inserted into the anterior or the posterior wall. These cases, the author says, are of practical importance from the fact that the displacement does not disappear on the removal of the tumor, as in the other forms, except in the very early stages, and then only with the aid of subsequent treatment. Out of a great number of cases of this kind which he has observed, he can recall only one in which replacement of the uterus took place spontaneously after the removal of the polypus.

Several cases are cited which appear to bear out his statements, and they are further sustained by experiment. A small hook was inserted, first into the anterior and then into the posterior wall of the uterus of a woman on the tenth day after delivery. To the hook was attached a silk thread, and, when this was drawn upon in the direction of the vaginal canal, the antiflexed uterus first became straightened and then, as the traction on the thread was continued, retroverted. The same train of events occurred whether the hook was inserted into the anterior or the posterior wall. This procedure was repeated on five different lying-in women, and in all of them with the same results.

As a practical outcome of his observations, the author holds that it is a matter of duty to remove such polypi as soon as possible. If the stage has passed in which spontaneous replacement takes place, the displacement should be treated with a suitable pessary, and cold-water irrigations of the vagina and rectum should be used, so as to give tone to the relaxed ligaments.

# *MINOR PARAGRAPHS.*

## SAYRE'S "ORTHOPÆDIC SURGERY" IN GERMAN.

In a recent number of the "Internationale klinische Rundschau," a new and excellent Vienna weekly journal, we find a very appreciative notice of Dr. F. Dumont's German translation of Dr. Lewis A. Sayre's "Orthopædic Surgery and Diseases of the Joints." The work is spoken of as "das vortreffliche Buch des berühmten amerikanischen Orthopädisten," and, for comprehensiveness and excellence, is set down as equaled by only a few others on the same subject.

## THE COMBINED USE OF CELLOIDIN AND PARAFFIN IN MICROSCOPY.

In the "Zeitschrift für wissenschaftlichen Mikroskopie," Kultschizky states that the use of both celloidin and paraffin in imbedding microscopical preparations has certain advantages over that of either material alone; the individual parts of delicate objects preserve their proper relations; the preparation remains dry, and the process of making sections does not require the employment of alcohol; and sections can be made as thin as when paraffin only is used. According to an abstract contained in the "Fortschritte der Medicin," the method is as follows: The alcoholic preparation is allowed to lie for a few hours in a mixture of equal volumes of alcohol and ether; it is then placed for twenty-four hours in a solution of celloidin, the strength of which is immaterial; it is now placed in ordinary oil of origanum, subsequently in a mixture of paraffin and oil of origanum, which should not be over 104° F. in temperature, and finally in melted paraffin. The length of time that it should remain in the oil of origanum, in the solution of paraffin, and in the melted paraffin depends on the character of the object, and must be ascertained by trial.

## THE REMOTE EFFECTS OF CHLOROFORM.

The danger of anæsthetization with ether in the case of persons affected with even moderate disease of the kidneys has recently met with general recognition—to such an extent indeed that the relative innocuousness of that agent compared with chloroform, so far as its immediate effects are concerned, has been somewhat offset. It is important to note, therefore, certain observations tending in the opposite direction by showing that chloroform too has its after-effects. The "British Medical Journal" gives an abstract of an article by Dr. Ungar, published in the "Vierteljahrschrift für gerichtliche Medicin," who has found that the prolonged administration of chloroform to healthy animals caused death in some of them after the lapse of

more than a day from the termination of the anæsthesia. Examination showed fatty changes in the heart, the liver, the kidney, the respiratory and digestive apparatuses, and various voluntary and involuntary muscles—conditions, in short, which, as the author remarks, must often be present in greater or less degree in patients to whom chloroform is given, and probably be more or less aggravated by its administration.

### TRANSLUCENCY IN SOLID TUMORS.

At a recent meeting of the French *Académie de médecine*, as we learn from the "Gazette hebdomadaire de médecine et de chirurgie," Dr. Poncet, of Lyons, alluded to the general confidence placed in the translucency test as showing the contents of tumors to be more or less watery. The accuracy of the test, he said, was not always to be depended upon, for there were some solid tumors, especially of the fingers and the wrist, that allowed of the passage of rays of light, perhaps owing to the thinness of the integument aided by the vascularity.

### THE SARATOGA SPRINGS.

The apprehension having been entertained for some time past that the supply of the Saratoga waters was likely to be seriously diminished, or their effervescent quality impaired, as the result of the operations of certain persons who have been boring for gas in the vicinity, the "Albany Journal" has investigated the matter, taking the trouble to get the State geologist's opinion. What it lays before its readers is practically to the effect that there is no danger of any noteworthy diminution of the supply of the mineral waters, or of the amount of gas contained in them, for many generations to come.

### ITEMS, ETC.

**The Medical Society of the State of New York.**—All physicians wishing to attend the meeting are informed that the New York Central Railroad Company has consented to issue excursion tickets at the rate of a fare and a half ($4.65), the regular rate being $6.20. It is the intention of the majority of the delegates from New York and its vicinity to go to Albany on the 6th of February by the 3.30 P. M. train. If a sufficient number take that train, a drawing-room car will be furnished for their exclusive use (additional fare for that car, $1). Gentlemen who can arrange to go on that day and by that train are asked to notify Dr. Clarence C. Rice, secretary of the New York delegation, No. 115 East Eighteenth Street, on or before February 6th. Certificates for tickets can also be had by applying to him.

**The late Dr. Wesley M. Carpenter.**—At the last meeting of the Medical Society of the County of New York the following preamble and resolutions were passed:

"*Whereas*, in the wisdom of the Supreme Ruler, our distinguished associate, Dr. Wesley M. Carpenter, has been taken from our ranks at the very meridian of his usefulness,

"*Resolved*, That we, as members of the Medical Society of the County of New York, desire to hereby record our appreciation of his long and faithful services as our secretary.

"*Resolved*, That in all things pertaining to his professional work we recognize in Dr. Carpenter's career among us a standard of life and a devotion to scientific medicine which place him among the most honored of our profession.

"*Resolved*, That, while admiring as we do those qualities most conspicuous in his character as a medical man, a much more intimate relation had been established between him and us which renders his death a personal bereavement. Although time may mitigate our grief, it can never banish from our hearts the recollection of his kind and exemplary life.

"*Resolved*, That these resolutions be spread upon a page of our minutes set apart for that purpose."

Elsewhere in this issue the reader will find the remarks made by Dr. Daniel Lewis, who moved the passage of the resolutions.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service, for the two weeks ending January 21, 1888:*

Purviance, George, Surgeon. To proceed to Detroit, Mich., as inspector of unserviceable property. January 11, 1888.

Austin, H. W., Surgeon. When relieved to proceed to Chicago, Ill., and assume charge of the Service. January 12, 1888.

Gassaway, J. M., Surgeon. Leave of absence extended fifteen days. January 10, 1888.

Goldsborough, C. B., Surgeon. When relieved to proceed to New Orleans, La., and assume charge of the service. January 12, 1888.

Irwin, Fairfax, Surgeon. To proceed to Boston, Mass., and assume charge of the Service. January 12, 1888.

Carter, H. R., Passed Assistant Surgeon. When relieved to proceed to Ship Island Quarantine, Miss., and assume temporary charge of the Service. January 12, 1888.

Carrington, P. M., Assistant Surgeon. Granted leave of absence for thirty days. January 10, 1888.

Goldsborough, C. B., Surgeon. To proceed with insane seamen from Chicago to Government Hospital for the Insane. January 16, 1888.

Heath, F. C., Assistant Surgeon. To proceed to Buffalo, N. Y., for temporary duty. January 21, 1888.

*Stoner, G. W., Surgeon. To proceed to Wilmington, N. C., Georgetown and Charleston, S. C., Savannah and Brunswick, Ga., Fernandina, Jacksonville, and Pensacola, Fla., as inspector. December 30, 1887.

**Society Meetings for the Coming Week:**

Tuesday, *January 31st;* Medical Society of the County of Onondaga (semi-annual—Syracuse), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *February 1st:* Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *February 2d:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *February 3d:* Practitioners' Society of New York (private).

Saturday, *February 4th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

### OBITUARY NOTES.

**Arthur Farre, M. D., F. R. C. P., F. R. S.,** of London, died, as we learn from the "Lancet," on the 17th of December, at the age of seventy-seven. Dr. Farre was not only an obstetrician of note, but a frequent contributor to the advance of obstetric medicine. Probably he was most widely know by his article on "The Uterus and its Appendages," in Todd and Bowman's "Cyclopædia of Anatomy and Physiology."

* Omitted from previous lists.

# Letters to the Editor.

## PREMATURE RUPTURE OF THE AMNION.

CORNWALL, N. Y., *January 10, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: Being unable to find any but the most meager information in the literature pertaining to the subject of premature rupture of the amnion, I desire the benefit of your correspondents' department in deriving information as to the proper treatment to be pursued in such a case as this:

Mrs. X., twenty-five years old, the mother of two children, is now pregnant and expecting to be confined on or about February 17th. Her last pregnancy occurred four years since. She says that on the evening of January 1st her waters broke while she was walking about her room, during a coughing fit, and that water continued to escape in small quantity during the night. I first saw her on January 5th, ordered her to lie abed, and prescribed a one-grain pill of opium every four hours, as she had fugitive lancinating pains in and over the region of the uterus. She complained of headache also, for which I prescribed antipyrine in ten-grain doses. The next day her condition was much better, and, with strict injunctions for her to lie abed for a while and to advise me of any change, I ceased my calls.

Sunday afternoon I was sent for in haste, and on my arrival I learned that while she was out of bed and in a coughing fit the water had again escaped with a gush. When I saw her she was in bed, and the water had nearly ceased flowing.

I have questioned her closely concerning her micturition, thinking it might be incontinence, but she assures me that it is not the escape of urine. I think the possibility of its being hydrorrhœa is remote. As to her previous history, in her first pregnancy the sac broke nearly five weeks before labor, which was "dry" and very severe.

She estimates the amount of water lost at about a pint and a half, and the abdomen is much lessened in size.

A. L. BROWNE.

## PRIVATE VENTURES IN COLLECTIVE INVESTIGATION.

FORT WORTH, TEX., *January 12, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: I did not intend to send you a protest against your article on "Private Ventures in Collective Investigation," wrong as I believe you to be; but, when "Country Practitioner" and "Veritas" prove that they are so "bankrupt in reserve capital of nerve force" as not to know this is a free country and they need not answer a genteel question if they do not know how, I think it time to defend the truly honest hard workers in our profession who are earnestly seeking aid.

A. P. BROWN.

# Proceedings of Societies.

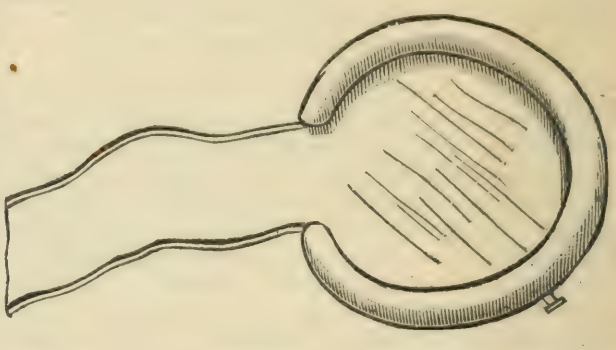
## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of January 11, 1888.*

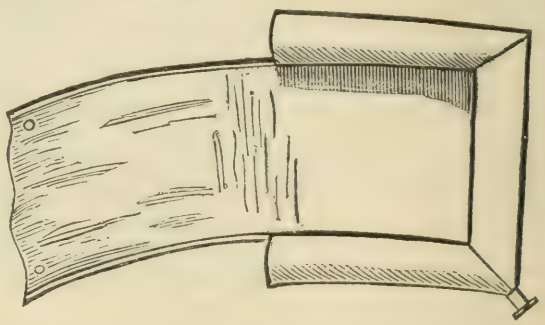
The President, Dr. J. SOLIS-COHEN, in the Chair.

**Rubber Cushions for Surgical Purposes.**—Dr. HOWARD A. KELLY read the following paper: It is now almost a year since I put into the hands of Mr. Levick, manufacturer of rubber goods, several designs of cushions for surgical purposes. These cushions resemble those commonly used by students at lectures, in having an inflatable rim, but differ in being left open on one side, being C-shaped or rectangular, with one side out. They have a bottom of rubber sheeting extended into an apron some inches in length for the purpose of drainage. I have had constructed three separate forms, a large C-shaped cushion measuring about twenty inches in diameter, the opening of the C being about eight inches across, and the apron twenty inches in length. The rim measures about two inches in diameter when inflated. This pad I constantly use for abdominal sections; it is also of great service in obstetrical cases requiring operative manipulation. It permits the free use of water for douching purposes; drains all blood and water from the field, enabling the operator to return the patient at once to bed without the necessity of removing clothing or changing linen. It has each month saved me more than its cost in the wash at my private hospital.

A similar pad of the same pattern, measuring but ten inches in diameter, is in use on the examining-table in my office, in all cases in which it is necessary to douche out the uterus or vagina.



The third pattern, which is in constant use for minor gynæcological work, is the perineal cushion. It is rectangular in shape, opening on one side, having a rubber bottom and long apron similar to the preceding. When it is in use the patient's clothes are elevated, and the thighs held flexed on the abdomen by my "Beinhalter." The buttocks are drawn down over the edge of the inflated rim, and the apron which hangs down from the edge of the table carries off all blood and the water used throughout the operation.



There is no one device in all my gynæcological work which has given me so much comfort as these simple cushions. I use gallons of water with the utmost freedom, and without ever being obliged to think once where it is going. In perineal work, instead of using sponges, I use constant irrigation, which prevents clotting of blood and soiling of instruments, and replaces at no expense, and with greater comfort and satisfaction, the sponges formerly used. The work thus accomplished is neater and cleaner, and the results are better.

I also present now for the first time a design for a rubber bed-pan. It is oblong in shape, with an inflatable rim and a rubber bottom. It differs, however, from any previous device in the fact that one end communicates with a large funnel-

shaped reservoir, terminating in a large nozzle through which the fluids are finally discharged. The whole peculiarity of the device depends upon the funnel and its outlet. The funnel is very broad at the top, being of the full width of the cushion, about seven inches in depth to the tube, terminating in the discharge pipe of the same length, which is perforated at its lower side by a button-hole for attachment, when in use, to the rim of the cushion. When the cushion is in use the rim is inflated, the discharge pipe is buttoned to the rim, and the patient is placed upon the cushion. Vaginal or rectal injections are now to be given. The fluid, as it is discharged from the vagina or rectum, accumulates on the floor of the cushion, the amount this will hold depending entirely upon the depth of the inflated rim and the size of the cushion and reservoir. When it is desired to empty it, the rim is caught in the hand at the upper end, and carried with the funnel hanging downward; all fluids at once gravitate into this, but do not escape, owing to the attachment of the discharge pipe to the rim. It is then carried to the closet and the discharge pipe unbuttoned, when the fluid rushes out; it is further cleaned by allowing the water to run freely through it in the same manner.

The advantages gained by this device are very great. The softness of the rubber is a great advantage over the hard bed-pan, and the capacity of the cushion is much greater, and may be made to vary with the size of the reservoir alone. It can thus be used for purposes for which the bed-pan is entirely inapplicable. The facilities for cleansing are perfect, eliminating the chief objection to which rubber cushions hitherto in use are open. The ease of transportation is also an available feature, as when collapsed it can be rolled up and packed away in a small space. It can also be used for continuous irrigation, by leaving the discharge pipe, which can be made of any length, hanging over the side of the bed, discharging on a piece of rubber sheeting which conducts the fluid into a bucket.

Dr. J. Price said: The only matter about which any question exists, the only thing in controversy, is whether Dr. H. A. Kelly has any claim whatever as the inventor or originator of the irrigation pad. Such claim he has set up not only here but elsewhere, without, I maintain, a shadow of authority in fact. Introducing the instrument here, he has made it legitimate matter for discussion, not only as to the merits of the instrument, but as to the genuineness of its authorship. About five years ago I conceived the importance of an irrigation pad or cushion, and from a design of my own my friend, Dr. John Madison Taylor, made a drawing. The instrument, as drawn, was ordered through Kolbe. Dr. H. A. Kelly saw it not only at the instrument-store, but also at my office. He there examined it, and we discussed its merits. I here present a bill from the New York Rubber Company for making this operating cushion, dated January 7, 1885.

Dr. Kelly said: I am sorry that anything so unpleasant should have come before the society, and I should not have brought the matter up had not the remarks in reference to it been made so publicly after the last meeting that I have been forced to defend myself. I can only repeat that I have no recollection that Dr. Price ever spoke to me on this subject.

## NEW YORK NEUROLOGICAL SOCIETY.

*Meeting of January 3, 1888.*

The President, Dr. C. L. Dana, in the Chair.

**Cerebral Tumor.**—Dr. J. C. Shaw reported the following history: The patient was a man, forty-one years of age, a jeweler by trade, temperate, and of good previous history. There was no history of syphilis. In 1879 he had in the night an attack of rigidity which was followed by a deep sleep. On March 19, 1882, he had an epileptic attack, the convulsion commencing in the left side of the face and extending to the neck, so that the head was twisted to the left side; the eyes were turned upward. Thus far the patient was conscious and had raised the left arm to strike upon his bench to attract help when his arm was seized with the spasm, and he knew nothing further. The attack was followed by sleep. He had as many as four such seizures in a week. In one attack observed by the speaker the left side of the face and the left arm had been principally affected. There was no loss of consciousness in this attack. The convulsions were preceded by a peculiar painful sensation in the roof of the mouth and in the teeth. There was more or less numbness of the left side, the tactile sensibility of which was diminished. Two points were recognized upon the left hand only when 4 ctm. distant, while upon the right hand two points were recognized when 1 ctm. distant.

In January, 1886, he began to complain of headache, also of nausea. Choked disc was now found. In August, 1886, vision was almost lost. Headache and nausea continued, and mental cloudiness was apparent. On February 4, 1887, the patient would fall to the right side, there was paresis of the left arm and leg, and he could not tell when he was lightly touched. He was now weak, thin, and confined to the bed. In March, 1887, the urine and fæces were passed involuntarily. In May a bedsore appeared. On June 21st the patient suddenly became comatose with puffing respiration, chiefly abdominal. After thirty-six hours he recovered from this, but on July 31st died of exhaustion, extremely emaciated. The skull was found very thin, the veins of the meninges prominent. On lifting the brain, the posterior fossa was found to contain fluid, the origin of which did not appear. The left hemisphere showed no gross lesion. In the right hemisphere the dura was adherent throughout a localized patch, dark-brown in color, and occupying the lower part of the motor zone, beneath which softening appeared. The basal ganglia were free.

The pain in the teeth complained of at the commencement of the spasms had suggested a reflex from the dura to the fifth nerve. The reader considered it not illogical to conclude that the numbness, too, was to be explained by the irradiation of this reflex to other portions of the sensory tract. The apoplectoid seizure was probably due to hæmorrhage into the softened mass. The opinion of the members was requested upon these points.

The President inquired in regard to the character of the growth.

Dr. Shaw replied that sections had not yet been made, but he considered the growth a glioma.

The President found that the growth occupied only the lower part of the ascending frontal and did not involve the parietal lobe.

Dr. E. C. Seguin remarked that, as the pia was *in situ*, exact location was difficult, but that, according to his judgment, the lower part of the precentral and the posterior extremity of the second frontal and of the third frontal convolutions were involved. The fact that Dr. Shaw had observed no laryngeal symptoms was interesting.

Dr. W. R. Birdsall, referring to the sensory symptoms, remarked that the tumor was not simply a cortical lesion; it extended inward, and more central tracts had probably been involved.

Dr. M. A. Starr added that sensory symptoms accompanied motor impairment where the parietal lobe was invaded. As a rule, where cortical motor lesions were without sensory disturbance, the location of such lesions was anterior to the fissure of Rolando. Where sensory disturbances were also found, it

was posterior to that fissure. In this case, however, it was not impossible that congestion posterior to the fissure would explain the symptoms.

Dr. Seguin remarked that the subject of sensory disturbance in connection with cerebral tumors was most interesting and important. In his own experience a slight diminution of sensibility had accompanied lesions of the motor centers even when confined to the cortex. Nothnagel, at the Congress for Internal Medicine in Germany, had referred to slight tactile anæsthesia in a large number of cases of tumor or lesion of the motor cortical centers. These were, however, without loss of the muscular sense. It was conceded that the muscular sense was located in the parietal lobe. In a case of Dr. Weir's, with sarcoma involving the fasciculus for the face and hand, there was distinct anæsthesia of the face and hand, but no loss of the muscle sense as tested by passive motion and weights.

Dr. J. J. Putnam, of Boston, recalled a case of tumor which had sprung from the falx between the two hemispheres and perforated the skull. At the time of death the whole left side was contractured. In this case numbness of the left wrist had preceded the motor symptoms. This tumor had been posterior to the fissure of Rolando.

Dr. Fisher asked the opinion of the meeting in regard to hyperæsthesia and pain under these circumstances. He recalled a case in which, with the symptoms of a tumor restricted to one side, there had been great increase of sensitiveness and pain.

**Combined Sclerosis.**—Dr. Starr presented the history of a case. The patient had been under his care at the Polyclinic for nine or ten months. He was sixty-two years of age, of good family history, and free from syphilis. Eight or nine years ago he had commenced to complain of a dull aching pain in the sacrum and down the legs. He had had no lightning pains, but a progressive difficulty in locomotion until he was now markedly ataxic. There was increased tendon reflex at the knees. The case differed from ordinary locomotor ataxia in the absence of lightning pains and the absence of the loss of the tendon reflex. There had been slight enuresis, but the urine was now retained. The pupils were contracted, but were not of the Argyll-Robertson type. They reacted both to light and to accommodation, but sluggishly. The tremor of the muscles of the face referred to by Gowers was present. It was a light tremor like that of paretic dementia.

The President then introduced Dr. J. J. Putnam, of Boston, the president of the American Neurological Association.

**Report of the Examination of the Spinal Cord in a Case of Combined Sclerosis.**—Dr. Putnam presented the following report: The patient was a woman, fifty-eight years of age, whose father had died at eighty, and her mother at eighty-three years. The patient had been divorced from a first husband on account of his immoral conduct. Her second husband was also dissolute. When twenty-eight or twenty-nine years of age the patient's hair had fallen out. There had been no eruption noticed. She had used stimulants freely, but never in excess. Beginning in 1880, she had suffered with diarrhœa. Brown discoloration of the skin of the left arm and neck had then been noticed. Subsequently the skin of the abdomen became of a deep chocolate-color and the pigment of the nipples and axillæ increased and deepened. When she was first seen by the reader her face was as dark as that of an Indian and roughened with scales and exudation. In 1883 she was treated for anæmia and dyspepsia, the nerve affection not having appeared until two or three years ago. The first nerve symptom was numbness in the fingers. In November, 1886, she had lost power in the limbs, so that her gait was unsteady. She had difficulty also in the use of her hands, and was said to have fainted at one time with her teeth clinched. Her motor inability consisted in incoördination rather than paralysis. She had no lightning pains, but closing the eyes increased the incoördination, so that she failed to reach the spot aimed at with her hands within four inches. On account of her mental apathy, her sensory condition could not be made out. Her answers to questions were not correct. She had a ravenous appetite and the diarrhœa continued. Taste had been impaired for several years. During the following six months the legs became completely paralyzed, and the patient died April 8, 1887, six months from the onset of the ataxia and the paraplegia. The symptoms of ataxic dementia were prominent in the ravenous appetite and disordered taste, leaving the diagnosis perhaps open to question, as examination of the brain was not permitted. Spitzka had found degeneration of the lateral tracts in dementia, but coincident degeneration of the pyramidal tracts was not present in these cases.

The post-mortem examination showed in the lower ileum several ulcers apparently tubercular in origin. In the cord there was softening of all the tissues at the level of the fourth dorsal nerve. There was extreme whiteness with no trace of vascularity in this part. The cord was examined from the region of the first lumbar to that of the second cervical vertebra. The posterior columns through their whole extent showed a condition like that of a primary sclerosis. At the level of the twelfth dorsal vertebra there were two sclerotic areas, one external to the column of Goll in the column of Burdach. The lateral columns appeared as described by Spitzka in his two cases of primary dementia. The septa between the nerve spaces were broken down so that holes appeared in the sections with fragments of myelin and granular cells. These changes were confined to the lateral pyramidal columns up to the middle cervical region, where the direct cerebellar tract of both sides took on the same appearance, and the diseased lateral area became less.

It was noted that the softened spot might have been due to anæmia or to myelitis. It was against the latter theory that the vessels were here shrunken, and there was no transudation of white globules to be seen. The degenerations were not in direct relation with this softened tract. The posterior nerve-roots were healthy. The anterior nerve-roots were affected with different degrees of inflammation.

The reader referred to Strümpell's and Gowers's classifications, also the general question of primary systematic sclerosis of the spinal cord.

Dr. Starr considered that the specimens placed the diagnosis of combined sclerosis in this case beyond doubt, and, inasmuch as the case had presented symptoms not recognized as belonging to this condition, the paper was one of unusual service by enlarging our clinical picture of the disease. The exact pathological difference between the condition of vacuolization in the lateral columns and that of the ordinary sclerosis of degeneration was a matter of interest. In these specimens the lateral columns were vacuolized, and in the posterior columns the connective tissue was increased; yet both processes were called sclerotic, when they probably should be differently classed. The speaker presented sections, one from a case of Friedreich's disease, and one from a case of ordinary sclerosis, each presenting the distinctions referred to in Dr. Putnam's paper.

Dr. Seguin considered the change in the lateral columns in Dr. Putnam's specimens in front of the region of the crossed fasciculi. In one section it was even in front of the transverse diameter. The same violation of the limits of the pyramidal fasciculi had been observed in a case of his own. In this case the paresis had predominated, and the patellar and plantar reflexes had been exaggerated. In another case referred to him by

Dr. Hunn, of Albany, ataxia and posterior column symptoms had predominated, and there had been no tendon reflex. There had been anæsthesia, fulgurating pains, and ataxia of the legs and hands, with gradual paralysis. One or the other lesion would predominate in such cases, producing variation in the symptoms. Errors in diagnosis were easy. Nodular or insular sclerosis, if distributed in the posterior and lateral columns, would give the clinical picture of combined sclerosis. Charcot had even lectured upon a case as spastic paralysis, to find, upon autopsy, nodular or insular sclerosis. The diagnosis should be guarded.

Dr. Birdsall, referring to the specimens under the microscope, found in the posterior columns ordinary sclerosis, and in the lateral columns separation and swollen myelin sheaths, the axis cylinders being in position in some places, while in others there were simply spaces between the neuroglia elements, as though the myelin and axis cylinders had dropped out. In judging of this condition, one had to remember the different normal structures of the two regions, the finer fibers and finer neuroglia elements in the posterior columns. With Dr. Seguin, he found the degenerated area forward of the transverse line of the central canal, and extending even half-way up the anterior horn, taking in the region described by Gowers as the ascending cerebral tract, as determined by physiological and embryological data. The speaker inquired whether there had been any chance for post-mortem softening of the cord, which would explain the vacuolization.

Dr. Putnam thought that there had not been any such chance, as the specimen had been dropped into Müller's fluid within an hour after its removal. The nature of the change in the lateral columns showed that it had been rapid, from the fragments of granular myelin scattered about, and it was suggested that the spaces might have been caused by albuminous fluid which had been poured out and coagulated. The section showing the degenerated area anterior to the transverse diameter had been taken from the upper cervical region, where the direct cerebellar tract carried the area forward. Of the three varieties of mixed sclerosis, the spasmodic was represented by a case of Strümpell's, the ataxic by Dr. Starr's case, and the paralytic by a case of Strümpell's and his own.

The President said that he had given special study to this class of cases, and he saw no reason to change the opinions he had formed a year ago. The classification referred to as Strümpell's had been arrived at by himself before reading Strümpell's paper. It would probably occur to any one who studied the subject. The most frequent combination was tabes with paralysis, atrophy, and contractures. In other cases the tendon reflex and ankle clonus disappeared last, and the case became one of typical tabes before death. Dr. Putnam's case resembled his own, and he believed the trouble to have been primarily a myelitis encroaching upon the gray matter and extending up and down. The vacuolization was an argument in favor of secondary change; he had seen it in several cases following an acute myelitis.

Dr. Putnam stated that, as the degeneration was found both above and below the softened area, it could not have been secondary to it; also the involvement of the whole lateral tract would have required a focal lesion above, which was not ascertained.

**Trephining in Epilepsy.**—The President presented the calvaria and brain of a young woman trephined over the site of an old fracture for epilepsy and maniacal attacks. The operation had been done by Dr. Robert Abbe with all antiseptic precautions, yet persistent high temperature had followed, with death on the tenth day. A small subdural cyst was evacuated at the time of the operation. The autopsy showed old leptomeningitis, with recent meningitis and acute red softening under the injured part. The question of the safety of trephining was brought up.

## Book Notices.

*The Rectum and Anus:* their Diseases and Treatment. By Charles B. Ball, M. Ch. Univ. Dub., F. R. C. S. I., Surgeon to Sir Patrick Dun's Hospital, etc. With Fifty-four Illustrations and Four Colored Plates. Philadelphia: Lea Brothers & Co., 1887. Pp. viii–410. [Price, $2.25.]

The time when the subject of the diseases of the rectum and anus could be compressed into a few pages of a small octavo volume seems to have passed, and it is a pleasure to read an exhaustive and well-arranged text-book on this subject, such as the one before us. The book covers all the ground that can be compassed without entering upon the exhaustive discussion of unsettled questions, and yet is written in a terse and concise style that makes it exceedingly good reading. In carefully going through it there is little to criticise and much to admire.

In the chapter on congenital malformations, for example, the writer has adopted a plan not heretofore used in describing the treatment of each anomaly under the same heading as the description of that form of disease, thus greatly facilitating easy reference for the practitioner.

Proctitis is divided into acute and chronic, catarrhal, dysenteric, gonorrhœal, and diphtheritic, while the possibility of verifying true gonorrhœa by the search for the gonococcus is pointed out.

The chapter which follows, on periproctitis, is not only well written, but the only one we have ever seen in any text-book on rectal surgery. There is nothing specially noticeable in the chapter on abscess and fistula, except the fact that recto-vesical and recto-vaginal fistulæ and their treatment are included, as they should be; for there is no reason why these affections should be considered as pertaining to gynæcology rather than to rectal surgery.

A special chapter is devoted to the relations of pulmonary phthisis to rectal fistula; but space will not permit even a mention of all the interesting points which the author has elaborated. We can only say that in some ways the work is far in advance of the ordinary text-book on this specialty. It is very complete without being tiresome, and the matter contained in it is all of practical importance and well arranged. The writer has done for rectal surgery what Treves in the companion volume has done for intestinal obstruction, and both works are alike creditable.

*Six Hundred Medical Don'ts;* or, the Physician's Utility enhanced. By Ferd. C. Valentine, M. D., ex-Surgeon-General, Army of Honduras; Member of the Medical Society of the County of New York, etc. New York: G. W. Dillingham, 1887. Pp. 9 to 144.

In six hundred "Don'ts" some of them must be good. Some of them are—good enough to make the reader wish the whole book better than it is. The late Charles Kingsley, when asked how he succeeded so well in varied directions, replied, with a smile, "I had a friend." Evidently our author has no adviser of similar caliber, else his little volume had not appeared in its present form. All that it contains, physicians worthy of the name know in a general way as they know familiar household faces; while particular and startling "Don'ts" must be taken with a grain of salt, as, for instance, this bit of

advice: "Don't hesitate to call disease 'sin'; it may be your sin, your parents', your grandparents', or great grandparents'; it *is* sin." Many of us hesitate to call disease scrofula, out of regard to public opinion. Surely we may halt a bit before throwing into a friendly camp a bomb shell like the information that baby's croup is sin! Among the five hundred and ninety-nine other "Don'ts" these are good ones: "Don't keep the parlor dark unless you value your carpet more than your and your children's health. Don't treat eating as an ugly business to be dispatched as soon as possible. Don't travel unprovided with your own drinking-cup."

And these are "Don'ts" to which humanity at large may answer in solid unison as one individual, "We won't if we can help it": "Don't expose yourself to a draught. Don't use sea-water or any water polluted with sewage, either for bathing or drinking. Don't make an ocean voyage on an overcrowded steamer, on which sea-sickness is more easily acquired, and, from the close quarters on a ship, infectious diseases are more liable to extend. Don't fall in love without previously ascertaining whether the object of your affection has descended from people of perfect moral and physical character." One thing is truly admirable about this little book, and that is the index, to which are devoted eighteen pages. Dr. Johnson, or Lord Macaulay, or some other wiseacre, says every book should have a good index.

*Practical Microscopy.* A Course of Normal Histology for Students and Practitioners of Medicine. By Maurice N. Miller, M. D., Director of the Department of Normal Histology in the Loomis Laboratory, University of the City of New York. Illustrated with One Hundred and Twenty-six Photographical Reproductions of the Author's Pen Drawings. New York: William Wood & Co., 1887. Pp. xv–217.

The title of this book has been rather unhappily chosen, as it conveys no idea of the character of the work. Practical microscopy includes a wide field in its scope; this little work treats only briefly of the structure of the principal normal tissues and some of the methods of microscopical technics It aims to form a guide for the beginner in microscopical work, and is designed to take in part the place of an instructor. It gives all the information necessary for guidance in the selection, hardening, imbedding, section-cutting, staining, and mounting of specimens illustrating the normal tissues, and also includes the composition and method of preparing the ordinary reagents and staining dyes. In addition to this, with each specimen is given *seriatim* a description of the principal features to be observed. The author discards the freezing microtome entirely. In this certainly most modern students in microscopy will not agree with him. The cuts are original, and most of them are excellent. The book fulfills admirably the purpose for which it is designed, and will probably be gladly received, especially by students who are unable to avail themselves of any laboratory instruction.

## BOOKS AND PAMPHLETS RECEIVED.

Syphilis of the Endometrium. By T. A. Ashby, M. D., Baltimore, Md. Read before the Gynæcological and Obstetrical Society of Baltimore, December 13, 1887. [Reprinted from the "Maryland Medical Journal."]

Introductory Lecture on the Ninth International Medical Congress and American Gynæcology: with a Scheme for Uniformity in Obstetric Nomenclature. Delivered at the University of Edinburgh, October 19, 1887. By Alexander Russell Simpson, M. D., Professor of Midwifery and Diseases of Women and Children in the University of Edinburgh.

Medical Lectures and Essays. By George Johnson, M. D., F. R. C. P., F. R. S., Fellow of King's College, London, etc. London: J. & A. Churchill, 1887. Pp. xxxii–390.

Electro-magnetism in Ophthalmic Surgery. With Illustrative Cases. Read before the Tri-State Medical Association of Mississippi, Arkansas, and Tennessee. By A. G. Sinclair, M. D. [Reprinted from the "Mississippi Valley Medical Monthly."]

Notes on some Obscure Cases of Poisoning by Lead Chromate, manifested chiefly by Encephalopathy. By David Denison Stewart, M. D., Chief of the Medical Clinic in the Hospital of the Jefferson Medical College. [Reprinted from the "Medical News."]

A Clinical Analysis of Sixty-four Cases of Poisoning by Lead Chromate (Chrome Yellow) used as a Cake-dye. By David Denison Stewart, M. D., Chief of the Medical Clinic in the Jefferson Medical College. [Reprinted from the "Medical News."]

Statistical Report of 5,700 Cases of Ear Disease, classified by Age, Sex, Occupation, and Disease; Causation. By S. S. Bishop, M. D., Surgeon to the Illinois Charitable Eye and Ear Infirmary, Chicago. Read in the Section in Otology of the Ninth International Medical Congress. [Reprinted from the "Journal of the American Medical Association."]

Operations for Mastoid Disease. By S. S. Bishop, M. D., etc. Read at the Thirty-seventh Annual Meeting of the Illinois State Medical Society. [Reprinted from the "Journal of the American Medical Association."]

Treatment of Chronic Suppurative Otitis Media. By S. S. Bishop, M. D., etc. Read in the Section in Ophthalmology, Otology, and Laryngology, at the Thirty-eighth Annual Meeting of the American Medical Association, June, 1887. [Reprinted from the "Journal of the American Medical Association."]

A Study of the Causes and Treatment of Uterine Displacements. By Thomas Addis Emmet, M. D. [Reprinted from Volume XII, "Gynæcological Transactions."]

The Tympanic Kymograph: A New Pulse-and Blood-pressure registering Apparatus. By Henry Sewall, Ph. D., Professor of Physiology in the University of Michigan. [Reprinted from the "Journal of Physiology."]

A Contribution to the Study of Cysts of the Vagina, with the Report of a Case. By George Woodruff Johnston, A. M., M. D., etc. Washington, D. C. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

# Miscellany.

**The late Dr. Wesley M. Carpenter.**—At the last meeting of the Medical Society of the County of New York, held Monday evening, the 23d inst., resolutions relating to Dr. Carpenter's death having been presented, Dr. Daniel Lewis said:

"Mr. President: In moving the adoption of these resolutions it seems eminently fitting to briefly review the life of one whose official relations with the society have been of such importance and value in every department of its activity. Dr. Carpenter was chosen assistant secretary in 1878, served in that capacity two years, and was then advanced to the position which his death has left vacant. It is a question whether his services have been appreciated at their full value, but their worth will become more apparent when we undertake to find in any one man all the sterling qualities which he possessed. By virtue of his office he was also secretary of the Comitia Minora, where his duties were of almost equal importance. He was always the first member to arrive at a meeting; every item of business was arranged in regular order for presentation, so that no time was lost; nothing was ever forgotten or mislaid by him; supplies of all kinds for his work were always provided in season. No notice of a meeting of the society or of the Comitia Minora ever appeared behind time, and, to the best of my knowledge, no typographical error ever appeared in a notice during the decade in which he attended to such matters.

"He was a good parliamentarian, his experience as a Member of the Assembly, in 1869, having doubtless been an aid to him in that direction. His suggestions were often of great value to the presiding officer,

yet his high sense of official courtesy prevented his offering advice unsolicited. But more valuable than all else perhaps was his accurate knowledge of all the proceedings of the society, even preceding the date of his election to membership in 1875. You will all readily recall occasions at our meetings when, in the course of a discussion, Carpenter would rise in his place, and, looking over his eye-glasses, settle the matter by giving a *résumé* of all rules, regulations, or precedents bearing upon the disputed question. No one ever questioned his authority; it would have been rash to undertake it, for he was always right. I never knew him to take a position from which he was compelled to retreat.

"These, then, were the qualities most conspicuous in him as a secretary: punctuality, accuracy, firmness, wisdom, knowledge, and absolute reliability. To enumerate such qualities is equivalent to saying that he had a well-balanced mind, thoroughly trained for its work, with a high moral sense governing all his actions, for such characteristics are inconsistent with sensuousness or immorality.

"In seeking the source of such a vigorous and noble character we must doubtless take the path to the old farm at Erieville, N. Y., upon which he was born, August 2, 1839. There were doubtless formed those habits of persevering industry which made the sturdy manhood of later years. There is no place so favorable to a boy's healthy mental and moral growth as the quiet hamlet, far removed from all the artificiality and allurements to vice which attract a young man when he leaves the old homestead for college or to begin life in a great city. Without knowing much of his parents, I venture to assert that they were religious people. That fact alone would account for the statement made at his funeral, that in all the years since he left his birthplace he had sent his yearly contribution to the little old church, because it needed his assistance.

"He was eminently a student of medicine, and few men had such an absolute command of their resources. Had it been otherwise, we can not imagine how he could have edited the 'Epitome,' which required extensive research, assisted to a large extent in the preparation of the 'Medical Record,' filled a professorship at the University Medical College with marked success, written books, reported the proceedings of State, national, and international societies, and been secretary of three societies besides our own. Notwithstanding all this immense literary and professional work, he was always ready for a friendly chat, was glad to meet a friend, was, in fact, of a most genial disposition.

"It was my good fortune to be his friend for several years, especially since we visited England and met accidentally one morning at the Paddington Station, both of us bound for the meeting of the British Medical Association at Worcester. There we met Dr. Austin Flint, who was summering at Malvern, a few miles distant. We three Americans went out and dined together in a most charming quarter of that old cathedral city. That quiet hour is recalled most vividly to me now, not only as the beginning of a very intimate acquaintance with Dr. Carpenter, but because two years later he consented, at my request, to read before this County Society a memoir of Dr. Flint, whose sudden death is fresh in the memories of us all, while to-day I am trying to perform the same sad office for the second of the trio, whose death was even more untimely and unexpected than the first.

"It appears probable that such intense mental labor as his, so unceasing and so long continued, with no recreation except a change of work, hastened his death, even if it may not have been the immediate cause. Is it possible that if those of us who saw his methods, and knew that he was doing more than human strength can long endure, had urged upon him the necessity of relaxation of physical and mental rest, the fatal day might have been long postponed?

"His nature was a sensitive one, although his reticence concerning himself may have given a different impression to those who did not know him well. There is no more lonely place for a man of his habits than the great city. Could we not and should we not have been more expressive of the appreciation we all had of his services?

"We shall greatly miss his presence at all the places where doctors meet. We shall probably not soon see his equal in the special work of his choice, and we shall never find a more upright, fair, and honest man, in the full sense of the term, in our own or any other profession. Those who witnessed his self-sacrificing life must have been impressed with the fact that no ordinary motive inspired him.

"Many years ago I remember hearing a legend which represented the so-called transmutation of vital forces and their perpetuation.

"A piper was playing upon his rude instrument when the sweet notes of the nightingale came floating across the meadow. Just then a cruel huntsman wounded the songster and he came fluttering down upon the musician's instrument and expired. In dying, the divine harmony of the nightingale's song was imparted to the pipe, which from that time forth became the flute, the most beautiful of all wind instruments. When we remember that for scores of coming years our friend, long anxious and lonely, may, in the life of the talented young musician, be the source of the very refinement of pleasure to the inhabitants of two hemispheres, may we not esteem this transmutation of his energy the very best of his history?"

**Medical Education in the United States and Canada.**—In the "Report on Medical Education" submitted at the recent annual meeting of the Illinois State Board of Health we find the following:

"The text of the Report on Medical Education for 1887 contains the data of historical interest pertaining to 258 institutions, dating back to 1765; the last report contained such data for 253 institutions. It contains, also, all necessary information as to the title, location, addresses of corresponding officers, faculty, curriculum of study, length and dates of sessions, requirements for matriculation and for graduation, fees, number of matriculates and of graduates at each session since 1877—and other facts of interest concerning the 129 medical colleges now in existence. It also embraces the statistics of a total of 116,529 medical students, classified by schools of practice, by States, by individual colleges, and by sessions for each year during the period 1877–'78 to 1886–'87, inclusive.

"The changes noted by a comparison with the report of 1886 show a net gain of two regular schools and a loss of two eclectic schools, while the others remain unchanged. As compared with the conditions which existed prior to the enforcement of the Schedule of Minimum Requirements—that is, prior to the sessions of 1883–'84—the report shows that there are now 114 colleges which exact an educational requirement of intending matriculates, as against 45 formerly—there being no change in this respect from the previous year; that 43 colleges now exact attendance upon three or more courses of lectures, as against 22 formerly—being a gain of two over 1886—and 57 others make provision for a three or four years' graded course; that hygiene is now taught in 114, and medical jurisprudence in 112 colleges, as against 42 and 61, respectively, prior to 1883. There is an increase in the average of lecture-terms from 23·5 weeks to 24·9 weeks during this period, and 114 colleges now have terms of five months or over, and 63 have terms of six months or over, as compared with 101 and 42 respectively. There is only one medical college that has a course of less than 20 weeks, the Medical College of Georgia.

"The effect of this improvement in methods of instruction and of the higher qualifications demanded before graduating the student is best seen in the diminishing percentage of graduates to matriculates. The tables embraced in the report now cover a sufficiently long period—from 1877 to 1887, inclusive—and deal with large enough numbers—116,529 matriculates and 37,493 graduates—to give them a positive value for this purpose. Errors arising from unusual or accidental conditions are largely canceled or diminished in importance in these aggregates, and the inferences drawn may be accepted as fairly trustworthy.

"The first fact of importance which arrests the attention in this comparison is that, notwithstanding the growth of population, the total number of medical students has never yet reached the proportions attained in 1882–'83. The sessions of that winter were attended by 13,088 students, of 1883–'84 by 12,763 students, of 1884–'85 by 11,975 students, of 1885–'86 by 12,321 students, and of 1886–'87 by 12,948 students. Although there was a gain last year of 627 students over the attendance in 1885–'86, the aggregate in 1886–'87 was still 140 less than in 1882–'83.

"The effect of a higher standard of qualifications for graduation is further shown in the diminishing percentage of graduates to the total number of students. In 1882–'83 out of every 1,000 matriculates 322 were graduated, taking both the United States and Canada and all schools of practice into the account. In 1886–'87 only 294 out of every

1,000 matriculates were graduated. In the United States alone in 1882-'83 out of every 1,000 matriculates 331 were graduated, while in 1886-'87 only 305 out of every 1,000 matriculates were graduated."

**The "Dietetic Gazette."**—This is now the name of the "Journal of Reconstructives." Practically, it is a new journal, much improved in appearance and in other respects. It is edited by Dr George B. Fowler, whose experience in editorial work is apparent even in the first number. It is published by Mr. John Carnrick.

**The Tokio Medical Library.**—It appears by the catalogue that the library was established in January, 1885, under the auspices of the *Sei I Kwai*, or Society for the Advancement of Medical Science in Japan, with the object of forming a reference library, and of encouraging the study of medicine in the western languages. It contains nearly 1,500 volumes, mostly in the English language. These books have been obtained by donation or, in the case of periodicals, by exchange with the "Sei I Kwai Medical Journal," the organ of the society. The names of the donors to the library of *books*, *money*, or *instruments* during the past three years are given in a list appended to the catalogue. Mr. William Wood, of the firm of William Wood & Co., New York, has presented over 1,000 volumes of "Wood's Library of Standard Medical Authors"; Dr. Robert T. Wilson, of Baltimore, has presented nearly 200 volumes; and Dr. H. C. Wood, of Philadelphia, has presented over 100 volumes. The library possesses the largest collection of English medical works in Japan. Donations are gladly received and thankfully acknowledged. They can be sent to the care of the New York Agency of the Yokohama Specie Bank, No. 7 Warren Street.

**The New York Post-graduate Medical School and Hospital.**—At the annual meeting, held January 17th, at the hospital, Dr. D. B. St. John Roosa was elected president for the ensuing year, Dr. William A. Hammond vice-president, Dr. W. Oliver Moore treasurer, Dr. George H. Fox a director, and Charles F. Clark, Esq., Dr. H. T. Hanks, Dr. Seneca D. Powell, and Dr. Charles C. Lee corporators. According to the treasurer's report, the financial condition of the school was more flourishing than ever before, and the number of matriculates had increased over eighty-seven per cent. during the year. The bacteriological laboratory, furnished with the most approved apparatus, has recently been opened. Dr. A. D. Rockwell has been appointed professor of electro-therapeutics, Dr. J. E. Weeks instructor in bacteriology, and Dr. George T. Jackson instructor in diseases of the skin.

**The Philadelphia Polyclinic.**—Dr. H. Augustus Wilson has been appointed professor of orthopædic surgery, and Dr. A. W. MacCoy professor of diseases of the nose and throat.

**The Copyright of Bromidia.**—The "St. Louis Medical and Surgical Journal" says: "Of all the curious reading that we have enjoyed in some time, we think that afforded by a communication from Dr. F. E. Stewart to the current number of the 'Druggists' Circular' certainly caps the climax. It affords a splendid illustration of the wisdom of the adage which advises the shoemaker to stick to his last. Whenever a physician strays from his own profession into the intricacies of the law, and especially of the patent laws of this country, his feet are in dangerous and slippery ground, no matter where his head or heart may be. In the present paper, Dr. Stewart attacks the recent decision of the United States District Court in the matter of the suit of Battle & Co. against the Grosses (Daniel W. and Edward Z.) for infringement of their copyright of bromidia. He declares that the decision is not final or binding, and advises the Grosses and druggists generally not to pay any attention to it. Dr. Stewart thus puts himself in contempt of the United States courts, and advises others to place themselves in the same foolish and dangerous predicament. The queer part of the matter, however, is that every reason which he advances against the validity and justice of the decision is the strongest possible argument in its favor, and the reader must be obtuse indeed not to see that it is so. This view of it was evidently taken by the editor of the 'Circular,' who says: 'While giving Dr. Stewart's argument publicity on account of its novelty, we think it proper to remind pharmacists that they are bound by the decision so long as it is allowed to stand'—which advice is good, sound sense, like pretty much everything that emanates from the editor of the journal quoted."

**The New York Academy of Medicine.**—At the last meeting it was announced that the medical books belonging to the late Dr. William D. Schuyler had been given to the library by Mrs. Schuyler, to whom a vote of thanks was passed.

**The Ohio State Sanitary Association** will hold its fifth annual meeting in Toledo on Thursday and Friday, February 9th and 10th. The officers are Professor E. T. Nelson, Ph. D., of Delaware, president; Dr. D. H. Beckwith, of Cleveland, Dr. John McCurdy, of Youngstown, and Dr. Byron Stanton, of Cincinnati, vice-presidents; Dr. R. Harvey Reed, of Mansfield, secretary; and Dr. L. C. Herrick, of Columbus, treasurer. The programme includes the titles of a large number of papers on subjects of great practical importance, by distinguished physicians, architects, engineers, and others.

**The Alumni of the Bellevue Hospital Medical College** will hold their annual dinner at the Buckingham Hotel, Fifth Avenue and Fiftieth Street, on February 14th, at 8 o'clock P. M. Tickets, at $5 each, may be had of Dr. W. H. Katzenbach, No. 22 West Forty-fifth Street.

**The Medical Profession of Easton, Pennsylvania, Fifty-five Years Ago.**—In the "Easton Daily Express" we find a vigorous article, taken from the "Philadelphia Times," by Dr. Traill Green, of Eastwood. Dr. Green says:

"The writer finds it to be his duty, in deference to the memory of very worthy members of the medical profession of Easton, Pa., in 1830-'33, to reply to statements made by Dr. Gross in his autobiography. He feels especially called to make this reply because, in a review of the autobiography in a paper having a wide circulation, the remarks of Dr. Gross on the physicians of Easton were quoted, and in that way public attention was called to them as it would not have been by the autobiography. The writer has no personal grievance to complain of, as he did not enter the profession until after the departure of Dr. Gross from Easton. The persons he referred to he knew as physicians in good standing in their profession, and after 1836 enjoyed intimate association with them. One of them was physician in his father's family for forty years, and another occupied the same position for several years. Only one of those criticised by Dr. Gross is now living, having his residence in another place. Many of the relatives and patients of these good men are still living, and have been greatly grieved by the remarks of Dr. Gross on their professional reputation.

"These are the remarks of Dr. Gross's 'Autobiography,' vol. i, page 56: 'The medical profession of Easton at the period in question was in a decidedly mediocre condition, without science, without learning, without progress, and apparently without ambition. Upon one thing all were agreed—they all bled, all gave emetics, all purged, all starved their patients. They were all real Sangrados, mowing down alike the infant, the youth, the adult, and the old man. Very few of them ever read a medical book. The remuneration for professional services was contemptible in the extreme. For a visit in town the ordinary charge was fifty cents, and double that sum for a ride into the country.'

"The physicians who were in practice at that period and did the professional work of the town and surrounding country were Drs. John Cooper, Joseph K. Swift, Samuel C. Gwinner, and Stewart Kennedy. None of them are now living, and only one other, as stated above, who was in the profession at that time is still living, and he may be included with those above named as worthy of a better appreciation than that made by Dr. Gross."

Dr. Green gives interesting sketches of these gentlemen and of the times in which they lived. Of one of them, Dr. Swift, he says:

"Dr. Swift was a man of distinguished culture, a constant reader of literature and science. It is singular that he should have been classed with the Easton physicians, 'without science and without learning' ('Autobiography,' page 56), when on page 57 we read: 'He was undoubtedly a man of brains, with clear intellect'; 'early in life their little home was the resort of most of the prominent strangers who visited Easton on business or pleasure.' And it may be added that the most cultivated people of the town sought the society of the doctor and his wife to the end of life. It was never known, as remarked by Dr. Gross, that 'Dr. Swift possessed, as he imagined, a pre-emptive

right to the best practice in the place'; nevertheless he was recognized as the best educated physician and surgeon of the town, and, with Dr. Cooper, for many years divided the largest and best practice of the town. His medical education, taste, and mechanical skill would have made him one of the best surgeons of his time had he been connected with a hospital. His introduction of adhesive plaster in making extension in fracture has made him known wherever surgery is practiced. Dr. Gross's allusion to his poverty as evidence of the want of success in his profession is very unkind ('Autobiography,' page 57). He lost his property, as many others have, by giving his name as indorser on the paper of friends. As a highly cultivated scholar, a distinguished physician and surgeon, Dr. Swift is well remembered by the older citizens of Easton. The writer is happy to give a brief extract from a letter which he received a few days ago from an intelligent and well-known physician: 'Although I never knew Dr. Swift personally, I have always heard him spoken of as a man quite versed in the science of his time. I have quite a number of the minerals named by him and given to me in exchange; and what I have done in mineralogy was greatly the result of an awakening to the subject from hearing of Dr. Swift's success.'"

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"It only remains to speak of 'the mowing down alike of the infant, the youth, the adult, and the old man by bloodletting.' The writer thinks it can be said of the physicians named above that they were skillful and men of good judgment. 'The killing and mowing down' are terms used very loosely and very frequently. Dr. Cooper, in his last sickness, said to two of the physicians of Easton: 'I was never charged with killing more than three of my patients by bloodletting. Two of these are still living, and one died ten years after the operation from want of bleeding.' Such killing has been done very frequently. Dr. Gross did not believe in any other kind, and surely did not fear that bleeding would kill aged and feeble persons, for he writes: 'A tall, slender gentleman of this city, nearly eighty years of age, in whom a severe attack of asthma was complicated with great congestion and slight inflammation of the lungs, the abstraction of less than six ounces of blood by the lancet led to speedy convalescence and to a complete cure. I verily believe that if this gentleman had not been bled he would have died. In certain forms of phthisis (consumption), venesection, judiciously employed, is frequently productive of great benefit. I remember the case of the late Mr. Benjamin Drake, of Cincinnati, who labored for many years under diseases of the lungs, associated with tubercular deposits, the more urgent symptoms of which were always promptly relieved by the loss of eight to sixteen ounces of blood by venesection. I have always felt satisfied that his life was materially prolonged by this treatment. Dr. Rush was in the habit, as Sydenham had been before him, of bleeding in every case of phthisis attended with a hard pulse, or a pulse rendered weak by the laborious transmission of blood through the lungs. In one of his cases he bled eighteen times in two weeks, and in another fifteen times in six weeks, with the happiest effects.' Dr. Gross says he 'cites these instances to show that a system borne down by disease may react favorably under what, to us of the present day, appears as a most heroic measure.' (Dr. Gross, 'A Discourse on Bloodletting,' 'Transactions of the American Medical Association,' vol. xxvi, 1875, page 433.)"

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"Dr. Gross deserves great praise for his advocacy of bloodletting, and the medical profession will thank him for the good words he uttered again and again in commendation of it. His prediction will doubtless come to pass. 'Bleeding will again come into fashion. And, although I am not a prophet, nor the son of a prophet, I venture to predict that the day is near at hand, if indeed it has not already arrived, when this important element of treatment so long and so shamefully neglected will again become a recognized therapeutic agent, and will thus be instrumental in saving many lives, as well as many an eye, many a lung, many a joint, and many a limb.' (*Ibid.*, p. 431.) Is it not strange that one who so practiced bloodletting and so earnestly recommended it could so hastily condemn the men of Easton of 1830–'33, who with good judgment practiced as wisely as he did? The writer can not forget how two free bleedings by Dr. Cooper, in his own Easton home, in an attack of pleuro-pneumonia, in which he attended him in youth, brought him speedy relief and left his lungs in good condition. What result did they obtain? Professor J. William White, of the University of Pennsylvania, in his article, 'A Century of Medicine,' says that during one of the epidemics of yellow fever, near the close of the last century, 'Dr. Rush bled Dr. Griffith seven times in five days, and the latter lived for many years—until June, 1826.' In the treatment of inflammation of the organs of the chest Dr. White remarks: 'As a matter of fact, their results were not bad. The proportion of recoveries in such cases compared very favorably with those of earlier times of which we have any knowledge, and not unfavorably with the statistics of many modern practitioners.'

"It is seen from the writings and practice of Dr. Gross that he bled persons, 'slender and nearly eighty years of age'; consumptives, to the amount of eight and sixteen ounces of blood; that he refers to the practice of Sydenham and Rush, who bled consumptives freely and frequently, 'with the happiest effects'; of the frequent bleeding of women, so common for a time, he says: 'I do not know that I ever heard of one that was injured by the practice'; he commended it in inflammatory and non-inflammatory diseases, in the young and aged. When has the most ardent advocate of bloodletting ever asked more than Dr. Gross taught as to bloodletting? The writer does not notice other remarks of Dr. Gross, 'jealous,' 'unsociable,' etc., as professional defects were the serious charges.

"The writer can not reconcile Dr. Gross's charges of ignorance with his advice to a young medical student against obtaining a good education. In a review of the autobiography of Dr. Gross in the 'American Journal of the Medical Sciences,' October, 1887, p. 481, we read: 'That the classical training which he experienced during these two years was of incalculable service to him no one who is familiar with his writings can doubt; and yet it is due to the truth of his history to tell, what is not mentioned in his diary, that when, in 1845, a pupil in his office became the subject of similar convictions, and consulted him as to the propriety of resorting to Transylvania University, a noted classical institution at Lexington, Kentucky, he advised against the scheme. We have authority for saying that the pupil alluded to has never ceased to regret his acceptance of the advice. In fact, it would seem, from an entry made July 18, 1883, that his early opinion as to the necessity and special advantage of the acquirement of the dead languages preliminary to the study of medicine, or any other profession save theology, underwent some modification. This is not the place to discuss the question, but we may be allowed to express the hope that the views of Charles Francis Adams, Jr., have not been, and may never be, generally received with favor, even within the precincts of Harvard University.'

"The medical practice of the period criticised by Dr. Gross was not peculiar to Easton, but prevailed everywhere, and was his as well."

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality," for December, 1887, there were 582 deaths during the month, including 1 from cholera morbus, 4 from cholera infantum, 27 from croup and diphtheria, 11 from cerebro-spinal meningitis, 3 from dysentery, 1 from diarrhœa, 3 from erysipelas, 25 from typhoid fever, 3 from influenza, 11 from measles, 2 from whooping-cough, 3 from septicæmia, 2 from scarlet fever, and 10 from small-pox.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending January 20th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending December 31st corresponded to an annual rate of 24·8 in a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 18·5, and the highest in Bolton, viz., 33·9 in a thousand. Small-pox caused 24 deaths in Sheffield, 2 in Bristol, 1 in Leeds, and 1 in Hull.

For the week ending December 24th the deaths registered corresponded to an annual rate of 20·8 in a thousand. The lowest rate was

recorded in Derby, viz., 15·5, and the highest in Blackburn, viz., 31·7 in a thousand. Small-pox caused 21 deaths in Sheffield, 2 in Bristol, and 1 in greater London.

*London.*—One thousand eight hundred and eighty-two deaths were registered during the week ending December 31st, including 28 from measles, scarlet fever, 40; diphtheria, 22; whooping-cough, 130; enteric fever, 19, and diarrhœa and dysentery, 12. There were 442 deaths from diseases of the respiratory organs. Different forms of violence caused 74 deaths, and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 23·3 in a thousand. In greater London 2,526 deaths were registered, corresponding to an annual rate of 22·4 in a thousand of the population. In the "outer ring" 9 deaths from diphtheria; measles, 13; scarlet fever, 6; and whooping-cough, 20, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending December 31st in the sixteen principal town districts of Ireland was 33·9 in a thousand of the population. The lowest rate was recorded in Lurgan, viz., 10·3, and the highest in Sligo, viz., 43·3 in a thousand.

*Dublin.*—Two hundred and forty-five deaths were registered during the week ending December 31st, including 1 from measles; whooping-cough, 3; scarlet fever, 6; diphtheria, 2; diarrhœa, 1; and dysentery, 1. Diseases of the respiratory organs caused 70 deaths. Four accidental deaths were registered, and in 41 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 36·2 in a thousand.

*Scotland.*—The deaths registered in eight principal towns during the week ending December 31st corresponded to an annual rate of 24·3 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 14·6, and the highest in Paisley, viz., 35·9 in a thousand. The aggregate number of deaths registered from all causes was 607, including 14 from measles; scarlet fever, 7; diphtheria, 13; whooping-cough, 24; fever, 5; and diarrhœa, 10.

*Santiago, Chili.*—The United States minister, in his dispatch dated November 11, 1887, says: "Cholera has again made its appearance in Santiago. For the week ending November 5th, 40 cases were reported as proving fatal, 19 on yesterday and 14 the day previous. It has extended to the south of Chili during the winter months, and has been particularly severe in some sections. It is the general impression that it will prove as destructive to life in Santiago and its environs as it was last summer, though the Government and people are much better prepared to meet it in a sanitary point of view."

*Cienfuegos.*—There were 76 deaths from small-pox during the month of December, 1887, and 188 cases were under treatment January 1, 1888.

*Havana.*—Five deaths from yellow fever and 71 from small-pox are reported for the week ending January 7th.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Glasgow | December 24. | 545,678 | 236 | .. | .... | .... | .... | 3 | 8 | 4 |
| Glasgow | December 31. | 545,678 | 247 | .. | .... | .... | .... | 1 | 4 | 8 |
| Warsaw | December 24. | 439,174 | 202 | .. | .... | 10 | .... | .... | 7 | 3 |
| Calcutta | December 3. | 433,219 | 253 | 15 | .... | .... | .... | .... | .... | 1 |
| Amsterdam | December 24. | 378,686 | 144 | .. | .... | .... | .... | .... | .... | 4 |
| Amsterdam | December 31. | 378,686 | 156 | .. | .... | .... | .... | 1 | 1 | 2 |
| Copenhagen | December 21. | 290,000 | .... | .. | .... | .... | .... | 1 | 5 | 7 |
| Munich | December 24. | 269,000 | 130 | .. | .... | .... | .... | .... | 5 | 4 |
| Edinburgh | December 31. | 258,629 | 107 | .. | .... | .... | .... | 1 | 2 | 2 |
| Palermo | December 25. | 250,000 | 116 | .. | .... | .... | .... | .... | 1 | 11 |
| Belfast | December 24. | 224,422 | 178 | .. | .... | .... | .... | 1 | 4 | .... |
| Belfast | December 31. | 224,422 | 178 | .. | .... | .... | .... | 2 | 3 | 3 |
| Bristol | December 24. | 223,695 | 96 | .. | .... | 1 | .... | 1 | 5 | .... |
| Trieste | December 24 | 154,500 | 94 | .. | .... | 12 | .... | .... | .... | 2 |
| Stuttgart | December 31. | 125,510 | 48 | .. | .... | .... | .... | .... | .... | 1 |
| Pernambuco | December 20. | 110,000 | 65 | .. | .... | 1 | .... | .... | .... | .... |
| Barmen | December 24. | 108,000 | 35 | .. | .... | .... | 1 | .... | .... | 3 |
| Reims | December 24. | 97,903 | 54 | .. | .... | .... | .... | 1 | 1 | 3 |
| Leith | December 31. | 72,297 | 22 | .. | .... | .... | .... | .... | .... | 1 |
| Cienfuegos | January 2. | 35,464 | 34 | .. | 1 | 25 | .... | .... | .... | .... |
| Guayaquil | December 16. | 30,000 | 48 | .. | .... | 12 | .... | .... | .... | .... |
| Guayaquil | December 22. | 30,000 | 52 | .. | .... | 11 | .... | .... | .... | .... |

UNITED STATES.

*Florida.*—Dr. King Wylly, president of the Florida Health Protective Association, states, under date of January 16, 1888, that no yellow fever exists in Florida at present.

## ANSWERS TO CORRESPONDENTS.

*No. 132.*—Address the secretary, Dr. W. E. B. Davis, Birmingham, Alabama.

*No. 133.*—The medicinal honey of Tasmania (*miel eucalyptè natural Guilmeth*) is advertised as for sale at the Pharmacie Chevrier, 21 Faubourg Montmartre, Paris.

*No. 134.*—French and German medical books are kept in stock by Messrs. B. Westermann & Co., of No. 838 Broadway, New York, also by Mr. G. E. Stechert, of No. 828 Broadway. From either of these houses you can obtain monthly lists of new publications, giving the prices. The book you mention is published in parts, and the individual parts vary in price.

*No. 135.*—The name is French, not German, and should be pronounced like our word *blow*.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*



Theodore R. Varick M. D.

## Lectures and Addresses.

### A EULOGY ON THE LATE THEODORE ROMEYN VARICK, M. D.,

*Read before the New York Academy of Medicine, January 5, 1888.*

BY J. LEONARD CORNING, M.D.

MR. PRESIDENT: On the 23d of November, 1887, there died at his home in Jersey City, Dr. Theodore Romeyn Varick, a surgeon of wide experience and much originality. Having by an unfortunate accident fractured his ankle, he was confined to his bed; and, though, to all appearances, far from dangerously injured, he expired suddenly from secondary shock, while congratulations upon the prospect of a speedy recovery from his injuries were yet upon the lips of his friends.

The deceased was for many years an honored fellow of this Academy, and he exhibited at all times a lively interest in its proceedings. So great, indeed, was his interest in all things medical that, up to the very day of his death, he maintained the habit of poring over a large number of native and foreign journals, to which he was a constant subscriber, in order, as he said, to "keep his mind young." Blessed with a phenomenal memory, he retained what he read, so that, whatever the theme of conversation chanced to be, he was enabled to illuminate it with an inexhaustible fund of anecdote and reminiscence. But, well able, as he was, to lay by in the storehouse of the mind no end of scientific lore, his was not a spirit to rest content with mere encyclopædic attainments. Perceiving that medical science was, from its inherent nature, eternally progressive, that no catechism could ever formulate its ultimate perfection, he laid hold upon research. Being of a practical turn of mind, and appreciating the fact, ever patent to all truly great physicians, that the chief aim of the practitioner must be to cure disease, he turned to therapeutics, as being at once the most natural and at the same time most promising outlet for his creative energies. In the atmosphere of pain which envelops great surgical clinics he plied with consummate skill the art of alleviating human suffering. In the silence of his library he sat till far into the night, waiting patiently on thought to show him how to perfect that art. When questioned as to his reasons for this constant self-abnegation, he replied: "Medicine is the noblest of professions, but the most wretched of trades." His whole professional life was the logical outcome of his idealism. On many a cold and dreary night this man of fine parts might have been seen hastening to the house of poverty, bringing his skill and the comfort of his smile. He himself never referred to these visits of mercy, but a member of his family has told me that they afforded him exquisite enjoyment. Thus did he give to the poor his invaluable services to the extent of untold thousands.

Though it is quite impossible, in a communication of this character, to give an adequate account of such a life, an attempt shall be made to chronicle some of its more salient features.

Dr. Theodore Romeyn Varick was born June 24, 1825, in Dutchess County, New York. His father, John Vreedenburgh Varick, was a native of New York city. His mother, Anna Maria (Romeyn) Varick, was a member of the Romeyn family of Hackensack, New Jersey. His uncle, Colonel Richard Varick, was attached to the staff of Benedict Arnold at the time of that arch-traitor's defection. Subsequently, Colonel Varick became private secretary to Washington, continuing to fill this honorable position till the close of the Revolutionary war. It was this Colonel Varick who was mayor of New York city from 1789 till 1800, a period of eleven consecutive years.

In 1841 Theodore R. Varick entered the collegiate department of New York University, and in 1843 he commenced the study of medicine in the same institution, graduating in 1846. Shortly after receiving his degree he obtained the appointment of assistant physician in the New York Dispensary, located at the corner of White and Centre streets. In the following year he became one of the corps of attending physicians, and served in this capacity for two years. During the year 1847 ship-fever prevailed in New York as an epidemic. Dr. Varick was unremitting in his self-sacrificing devotion to the afflicted. Three out of a staff of six physicians died of the disease, yet he never relaxed in his ministrations of mercy till he himself was prostrated. Having recovered from this severe illness, he settled in Jersey City in 1848, where he continued to practice his profession till his death.

In 1851 he became one of the incorporators of the District Medical Society of Hudson County. At the present time there is but one of the original incorporators of this society living, Dr. J. E. Culver, of Jersey City.

Owing to his arduous duties as a practitioner, Dr. Varick often experienced difficulty in finding the leisure necessary to extensive literary undertakings. In spite of his manifold duties, he found time, however, to impress his personality upon the periodical medical literature of the day. His papers, though not numerous, are always highly suggestive, and they have a practical aroma about them which impresses the reader forcibly that the writer must have been a man of wide experience and sound judgment. Here are the titles of some of his more noteworthy contributions: "Attributes of Mind, their Operations and Effects," an address delivered before the New Jersey State Medical Society, in 1864, while he was president of that body; "The Causes of Death after Operations and Grave Injuries," being an address delivered before the New Jersey Academy of Medicine, 1875; "Complete Luxation of the Radius and Ulna outward to the Radial Side" (the "Medical Record," 1867). At the time of that publication medical literature contained but thirteen similar cases. "Urticaria produced by Hydrocyanic Acid" is the title of one of his earliest papers. In 1869 he published the account of a case of "Subperiosteal Resection of the Clavicle," which excited much interest at the time. Some of his most important, indeed in some respects his most valuable, contributions are those on the employment of hot water in surgery—a mode of treatment perfected and employed by Dr. Varick as early

as August, 1879. To thoroughly appreciate how much credit is due him on the score of his contributions to this field of surgery, his papers should be read with care. Take, for example, his dissertation on "The Use of Hot Water in Surgery," published in the "New York Medical Journal" for October 15, 1887. In treating of his subject he here displays the instincts of the true investigator, proceeding to handle the different phases of his theme by the aid of that innate lucidity of perception which, more than anything else, is the mark of a high grade of intellectual endowment.

It was inevitable that a man of such admirable parts should receive a wide recognition. Governor Randolph, of New Jersey, appointed him to the office of surgeon-general of the State of New Jersey in 1869, a position which he filled till shortly before his death. He was attending surgeon and medical director of St. Francis Hospital for many years, as well as surgeon to the Jersey City Hospital. The work which he accomplished in these two institutions, especially in the domain of railway surgery, procured him a national reputation; and there were many choice medical minds beyond the sea who testified to their interest in his surgical undertakings by frequent correspondence.

As a director in the Morris Plains Insane Hospital he rendered important service, introducing reforms in the mode of administration which have proved of benefit alike to the staff and to the patients of that institution.

Dr. Varick was a lover of young men. Appreciating keenly the struggles incident to the beginnings of active life, he was constantly on the alert to aid the younger members of the profession who might stand in need of his assistance. One of his students, who had conceived a profound veneration for his character, thus wrote on the receipt of the news of his death: "I, too, shall miss him, for his friendship was as abiding as his honor. While I had learned to value that friendship, his ability as a surgeon was ever before me. In his death the profession loses an able surgeon, a wise counselor, and an original and logical writer." A more truthful characterization could not have been found.

Besides his knowledge of the weighty matters of his profession, Dr. Varick was versed in those gentler accomplishments which exalt the spirit and keep the heart accorded to the loftiest aspirations of mankind. He was a musician as well as a physician. Often, when at last he had returned home, after long hours of weary responsibility, he would sit at the organ, finding in the majestic melody that rest which the philosophies of this world can not give. Thus, with his hands directed to the alleviation of human suffering, his eyes fixed upon the stars, he moved on. What wonder that the inevitable end was peace!

My own relations with the deceased were most happy. As one of the consultants to St. Francis Hospital I had frequent opportunities of witnessing his admirable work in the surgical amphitheatre of that institution. In his home I learned to value that noble hospitality which comes from a full heart and ripe understanding.

Such men are rare in any business, in any profession. Like beacon-lights amidst the storms, they at last go down, but through the vistas of memory there comes a reminiscence of their brightness which shall lead us on to greater and fuller consummations.

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# Original Communications.

## CONGENITAL TORTICOLLIS.*

By JOHN D. S. DAVIS, M. D.,
BIRMINGHAM, ALA.

In this day of progressive surgery one can scarcely say much that is new. And while I feel that nothing is new in the principles which I advocate, I feel justified in occupying your time in the discussion of a subject from the fact that my views are in opposition to those held by many surgeons to-day.

Of the two great classes of wryneck, congenital and acquired torticollis, the former will receive attention in these remarks. Congenital wryneck is one of the many affections which in themselves are devoid of danger to life and unaccompanied by physical pain, but, from the obvious distinction they produce, are sources of lasting discomfort, uneasiness, and unhappiness, irrespective of their interference with the natural prospects of the individual. Certainly the first and greatest duty of the surgeon is to save life, yet to remove such an obstruction must be of the utmost importance, and should be the ambition of every surgeon, and to reach this end the most speedy method of procedure and comfortable apparatus should at all times be adopted. Before referring to the structural changes to be overcome, and the treatment found most successful, I wish to impress upon you that, from the study of the history of wryneck and its treatment as far back as the seventeenth century, we fall far short of the conclusion that the surgeon always made his patient comfortable while under treatment. Indeed, many of the appliances used, even at the present day, are cumbersome and uncomfortable to the patient.

While we can not always know the ætiology of congenital torticollis, it must be of importance. Whatever the pathological state, it consists in a torsion resulting from a permanent contraction of one or both sterno-cleido-mastoid muscles, often with a binding down of other tissues of the neck. When it is unilateral, the head assumes a displacement which inclines the summit toward the shoulder of the affected side, and the chin is elevated in an opposite direction.

Wryneck may be distinguished as idiopathic, that arising from functional or organic lesions of the muscle, and symptomatic torticollis.

In a general way torticollis may be the result of cold, innutrition, disease of any nature involving the organs which enter into the composition of the neck, glandular inflamma-

* Read before the Alabama Surgical and Gynæcological Association, October, 1887. Contributed by Dr. W. E. B. Davis, of Birmingham, Ala.

tion, phlegmons involving the cellular tissue bordering upon the sterno-cleido-mastoid muscles, abscesses, vicious cicatrices, cervical Pott's disease, nervous alterations, paralysis, etc., any one of which may produce the deformity known as wryneck or torticollis, Pott's disease presenting a deviation of the head from its normal position by reason of disorders existing in the cervical vertebræ.

Of all the varieties that might be mentioned which may induce surgical intervention, the most frequent is that entitled congenital torticollis, "that which has had its origin in the alteration of the muscle itself or a lesion of the nerve connected with it."

Torticollis presents a very peculiar physiognomy. The attempt at proximity of the two ends of the sterno-cleido-mastoid muscle brings the mastoid process of the temporal bone forward and downward, approaching the sterno-clavicular articulation, giving the face a one-sided upward look.

Willie A.,* aged two years, was brought to me on March 20, 1884, for treatment of deformities which had existed from infancy. I reported him then of healthy parents, but since have learned that his mother has consumption, inherited from her mother. I found upon examination the right sterno-cleido-mastoid muscle involved, bringing about a peculiar position of the head, which was due to rotation of the head upon its axis, to allow the approximation of the origin and insertion of the sterno-cleido-mastoid muscle, and single hare-lip of the left side extending into the nostril. I placed the head as nearly as possible in its normal position, carefully retaining it in that position. While the contracted, or, as Dr. Sayre would say, contractured, parts were thus kept on the stretch, I made additional (point) pressure with my finger upon the lower fourth of the sterno-cleido-mastoid muscle (that part which was most tense), which immediately produced reflex contraction, pain, and spasm. While the muscle was in this way kept tense or on the stretch, I introduced a curved tenotomy knife flatwise through the integument, on the inner side of the muscle, three fourths of an inch above the sterno-clavicular head, carrying the knife through the tissues slowly, closely hugging the sternal head of the muscle, carrying it flatwise, closely hugging the muscle, until the clavicular side was passed, when the cutting edge was turned to the muscle, and with a sawing motion severed both heads by one long incision through a single small puncture of the skin. The knife was then turned flatwise and withdrawn as it had been introduced. The wound was covered with a strip of adhesive plaster, and the head held in a normal position by an axillary strap attached to a cross head-band, better described hereafter in this paper.

I introduce this case here as an illustration of the deformity in these cases for a second reason—viz., it is accompanied with hare-lip (which was afterward operated on), which is not a rare complication, nor are other like deformities. In the normal state the sterno-cleido-mastoid muscles are situated on the same level, have an oblique direction backward and forward, above and below, and if a line is made from one mastoid process to the other passing by the occiput, that line will correspond to the anterior third of the condyles of this last bone. In the above-described case it was far from being the same. The sound sterno-cleido-mastoid was advanced, and the intermastoid line was no longer horizontal. The muscular changes are not always confined to the sterno-cleido-mastoid, but other muscles undergo modification—the scalenus, trapezius, etc. Indeed, such is always the case in very protracted and pronounced torticollis, or when Pott's disease is a cause, these exaggerated conditions of several muscles producing a modification of the muscular and bony structures of the neck, whose development is arrested, contributing thereby largely to the failure in treatment.

The ætiology of congenital torticollis is as obscure to-day as in the seventeenth century. Professor Dr. F. A. von Ammon,* in 1839, observed that in a position of the fœtus *in utero*, where the head constantly inclined to one side, a frequent cause of origin might be found. Stromeyer observes that congenital wryneck is not rarely met with in irregular presentation—*e. g.*, in breech presentation. Others are of the opinion that through the act of delivery obstipitas capitis is caused, as, for instance, by faulty application of the forceps, or by pulling out the trunk before the head is extracted, or that by an applied force of this nature inflammations and changes of muscles and neck and superior cervical vertebræ may be produced.

Congenital wryneck attracts less attention immediately after birth than later, when the child begins to move and learns to walk, and the development of its body progresses. At the time of birth the neck of the child is very short and the chin near the sternum; and motions of the neck are not frequent. There is also that influence wanting which wryneck in the course of years exercises upon the position of the entire body as well as upon the changes of the face, upon the carrying of the claviculæ and shoulders when children run about and develop rapidly—changes which at a later time will present themselves in the most frequent manner.

Stromeyer further observes that "in congenital wryneck the form of the cervical vertebræ is abnormal," stating that "this is a reason why this affection in new-born children is so frequently overlooked."

Such was the opinion of the German and French surgeons as far back as 1716, and is the representative idea of a large majority of the surgeons to-day.

Richard Volkmann,† recently referring to the much-accepted theory of Stromeyer, "according to which the deformity originates in consequence of acquired inter-partum stretching, partial tears, and rending asunder of the sterno-cleido-mastoid muscle, or these lesions are generally followed by cicatricial shrinkings of the muscle, partly on account of keeping the head in the oblique direction for a long time, induced by pains and laxity of the muscles, until finally contraction develops, induced by disturbances of nutrition and growth," said: "This theory requires to be established."

And surely can I not say as much of all theories yet advanced relating to the ætiology of this malady?

* Reported by me in the "Atlanta Medical and Surgical Journal," with illustrations, December, 1884, vol. i, No. 10, pp. 516–518.

* "Monatsschr. f. Med., Augenheilk. u. Chir.," Leipsic, 1839, ii, 577–580.

† "Ctrlbl. f. Chir.," Leipsic, 1885, xii, 233–236.

Volkmann, in the following language, expressing an opinion which I heartily indorse, asserts that "the subcutaneous tear, the hæmatoma of the sterno-mastoid muscle, *a name not happily chosen*, does not, in a majority of cases, lead to contraction of the muscle and to torticollis of head, as likewise in other parts of the body tears or sections of a single muscle are generally not followed by contraction." So far I agree, and, further, am of the opinion that the tearing of the muscles should be stricken out of the list of causes of congenital wryneck. And, while it is *possible* for a laceration of the muscles of the neck to occur, on account of their being too short and not pliable in consequence of the attitude of the fœtus *in utero*, or from other causes, there is no probability of its playing any important part in the aggravation of a malady already existing; on the other hand, the laceration tends to alleviation of the trouble. In a very acceptable article from the pen of Professor Petrism, of Kiel,* much of the same theory of Volkmann and Stromeyer is advocated. They are all uncertain, and can only account for a limited number of cases of torticollis. I agree in a possible number of such, but certainly the ætiology is too uncertain to attempt a further explanation for the cause of these cases than that accredited to any other malformation, such as hare-lip, equinus, rickets, strabismus, congenital cataract, etc. It is my opinion that all malformations, as a rule, are due to depraved, degraded, or low vitality, resulting from scrofulous, syphilitic, rheumatic, or consumptive parentage. In thirteen cases in my own knowledge, whose history I am in possession of, there were in ten, scrofulous parents; in one, syphilitic parents; in one, phthisical parents; in one, unknown.

F. A. Southam, M. B. Oxon., F. R. C. S.,† in 1885 wrote an article upon congenital torticollis in which he maintained that the condition sometimes met with in infants, and known as induration of the sterno-mastoid, though occasionally syphilitic in its origin, was more commonly the result of injury during delivery. It seems not unlikely that, in neglected cases of this kind, torticollis may eventually develop, but not congenital torticollis. However much congenital torticollis may appear to be the result of injury received at the time of birth, it can no longer be classed as congenital torticollis; when it is known that contusion or laceration of the sterno-cleido-mastoid, followed by inflammatory changes in the surrounding tissues (or the muscle itself), is the cause of trouble, it is to be classed as acquired torticollis. But I must here record my disbelief in such a cause for congenital torticollis.

We now come to consider the methods of treatment which have been and are being adopted for the alleviation of congenital torticollis. It may be interesting to look into the history of the treatment of a disease which opened up as far back as the seventeenth century a broad avenue along which French and German surgeons scrambled and fought for priority. It was an intense battle between Dupuytren and Guérin, also the point of departure of ardent controversies between Guérin and Bouvier. Such a struggle for priority has never been equaled; in comparison the recent fight between our distinguished and beloved Battey and the renowned Tait, of England, over a procedure in ovariotomy, was but a Lilliputian battle to a Titan conflict.

As far back as the year 1500 we learned of the failure of massage and methodic use of mechanical instruments. And while, all along, the defective character of the treatment was apparent, it was not until the eighteenth century that the treatment of torticollis furnished any success. Notwithstanding many attempts had been made, it was not until the year 1639 that Minnius discovered a tendency to contraction of tendons and muscles, and essayed to cure torticollis by cutting the sterno-cleido-mastoid muscle.

In gathering the details of the history of the operative treatment of torticollis, I have availed myself of the records of Professor M. J. Giraldès,* much of whose phraseology I am compelled to use, so accurate are his data on this one point.

In 1682 Job Meeckren † reported a case of torticollis in which the sterno-cleido-mastoid was divided by Florianus. The operation was not a success, and soon fell into oblivion, and it was only at the commencement of the nineteenth century that tenotomy was seriously studied.‡

At the time when Florianus lived the tendon of the sterno-cleido-mastoid was severed openly, either by a parallel or transverse incision, as was then done in the case of the tendo Achillis.

It was not until the year 1817 that a new example of tenotomy was put into practice by Delpech, who cut the sterno-cleido-mastoid muscle transversely. In 1822, five years later, Dupuytren # improved this operation by subcutaneous division of the sterno-cleido-mastoid in a girl of ten years of age. Ammon, in 1823, reported ‖ this circumstance in France, and, with the descriptions given by Coster and Averill, gave the operation great prominence throughout the country. Yet credit is due Bouvier for bringing the procedure before the public, through the Academy of Medicine, by drawings illustrating the operation, and demonstrating the employment of tenotomy as a surgical means. In his work he maintained that torticollis was nearly always due to contraction of the clavicular extremity of the sterno-cleido-mastoid, and that section through one opening and one operation permitted him to correct the malformation. When this was known, M. Bouvier and M. J. Guérin each persisted in the assertion that he had previously performed the operation, and it was soon detected that Dieffenbach and Syme were proceeding in the same manner for priority of the discovery.△

Giraldès sums up these controversies with the follow-

* Langenbeck's "Arch.," xxx, p. 781; "Ctrlbl. f. Chir.," 1885, No. 7.

† "British Med. Jour.," London, 1885, vol. ii, pp. 59–61.

* "Clinical Lectures on the Surgical Diseases of Children," by M. J. Giraldès, Paris, 1869. "Med. and Surg. Rep.," Philadelphia, 1871.

† "Observationes medico-chirurgicæ."

‡ Delpech, of Montpellier, Dieffenbach, Stromeyer, Bouvier, and Guérin, all successively contributed to its progress and popularization.

# "Manuel de médecine de Coster," 1829, 3d edition, p. 219.

‖ "Parallèle entre la chirurgie française et la chirurgie allemande," 1823.

△ A journal of that period, "L'Expérience," contained numerous articles on the subject, which it is easy to complete by the perusal of the "Gazette médicale."

ing results, that, "if M. J. Guérin has shown that the section was made under the skin by only one incision, it was M. Fleury, and afterward M. Bouvier, who first made the subcutaneous section of the tendon of the sterno-mastoid. However, it is just to say that M. Bouvier, in his work and in his academic presentation, designed mainly to prove the inconvenience of the subcutaneous section, which he regarded as an exceptional practice, while M. J. Guérin, on the contrary, contributed by his efforts to promote and establish it as a general method.

"It has been necessary to search in the works published anteriorly in order to withdraw from M. J. Guérin the merit of having instituted subcutaneous tenotomy. Very soon we placed our hands on the observations of Dupuytren; and M. Dezeimeris, who took part in that dispute, in place of adhering to the text of Coster, cited the translations of Ammon, and said: 'You see that Dupuytren preceded you by sixteen years.' M. J. Guérin did not acknowledge himself vanquished. He made a sharp reply to those authorizing the account of Coster and Norvill, and thought the discovery of Dupuytren was silly. . . . Discussions also took place at the Academy of Medicine—discussions that passionately commented on this journal, and which finally ended in a famous lawsuit."

Departing from purely historical details in the treatment of congenital torticollis, excluding the spasmodic, we may divide congenital torticollis for treatment into three classes:

1. Those not susceptible of material improvement.

2. Those capable of considerable improvement, but not complete rectification.

3. Those which may be completely cured.

There is but little difficulty in selecting the cases falling in the field of the first (incurable), as there is universally osseous as well as muscle involvement, dependent upon intra-uterine changes of the vertebræ, rickets, or Pott's disease.

The second class includes all those cases which may be recognized and treated early with a perfect result, but in which, from being allowed to exist until the development of the body has advanced for several years, complete malformation of the cervical vertebræ has taken place, and will not allow of perfect restoration of the head to its normal position after section of the contracted (contractured) tissues. Indeed, this seems to imply that no excuse should exist for congenital wryneck in the adult. This, I am convinced, is true where the muscular structures alone are involved. Many cases may occur under this division thoroughly amenable to treatment, yet, from bony malformation, not susceptible of complete restoration.

The last may cover all cases where no osseous complication exists. Shortened muscle from whatever cause, nerve influence or traumatic, may be divided with a perfect result. And here I will express my doubts as to the nervous origin of the disease.

Swan* assumes "that wryneck is the result of nerve influence exerted chiefly on the sterno-mastoid muscle, but also on the anterior fibers of the trapezius muscle; that the spinal accessory nerve, or its sources from the medulla oblongata or cervical cord, must be chiefly looked to as the nerve site of its production; that it is possible that the muscular and communicating branches of the cervical plexus may be involved in its production, as well as the spinal accessory, whose fasciculi extend as far as the sixth cervical nerve; that it is analogous to talipes, strabismus, or other instances of abnormal muscular contraction."

This is theoretical and quite speculative. While Swan is supported in his belief by the history of eleven cases which came under his observation—where there were convulsions in five, talipes equinus co-existed in two, strabismus in three, and chorea and rheumatism in one—it does not appear to me that that history alone would justify the conclusion he arrived at, for in the thirteen cases in my knowledge, infantile convulsions existed in nine, and harelip in one. Now, the nine cases of infantile convulsions occurred in the list of ten scrofulous patients. While it may be a fact that in cases like those reported by Swan "the medulla oblongata or cervical cord must be chiefly looked to as the nerve site of its production," do not my thirteen cases justify me in the conclusion that doubt may be expressed as to the exemption from hereditary trouble, scrofulous in its nature, in the cases reported by Swan?

The usual plan practiced by surgeons to-day is to divide the muscle subcutaneously close to its sterno-clavicular attachment, and the general plan of doing so is to puncture the skin on the inner or outer margin of the muscle. A blunt tenotome should then be run along the groove of a director, and the tendon divided from behind forward, dividing both the sternal and the clavicular origin of the muscle through the same opening.

The plan I have adopted is that taught by Dr. Sayre. It is to place the head in a normal position, or near enough to render the affected muscle or structure tense, retaining it there by competent assistance. While the muscle is in this way made tense, or put upon the stretch, I introduce a curved tenotomy-knife flatwise through the integuments on the inner side of the muscle, about three fourths of an inch above the sterno-clavicular articulation, carrying the knife through the tissues, closely hugging the sternal head of the muscle, and then carrying the blade flatwise, or introduced beneath the muscle to near the external or posterior side of the clavicular head of the muscle, when I turn the cutting edge toward the muscle, and with a sawing motion sever both heads by one long incision through a single small puncture of the skin. The knife is then turned flatwise, and withdrawn, at the same time following the point of the blade of my instrument with the finger of my left hand, so as to press out all the blood, and to prevent air from entering the wound. By this method there is less risk of wounding any large blood-vessel or nerve in close relation with the muscle at the point of division—namely, the carotid artery, the internal, external, or anterior jugular vein, or the pneumogastric or spinal accessory nerve.

The wound should then be covered with a single strip of adhesive plaster, and the head held in position by passing a rubber strap or tubing under the axilla, and fastening the

* "Dublin Journal of Med. Sci.," 1879, vol. lxviii, pp. 114–119.

two ends of this strap to a linen roller-bandage passed around the head, and held in position by a cross-bandage over the head, connecting with the roller on either side. In retaining the head support, I always fix the bandage around the head in the way just described, in preference to using adhesive straps attached to the bandage and the skin of the forehead, thus allowing of removal at will, and avoiding the irritation and unpleasantness of the plaster. The dressing should be kept on until the head has regained its normal position. In vindication of the appeal I have made to the axillary strap, I have only to use the words of Swan:* "The appliances which have been in use for the application and extension of wryneck have seemed to be unsatisfactory, inasmuch as the mobility of the scapulæ, spinal column, ribs, or pelvis—to some of which an apparatus is usually adapted—interferes with the maintenance of a fixed point whence to extend the head. The same objection applies to application of plasters to the integuments, which can in no available situation be perfectly fixed, and the plasters have the disadvantage of slipping and requiring constant adjustment." With these objections comes the author's suggestion of an extension apparatus, which has been but little used.

Pure, simple, and uncomplicated congenital torticollis needs no extension apparatus to adjust the head after a *complete* resection of the lower bound-down tissues. All that is necessary is to keep the head held upright by an axillary strap, no extension being necessary when the osseous structures are not involved; hence the consideration of the various extension apparatus and head supports now in use, and those which have been in use in the treatment of congenital torticollis, need not occupy our attention. In many cases of congenital torticollis we find the muscles firmly bound down by plastic adhesions, and several muscles involved. In these cases a good result can be had only by cutting everything that tends to bind the head down in an abnormal position. No words can be better used here to express my meaning than those of Sir Henry Thompson relating to the division of anterior urethral strictures: "If you cut one, cut all." And again he says: "If you cut at all, cut all." That is, I would cut all the tissues in which the presence of obstruction is to be demonstrated.

My observations in the history of congenital torticollis and of myotomy and tenotomy, not only in the neck, but at the foot, knee, thigh, etc., have caused me to reach the following conclusions:

1. That it is rare and doubtful if ever congenital torticollis is produced through the act of delivery, resulting from faulty application of the forceps, or from pulling out the trunk before the head is extracted; but that the cause may often be found in the low vitality of the fœtus of scrofulous parentage.

2. That complete resection of all the contracted (contractured) tissues is necessary before attempting to restore the head to its normal position.

3. That, after complete section of the tissues, the head should be placed immediately in the normal position, and retained there for ten or fifteen days.

* "Dublin Jour. Med. Sci.," 1887, vol. lxviii, pp. 114–119.

# A CASE OF EXTRA-UTERINE (TUBAL) PREGNANCY.

*RUPTURE AT THREE MONTHS; LAPAROTOMY; RECOVERY.*

By S. C. GORDON, M. D., Portland, Me.,

LECTURER ON DISEASES OF WOMEN IN THE PORTLAND SCHOOL FOR MEDICAL INSTRUCTION, SURGEON TO THE MAINE GENERAL HOSPITAL, FELLOW OF THE BRITISH GYNECOLOGICAL SOCIETY, MEMBER OF THE BOSTON GYNECOLOGICAL SOCIETY, ETC.

On September 22d, ult., I received a letter from Dr. F. E. Hitchcock, of Rockland, Me., the substance of which was as follows:

"Rockland, Me., *September 20, 1887.*

"Dear Doctor: I have a case now under my care which I believe to be one of extra-uterine pregnancy. My reasons for my belief are:

"*First.* She has not menstruated since June last.

"*Secondly.* She has had more or less morning sickness and giddiness, and other reflex symptoms usually accompanying the first months of gestation.

"*Thirdly.* She has had frequent attacks of deep-seated pelvic pain, at times quite severe, and followed by spurts of blood from the vagina.

"*Fourthly.* The breasts have increased in size, the areolæ are darkened, and the papillæ prominent.

"*Lastly.* Within a month there has been a perceptible enlargement in the left side, corresponding to a pregnancy of the left Fallopian tube. I feel quite sure that the enlargement is not due to any inflammatory process, for there has been no increased temperature to warrant a belief in that theory.

"Within a few days she manifests symptoms which indicate that rupture may soon take place. In case I telegraph you, be sure to come by first train prepared to operate.

. . . . . .

"Very truly yours,
"F. E. Hitchcock."

About nine o'clock P. M. of September 23d I received the following telegram:

"Refer to my letter of Wednesday. Sac burst this P. M. Profound shock and extreme collapse, but reaction has taken place. Come by boat prepared to make laparotomy.
"F. E. Hitchcock."

I arrived at 6 A. M., September 24th, saw the patient, and confirmed the diagnosis. We summoned a consultation consisting of Dr. Banks, of Rockland, and Dr. John Walker, Jr., of Thomaston. The patient was suffering from severe pain, with extreme hyperæsthesia of the abdomen and symptoms of well-marked peritonitis. She could not tolerate the slightest touch of anything anywhere over the abdominal surface. We decided to etherize, in order to afford the members of the council opportunity to examine. This being done, I was able by the bimanual touch to distinctly outline a tumor in the left side, separate from the uterus, which was also enlarged.

The proposition to make abdominal section was unanimously assented to, and I proceeded, assisted by Dr. Hitchcock, Dr. Banks, and Dr. Walker. I found the well-marked indications of peritonitis in adhesions of the tumor to the wall and omentum, also of the peritoneal surfaces to each other at different points. Quite an amount of serum had accumulated, due, probably, both to peritonitis and the extravasated blood which followed the rupture; of this there was about three pints, some of the clots being almost black, while others were bright red.

This difference in color, I am inclined to think, was from the different ages of the clots. Dr. Hitchcock believes

that she had a small hæmorrhage a few days before the extreme collapse took place, as she had very severe pain followed by some exhaustion.

The tumor proved to be a gestation sac of the left Fallopian tube, and had undoubtedly existed for about three months, the fœtus being about three inches long. After removing the tumor and blood, and sponging carefully and ligating all bleeding vessels, I poured a quart of very hot carbolized water into the cavity, rinsed the parts, and thoroughly sponged it out; introduced a glass drainage-tube, and closed the abdominal wound with silk, dressing with gauze and absorbent cotton. The operation was closed about nine o'clock, sixteen hours after the rupture. I left the patient at 1 P. M., having given two hypodermatic injections of morphine sulphate, a quarter of a grain each. She was very comfortable, having slept more than half the time for the last hour before I left. From that time forward all signs of peritonitis disappeared, and the recovery was uninterrupted.

The temperature was at no time above 101°, and that only for a single day, most of the notings being 100° or below during the first week. There were some vomiting and nausea for a few days, but a small quantity of morphine controlled all the troublesome symptoms.

I am perhaps needlessly minute in these details, but, as they have a bearing on some conclusions drawn from the case, I am obliged to be thus explicit. The patient is about thirty-three years old, but was married very young, and had one child in her early married life. From the birth of this daughter (now about sixteen years of age) until this summer she had never been pregnant, although no means had been used to prevent conception. This fact was at first somewhat an obstacle to a ready diagnosis of the real condition, although she manifested some of the early signs of pregnancy. The absolute diagnosis of extra-uterine pregnancy was made by Dr. Hitchcock about a week before rupture, and principally by bimanual examination and being able to clearly separate the tumor from the uterus.

Lawson Tait thinks a diagnosis before rupture very difficult to make, and questions its being made. Certainly in this case Dr. Hitchcock had succeeded in making it, and it would seem as if he had all the essential elements for basing such an opinion upon. The patient had been a woman of very good health in the years intervening between the pregnancies, with no history, so far as I could learn, of any pelvic lesions.

Mr. Tait believes that tubal pregnancy occurs where there has been salpingitis that has destroyed the epithelium of the tube, thus allowing the ovum to adhere to its walls, where it becomes impregnated. In this case I am unable to say whether or not such a condition obtains.

So far as I am able to learn, this is the second successful case of laparotomy for tubal gestation after rupture had taken place, that of Dr. Arthur Johnstone, of Danville, Ky., being the first. The cases differ in this particular: his operation was done thirty days after the first rupture, while mine was done fifteen hours after, and I think before all hæmorrhage had ceased. On this last point I am not quite sure. I removed some very fresh clots and some fluid fresh blood, but whether due to extravasation *immediately* before the operation or to the manipulations made to break up the adhesions I can not say. My anxiety to remove the sac as rapidly as possible prevented me from noticing any minor matters connected with the case.

Dr. Johnstone says he found many very black clots, some even "inspissated"; this he thinks due to former lesser hæmorrhages. In my case there were no inspissated clots, at least none were noted.

Dr. Robert P. Harris, who is certainly authority on abdominal sections, writes me under date of November 7th:

"This operation may be divided into two classes. In one the incision is made while the hæmorrhage is still active, and in the other after it has nearly or entirely ceased and the woman has in a measure recovered from the shock." The first he would denominate "primary" laparotomy, the latter secondary or "hæmostatic laparotomy."

I think in my case the patient had a much better chance for life fifteen hours after rupture than if she had been operated upon at the period of collapse and while hæmorrhage was still active.

This is a point that only experience must determine. If we could be at all sure that hæmorrhage would cease before it exhausted the patient, we should all say, wait until reaction takes place. I feel quite certain that peritonitis is no serious bar to operation, but, from my experience in this case and several other cases of peritonitis from different causes where I have performed laparotomy, I am quite confident that from the moment of the operation the peritonitis ceased. In all of these cases I washed out the abdominal cavity with hot water.

I believe the profession have been too much in fear of reopening the wound after abdominal section where peritonitis had supervened. I have no doubt it would be equally favorable were it done in peritonitis from other causes—intestinal obstruction, tubercular deposit, wounds, etc. Hereafter I shall not allow a patient in this condition to die without operating where consent can be had.

Dr. Harris closes his letter by saying, "There is no other successful one on record in the United States but the one occurring in Danville."

The conclusions I would derive from this case, while more or less crude and more in the form of suggestions than conclusions, are as follows:

*First.* If it is true that the diagnosis of extra-uterine, and especially tubal, pregnancy is not so difficult as to prevent us from being certain in a majority of cases, why even attempt fœticide by electricity or any other means, which at the best leave a foreign body in the abdominal cavity, where it may produce septicæmia or other troubles, and keep the patient in a state of invalidism for years? Why not at once remove it by laparotomy, as we would any ovarian tumor? The risk can not be very much greater. Why wait and take the risks of rupture from which the patient may at once die, or a few days later die from peritonitis?

The risk of waiting until competent surgeons can be secured may be too great, even if we permit it to go on to rupture. Lives may be lost even under the most favorable circumstances if we wait for this to take place, and it is liable to occur at almost any period of gestation.

*Second.* I am satisfied that peritonitis is no bar to operation, but, on the contrary, that the operation is a decided

relief to the peritonitis, not only from the cutting and consequent hæmorrhage, but by removing any material which if left might become septic, and this suggests that any plan which tends to relieve the congested vessels and eliminate any fluid exudate must be beneficial in preventing a fatal termination in peritonitis from whatever cause. Acting upon this theory, Mr. Tait has for a long time used the saline catharties in beginning peritonitis with marked success. My own experience in several cases within the past six months confirms me in the belief that this is a far safer method than the long-continued and universal opium treatment of Alonzo Clark.

*Third.* That the danger from hæmorrhage is a very grave one. I am quite sure that in this case, had not Dr. Hitchcock given the patient the most faithful and persistent attention for hours, she would never have rallied from the collapse. The rupture was a large one, occurring just at the junction of the tumor with the remaining, proximal portion of the Fallopian tube. The fat, firm abdominal walls, with a small abdominal cavity, contributed to arrest the hæmorrhage much earlier than would have happened had the condition been the reverse. Therefore I am forced to the conclusion that, if we are sure of our diagnosis, laparotomy at once is the best practice.

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## AN ELECTRIC NASAL SAW.*

By JOHN O. ROE, M. D.,
ROCHESTER, N. Y.

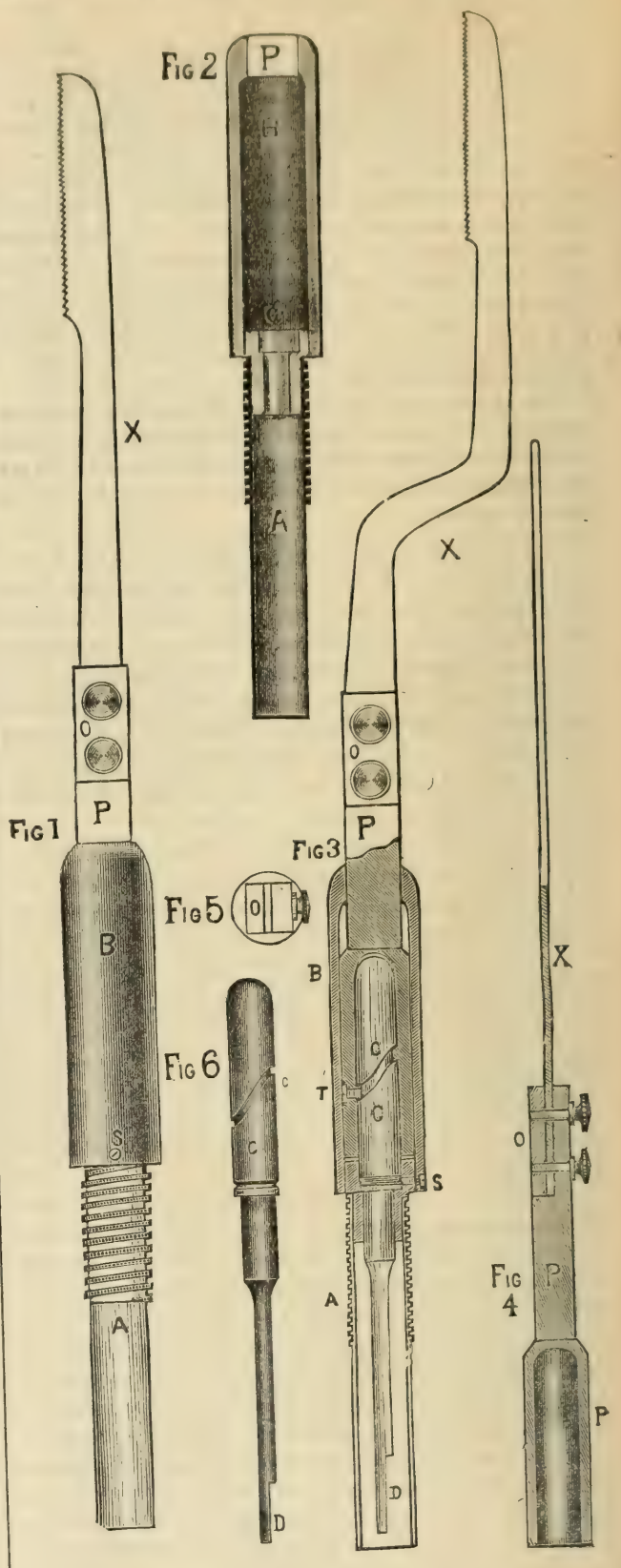
The instrument herewith presented is a nasal saw, which I have devised to be worked by an electric motor. The mechanical construction of this device is illustrated by the accompanying figures.

In Fig. 1 is shown a view of the complete instrument, which consists essentially of the reciprocating plunger P, carrying the nasal saw X, which is firmly held at the end of the plunger by the clamp O, drawn tightly around the end of the saw by means of thumb-screws. This plunger moves in the shell B, to which is attached the shield A.

Fig. 2 represents the interior of the shell B, and the mode in which the shield A is attached to it. The interior of the shell is cylindrical, with the rectangular opening P in the upper end. The hollow shield A is inserted into the lower end of the shell, forming the step *a*.

In Fig. 3 is represented the mode in which the plunger is fitted in the shell already described.

The construction of the plunger itself is shown in Fig. 4. The end of the plunger P, which carries the saw, is rectangular, as shown in the cross-section (Fig. 5), and fits nicely into the correspondingly shaped opening P (Fig. 2) in the upper end of the shell B, in which it is permitted to slide forward and backward. The rest of the plunger P is cylindrical and is nicely fitted to the interior of the shell B, which thus acts as a guide to steady the motion of the plunger, and which is bored out longer than the plunger to allow space for the length of the stroke or travel of the plunger. The cylindrical end of the plunger (Fig. 4) P is bored out so as to receive the revolving cylinder C (Fig. 6), which is formed on the end of an ordinary drill-shank D.




* Read before the American Laryngological Association at its ninth annual congress.

This cylinder has a shoulder near the end where the shank D is attached to it, and this shoulder forms a bearing which is supported by and revolves on the step *a* (Fig. 2), already referred to.

Near the shoulder a small groove is turned in the cylinder C, so as to receive the point of the screw *s* (Fig. 3), which passes through the shell B, thus preventing any longitudinal movement of the cylinder, but permitting it to revolve freely.

Near the middle portion of the cylinder C is the spiral groove *c*, which is formed around it and which returns upon itself, thus forming a cam in the surface of the cylinder. When the cylinder C is inserted in the plunger P, the small screw T (Fig. 3), whose head is completely beneath the surface of the plunger, has its point projecting into the groove or cam *c*, just described.

To operate the saw it is simply necessary to slip the socket A on the end of a dental drill and attach the shank D to the cable by means of the ordinary chuck, the shank being shaped so as to fit the chuck. If now the cable is revolved by means of a motor of any kind, it is evident that the cylinder C will revolve in the plunger P, and the groove or cam *c* will force the screw T to travel forward and backward, carrying the plunger P and the saw X with it, thus giving the latter a reciprocating movement, the rapidity of which can be regulated by the speed of the motor.

The whole arrangement is simple and compact. It can be attached to the handle of the dental drill in a moment, and, if properly made, of good material, it will not get out of order with any ordinary usage, as all springs are avoided, and the operation is positive in every particular.

The superiority of the saw, in nearly all cases, over other devices for the removal of bony growths or bony deformities of the nasal passages, and especially of the nasal septum, has been very clearly and ably shown by Dr. Bosworth.*

Its marked superiority consists in its leaving, if properly manipulated, an even and smooth surface, and therefore no irregularities in which secretions may accumulate and become inspissated, as is often the case after the use of burrs or drills.

There are two advantages possessed by this saw propelled by electric power instead of by the hand. They are the greater accuracy and rapidity with which the operation can be done.

There are two blades attached to this saw—one straight, and one set at an angle, as shown in the cuts.

The object of the angular blade is to throw the body of the saw and the hand below the line of vision, so as not to obstruct the view of the blade while operating.

In using the hand-saw it is difficult to make the to-and-fro movement of the hand so steady and uniform as not to displace the blade of the saw, particularly in starting it; but with this saw, propelled by power, it can be held in the hand firmly and steadily at the exact spot where it is wished to cut, the motor being started and stopped by simply closing and opening the current by means of a push-button placed on the floor and controlled by the foot.

* "Med. Record," New York, January 29, 1887, vol. xxxi p. 115.

It is seen that each revolution of the motor gives the blade of the saw a backward and forward movement, so that a speed of fifteen hundred or two thousand revolutions gives the blade a corresponding number of strokes. It can be at once seen that a bony projection which will require a considerable period of time to cut through with the hand-saw can with this device be cut through very quickly.

The length of time required in some cases to cut off a hard bony outgrowth with the hand-saw is often an objection to its use, for not unfrequently patients have fainted, not on account of pain, for that can be entirely prevented by the use of cocaine, but on account of the mental association or unpleasant sensations produced by the vibrations of the saw. This is entirely avoided by the rapidity of the action of the electric saw, and the quickness with which the operation can be performed.

It might be feared that this rapidity would endanger the cutting of parts not intended to be cut. This is not to be feared, for the hand of the operator can be so firmly secured or rested against the face or upper jaw of the patient as to give him the greatest security and accuracy in controlling the blade of the saw. Also, the saw can be stopped almost immediately by breaking the current to the motor.

The application of the surgical engine or motive power to nasal surgery is due to Dr. Goodwillie,* and in some operations in the nose his revolving knives, nasal drills, and burrs are superior to any other instrument devised. So are the nasal trephines devised by Dr. Curtis,† and the nasal drills and nasal planes devised by Dr. Jarvis;‡ but for the removal of redundant bone tissue from the nasal passages, and especially from the septum narium, where the surfaces should be left smooth and straight, a perfectly and rapidly working nasal saw, propelled by a motor easily and quickly controlled, like the electric motor, is *par excellence* the instrument to be employed.#

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## THE USE OF GALVANISM IN GYNÆCOLOGY.‖

By E. L'H. McGINNIS, M. D.,

ELECTRO-THERAPEUTIST TO THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK; ASSISTANT TO THE CHAIR OF GYNÆCOLOGY IN THE NEW YORK POLYCLINIC; MEMBER OF THE NEW YORK PATHOLOGICAL SOCIETY, ETC.

When I was requested to contribute something on this subject to your many valuable papers, it was with a sense of fear and trembling that I reluctantly acquiesced, for I feel that the subject is one so vast that many of our number could do it justice better than I. On the other hand, I welcome an opportunity to hear your discussions, and were I

* "Extirpation of the Bones of the Nose and Mouth by the Aid of the Surgical Engine." "Med. Record," New York, July 12, 1879, vol. xvi, p. 28.

† "New York Medical Journal," vol. xiv, 1887, p. 596.

‡ "Medical Record," New York, 1887, vol. xxxi, p. 408.

# This electric nasal saw has been made for me by Chr. E. A. Gronbech, 205 East Thirty-fourth Street, New York. I use the Challenge motor, which is also made by him. This is run by a Gibson storage battery, which is charged with the Edison current.

‖ Read before the Alumni Association of the Woman's Hospital in the State of New York at its fourth meeting.

to have the benefit of them to record here I might interest you more. But if I can tell you even one fact new to you, and make you as interested in the subject as I have been and am, the few moments of your time allotted to me will perhaps be spent not entirely in vain.

I am well aware that electricity as applied to gynæcological purposes has been rather frowned upon in times past, because many of you have imagined, from the accounts of the marvelous cures due to its application, that anything abnormal in the female pelvis or vicinity would succumb to its influence, and, having tried to make it fulfill your expectations, have failed in accomplishing the desired results, and so you have declared its employment only a waste of time, and have neglected to use your battery where it might have been of much service. My limited experience with it has taught me one important fact—viz., that it will *not* cure every patient on whom it may be tried; but if it will cure many of them, and relieve more, surely we have an important aid to the treatment of obstinate cases where our other resources have been well drawn upon and the results have not been satisfactory.

The tonic effect of electricity is so well proved that it need take but little space; and while a tonic, it is often a sedative, for one patient will be gently stimulated by a certain amount, and another, with the same amount of electricity, will be seen to grow drowsy and sleepy, even on the table. In my clinic at the Woman's Hospital, patients have told me that the nights of my applications were the only ones they could sleep through without the aid of medicines.

No doubt some of us have used it for the relief of disordered menstruation, especially amenorrhœa, in which the tonic effect is so often shown by an increased flux at the menstrual period, and in dysmenorrhœa due to causes other than displacement, when the sedative effect is recognized. I have often seen it give temporary relief from pain when due to morbid growths such as ovarian cysts, uterine fibromata, and the like. A word in regard to the time of application may not come amiss, as much of its success depends upon when it is used. In cases of amenorrhœa I have found that if as many treatments as possible are given during the few days just preceding the time of the expected flow, the amount will be larger, and there will be less pain than if it is given at stated intervals during the month. In regard to dysmenorrhœa, which is looked upon as a symptom, of course the use of galvanism is called for not only when pain is actually present, but also during the intervals. Do not be surprised if one or two treatments fail to give the relief you have read of in the literature on the subject, but I am sure you will be well repaid if you persevere with your treatment and bear in mind that continued repetition is necessary for satisfactory results.

Another class of cases where electricity has given me satisfaction is that in which patients who have undergone abdominal section and recovered from the operation return to us complaining of pain, sometimes constant, occasionally coming and going, and ask us for relief. What shall we do for them? Perhaps the most satisfactory results may be obtained by the use of a mild galvanic current passed through the seat of the pain, one electrode being placed in the vagina, the other externally applied to the abdomen, the latter of which should be a large, flat, sponge- or cotton-covered metal plate. No universal rule as regards the strength of the current can be given, for patients differ very much in their susceptibility. I generally give as much as can be comfortably borne, the amount varying from 30 to 50 milliampères. Care should be taken to avoid the scar, as it is often extremely sensitive. All patients whose cases are of this troublesome character do not stay permanently cured, but those which I have used it upon in this way have been much relieved during their course of treatment, and a number of them have had no return of pain during the year since leaving my hands, and will, let us hope, remain free from a return of troublesome symptoms.

In the treatment of ovarian cysts something has been done by Dr. Paul F. Mundé and others, but the results, while fair, are not encouraging as compared with those of the operation for removal of the growth. I am of the opinion, however, that much good may be done in cases of tumors which are too adherent to be removed with any degree of safety.

Dr. Mundé's experience with ovarian cysts treated by electrolysis shows us that out of fifty-one cases in which he used the above-mentioned treatment, twenty-eight, or about 55 per cent., were cured or permanently improved by it. In thirteen of these cases (or 25·4 per cent.) dangerous results followed, and nine of them (or 17·6 per cent. of the fifty-one) were fatal. But surely where the knife is impracticable and nothing safer can be done, this treatment is worthy of trial.

The crowning triumph of galvanism, however, seems to be in the treatment of uterine fibroma by electrolysis. Many methods of application have been tried, but that of my friend, Dr. Georges Apostoli, of Paris, seems to be in every way the best. The older custom of introducing one or both platinum-pointed needles into the body of the growth itself gave very good results, and a number of patients whom I treated in this manner were much improved. The hæmorrhage was greatly diminished, and in some it was checked entirely as regards an abnormal amount; the pain was very greatly controlled, and the size reduced so much that clothing which was rather tight before the treatment was commenced had to be taken in at the waist once and sometimes twice in a few weeks. The objection of troublesome hæmorrhage following the withdrawal of the needles has been frequently raised, and while I personally have never had any such unpleasant sequel, I am rather of the opinion that it was due to my good luck, although every possible care was exercised. I also was accustomed to introduce the needles without the use of an anæsthetic, but it is hardly to be advised, as the proceeding is generally a very painful one to the patient, especially if a round-pointed needle is used; and the amount of force necessary for its introduction may do some damage, such as carrying it beyond the morbid growth and perforating the uterus.

Dr. Apostoli's method does not cause such anxiety on the part of the attending physician, for there are, as a rule, no needles to be withdrawn, consequently there is no fol-

lowing hæmorrhage, neither is there likelihood of septic trouble. His method of procedure is as follows:

First, an electrode, which is made of platinum and shaped like an ordinary uterine sound, bent to perfectly fit the canal, is introduced and carried well up to the fundus.

He next lays upon the abdomen another electrode consisting of a flat piece of metal (to which the wire is connected) covered by a moist preparation of potter's clay, which is inclosed in a gauze net or bag; this enables it to retain its thick, flat shape, and it can be easily carried about from house to house if necessary. I may remark in passing that the doctor never allows this electrode to become dry, and this he manages by wrapping it in two thicknesses of flexible oil-cloth, such as is sometimes used for a table-covering in kitchens; and so well does it keep it wet that the same electrode which he prepared in Paris, after he had used it in Great Britain and crossed the ocean and used it several times in this country, was found to be in perfect condition for immediate use when I saw him operate in New York. After this has been well pressed and molded to the shape of the abdomen, the current is then *gently* turned on and very gradually increased till the proper strength is reached. The word *proper* needs some explanation here. He says in one of his writings on the subject that the current should be from 60 to 70 milliampères; I have, however, seen him use as high as 250 milliampères, and in all his more recent cases he makes use of the stronger current. This strength is to be maintained from five to fifteen minutes; he used it twelve minutes when I saw him. Then the current is very gradually reduced until none remains, the patient is put to bed and kept quiet for a few hours, and the operation is finished. One thing is specially to be avoided —viz., any interruption of the current during the operation.

This method is quite painless, and is exceedingly simple in its details. It is repeated once or twice weekly, and its benefit is noticed almost at once by the rapid reduction in the size of the mass and in the cessation of hæmorrhage.

In case the uterus is in such a position that it is impossible to pass the electrode to the fundus, needles of platinum are to be inserted into the mass itself, and the strong current is then used as before mentioned. I have heard the question of the likelihood of stenosis of the canal following the operation spoken of, and in reply I learned that out of over one thousand cases treated in this manner but one was followed by this unfortunate accident.

I am glad to mention the growing popularity of this operation both at home and abroad, and very many of our best authorities on the subject are having excellent results by its employment. No less a one than Dr. Keith, Sr., of Edinburgh, who has, perhaps, used it as much as any one now living, says in a recent article that he holds any operator culpably negligent if hysterectomy is performed before a thorough trial of Apostoli's method has been given.

When Dr. Apostoli visited this country last autumn he brought with him a portable battery made by Gaiffe & Sons, of Paris, and through his courtesy I was enabled to purchase it. Thinking it might be of interest to you, I have brought it here, and now take pleasure in showing it to you.

Dr. Frank Martin, of Chicago, who has given much attention to the treatment of uterine fibroma by electrolysis, in a recent article published in the "Medical Record," mentions a new battery which is really a small dynamo-machine, and may be run by steam- or gas-engine, or even electricity, and from his description seems to be a very useful addition to the outfit. Few, however, would care to spare the necessary room for it or bear the expense.

In conclusion, let me urge you to place more dependence upon galvanism in your routine treatment, and, as our knowledge of electro-therapy is increased with time, let us hope that it will rob the surgeon's knife of much of its terror, and enable us to treat obstinate cases with a success never before equaled.

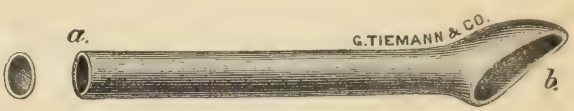
335 Fifth Avenue.

## NASAL INTUBATION.*

By D. H. GOODWILLIE, M. D.

On this occasion it is only my purpose to introduce to you a method of nasal intubation as a valuable aid in the treatment of intranasal disease, and at some future time to give more in detail the result of an experience of some years of its use.

My first efforts began by the use of pure rubber-gum tubing of different sizes and strength and made applicable to each case by such impromptu means as I had at command. These experiments, after being carried on for some time, were so encouraging that I had the tubes made in soft rubber and platinum or aluminium from models that have proved by experience to be of practical application. These improved tubes properly made have given me such good results that I merely call your attention to them for your consideration.




These tubes are oval (*a*) in shape and of the same size, with the exception of the anterior end (*b*), that is shaped so as to fit the vestibule of the nostril, and by that they are retained in place.

They are made of different sizes, ¼ to ½ inch in diameter, and in length from 2½ to 3½ inches, but may readily be cut to any desired length.

The metal tubes can be changed in their caliber by passing through them a core of the desired shape. The anterior end may be soft rubber, as it is more comfortable by its flexibility in the vestibule of the nose.

The small rubber tubes are made use of at the beginning of the treatment and changed to larger ones until there is normal space or the deformity has been corrected. Then the metal tubes may be used if so desired, as they allow freer respiration through them. The tube is put into the nostril by raising the end of the nose and gently passing it into the inferior meatus, then releasing the end of the nose

* Read before the Section in Laryngology and Rhinology of the New York Academy of Medicine, December 27, 1887.

and passing the anterior end into the vestibule. They can not be seen externally, and so can be worn and treatment carried on without any unsightly appearance, or even knowledge of their presence.

They can be readily removed by the patient for cleansing and returned to the nostril. Some of my patients have worn them constantly for months without discomfort and always with benefit.

I will simply refer to some of the nasal diseases in which they have been made use of—viz.:

1. Intranasal hæmorrhage.
2. Fractures of the nose, internal and external.
3. Deviations of the cartilaginous and bony septum after the necessary surgical operation of section or removal of exostosis.
4. After the removal of hypertrophic turbinated tissues or polypi, whether by the cautery or snare.
5. Hypertrophies of the soft tissues without an operation, when worn for a sufficient time to produce absorption.

The following two cases will serve to illustrate the good results of the nasal tubes. I will not occupy your time by going into details. These patients have kindly consented to be present for your examination:

The Rev. F. R., from a blow upon the nose by a base-ball in his youth, had as a consequence a deviation of the cartilaginous and bony septum, with an exostosis into and along the line of the left inferior meatus for nearly two thirds of its length. There was little or no respiration through the nostril. As it affected his voice in speaking, he sought relief. On October 10, 1887, the exostosis was removed by the revolving trephine, knife, and electro-motor. On November 22, 1887, a soft rubber tube was introduced into the left nostril, and was kept in constantly day and night for a month, during which time he did his public speaking. This was replaced by the larger one he now wears. He has removed it four or five times a day for cleansing both it and the nostril, and then replaced it. You can now see by his removal of this tube that he has abundant passage for air and mucus by the straightening up of the septum. The tube will be kept in until the parts are healed and contraction has been complete.

Dr. J. S. A., when a youth, received a blow upon the nose that displaced the septum and produced an exostosis through its whole length in the line of the left inferior meatus. He had little respiration through the nostril, a fœtid discharge, follicular pharyngitis, and ear trouble. After preliminary antiseptic treatment, the exostosis was removed on October 13, 1887, with the revolving trephine and knife. The nasal tube was introduced on the 26th inst. The length of the exostosis, being more than two inches, exposed considerable bone surface, and, along with considerable hypertrophy of the inferior turbinated, it has steadily and slowly improved, and only requires time to heal and contract in order to give him a good result.

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**Iodine Trichloride.**—According to the "Lancet," this compound is freely soluble in water; it is a stronger germicide than carbolic acid, and approaches to corrosive sublimate, but is not nearly so poisonous. Langenbuch recommends an aqueous solution of 1 part in 1,000 or 1,500 for disinfection of the hands, wounds, and instruments; the slight discoloration can be easily removed from the hands by means of ammonia. He recommends a solution of 1 part in 1,200 as an injection for gonorrhœa, or as an internal remedy in dyspepsia due to bacteria, the dose to be a teaspoonful every two hours.

## A CASE OF SPASMODIC ASTHMA DUE TO ANEURYSM.

By J. W. LORD, M. D., and PEARCE KINTZING, M. D.,
RESIDENT PHYSICIANS TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

An interesting case of asthma, due to an unusual cause and presenting peculiar obscurities, which resulted in failure to detect the primary affection, came under notice recently.

John C., colored, aged forty-nine, applied for admission into the house November 25th. He had been a hod-carrier, and had suffered with irregular asthmatic attacks for the last three years, which were at first only noticeable after climbing ladders with heavy loads. He was then attacked with spells of dyspnœa and coughing, soon expectoration of a thin serous liquid followed, and expectoration gave more or less relief. The spells of dyspnœa increased in number, the cough became more constant, expectoration steadily increased, and finally his voice became somewhat husky, and the patient also noticed that various changes of position gave him relief, and that copious expectoration was always followed by amelioration of the dyspnœa. He stated that he had been unable to work for nearly six weeks.

On admission, shortness of breath was very marked, the respirations were forty in a minute, and inspiration was accompanied by a peculiar gasp. Harsh rhonchi of a mixed character could be heard at some distance from the patient. His voice was husky. He complained of no pain.

Examination showed the chest markedly increased in its antero-posterior diameter. The lungs were intensely emphysematous, and neither the area of cardiac dullness nor the apex-beat was discoverable. Râles, liquid in character and shifting in position, were heard at all points. He was unable to hold his breath for more than a few seconds. The heart-sounds were obscure, but a faint murmur at the midsternum opposite the fourth cartilage, systolic in time, could be heard, but was not transmitted in any direction. There was no bruit in the carotids nor along the descending aorta. There was no difference in the radial pulses. The pupils showed no inequality, and responded to light. Dysphagia was not very marked, and, as the patient was on liquid diet, particular attention was not drawn to it. There had been no marked wasting. Expectoration was now very profuse, and amounted to over a pint a day. Perspiration was profuse and constant.

The patient was treated for spasmodic asthma. Morphine by the mouth in quarter-grain doses gave relief. Oil of eucalyptus relieved one spell promptly. Hot mustard foot-baths and turpentine stupes to the chest pushed to vesication also gave favorable results. Extract of belladonna acted well, but increasing frequency and severity of the asthmatic paroxysms rendered the resort to other measures necessary. Fluid extract of quebracho caused intense spasm, and was withdrawn after trial. One paroxysm was so severe that etherization was resorted to. The pulse was weak, and ranged from 112 to 130. Digitalis was carefully given, and a marked improvement noted. The temperature range was a peculiar feature, and is appended. It is to be noted that the rise or fall of temperature had no influence on the dyspnœa, nor could any cause for the temperature range be found, either before or after death, which occurred from asphyxia on the eighth day.

The post-mortem revealed an enlarged heart, with marked hypertrophy of the left ventricle. The heart was bent upon its axis at the origin of the aorta, and the apex pushed to the left, being in the sixth interspace. The long axis of the heart was

at an exact right angle to the sternum. The aortic valve was on the same level as the apex. The aortic and pulmonary



valves were fenestrated, but no retraction nor thickening of either these or of the mitral was present. The aorta was dilated, and atheromatous plates were plentiful, some being calcareous. Three large sacculations were found just above the valves. The pulmonary artery was constricted and wedged out of sight between the aorta and the base of the left ventricle. The angular bend in the aorta accounted for the murmur heard at the fourth cartilage. A large, irregular intrapericardial aneurysm of the dissecting variety was found, involving the transverse and descending portions of the arch. It completely surrounded the trachea and œsophagus, pushing them to the right. Both were pressed upon and the trachea was nearly occluded. Posteriorly the sac of the aneurysm was attached to the sides of the bodies of the second, third, fourth, and fifth thoracic vertebræ, and had eroded the bodies extensively. The intervertebral discs were intact. The sac was entirely filled with laminated clot. The pericardium was tightly bound to the sac of the aneurysm. The pneumogastric nerve was pressed between the pericardium and the sac. From the lower border of the heart to the apex of the arch measured eight inches and a half, and the pericardium was thickened, stretched, and closely incorporated with the sac. The pulmonary veins were pressed upon, thus causing the serous exudate into the vesicles. The lungs presented the usual characteristics of emphysema.

## Correspondence.

### LETTER FROM PARIS.

*Cephalic Version by External Manipulation.—The Spectroscopic Study of the Reduction of Oxyhæmoglobin.—A Physician's Duty to his Patient and to the Public.—A Doctor classed as a Commercial Traveler.—Antipyrine in Obstetrics.*

PARIS, *January 20, 1888.*

PROFESSOR BUDIN now has charge of the Faculty of Medicine's *Clinique d'Accouchements*, where he delivers the obstetrical clinical lectures in place of M. Pajot (retired). A late writer, speaking of the study of obstetrics in America, says: "It is a pity that you have no special hospitals for women in confinement, as they have in France." In the fine building devoted by the faculty to this purpose in Paris, where they have several births a day, Dr. Budin has been able to inaugurate a new system of study for Paris students, which enables them actually to superintend a confinement as they will have to in private practice. In their turn, two students are called, at any hour of the day or night, to come to the hospital and take charge of a patient. One of the students acts as the principal, and the second one assists, taking his turn as chief on the next occasion. A complete history of the case is written out by the students, describing the labor in all its phases, and this is read to the professor when he comes for his morning visit. He then questions the students on the interesting points in the case, and sometimes uses it in the clinical lectures, which he delivers twice a week. Among the interesting cases that took place lately at the *Clinique* was one in which M. Loviot, the *chef de Clinique*, did cephalic version. The child presented by the breech in the left oblique anterior diameter. The manner in which the version was performed is the curious part of the case. It was by external manipulation. The woman was a primipara, twenty-two years of age. Chloroform was given, and she was placed in the usual obstetric position, when M. Loviot introduced his left hand into the vagina and made an attempt to push the breech upward and forward. Notwithstanding the fact that the breech was already engaged, this was easily performed. With the right hand the operator then felt the breech about the level of the superior strait, in front; seizing it, he began to push it by little blows upon it toward the left side of the mother. Withdrawing the other hand now from the vagina, he felt for the head, and, confiding the breech to an assistant, who continued to push it up and to the left, M. Loviot pressed the head down and to the right, until it arrived at the superior strait. Once in position, it was kept there by a bandage, and five days afterward the membranes broke and labor began. The uterine contractions not being sufficient, the case was terminated with the forceps.

Cephalic version by external manipulation had been discussed lately here by the *Société obstétricale*, and its members had come to the conclusion that it was useless, if not dangerous; but, if conclusions can be drawn from this case, it would seem that, even when the breech is engaged, it is possible to perform cephalic version. The fixity of the part engaged may not be definitive, and, owing to the relaxation of the muscles obtained by giving chloroform, the hand can be introduced into the vagina and the presenting part pushed upward. M. Loviot professes to be the first who has performed the operation of changing a breech presentation when the breech was already engaged before labor and with chloroform.

The application of spectroscopy to the study of pathological alterations in the blood is still quite new, and from its importance deserves more mention than I can give to it in a letter, but I must mention some facts in regard to it. So far the considerable expense of the large instruments employed has to a great extent prevented any use being made in medicine of the principal characteristics of the coloring matter of the blood, either in the normal or in the pathological state, but a late invention of Dr. Hénocque's places in the hands of the medical profession a handy, portable hæmato-spectroscope that will almost go into a waistcoat pocket, and with which a spectral analysis, both qualitative and quantitative, of hæmoglobin and its derivatives (oxyhæmoglobin, methæmoglobin, etc.) can be made at the bedside. But it will be asked, What is the advantage of knowing this? Well, it has been proved to be of the utmost importance in the study of the variations of the activity of the reduction of oxyhæmoglobin in health and in disease. This Dr. Hénocque makes us *see* with his instrument applied to the thumb. A small elastic-band ligature is tied around the lower part of the thumb, and, on the hæmatoscope being applied to the nail, which is exposed to the usual daylight (as strong as possible, but that from a house window is enough), the energy of the exchange going on between oxygen and the tissues can be seen. This new idea is of great practical importance in the study of the phenomena of nutrition, both in physiological and in pathological states, so that such physicians as Professor Germain Sée are now taking the matter up and applying it to the study of

many pathological states, such as anæmia, etc. Dr. Hénocque is one of Professor Brown-Séquard's best men. He has given the results of some 370 cases in which experiments were made.

Professor Brouardel is reporting some interesting cases in legal medicine to the *Société de médecine legale*. A late one refers to a doctor who is attached to a large railroad company, and was called in by one of the men who were employed in starting trains, having indeed complete charge of a small railway station. The doctor found the patient indisposed, and on questioning him saw that he had suffered from vertigo and that he had fallen twice insensible, for a moment or two. In view of the fact that the man often had to turn a switch for trains containing hundreds of travelers, who might be in danger from this man, he asked if he ought to overlook professional secrecy and inform the company. Dr. Brouardel answered that it would be best to tell the patient that, if any accident happened, the doctor could not take it upon himself to excuse him, on account of his illness, and that he would have to betray his professional secret in his case. It so happened that the man saw that it was dangerous to go on, and he consented to apply for an inside office place under the company, which allowed him to make a living without danger to others; but at the same time it is a delicate question for a physician to decide, whether he ought to betray a patient for the good of the public.

Another case of professional interest was decided by the Paris tribunals lately. A doctor had agreed with a druggist to write articles recommending a certain chemical product manufactured by the druggist, and also to deliver lectures in regard to the product, recommending it in fact by all possible means to his professional brethren and the public. In consideration of these services the druggist agreed to pay the doctor 4,000 francs a year and certain expenses. Afterward the doctor refused to continue the work for the druggist, who at once sued him. The doctor's lawyer maintained that he could not be compelled to carry out such a contract, as he was not a man of business. The tribunal, however, decided that, as the doctor had agreed to do work such as an ordinary commercial traveler did, he was responsible. It was added that a physician should only advise any preparation which he knew to be useful in the ordinary way of giving advice at his office or at a patient's house, and not by advertisements; and that he should not receive any payment for such advice, beyond his usual professional fees, under pain of being ranged with the regular mercantile traveler. This would not be a bad judgment on those who recommend certain preparations, for a consideration, in other countries!

Antipyrine is all the rage, and it is being recommended for all sorts and kinds of troubles. At the last meeting of the Academy of Medicine, M. Ossian Bonnet said that it would cure seasickness, in amounts varying from thirty to ninety grains a day, or in doses of eight grains by subcutaneous injection. Another says it will cure chorea. Its use in obstetrics is increasing rapidly. It seems to have great power over the painful contractions of the uterus in abortion, and in other painful hæmorrhagic states. Abortion has been prevented by giving a large dose of antipyrine by rectal injection. M. Laget, of Marseilles, relates a case of premature birth in which during the period of expulsion the pain was so excessive that the uterus seemed to be paralyzed, which is often seen in certain cases of uterine inertia. Two doses of antipyrine, of thirty grains each, brought about a cessation of the intense pain, without interfering with the uterine contractions, which indeed seemed to be regulated in their power by the medicine. It was given by the stomach, as the head, being down on the perinæum, might have interfered with the rectal injection; but subcutaneous injection could be tried in such cases.

THE
NEW YORK MEDICAL JOURNAL,
*A Weekly Review of Medicine.*
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, FEBRUARY 4, 1888.

## MEDICAL MEN IN POLITICS.

A recent number of the "Lancet" contains an editorial article in which some wholesome advice is given to the medical profession, the point of which is that its members ought to lay aside their professional character—"be distinctly 'off duty' and out of uniform"—when they take part in politics. But the article seems to have been inspired by the writer's dread that medical men may commit the blunder of forcing their political views upon the public at an unfair advantage. "It can not be gainsaid," says the article, "that the practitioner of medicine has manifold opportunities of exercising 'undue influence' in politics. Nothing but the surpassingly good and strong sense of the community could resist the influence of the medical profession if it seriously laid itself out to direct or control public policy. This may appear to be a sweeping assertion, and undoubtedly it will be regarded as a startling one, but we have no hesitation in making it. Socially, there can not be any question that, for good or evil, medical men have an influence which, if they chose to use it, would be irresistible, and compared with which the influence of the priests of the middle ages was mere child's play. However amenable men may be to the terrors of a future life, the health experiences of the present and the dread of dying are such formidable factors in the production of the mental state and opinions, that, even if there were nothing other than these considerations—and there is much, as every practitioner knows—there would be more than enough to give the men who practically hold the talisman of health in life transcendent authority and influence."

It is impossible to misconstrue such language; it seems meant to be taken literally. So taken, either it rests upon no better foundation than dreams, or else it indicates that the British people are of a character far different from that with which they have been credited for centuries—always, in fact—and that they have a tendency to servitude which must turn to irony the old refrain "Britons never, never shall be slaves!" In view of their history, such an inference is out of the question; moreover, it runs counter to pronounced national characteristics that the whole world has constantly before its eyes. We are convinced, therefore, that the "Lancet" has conjured up an imaginary danger. We believe that the influence of medical men with the community is quite as great in the United States as anywhere else, but everybody in the profession here knows that, if it were to organize itself for political purposes, it would not only accomplish nothing, but would make itself ridiculous. Besides, even granting that "undue influence" might be exerted to the degree imagined by the "Lancet," if the two contending political parties counted each its respective

proportion of adherents among medical men, the profession would be divided against itself and consequently powerless for good or evil. The truth is, the medical profession has no political influence in the matter of party measures, and it never will have any; it seeks it not, and it never has sought it. Fortunately, however, it has a power in matters concerning which it is specially enlightened, and that power is and will always justly remain proportionate to its worthiness and its earnestness. Moreover, while they can not sway men's minds on party questions, medical men belong, we are proud to be able to say, very generally to the class of citizens who despise the control of party organizations, and are ever ready to vote, and do their best to get others to vote, for men and measures strictly on their merits, without reference to "the machine."

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### THE CONNECTICUT MEDICAL SOCIETY.

The "Proceedings" at the ninety-sixth annual convention of this society have lately been issued in the shape of an octavo of somewhat more than two hundred pages, prepared under the careful editorship of the secretary, Dr. St. John, of Hartford. The formal papers are entitled "The Treatment of Diseases of the Ear by the General Practitioner," by Dr. A. E. Abrams, of Hartford; "Climacteric Glycosuria," by Dr. George R. Shepherd, of Hartford; "The Relations between Scrofula and Tubercle," by Dr. J. B. Kent, of Putnam; "New Remedies," by Dr. Thomas H. Russell, of New Haven; "Is Smoking Injurious?" by Dr. A. E. Adams, of Danbury; "The Alcoholic Question Medically Considered," by Dr. T. D. Crothers, of Hartford; "Neurectomy of the Trifacial Nerve," by Dr. M. Storrs, of Hartford; "The Adirondacks, a Resort for Health and Recreation," by Dr. William S. Todd, of Ridgefield; "On Erosions of the Cervix Uteri, their Pathology and Treatment" (read by invitation), by Dr. E. W. Cushing, of Boston; "A Medico-legal Study of our Charter and By-laws, with Reasons why they should be Revised," by Dr. Stephen G. Hubbard, of New Haven; and "Natural and Assisted Labors, with Special Reference to the Use of the Forceps," by Dr. R. M. Griswold, of Manchester. Several of these papers were read before local societies; they are all of considerable interest and value. Dr. Adams, who says a good word for tobacco, furnishes us with a suggestive and ingenious article. He upholds the view that little if any of the injurious effect of excessive smoking is due to nicotine. Moderate smoking, he thinks, "acts as a sedative and equalizer of the temper, assists digestion, and is a medium of sociability among men which should not be discarded." Incidentally he cites facts that run somewhat counter to the prevailing outcry against cigarettes. Dr. Cushing's paper is illustrated with several very satisfactory photographic views representing both gross and microscopical appearances. The author thinks that in cases of eversion from laceration of the cervix uteri the everted mucous membrane becomes diseased—not merely exposed—probably from irritation due to some form of bacterial growth.

It seems that the chairman of the Committee on Matters of Professional Interest in the State changed his abode to Pennsylvania during the year, leaving his duties on the committee unattended to. With commendable spirit, however, the remaining members of the committee, Dr. A. W. Nelson and Dr. E. K. Root, declining to be "considered exanimous," prepared a report, in which, after giving concise accounts of certain matters relating to remuneration for medical services and to illegitimate practice, accompanied by unusually sensible comments, they presented a draft of a proposed law to regulate the practice of medicine. It provides that each of the three incorporated State societies, regular, homœopathic, and eclectic, shall annually appoint three of its members to serve as a board of examiners having the power to license physicians and midwives; also for the punishment of midwives who fail to call in a physician or a coroner in cases of death. The draft has the rare merit of brevity.

The society is to be congratulated on the excellence shown by this part of the third volume of its new series of "Proceedings."

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## *MINOR PARAGRAPHS.*

### A NEW ATLAS OF VENEREAL AND SKIN DISEASES.

As we have often stated, American physicians have contributed very creditably to the advance in dermatology that has taken place within the past quarter of a century. Not the least important of their contributions have been graphic clinical descriptions and telling pictorial delineations. These are precisely the features needed in any atlas illustrating a department of medicine. We were glad, therefore, to meet with the announcement some time ago that the preparation of such a work, to be issued by Messrs. Lea Brothers & Co., of Philadelphia, was in the hands of Dr. Robert W. Taylor, of New York, all of whose writings have been conspicuously marked by vividness and accuracy. We have lately had the opportunity of examining impressions of a great part of the plates and cuts to be given in Dr. Taylor's new atlas, together with the system of its arrangement. Besides the beauty and fidelity of the illustrations, they have the great merit of portraying typical and instructive rather than startling appearances, and especially of representing not only the acme but the various phases of the disease to which they pertain. Having those objects in view, whoever sets to work to produce an atlas of cutaneous and venereal diseases finds his greatest difficulty to lie in the work of selection, and the greater are his attainments as a clinician the more readily will he surmount it. Dr. Taylor's well-known excellence in this respect might well have been taken as sufficient guarantee of the quality of his new work, and our inspection of the plates and letter-press has been only confirmatory. The work will be a most valuable guide in diagnosis and treatment, and we have no doubt that it will shed new luster on American medicine.

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### THE NEW YORK CLINICAL SOCIETY.

The one hundredth meeting of this society was held on Friday evening, January 27th, at the house of one of its members, Dr. L. Emmett Holt. It was fitting that on such an occasion a formal discussion should be announced, to be taken part in by a few invited guests. The subject was the operation of shortening the round ligaments of the uterus. Of late, the society has given abundant evidence of its growing usefulness, and we congratulate it on its status at the time of its hundredth meeting.

### THE NEW YORK POLYCLINIC.

A very enjoyable entertainment was given by the faculty of the Polyclinic last Saturday evening, at the building in Thirty-fourth Street. The teaching corps received their friends and those of the gentlemen in attendance on the courses quite informally, but in the most social spirit. We learn that such informal receptions are to be given regularly at short intervals. The idea is very creditable; there should be other ties between instructor and pupil than those nurtured in the clinic and the laboratory; they conduce to an *esprit de corps* which it is highly desirable to maintain in the profession.

### THE CITY BOARD OF HEALTH.

We are glad to be able to say that the gratification expressed by the Mayor, Mr. Hewitt, in his response to a toast at the recent dinner of the Alumni Association of the Medical Department of the University of the City of New York, at the improvement that has taken place in the composition of the Board of Health Commissioners during his mayoralty, and in the administration of the city's sanitary affairs, seems to us decidedly well founded. We are satisfied that the present board is doing far better work than any of its predecessors for a number of years past.

### THE DEATH OF PROFESSOR ASA GRAY.

By the recent death of the botanist of Harvard the little knot of American workers in the field of the natural sciences has sustained a loss comparable to that entailed by the death of the late Professor Baird, and the profession of medicine shares in the loss to about an equal extent. Both these eminent men were educated as physicians, and, although they each entered upon a career quite different from the practice of medicine, medical science has indirectly profited much by their labors, and certainly will not hesitate to claim them as its own.

### THE IMPONDERABLE MATERIA MEDICA.

That lively sermonizer, the Rev. Heber Newton, lately discoursed from the pulpit nominally on the "mind cure," but really on a wide range of psychical agencies credited with influencing the bodily state. The greater part of his "sermon" was somewhat discursive, although sparkling, but he closed with some exceedingly wholesome advice—to the believers in such agencies, that they should avoid trying to found a sect on the basis of facts long ago recognized, that they should not insist that their truth was the whole truth, and that they should cut loose from the quacks who were gathering round them like camp-followers seeking only for the booty of success; and to medical men, that they should make use of whatever truth they might find beyond the material subject-matter of scientific study, rather than ignore it to its own undue elevation. "Let them," he said, "absorb what is good in this heresy, and thus they will best refute it. Let them enter in their pharmacopœia the tonics of thought and feeling. Let them administer mental and moral stimulants scientifically, as those who really believe that an idea may be the most potent of drugs." Of course, as the Rev. Mr. Newton doubtless knows, all this is striven after by every physician who is at all above pills and powders, and not seldom practiced with the most striking results.

### HOSPITAL ACCIDENTS.

It speaks well for the discipline maintained in the Hospital for the Ruptured and Crippled that on the occasion of a fire that occurred there last Sunday night only one life was lost, and that not a patient's. More melancholy, if the newspaper account is true, was the casualty by which a patient was precipitated into the cellar of the Roosevelt Hospital through the elevator well a few days ago, for such an occurrence ought not to be possible. According to the account in question, the patient had just undergone an operation, and while yet on the wheeled stretcher, not having emerged from the anæsthesia, was trundled into the well by an orderly, who supposed that the platform of the elevator was at the theatre landing. The patient, a young man, is said to have died a few hours after the accident.

### THE MEDICAL CORPS OF THE NAVY.

It is to be hoped that the line officers of the navy are not quite so ill advised as to be following a course attributed to them by the newspapers—that of offering organized opposition to a bill increasing the pay of certain officers of the medical corps, while at the same time seeking an advance in their own pay and the passage of the "thirty years' retirement bill." As we have often remarked, the naval service is none too attractive to medical men as things are now. If the line officers are in any measure successful in preventing a just increase in the compensation of their fellow-officers of the medical staff, they will have only themselves to blame when the time comes—and come it must at no distant day—that they find their lives and health in the hands of an inferior class of medical men.

### THE "BROOKLYN MEDICAL JOURNAL."

Some weeks ago we mentioned the announcement of this new monthly journal. The first number, dated January, 1888, has now reached us. As we expected, it presents a handsome appearance, and contains a number of valuable articles. In the opening editorial article the editors expound its *raison d'être* most cogently. We wish the new journal success.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending January 31, 1888:

| DISEASES. | Week ending Jan. 24. | | Week ending Jan. 31. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 12 | 2 | 10 | 2 |
| Scarlet fever | 125 | 25 | 131 | 20 |
| Cerebro-spinal meningitis | 3 | 2 | 2 | 2 |
| Measles | 52 | 11 | 36 | 7 |
| Diphtheria | 170 | 54 | 136 | 52 |
| Small-pox | 5 | 3 | 1 | 0 |

**The Health of New York City.**—During the five weeks ending Tuesday, January 31st, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 44 cases and 15 deaths; scarlet fever, 700 cases and 109 deaths; cerebro-spinal meningitis, 11 cases and 7 deaths; measles, 200 cases and 32 deaths; diphtheria, 826 cases and 282 deaths; small-pox, 16 cases and 3 deaths.

**The Kings County Medical Association.**—The anniversary address of the president, Dr. Edward R. Squibb, will be read at the February meeting, to be held on Tuesday, the 7th inst. Its title is "Some Account of the Materia Medica in 1887."

**The late Dr. Wesley M. Carpenter.**—At a meeting of the New York Pathological Society held January 25, 1888, in ex-

ecutive session, the committee appointed to draw resolutions up upon the death of the late secretary, Dr. Wesley M. Carpenter, presented the following, which was unanimously approved of and accepted:

"*Whereas*, It has pleased an overruling Providence to remove suddenly our honored and almost peerless secretary, Dr. Wesley M. Carpenter, therefore be it

"*Resolved*, That this society has lost in him not only one of its most honored and gifted members, but a great and admirable medical scribe, whose long, conscientious, and skilled services in its behalf have been largely and gratefully appreciated, not only by the members, but by readers of its 'Transactions' everywhere.

"*Resolved*, That his faithfulness and rare excellence in the performance of his responsible duties have been, and ever shall be, examples worthy of emulation by his sorrowing survivors. He taught emphatically that the best incentives for good work are a high sense of honor and a pure love of science.

"*Resolved*, That in the death of Dr. Carpenter the members of this society have lost a personal director and friend whose watchful care, sound judgment, and facile pen were ever ready in their behalf, and whose strict fairness and unusual correctness in reporting and guiding the proceedings of this body were never questioned.

"*Resolved*, That, while working modestly, earnestly, and successfully for the best interests of this society, he was unconsciously, but surely, making for himself an enduring reputation as an accurate, accomplished, and classical medical man and writer. He not only spoke through and for others with a terseness and force which made his reports models of their kind, but often for himself with an originality and perspicuity which added greatly to the value of our records.

"*Resolved*, That we also tender to his household and kindred our sincere sympathy for the loss of one who was taken from them and from us in the fullest tide of his extended usefulness, and join sorrowfully, though scarcely yet resignedly, with them in forced submission to the inevitable decree which comes sooner or later to all of us, but which came seemingly too early to him."

[Signed] George F. Shrady, M. D., John C. Peters, M. D., John H. Hinton, M. D., } *Committee.*
Walter Mendelson, M. D., *Secretary.*

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 22 to January 28, 1888:*

Burton, H. G., Captain and Assistant Surgeon. Granted leave of absence for one year on surgeon's certificate of disability, to take effect when able to travel. S. O. 19, A. G. O., January 24, 1888.

Fisher, W. W. R., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, on surgeon's certificate of disability. S. O. 4, Department of California, January 20, 1888.

**Society Meetings for the Coming Week:**

Monday, *February 6th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *February 7th:* Medical Society of the State of New York (first day—Albany); Kings County, N. Y., Medical Association; New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Hampden, Mass., District Medical Society; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston).

Wednesday, *February 8th:* Medical Society of the State of New York (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Pittsfield, Mass., Medical Association (private); Franklin, Mass., District Medical Society (quarterly—Greenfield); Philadelphia County Medical Society (conversational).

Thursday, *February 9th:* Medical Society of the State of New York (third day); Society of Medical Jurisprudence and State Medicine; New York Laryngological Society; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *February 10th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *February 11th:* Obstetrical Society of Boston (private); St. Louis Medical Society.

OBITUARY NOTES.

**Francis H. Terrill, M. D.,** of San Francisco, died in that city on January 20th, at the age of thirty-four years. The deceased was a native of Virginia, and obtained his education in the University of Virginia. He served for a number of years in the medical corps of the navy. Four years ago he entered into practice in San Francisco, where he soon became exceedingly popular and successful. It is said that he did not believe in the necessity of revaccination, and it is painful to reflect that this disbelief led to his early death, for he died of smallpox.

**George A. Crosby, M. D.,** of Manchester, N. H., died on Tuesday, January 31st, at the age of fifty-six. He was graduated from Dartmouth Medical College in 1852, and in his early professional life he practiced in South America. During the civil war he served as a surgeon in the volunteer army. He was a member, and at one time president, of the New Hampshire State Medical Society.

# Proceedings of Societies.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of January 11, 1888.*

(*Continued from page 105.*)

**The Treatment of Nervous and Mental Disease by Systematized Active Exercises.**—Dr. Charles K. Mills read the following paper:

Exercises or movements for medical purposes—medical gymnastics, in other words—have been divided and subdivided to an absurd degree by Ling and his followers. Schreiber gives an example of a German term for what is called the quaternary combination of the standing position, which term contains forty-five letters and nine different words, although it is written in Ger-

man as a single word. The division, however, into such movements or exercises as passive, duplicated active, and active, is rational and useful. Passive movements are performed upon the patient or individual, his will not coming into play except in submitting. In duplicated active movements, both the operator and the individual treated take part, the first resisting while the second acts, or the reverse. Sometimes these movements are spoken of as semi-active and semi-passive; in the former, the physician or operator resists; in the latter, the subject resists. Movements of this class are of the greatest value in some forms of nervous or neuro-muscular disease, but it is not my purpose to discuss them, unless it be incidentally in this paper; nor do I intend, except perhaps in the same manner, to speak of massage.

It is of systematized active exercises that I shall more particularly speak. The expression single active movement indicates that the movement is performed by a single individual without direct assistance, although it may be done under the orders of a physician or master. Exercise of this kind may be performed either with or without apparatus, and even when the latter is used it need not necessarily be expensive. While massage and electricity have received a large share of attention from neurologists, they have neglected too much the use of medical gymnastics, particularly systematized active exercises. Masseurs and masseuses, good, bad, and indifferent, now abound in our large cities, but good instructors in physical culture as applied to medical purposes are not numerous.

"Gymnastics," "exercises," and "movements," by some medical writers are used as practically synonymous. Dr. George H. Taylor, however, maintains that we should carefully distinguish between gymnastics and movements, and between calisthenics and movements, and that evil has grown out of confounding these terms. It is probably better in a medical paper to speak with precision of "movements" or "exercises," designating the particular kind, but "medical gymnastics" covers the whole ground, and the word "gymastic," or "gymnastics," used in a general sense, may be properly employed in medicine.

I will not give much space to a discussion of literature, but will refer briefly to a few important publications, including those which I have chiefly consulted in the preparation of this paper. The attention of the profession of this country has been too little attracted to the publications and the practical work of the brothers Dr. George H. Taylor and Dr. Charles Fayette Taylor, of New York, who may be regarded as the pioneers in this country of the gymnastic treatment of disease. They deserve great credit for their efforts, not wholly appreciated. As early as 1861 a book was issued on "The Theory and Practice of the Movement Cure," by Charles Fayette Taylor, M. D., in which is discussed in an interesting and practical way the treatment by Swedish movements of curvatures, paralysis, indigestion, constipation, diseases of women, etc. In 1879 appeared a treatise entitled "An Exposition of the Swedish Movement Cure," etc., by George H. Taylor, A. M., M. D. Dr. Benjamin Lee, of Philadelphia, by his practical labors and his publications on massage and Swedish movements, has done much to advance the cause of mechano-therapy in America, and stands with the Taylors as a pioneer in this department.

Archibald Maclaren's "System of Physical Education, Theoretical and Practical," is an invaluable book, and while not intended for medical purposes should be studied by every physician interested in active exercises as a means of treatment. Blaikie says truly of Maclaren that he has done more than any one else now living to point out the benefits resulting from rational physical exercise, and how to attain these benefits. By his individual efforts and his publications, William Blaikie himself has also done a great work for the advancement of physical culture. His book, published by Harper & Bros. in 1883, and entitled "How to get Strong, and How to stay so," has enlisted the interest of thousands, and doubtless has lengthened or saved many a life. In 1886 appeared another little work by Blaikie, in the form of a school text-book, "Sound Bodies for our Boys and Girls." The exercises given in this book are clear and plain; they are arranged on a natural plan; they are safe, and but little apparatus is required for them—a few dumb-bells, a few wands or sticks, and a horizontal bar, are about all. I have found them to be admirably suited for my purpose in the treatment of some forms of nervous and mental disease.

In the "Therapeutic Gazette" for June and July, 1887, appeared two lectures by Professor Dujardin-Beaumetz, of Paris, in the first of which he considers the physiological effects obtained from exercise and movements; and in the second, after setting forth the methods of medical gymnastics, he discusses the diseases and condition in which they are useful.

"A Manual of Treatment by Massage and Methodical Muscle Exercise," by Joseph Schreiber, M. D., of Austria, translated, with the author's permission, by Walter Mendelson, M. D., of New York, has appeared within a few months. This book treats the subject of mechano-therapy from various points of view; and in it are found explicit directions in regard to the technique of massage and its effects, and also a discussion of active movements with and without apparatus. The treatment of many nervous diseases is discussed. The book is a valuable practical treatise, and its publication will do much to advance mechano-therapy in this country; but one of my chief reasons for referring to it is because it contains an extensive chronological bibliography, which can be consulted by those interested.

I am engaged in the preparation of a book on the "Gymnastic Treatment of Nervous and Mental Diseases," in which will be considered both general and local methods of exercise, and the combination of such methods with other forms of treatment, as, for instance, with massage, electricity, hydrotherapy, and medicines.

One of my chief purposes this evening is to call attention to general systematized active exercise. I shall also speak of a few special or local exercises designed for particular organs or parts. In a large number of nervous or mental cases the improvement of the general nutrition is the one thing needed to bring about relief or cure, and one of the most effective aids to this end is general, systematized active exercise. The methods chiefly adopted by me are (1) the exercises of Blaikie, with or without dumb-bells, and with the horizontal and parallel bars or substitutes for them; and (2) exercises with pulley-weight apparatus. I need only refer you to Mr. Blaikie's* best-known book for a description of some of the simplest forms of apparatus; to the uses which can be made of the jambs of a door and a couple of pitchfork handles, and for the sketch of a pair of pulley-weights of excellent pattern designed by Dr. Sargent. A. J. Reach & Co., of Philadelphia, the well-known dealers in sporting and gymnastic goods, have constructed a form of pulley-weight apparatus which is very complete, compact, and convenient. "The Home Exerciser" of C. L. Dowd, of New York, is also convenient and useful, and has been strongly indorsed by Mr. Blaikie for its compactness, strength, lightness, etc. The apparatuses of Reach and Dowd consist of an arrangement of ropes, pulleys, and weights, ingeniously put together so as to occupy but little room, and yet to allow the performance of many movements. "The Home Gymnasium" of John E. Ruebsam, of Washington, is well adapted for the office of a physician, or for hospitals and colleges. For a long time I have had this

* "How to get Strong," etc.

apparatus in use. It occupies more room than that of Reach or that of Dowd, but, on the other hand, it is in some respects more complete, having, for instance, combined with it a lounge for massage purposes, and a strong horizontal bar. An apparatus of this kind, or one similar, should be in every hospital which has not a complete gymnasium.

Elastic straps are sometimes used for gymnastic purposes. According to Dujardin-Beaumetz, Pichery was the originator of this system, which he has styled "opposition gymnastics." Elastic cords with handles attached are firmly fastened in convenient places. By making tractions in different directions they will bring out almost any muscular action. They can be adapted for the leg or foot movements as well as to the upper extremities. Some objections, however, apply to them which are not applicable to the pulley-weight apparatus, or to the use of dumb-bells, bar-bells, etc. The force used can not be thoroughly controlled and regulated. Blaikie,* in describing and criticising one of the forms of parlor rowing apparatus, has pointed out their defects and shortcomings better than can be done by myself. In spite of their defects, however, he considers them excellent contrivances if used intelligently.

Movement apparatus run by steam has been largely resorted to in some countries, particularly in Sweden, where the method was invented and introduced by Zander. In this country it has been used in a few institutions, as at the Surgical Institute, formerly located at Broad and Arch Streets, in Philadelphia, where I have observed its workings. The system has a field of usefulness; it has also certain disadvantages, and needs the most careful supervision, but under the strictest supervision it may be used with great benefit. To some extent semi-active and semi-passive or duplicated active movements may be carried out by this machinery, and it can be made to cover the whole range of passive exercises.

The same cautions and contra-indications are to be borne in mind in using the exercises either with or without apparatus; probably the dangers of overdoing are to some extent greater with than without apparatus. In the prolonged treatment of patients some advantages accrue from the use, conjointly or alternately, of exercises with and without apparatus. The interest of variety is added, and the opportunities for the adaptation of movements to special cases and conditions are more numerous. Most of the firms that sell pulley-weight apparatus send with them printed instructions and illustrations; but I must enter a word of caution against the employment of such apparatus by invalids without special medical supervision. Much harm has come to individuals, as well as to the subject of medical gymnastics, by the use of exercises without specific directions.

To a considerable extent I have personally directed the exercise-treatment of my patients in private practice and in the nervous wards and the insane department of the Philadelphia Hospital. Dr. A. H. P. Leuf, instructor in physical culture in the University of Pennsylvania, and Dr. O. H. Beckman and Dr. Mary Willits, assistants in the department of the mind and nervous system in the Philadelphia Polyclinic, have, under my instructions, successfully treated patients for me.

Mr. Clinton A. Dodge, of Philadelphia, is an able and experienced instructor and expert in gymnastics. During the present year he has treated for me, with marked success in most cases, patients suffering from neurasthenia, hysteria, habit chorea, neuritis, lateral spinal curvature, melancholia, etc. Mr. Dodge has also had under his charge the patients of other physicians, and, by their permission, he has given me some of the results of his work.

The director of these exercises should be thoroughly well fitted for his work. He should not only understand the work, but he should combine discretion with enthusiasm in pursuing it. If he is not a physician, or if he is a physician without special experience in such work, the treatment should be carefully supervised by some one more competent. The treatment should be carefully individualized. The instructor or director should not undertake too much in one day; and he will soon tire and do badly with his patients if he can not become interested.

Usually I combine respiratory exercises with the muscular movements. "On the two powers, muscular and respiratory," says Maclaren, "depends the ability to perform all bodily exercises." Inherent nervous force has also something to do with the capacity to perform bodily exercise. Of course, in any method of gymnastics respiration must to some extent be exercised. Breathing becomes accelerated and even painful under continuous active exercise. In speaking of respiratory gymnastics in this connection, however, I refer to special efforts of breathing—by taking deep, full breaths through the nose and mouth; by forced expiration as well as inspiration; by counting with a loud voice while holding the breath, etc. It is not my purpose to refer in this paper to the use of pneumatic chambers or other forms of pneumatic apparatus.

It is interesting to recall that the most ancient of books in which gymnastics is discussed, the Chinese treatise "Cong-Fou, the Art of Man," speaks particularly of the importance of respiratory gymnastics. Dally and others in the present century have maintained that respiration is the pivot of every gymnastic exercise, and systems of respiratory gymnastics have been invented (Dujardin-Beaumetz).

Want of respiratory power is certainly either at the root, or is an essential constituent, of many morbid nervous conditions. It is remarkable how much individuals differ with reference to their respiratory power, even when of apparently the same muscular ability. The development of the lungs, chest walls, diaphragm, abdominal walls, and other parts; the greater aeration of the blood which is conveyed to weak spinal or encephalic centers; and the greater control which the patients obtain over all nervous and muscular effort through these respiratory exercises, make them of decided value in cases in which active movements are applicable. On the other hand, it is quite possible that some harm may result from the incautious use of forced respiration. Carried on too long, both as far as giving lessons is concerned and as far as the weeks and months during which the exercises are continued, it is even conceivable that the air-cells may be unduly strained. Great care should be taken with those who are very weak generally or in a particular part, especially in the lungs or abdominal region.

The treatment should begin with the simplest forms of exercise, and these should be constantly increased and elaborated as the patients gain in skill and strength. It is wonderful how little some patients can do in this direction. A grasshopper in gymnastics is a burden to them. Five minutes or even less is sometimes all the time that can be safely taken at first, and five minutes of actual exercise must sometimes be distributed over half an hour. In most cases the time should never be allowed to exceed twenty to thirty minutes. Often it is important to give resting spells during the process of treatment. Some patients, ambitious to excel or fearing to appear weak, will certainly overdo. Individual peculiarities should be carefully studied. In the majority of cases of nervous and mental diseases in which systematized active exercises are indicated, the danger will be greater of overdoing than of doing too little.

It is an important practical matter to have the air of the room in which the exercises are performed as pure as possible.

* *Op. cit.*, p. 101.

The room should be well ventilated. It is not necessary, particularly in the case of the nervous and weak, that the room should be without fire—indeed, it is sometimes better that there should be some warmth—but fresh air should be admitted to the room. Carrying out strictly hygiene in various directions will very much assist in getting good results with the exercises. When possible, it is well for the patient soon after finishing the exercises to take a sponge-bath, with tepid or cold water, according to individual vigor. Good food, regulated exercise in the open air, and plenty of sleep are, of course, important.

To illustrate clearly what is meant by simple respiratory exercises in connection with systematized muscular movements, I will quote for you from Blaikie's smaller work two of his very plain directions. I will also quote from the lectures of Dujardin-Beaumetz one of Dally's movements:

"*Directions.*—1. Stand four feet apart in the aisles, with arms folded behind you, and with one foot about eight inches in front of the other. 2. Now draw the head back and tip it as far down behind as you can. 3. Hold the chin up high. 4. Rest there a moment, then stand up straight again. 5. Repeat this exercise six times. *Caution.*—Breathe deep, full breaths all the time; indeed, always, when exercising, breathe slowly, and as large breaths as you can."

. . . . . .

"1. Take a dumb-bell in your right hand and hold it up high over your head. 2. Stand with the chin up high all the time. 3. Breathe a full, deep, slow breath. 4. Now slowly lower the dumb-bell, not down to your right shoulder, but across, above your head, and down over your left shoulder, as low as you can, till it touches your shoulder, letting your body tip over to the left. 5. Hold it there till you slowly count ten. 6. Now bring it back overhead again. Then do the same with the dumb-bell in your left hand. 7. Do this five times with each hand. Repeat this five times each day the first week, and twelve times daily after that right along."

One of Dally's respiratory exercises is as follows: He places the patient in a vertical attitude with the back against a wall; then, both arms being extended horizontally in front, the patient forcibly and slowly separates the fingers while he bends the thorax forward; he remains in this position thirty seconds, makes a deep nasal inspiration, and resumes the initial position; then makes a deep expiration, and repeats this exercise six times in succession.

Dujardin-Beaumetz, in reference to these exercises of Dally's, remarks that another and simpler exercise will render much service in developing respiratory capacity—viz.: To make the patient count with a loud voice as long as he can without losing breath. Before commencing to count he should make a deep nasal inspiration.

Among the diseases of the nervous system referred to by Dujardin-Beaumetz as calling for gymnastic treatment are muscular atrophies, deformities, chorea, and hysteria; and the conditions of ataxic, nervous, and neurasthenic persons, and the victims of mental overwork and sedentary life, and idiocy. He also discusses the uric-acid diathesis, gout, and diabetes, for which the neurologist is often consulted.

This paper is not founded simply upon theoretical considerations and a study of literature. For several years I have to some extent used systematized active exercises, either with or without apparatus, and during a year past I have had a considerable number of patients on this treatment. My objects, in addition to recording experience, are to call general attention to a too much neglected method of treatment, and to make certain practical suggestions which naturally grow out of a study of the subject. It will be impossible to give details of cases without dragging the paper to a wearisome length. When preparing this paper I was able to put my hands on forty-two such cases, not including those under treatment at the Philadelphia Hospital. Of these cases, twenty-five were treated by the general active exercises, some with and some without pulley-weight apparatus; the nineteen others by some local method for a special purpose. The cases treated by the general exercises included cases of idiocy, insanity, asthma, minor chorea, habit chorea, hysteria, general nervousness, neurasthenia, nervous palpitations, lithæmia, cerebral syphilis, diabetes, curvatures, ataxias, and paralyses; those treated by special more or less local methods included cases of hemiplegia or monoplegia, infantile paralysis, lead paralysis, rheumatic neuritis, muscular atrophy, aphonia, and writer's or telegrapher's disease.

For the feeble-minded, for the insane, and even for criminals, systematized active exercises can be used with great advantage. Those in charge of institutions for the idiotic and feeble-minded in France have in particular given much attention to gymnastics. It is only necessary to recall such names as Esquirol, Bourneville, and Pichery. At the Pennsylvania Training School for the Feeble-minded, at Elwyn, in charge of Dr. I. N. Kerlin, I have frequently, and with great interest and pleasure, witnessed the performances of the gymnastic classes. As many as eight separate classes are instructed at one time by as many teachers, and at intervals general exhibitions are given. The classes are graded from those pupils who can only perform the simplest movements up to those capable of elaborate and somewhat difficult exercises. At Barre, Mass., a gymnasium has been erected, and the children are thoroughly drilled and taught. The same is true of some other institutions for the idiotic and feeble-minded in this country. Much could be said, if time permitted, about the beneficial effects of regulated physical culture in idiocy. For the improvement of the general nutrition of a class of unfortunates usually deficient in this respect, as well as for their training and development, both mental and physical, systemic exercises are of the utmost value. In some of the grades of idiocy attention should be paid to individualizing the treatment by exercise. To a certain extent gymnastics can be used for diagnostic and prognostic purposes in idiocy, observation of those attempting systematized exercises determining the possibilities as to general improvement.

So far as I know, very little has been done with systematized movements in hospitals and asylums for the insane, although I believe insanity affords a great field for such treatment. In the first place, such exercises will do much toward improving the frequently deteriorated physical condition of the insane; secondly, they afford a method of calling out and improving the impaired mental faculties; and, thirdly, they constitute another valuable means of supplying to the insane that which all alienists now agree is most important for them—occupation.

"One of the great improvements that have taken place in modern asylum management," says Clouston,* "has been that rational physiological outlets are provided for the morbid muscular energy in cases of chronic mania. They are neither confined in their rooms nor within 'airing courts,' inclosed by high walls. They are made to wheel barrows and dig on farms. They are encouraged to dance, and are well fed. Most of them eat enormously, and if they have not enough to eat they fall off, get worse in their mental state, and in their habits. Many of them can be got to expend their energy in hard, regulated work, and are the very best workers on the farms and in the laundries of the asylums. They are not all, of course, furiously maniacal. Some of them simply have a slight morbid excess and exaltation of the brain convolutions, shown by restlessness, want of affection, want of self-control, but are not incoherent.

* "Clinical Lectures on Mental Diseases," p. 158.

If they are kept at work, the most objectionable and repulsive parts of the older asylum life are avoided in a great measure, and the refractory wards, with their noise and danger, are not needed. The scenes with patients, attendants holding them down, and removing them into the seclusion of their own rooms, are few. No doubt there are risks run in the present system to patients and guardians, but I believe the risks are much less in reality than under the old system, for the patients are not so irritable, not so revengeful, and not so dangerous, generally."

By means of systematized exercises the insane can be provided with an additional "rational physiological outlet" for their morbid muscular energy on the one hand, and, on the other, with a rational physiological method of calling them out of their muscular and general torpor.

A few weeks since, in the Insane Department of the Philadelphia Hospital, I started a class in systematized active exercises, selecting eight women suffering from melancholia, and putting in with them to give zest to the treatment two other patients not mentally depressed. Sufficient time has not yet elapsed to determine how much in a curative way can be accomplished by such treatment, but already the experiment has proved to me an instructive one. I found that even these patients, plunged into the profoundest depression, could, by sufficient persistence, be aroused to the performance of some movements; others did moderately well; some very well. The difficulty of fixing the attention of these patients, and yet the possibility of doing it by sufficient effort, has been clearly shown. The class has made much improvement in facility and rapidity. Small classes should be formed in large insane asylums, and the treatment given a thorough trial.

An instructive case of mental disease, greatly benefited by systematized active exercises, is that of a young man who at the age of twenty-one broke down mentally, as the result of too great output of mental energy and physical exertion in business. He became depressed, and soon developed delusions of suspicion, believing that people were watching and following him. In a few weeks, under rest, the depression disappeared; he again attempted business, but became excited, and then developed ambitious delusions. He was admitted to an asylum for the insane, and in three months came out, apparently well. In brief, his subsequent history for eight years was that every year, late in the spring or early in the summer, he had a period of excitement followed by one of depression, each lasting about three months. About three years ago he began the use of systematized active exercises, after the method of Blaikie and others. He has since persevered with them, at the same time paying attention to diet, sleep, and general hygiene. On a few occasions he has had touches of elation, lasting only a day or two, but he has been able, owing to his increased physical and mental strength, to resist with success the beginnings of such attacks, and he has been entirely without the regular periods of depression and elevation for nearly three years.

An experiment made at the New York State Reformatory, at Elmira, has been frequently referred to of late by the medical and general press. An experimental class in physical culture was formed of twelve men, who for a period ranging from one to two years had made no appreciable progress in their school work, and who seemed incapable of prolonged mental effort, yet could not, strictly speaking, be considered mentally unsound, or representatives of a class known as feeble-minded; with the object of ascertaining, if possible, if physical culture, as comprised in frequent baths, massage, and daily calisthenics under the care of a competent instructor, would not result at least in the partial awakening and stimulation of dormant mental power. Increased mental activity rather than muscular development was to be the gauge of success or failure of the experiment.

Dr. H. D. Wey,* physician to the Reformatory, in reporting upon the results of the experiment, says that to those who were thrown in daily contact with the men, a mental awakening was apparent. They became interested in their studies, and strove to appear to the best advantage in the school-room. Their advancement in their studies was not steadily onward, but rather intermittently progressive. It will be interesting to note in the future, as Dr. Wey remarks, whether the good results are permanent; but whether they are or not, the step is one in the right direction, and is to be commended to penologists everywhere.

Systematized active exercises serve a good purpose in some of the various disorders designated as asthma. One patient whose case was of this kind, a young lady, despondent, weak, dyspeptic, hysterical, with a feeble heart, and subject to attacks of asthmatic breathing, improved with great strides in a few weeks under general active exercises. She began treatment with half-pound dumb-bells, and at first could only stand five minutes' work. The exercises were increased until half an hour was reached and dumb-bells weighing four pounds were used.

In the treatment of chorea, or rather choreas, systematized active exercises are valuable. Special forms of gymnastics have been employed for this affection to some extent, particularly in France and Germany. Napoleon Laisné,† a French professor of gymnastics, and evidently an earnest and enthusiastic worker in his chosen field, under the directions of Dr. Blache and other physicians of Paris, has used gymnastics largely both for chorea and for other convulsive disorders. In 1865 he published a book in which his methods are set forth. Both Schreiber and Dujardin-Beaumetz refer to his labors and successes. His method in mild cases, as described by Schreiber, is to place the child before him, steadying it between his knees, and then take its hands in his, and perform rhythmic movements with each arm, keeping time by counting, or, better still, singing, out loudly—"one," "two," "three," etc. The child at the same time is also urged to try and keep time with the movements, and not to make them irregularly.

"Care must be taken in the beginning to prevent, as much as possible, the coincidence of involuntary movements with the rhythmic ones. When the arms have been exercised, similar movements are undertaken with the legs. From time to time a pause for rest is made, during which the limb must be held firmly enough to prevent the occurrence of involuntary motions. The child is then laid on its back upon an inclined ladder, the feet being held by an assistant; then grasping a rung above its head, it holds on in that position as long as it is able. This is to be repeated several times, and to be followed by a short rest. Afterward, the shoulders, back, and legs are rubbed and gently kneaded."

Lengthy details of treatment will be found in Schreiber's "Manual."

Two cases of minor chorea improved under medicinal treatment up to a certain point, and then would advance no further. General exercises with light dumb-bells were ordered, and in both cases the progress to complete recovery was rapid.

In the treatment of habit chorea, these exercises have a peculiar value. This, whether in children or adults, is an annoying and distressing disorder, and commonly intractable. By habit chorea is meant an abnormal movement or series of movements, voluntary or partially involuntary, repeated at frequent

* "Annual Report of the New York State Reformatory, at Elmira, for the Year ending September 30, 1886."

† "Applications de la gymnastique à la guérison de quelques maladies," Paris, 1865.

intervals. Mitchell * records two interesting cases, and recommends for treatment careful and good diet, light gymnastics, no school, gentle aperients, and full doses of arsenic, particularly the hypodermic injection of arsenic in the form of Fowler's solution. I refer to this treatment, as he includes light gymnastics among the measures recommended. Among my nervous patients I have had a goodly number with habit chorea. Nearly thirteen years ago I reported the case of a girl, fifteen years old, who had peculiar movements of her right ear, after a time associated with twitchings of her nostrils and upper lip and the limbs of the right side. Another patient, under excitement, made a movement of extension and semi-rotation with one arm, sometimes accompanying it with twitching of the facial muscles. Facial grimaces constitute, as is well known, one of the most common forms of habit chorea. I have now under my charge a case of habit chorea which is being treated successfully by systematized active exercises. The patient, a young lady, eighteen years old, began to be troubled with spasmodic movements nine years ago. These lasted at first from one to two years, then disappeared for a year to return again, and have since gone and come several times. For the last two years, however, she has been troubled almost continuously with the movements, and has tried various modes of treatment, chiefly medicinal, but without any decided benefit. The chorea consists of a sudden jerking of the head downward and to one side, which may be performed once or several times in succession. Either with or without this twitch or jerk, she frequently also has a snapping movement of both eyes. The chorea was not started by imitation, but it is much influenced by any cause of nervous excitement, such as fright.

Systematized gymnastics, either general or local, constitutes a rational treatment for cases of this kind, because by means of such exercises not only is the general nutrition of the patient improved, but the nerve-centers are given tone and strength, and good habits of movement are made to replace bad ones. Such eccentric and abnormal movements are the result of eccentric functioning by nerve-centers, or of irregularities in the conveyance of impulses through nerve-channels. By again and again causing normal impulses to be conveyed in a normal manner to muscles, in time the choreic habit will be overcome. Such treatment, however, needs to be persisted in for months.

The advantage of any treatment which involves specific direction and the adroit calling out of the volition of a patient must be evident to every one who has had experience with hysteria in its manifold forms. In hysterical paralysis much can be done by laying out a careful plan of treatment by exercises, and gradually leading up to their full performance. In referring subsequently to ataxias and palsies, functional and organic, methods to this end will be considered. For the improvement of nutrition, and of what may be termed the general nervous and mental tone of hysterical patients, systematized active exercises fill an important place. Properly used and controlled, they may also prove most beneficial in cases of general nervousness, and also for neurasthenia. Whatever view may be taken of the much-mooted question of neurasthenia, without doubt both respiratory and muscular power, either primary or secondary, are often deficient, and the nerve-centers themselves can be strengthened and improved by exercising these two powers. Care should be taken not to force individuals suffering in this way to excessive effort at first.

Great are the advantages which result from the sojourn by sea or mountain, from the cure of camp and ship; but the improvement of health obtained by such holiday treatment is often soon lost in whole or in part by the individual going back too completely to old habits of living and working. A resort to systematized active exercises for a few minutes daily will do much toward keeping the good that has been obtained.

"A man," says Maclaren, "can not, in a week or two, eat sufficient food to supply the demands of the appetite for a whole year, neither can he take sufficient exercise to keep his body in health throughout the four seasons in a summer's ramble. These mountain excursions or sea-side sojourns must be *in addition to*, and involving no curtailment of, the daily walk to and from business, the daily ride to and from somewhere, or the daily employment with or at something—a something which will in its doing quicken the pulse and augment the breathing, and, if possible, bring the perspiration to the forehead."

For those forms of nervous palpitation which are dependent upon a neurasthenic condition, associated or not with digestive disorder, systematized active exercises are of great value. The exercise should at first be light, but should be carefully and somewhat rapidly increased. Besides the indoor exercises, after the method of Blaikie, or with the pulley-weight apparatus, the patient should use deep breathing while walking out of doors. A case reported by Dr. Theodore Clemens,* of Frankfort-on-the-Main, is interesting in this connection. The patient was a man, forty-six years old, who applied for treatment on account of distress and irregularity of the heart. Clemens decided to make him do the thing he most dreaded—viz., climb up several flights of stairs. The effect was most happy. The patient's pulse, which had intermitted at every tenth or twelfth beat, wavered only twice, and but slightly, in a hundred beats after he had mounted three flights of stairs twice. He now decided to make similar efforts regularly every day, and in three months he was a well man.

For the group of diseases which fall to the lot of both the neurologist and the orthopædist—cases of curvature, deformity, atrophy, etc.—systematized active exercises have long been used by the best authorities. I can only refer in this general way to this branch of the subject in the present paper. My more particular object is to call attention to the value of systematized respiratory exercises in setting up or straightening the feeble and stooped, who also frequently are sufferers in some degree from nervous or mental weakness. If at the same time appropriate general hygiene is used, the improvement in such cases is sometimes simply wonderful. I have notes of a number of cases treated by Mr. Dodge and myself to bear witness to the truth of this statement, but time will not permit me to refer to these in detail. A gentleman whose son had been using systematized active exercises wrote to Mr. Dodge as follows:

"I have pleasure in assuring you that I think my son has wonderfully improved in health and appearance during the past month, while under your care. Even in two weeks we saw a marked change in him for the better—his stooping shoulders (made so by outgrowth of strength) straightening marvelously."

For gout and lithæmia, to promote excretion and nutrition; for anæmia and spanæmia, to assist assimilation and further oxidation; for headache, sleeplessness, and nervous irritability, to soothe and calm the nervous system; to aid elimination in cases of lead, arsenic, mercurial, and other metallic or toxic diseases; for diabetes, to favor the skin and increase combustion—systematized active exercises have a value which can not be too highly extolled, and one which I have had an opportunity to demonstrate in my own practice.

In curable ataxias, as in those which follow diphtheritic or exanthematous diseases, and in the hysterical varieties, systematized active movements, the patient at first lying down or sit-

* "Lecture on Diseases of the Nervous System, especially in Women," by S. Weir Mitchell, M. D. "Philadelphia Medical Times," March 28, 1875.

* "Medical and Surgical Reporter," October 22, 1887.

ting, and subsequently standing, have proved of great service in my hands.

In Dr. Mitchell's lectures,* some valuable advice and interesting details are given with reference to the best method of slowly training by what are really systematized active movements, although not so called by him. The weak and inapt muscles are cautiously brought into use. The patient is first convinced, after she has made an effort which seems extreme, that another forth-putting of will must add to the previous results. The nurse begins to train the patient while in bed, to move the legs one at a time very slowly, but in larger and larger movements, with intervals between of a minute or more.

"An order is given to lift the leg; if it be too weak, a finger beneath the ankle aids it, but no attempt must be let to fail utterly; as she gets on, the orders are to be obeyed more quickly. It is easy to sketch out for one's self what such a system should be in its details. After it has gone far enough the patient is seated in bed with some support to her spine, and is trained to move the head freely. The next step used with me to be a lesson in walking, but of late I find it better to teach the girl to creep, which is an easy and natural mode of training for the walk. The patient has pads tied over her knees, and, lying flat on her face on the floor, without skirts, has around her a folded sheet. At an order she tries to rise, helped by a lift of the sheet belt by the nurse. When she is able to do this, and gather her legs and arms so as to make herself a quadruped, she is taught to balance herself, every effort being assisted, when needing help, by the nurse standing above her. The progress to creeping is easy; then comes the lesson of kneeling and pushing a chair; and last, that of standing in a corner or by a chair."

In the treatment of ataxic affections, even sometimes when dependent upon organic disease of the cerebro-spinal axis, the use of what may be called balancing or acrobatic gymnastics is of some value. Dr. Mortimer Granville, in the "Practitioner" for 1881, and subsequently in his monograph on "Nerve Vibration and Excitation," discusses a method for the regeneration of the nerve elements by exercise on the basis of the law of development through function, holding that the ataxic subject is reduced to the position of a child just learning to stand or walk. His plan is to direct the patient to stand with his eyes closed in his bath, after pouring a small can of water down his spine, or applying a mustard poultice over the full length of the spine for ten minutes or a quarter of an hour, to persevere in an attempt to stand for, at first, a quarter of an hour, and, as his state improves, for half an hour every morning. He is to be furnished with a chair or rail at hand, to which he can cling in case of need, but is instructed to avoid using it except when in danger of falling. The exercise must be continued diligently for weeks before success can be obtained.

In patients suffering from multiple neuritis, or some curable forms of myelitis, advantage should be taken of the first signs of motor improvement to begin with active exercises, while the use of electricity and massage is continued. The particular point upon which I desire to insist is that the attempt to join the will of the patient to the long unused muscles shall not be deferred a moment longer than is necessary. Simple attention to this truth, which ought to be self-evident, would, I think, in many cases have saved patients from weeks or months of uselessness.

In the treatment of various forms of paralysis that systematized active movements may be employed with advantage has long been known. Even in paralysis from organic brain disease a clear method of using gymnastic treatment will be found to serve an excellent purpose. Such paralysis is usually the result of hæmorrhage, embolism, thrombosis, tumor, abscess, or depressed fracture; less frequently of meningitis or encephalitis, of atrophy or arrested development, and still more rarely of uræmia. Sometimes in cases of sudden lesion, such as hæmorrhage or embolism, the assault upon the nervous system is so violent, or the destruction is so great, that death results quickly, or the patient is reduced to a state of utter helplessness, for which, practically, nothing can be done. In many cases, however, soon after the attack, or even at a later period, the amount of palsy is disproportionate to the cerebral lesion by which it has been initiated. Many cases of monoplegia and hemiplegia illustrate this truth. Little by little some of these patients regain muscular power to such an extent as almost to induce the belief that they will get entirely well; indeed, in some cases of hæmorrhage, tumor, traumatism, syphilitic meningitis, and uræmia, complete or almost complete recovery does occur. We should, therefore, not disregard entirely the treatment of such patients.

The course of treatment usually pursued in these cases in the main wise is, at first, to do little more than protect the patient from disturbing influences; and after the shock of the attack, and the acute inflammation which sometimes accompanies or follows it, have subsided—that is, in a few weeks or months—to give absorbents and alteratives, and to apply electricity and possibly massage, allowing the patient to use the affected limb as he sees fit. More than this, however, should be done; and it is just here that single active exercises, after some thorough system, may play a useful part. Every effort consistent with safety should be made to unite again the paralyzed limb with the volitional centers. Such patients often need to be incited to effort.

Two methods of systematized active exercises may be tried for these hemiplegias and monoplegias. One is the method partly of duplicated active, and partly of single active movements, used and described by some of the writers on Swedish movements, as, for instance, by the Taylors. The patient is placed in a recumbent or half-reclining posture, so that he may be able to direct all the cerebral energy at his command toward the paralyzed member, and is then urged to make some simple movement. If he succeeds to ever so slight a degree, he should simply be encouraged to repeat the movement, but he should be carefully guarded against undue or too prolonged effort. Other simple movements are added from time to time. If he can do absolutely nothing, the operator should perform on the patient the desired movement, while the latter fixes his attention upon the performance and tries to assist. When a little headway has been made systematized active movements should be used in conjunction with electricity, massage, and duplicated active movements in an orderly and thoroughly regulated manner. With light dumb-bells and with the pulley-weight apparatus all possible movements, and particularly those which are most wanting, should be cautiously encouraged. From a cautious pursuance of such methods I have seen a surprising result in a number of cases supposed to have reached the limit of improvement. Such treatment does good, not only because the original lesion may have been partially removed, but also because by such efforts portions of the brain adjoining the centers destroyed may be made to take on new function; or possibly in some instances the other hemisphere of the brain may be called into new activity. To central spinal palsies, as well as to paralysis from brain disease, in a large measure the same truths apply.

Another method of gymnastic treatment which I have often employed with benefit in cases of monoplegia and hemiplegia is to cause the patient, first, to make a movement upon the unaffected side, and then instantly to perform the same movement

* *Op. cit.*

with the paralyzed member, following this quickly with an attempt to do the same thing with both limbs. It is surprising the curious results that will be sometimes obtained in this way, if the leg is but little affected and the patient can stand while these movements are performed by the upper extremities. To exercise the legs the patient, of course, should be placed in an easy position, and one that will allow the movements to be performed with the greatest convenience. Exercises of this kind probably have some effect in bringing the paralyzed side of the body under control of the uninjured side of the brain through commissural channels in the spinal cord.

For some of the arthritic neuroses and for rheumatic neuritis, or muscular rheumatism, these exercises are of undoubted value. I have seen three cases of a form of rheumatic neuritis affecting the deltoid and adjoining muscles in which the progress to complete recovery was much assisted by an early resort to dumb-bell exercises and pulley-weights. Cases of this kind are best treated by using large doses of oil of gaultheria, or sodium salicylate, with hypodermic injections of morphine in the most acute stage, a little later resorting to massage, electricity, or both, and then to exercises with light dumb-bells or pulley-weights. Here, again, the point I wish to impress is that such active exercises should not be deferred too long.

Hysterical aphonia or apsythria (loss of the power of whispering) can sometimes be treated successfully by a species of respiratory gymnastics, or a combination of respiratory with vocal and muscular gymnastics. Dr. Mitchell has described a method of bringing back the voice which is really a form of respiratory gymnastics, a method which I have used several times with success, and less frequently with failure. Speaking of a young woman who had good power over the laryngeal muscles, but could neither speak nor whisper, he concluded that if he could teach her to speak only with a very full chest, he might secure an involuntary success. Asking her to fill her lungs several times, and when very full to keep her mouth wide open, he then had her try to sound the broad A, at the same time breathing out violently. She made a clear, audible sound, and was at once on the high road to cure. Some years ago, with this simple method, I obtained a brilliant success with a young lady who had not spoken even in a whisper for many months. I now combine light dumb-bell and pulley-weight chest exercises with this method.

In certain cases the treatment by rest, seclusion, etc., can be successfully combined with that by systematized exercises. After the nervous or broken-down patients suitable for the treatment have progressed to a certain point, after their nutrition has been placed upon a firm basis, respiratory exercises without apparatus, or with very light dumb-bells, can be carefully begun. Five minutes, or perhaps only three minutes, should be taken at first, and the time should be increased with the utmost caution. In a recent neurasthenic case with hystero-epileptic seizures, after the patient had improved under the rest treatment, systematized active exercises were resorted to with the greatest benefit. In those cases of hystero-epilepsy in which the seizures are partially voluntary, or of the induced voluntary kind, the use of such exercises assists the patient in obtaining the control of herself and her movements which enables her to resist the beginning of the attacks.

Dr. C. F. Taylor, in the book to which I have already referred, has hit the secret of the combination of rest and exercise in certain cases.

"The true remedy," he says, "is rest and exercise. Let the rest be complete relaxation of all muscular effort—not the entertaining of company, sitting bolt upright, so that the spinal muscles must be constantly acting, or reclining in a 'graceful' attitude on a lounge, with book in hand, but a completely sustained position, when all the muscles must cease to act. Then the exercises to follow should be short, varied, and taken with some vigor."

The now generally accepted views with reference to cerebral localization throw some light upon the manner in which systematized active exercises, or other forms of gymnastic treatment, improve or repair the nervous system, and especially the brain. This fact has not been overlooked by the authorities in neurology and gymnastics, as by Emil Du Bois-Reymond, Schreiber, Crichton Browne, and others. In the brain are represented both a differentiation and an integration or solidarity of function. Centers for speech, for vocalization, for particular movements, for the special senses, for the muscular sense, for organic sensations, for some of the higher faculties, as of attention and inhibition, are now, with reason, alleged to have been isolated. For the localization of some of these—as that of speech, the motor, and some of the sensory centers—the facts and arguments are practically incontrovertible. In the plainest of terms, if brain centers which determine certain movements exist, the performance of these movements must develop and train not only the muscles concerned in these actions, but the cerebral centers with which they are connected.

Dr. Howard A. Kelly said that, some six years ago, while living in Colorado, a friend and himself followed the directions contained in Blaikie's book very carefully. His friend was consumptive, and had since died. In spite of the condition of his chest he was able in one month to add a full inch to his chest-capacity. The speaker was practicing at the same time, and succeeded in adding three fourths of an inch to his own. This gain was distinctly in chest-capacity, and due to increased development of the muscles. He thought that Blaikie's great merit lay in the extreme simplicity of the exercises directed, many of which consisted of simple rhythmical movements of the body. Among his most elaborate apparatus for room exercise was a single bar placed between the jambs of the door. It should be borne in mind that gymnastic exercises were but the substitute in city life for what people got naturally in the country. A most important point was one to which Dr. Mills had referred, that these exercises should be carried out in a medium of fresh air, and not in the superheated air of a furnace-heated house. When the speaker was in Rostock with Professor Schatz he had had some interesting discussions with him upon the subject of intra-abdominal pressure, and he suggested a series of questions. One was, "In which case is the intra-abdominal pressure the greatest, when the person is lifting a bucket of water with one hand, or when lifting two buckets with both hands?" The speaker said that it was greatest when he was lifting one bucket with one hand, for then he made a column of the abdominal muscles on the opposite side, and necessarily increased both the intra-abdominal and intra-thoracic pressure, while in the second case the strain came upon the muscles of the back, and pressure was not increased. The key-note to the application of this subject to nervous diseases must be this, that deficient innervation was due to deficiency and irregularity in the circulation, and improvement of the circulation was what was accomplished by gymnastic exercises.

The President (Dr. J. Solis-Cohen) said he had long been interested in movement cures, and could recall an interesting case which was under his care in 1860, while he was a resident at Blockley Hospital. A poor wood-sawyer had lost the use of his lower extremities as the result of exposure to cold. Not many months previously Dr. Fayette Taylor, of New York, had explained his methods of resistance movements to the speaker, and he determined to try them on the right leg of this man; so once or twice a day he caused the man to try to move his leg against resistance, and moved it himself against his attempts at

resistance. Some weeks later, when he was showing one of the attending physicians the improvement which had been produced in the right leg, the patient suddenly said: "Doctor, that is your leg, now look at mine," and, throwing off the cover, he kicked his left leg vigorously. Finding the benefit to the right leg so great, he had quietly practiced on the left leg on his own account, and had done much better with it.

Dr. Benjamin Lee said it was now about ten years since the reader of the paper had published a lecture in which the views expressed this evening were somewhat tentatively expressed. It was gratifying that after this lapse of time he could substantiate what he had then held in a partially theoretical way. The treatment of nervous affections by gymnastic exercises naturally divided itself into two branches—the treatment of functional and that of organic disease. In regard to functional troubles, the speaker had always felt that the nerves on the whole were the best-behaved parts of our economy; that all they wanted was good feeding. When a nerve misbehaved it was because it wanted nourishment. Not that the patient might not be putting enough food into his stomach. He might be gorging himself, and yet the nerves not receive a supply of nourishment of the proper quality and adequate to the demands made upon them. In the muscular system we possessed the great lever to act upon nutrition, and, if we made use of the muscular system intelligently, we could in the majority of instances supply to the nerves their needed nourishment, and in that way overcome the functional nervous disease. His own experience with the use of active exercises alone in the treatment of such cases had been limited. He had always combined with it massage and duplicated movements—that is to say, those in which the operator either made a movement which the patient resisted, or resisted a movement which the patient attempted to make. The form of exercise in which the operator made a movement which the patient resisted gave us one of the most powerful means of acting upon nutrition. It was what we termed a duplicated eccentric movement, or, if the term might be allowed, an eccentric contraction. By a concentric contraction of the muscle we understood that which every muscle made in an ordinary movement, in which, the muscle cell contracting in the direction of the axis of the muscle, the latter was in consequence shortened. By eccentric contraction we understood an effort at contraction on the part of the muscle in which the operator used a greater force than the patient, and the muscle was really elongated instead of being shortened. In this way the nervous energy of the patient was directed most energetically to the muscle, and yet at the same time, as it was elongated, we were inviting into it an increased supply of blood. The author had referred to the danger of these exercises being carried to excess. This was particularly likely to happen where the exercises were carried on in classes. It was essential in carrying out this treatment in nervous cases that each case should be treated singly on its merits. When we came to the treatment of organic nervous affections his experience had been that, in the early stage of the disease at least, very little should be done in the way of active exercise. We should rely upon massage and passive exercise. Afterward active exercise should be given in the way of carefully regulated duplicated movements. Another important point was with reference to the early use of exercise in all forms of paralysis, and especially in infantile paralysis. He believed that there were hundreds of crippled children and crippled adults going about who, if their cases had been undertaken in the way described by the author, as soon as the slightest trace of muscular power could be observed, would now be able to walk and have the use of their limbs.

Dr. S. Solis-Cohen said that Dr. Mills had referred to the use of exercise in the treatment of criminals. He presumed that he meant more especially the criminal insane. It might, therefore, not be irrelevant to quote the views of Dr. B. W. Richardson in reference to the prophylaxis of criminal insanity, or, if these were too strong words, the rectification of the inherited moral obliquity which, conjoined with ignorance and misery, led to law-breaking, by teaching those predisposed to a life of crime to use their muscular and nervous energies in useful pursuits. He would make the prospective forger an engraver, the prospective burglar a blacksmith or a locksmith, and so on. The arguments advanced by Dr. Richardson could be found in a recent number of the "Asclepiad," and were worth reading. Dr. Richardson called attention to the high importance of this subject by illustrations from the reformatory schools. He stated that children who were unruly and could not be kept in order had been rendered docile and obedient by having their nervous energies liberated in regular gymnastic exercises at such periods as experience had shown that disorder was most likely to occur.

## Book Notices.

*Lectures on the Diagnosis of Diseases of the Brain*, delivered at University College Hospital. By W. R. Gowers, M. D., F. R. S., Professor of Clinical Medicine in University College, etc. Second Edition. Philadelphia: P. Blakiston, Son, & Co., 1887. Pp. vii–254. [Price, $2.]

Most students of neuro-pathology are probably familiar with the first edition of Dr. Gowers's little book. In this, the second edition of his lectures, additions of quite an extensive character have been made, so that the value of the work as a whole has been considerably enhanced. The chapters on the "Medical Anatomy of the Brain," the "Cerebral Circulation," and the "Mechanism of Brain-Symptoms," are exceedingly well written. We would also commend the lectures on the cranial nerves and those on the affections of sight, and particularly the paragraphs on hemiopia, which will be found at once interesting and instructive. The author has a way of throwing the principles of his subject into bold relief, of dividing the wheat from the chaff, so that a subject which is regarded with more or less apathy by the average practitioner is made attractive. Finally, there is no parade of cabalistic anatomy, that spectre which has cooled the ardor of so many practitioners when thrown in contact with neurological literature. The book can not fail to prove of benefit to students of neuro-diagnosis and physiology.

*Health Lessons.* A Primary Book. By Jerome Walker, M. D., Lecturer on Hygiene at the Long Island College Hospital, and on Physiology and Hygiene at the Brooklyn Central Grammar-School, etc. New York: D. Appleton & Co., 1887. Pp. 4–7 to 194.

To write a useful book of science for small children is a most difficult task, and Dr. Walker has done wisely in confining himself mainly to hygiene, introducing barely enough anatomy and physiology to explain his instructions. The desire to illustrate his meaning vividly has, in a few places, led him to use expressions of doubtful appropriateness, such as may perhaps convey a wrong impression to a child's mind; for example, he speaks of "machinery" in our heads and bodies, of the "food-pipe," and of "boat-like cells" in the blood. On page 57 it is rather awkwardly stated that the saliva is squeezed out of the salivary

glands by chewing; this is likely to be misapprehended. A child might easily be confused by reading on page 83 that the capillaries are too small to be seen without a powerful microscope, and on page 85 that a few of them are shown in the colored picture representing the circulation of the entire body. The wisdom of an unqualified recommendation of newspapers for lining clothes (p. 97) may be doubted, for they only retain warmth, as a rubber garment does, because they are impervious to air. On page 137 the sentence "Your muscles should be so strong that you would be able to hold yourself erect on both feet for a short time at least" apparently refers to rising on the toes, although, as it reads, it means simply standing erect. We have noticed but one misprint—viz., on page 130, where the spine is said to be "made up of thirty-six bones," instead of twenty-six.

These criticisms are made with a view toward making a good book better. Dr. Walker has selected his material with good judgment, and presented it in a way likely to excite the interest and impress the memory of children. As an early guide and teacher, and as a preparation for the more advanced studies of youth, this little volume will serve an excellent purpose exceedingly well.

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*Études cliniques sur le morrhuol* (extrait de l'huile de foie de morue brune). Par E. Chazeaud, Docteur en médecine de la Faculté de Paris. Paris: G. Steinheil, 1887. Pp. 56.

This brochure opens with an introduction upon the value of cod-liver oil and the difficulties often encountered in administering it. In the historical part that follows, the author mentions the various substitutes for cod-liver oil that have been tried from time to time and been found wanting. In 1884 M. Chapoteaut, stimulated by the desire to obtain the active agent of cod-liver oil, so that it could be given separately from the nauseous oil, undertook a number of experiments. As a result of these he found that, when the oil was treated with alcohol, the alcohol became colored, and, on evaporation, yielded an amber-brown, aromatic liquid, partially crystallizing at ordinary temperatures, and containing compounds of iodine, bromine, and phosphorus. This product has been termed morrhuol, and is said to be the active principle of cod-liver oil. Brown oil contains from four to six per cent. of morrhuol, while the pale oil contains only from two to three per cent.

The brochure embodies the clinical histories of ten cases of pulmonary tuberculosis in various stages in which morrhuol had been administered. An improvement occurred in all, but the most brilliant results were obtained in the early stages of that affection. These are the conclusions which the author draws: 1. Morrhuol increases the appetite and regulates the digestive functions. 2. It increases the weight of the body. 3. It increases the urea in the urine. 4. It diminishes the cough and expectoration, and all the symptoms dependent thereon.

The agent is put up in capsules, eight of which contain a gramme (fifteen grains), the usual daily dose, but the author has given as many as ten capsules without any untoward effects. In conclusion, he maintains that in morrhuol we have a remedy which is capable of accomplishing all that cod-liver can do without any of the disadvantages of the latter.

### BOOKS AND PAMPHLETS RECEIVED.

Seventeenth Annual Report of the Managers of the Buffalo Asylum for Insane for the Year 1887.

L'evoluzione odierna della medicina legale e l'antropologia criminale. Pel Dott. Angelo Zuccarelli, libero docente, con effetti legali, di psichiatrica e clinica psichiatrica e di medicina legale all' Università, etc. [Estratto dalla "Psichiatria," Anno V, 1887.] Napoli: Nicola Jovene & Co., 1887.

Report of Proceedings of the Illinois State Board of Health. Annual Meeting, Springfield, January 12 and 13, 1888. Cholera Quarantine, Medical Education.

California of the South. Its Physical Geography, Climate, Resources, Routes of Travel, and Health Resorts. Being a Complete Guide-book to Southern California. By Walter Lindley, M. D., and J. P. Widney, A. M., M. D. With Maps and Numerous Illustrations. New York: D. Appleton & Co., 1888. Pp. viii-377.

Foot-and-Mouth Disease as it affects Man and Animals, and its Relation to Human Scarlatina as a Prophylactic. Also Remarks upon the Transmission of Human Scarlatina to the Lower Animals and the Use of Virus thus cultivated as a Preventive Agent. By J. W. Stickler, M. S., M. D., Orange, N. J. [Reprinted from the "Medical Record."]

Transactions of the American Ophthalmological Society. Twenty-third Annual Meeting, New London, Conn., 1887.

Third Annual Report of the Managers and Superintendent of the North Texas Hospital for the Insane at Terrell. For the Year ending October 31, 1887.

Twenty-fourth Annual Report of the New York Society for the Relief of the Ruptured and Crippled. For the Year ending September 30, 1887.

Transactions of the American Dermatological Association at the Eleventh Annual Meeting, held at the Hall of the Maryland State Medical and Chirurgical Faculty in Baltimore on the 31st of August and the 1st of September, 1887. Official Report of the Proceedings by the Secretary, G. H. Tilden, M. D., Boston, Mass.

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## Miscellany.

**A Novelty in Sneak-thieving.**—Dr. Charles B. Kelsey writes to us as follows: "The latest sneak-thief game is to call on a doctor and ask for his card, as 'a patient wishes to write him from Brooklyn.' The card is presented at a neighboring drug-store with a verbal order for two bottles of Vichy. An hour later the bottles are returned, and the amount of the deposit is collected from another clerk than the one who gave them out. Of course, there has been no deposit, and, if any money is collected, it is so much gained. This game was worked on Messrs. Hazard, Hazard, & Co. with my card last night. The man is tall, smooth-faced, fairly well dressed (overcoat buttoned up tight, as if to conceal poorer clothes), and about twenty-five years old."

**A Change of Residence.**—Dr. J. K. Bartlett desires us to notify those of our readers who may have occasion to write to him that he has moved from Milwaukee, Wisconsin, to Berkeley, California.

**The New York Academy of Medicine.**—At the next meeting of the Section in Neurology, Friday evening, the 10th inst., Dr. Henry Ling Taylor will read a paper entitled "The Hygiene of Reflex Action."

At the next meeting of the Section in Surgery, Monday evening, the 13th inst., Dr. F. W. Murray will read on "Aneurysm of the Internal Pudic Artery"; Dr. R. Abbe, on "Gangrene of the Perinæum"; and Dr. George L. Huntington, on "The Operative Treatment of Old Fractures and Dislocations of the Radio-humeral Articulation."

**The Society of Medical Jurisprudence and State Medicine.**—At the next meeting, to be held at the Academy of Medicine, on Thursday, the 9th inst., Austin Abbott, Esq., will read a paper entitled "The Physiology of a Rogue."

**The Orange Mountain Medical Society,** of New Jersey, held its annual meeting on January 27th. The following-named gentlemen were elected officers for the ensuing year: Dr. George Bayles, of Orange, president; Dr. W. H. White, of Bloomfield, vice-president; Dr. T. W. Harvey, of Orange, secretary; Dr. T. R. Chambers, of East Orange, treasurer; Dr. J. H. Bradshaw, of Orange, reporter; Dr. White, Dr. Bayles, Dr. Buttner, Dr. Bailey, and Dr. Harvey, members of the execu-

tive committee; and Dr. Chandler, Dr. Berry, and Dr. Van Wagenen censors. The society has now entered upon its fourth year. Monthly meetings are held throughout the year. The membership is limited to thirty.

**The Lane Lectures.**—The sixth course of popular lectures at the Cooper Medical College, San Francisco, under the auspices of Dr. L. C. Lane, is now in progress, a lecture being given every alternate Friday evening. On January 6th Dr. Lane lectured on "Coffee"; on January 20th, Dr. Clinton Cushing, on "Physical Excellence"; and on February 3d, Dr. A. Barkan, on "Spectacles." The lectures yet to be given are as follows: February 17th, by Dr. J. H. Wythe, on "The Microscope as a Detective"; March 2d, by Dr. Charles H. Steele, on "The Bath"; March 16th, by Dr. C. N. Ellinwood, on "The Stomach"; April 6th, by Dr. J. O. Hirschfelder, on "Electricity in Medicine"; April 20th, by Dr. W. S. Whitwell, on "Insanity"; May 4th, by Dr. Henry Gibbons, Jr., on "The Utility of Pain"; and May 18th, by Dr. W. D. Johnston, on "Lower Forms of Life."

**The Loves of the Bacilli** is the title of the following verses, by H. S. C., quoted by the "Lancet" from the "St. James's Gazette":

Quoth Bacillus to Bacilla
(Surely everything has sex):
"It is quite enough to fill a
Soul with pride, to see the necks
Of these mighty men of Science
O'er the microscope bent low,
While beneath them in defiance
Spins the merry Vibrio.

"Proud am I to think, my Comma,
While the world rolls on its way,
Every fell disease springs from a
Fairy filament, they say.
Autocrats that tower Titanic
Have been known to bow to me;
Mighty potentates in panic
Disinfect at thought of thee.

"Rash would he be who should presage
That no germs behind us are;
We are part of that great message
Which outrings 'twixt earth and star.
What by thousands or by tens is
Multiplied, in vain they show;
Something lies beyond his lenses
Mortal man may never know!

"We are greater, my Bacilla,
Than all monarchs; for meseems
We need but exist to fill a
Strong man's brain with fever-dreams.
Such the thought my passion kindles,
O my microscopic bride:
Kiss me! although twenty Tyndalls
Have their eyes upon the slide!"

**The Health of Boston.**—During the week ending Saturday, January 28th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 25 cases and 6 deaths; scarlet fever, 32 cases and 6 deaths; typhoid fever, 1 case and 2 deaths; measles, 12 cases. There were also 28 deaths from consumption, 41 from pneumonia, 4 from whooping-cough, 9 from heart disease, 14 from bronchitis, and 3 from marasmus. The total number of deaths was 223, against 204 in the corresponding week last year.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending January 27th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending January 7th corresponded to an annual rate of 23·8 in a thousand of the aggregate population, which is estimated at 9,244,099. The lowest rate was recorded in Brighton, viz., 14·8, and the highest in Plymouth, viz., 40·3 in a thousand. Small-pox caused 27 deaths in Sheffield, 1 in Bristol, and 2 in Leeds.

*London.*—One thousand eight hundred and sixty-eight deaths were registered during the week ending January 7th, including 25 from measles; scarlet fever, 37; diphtheria, 28; whooping-cough, 120; typhus, 1; enteric fever, 28; and diarrhœa and dysentery, 12. The deaths from all causes corresponded to an annual rate of 22·8 in a thousand. In greater London 2,370 deaths were registered, corresponding to an annual rate of 22·4 in a thousand of the population. In the "outer ring" 6 deaths from diphtheria; measles, 11; fever, 7; and whooping-cough, 45, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending January 7th in the sixteen principal town districts of Ireland was 35·4 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 5·2, and the highest in Newry, viz., 45·7 in a thousand.

*Dublin.*—Two hundred and sixty-one deaths were registered during the week ending January 7th, including 2 from measles; whooping-cough, 9; scarlet fever, 9; enteric fever, 5; and diarrhœa, 6. Diseases of the respiratory organs caused 73 deaths. Seven accidental deaths, 1 suicide, and 1 homicide were registered, and in 34 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 38·5 in a thousand.

*Scotland.*—The deaths registered in eight principal towns during the week ending January 7th corresponded to an annual rate of 27·1 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 20·3, and the highest in Edinburgh, viz., 30·3 in a thousand. The aggregate number of deaths registered from all causes was 685, including 2 from small-pox; measles, 23; scarlet fever, 7; diphtheria, 4; whooping-cough, 30; fever, 7; and diarrhœa, 18.

*Bordeaux.*—Six hundred and four deaths were registered during the month of December, 1887, including 102 from enteric fever.

*Santiago de Cuba.*—The sanitary inspector reports for the week ending January 14, 1888, that "no contagious diseases are prevalent just now. . . . Small-pox prevails more or less in the country, and the cities of Havana, Matanzas, Cienfuegos, and Manzanillo are suffering from the variolous disease in an epidemic form."

*Havana.*—One death from yellow fever and 70 from small-pox are reported for the week ending January 14, 1888.

*Buenos Ayres.*—The United States minister, under date of December 12, 1887, transmits a copy of a convention recently signed by the Argentine, Brazilian, and Uruguayan commissioners, relating to the question of quarantine along the South American shores. The convention contains eight articles, the first four of which are as follows:

ARTICLE 1. The contracting countries agree in declaring that: Exotic pestilential diseases are yellow fever, cholera morbus, and the Eastern plague; and an infected port is one in which either of the said diseases exists as an epidemic; a suspicious port is one in which isolated cases of either of the said diseases are occurring, or one which is in easy and frequent communication with or is not sufficiently protected against infected ports. An infected ship is one in which a case of pestilential disease has occurred; a suspicious ship is one which, proceeding from an infected or suspicious port, has not had during the voyage any case of pestilential disease, or one which, though proceeding from a clean port, has touched at an infected or suspicious port, or one which, during its voyage or on its arrival, has communicated with another ship from an unknown, infected, or suspicious port, or one which has had deaths from an unascertained cause or repeated cases of any kind of disease, or one which does not bring a clean bill of health from the port from which it proceeded as well as from the ports of call, or one which, though it has undergone quarantine or received special sanitary treatment in either of the contracting countries, is not furnished with an international patent of free *pratique*. The declaration of a port being infected or suspicious shall be made by the government of the declarant country at the request of the chief of the maritime sanitary service, and shall be published officially.

Art. 2. The contracting countries shall establish adequate sanitary services, and the chiefs thereof shall communicate with each other upon all matters affecting the service. A code of international regulations shall be issued for establishing uniformity in the services.

Art. 3. The contracting countries shall establish such lazarettos as may be necessary, and they shall be placed upon islands; at least one floating lazaretto shall be established in case of an epidemic; floating hospitals shall be created in connection with the fixed lazarettos, to be used for the treatment of persons attacked by exotic pestilential diseases in the ships which may arrive or are already anchored; the quarantines and sanitary measures adopted in any lazaretto of either of the three countries shall be considered valid, for the purposes of this convention, provided they be officially certified; the ports shall not be closed against any ship, whatever may be her sanitary condition.

Art. 4. A ship proceeding from foreign ports shall not be put in free *pratique* without a previous sanitary visit. The visiting sanitary authority shall thoroughly investigate the sanitary condition of the ship, and shall decide on the treatment to be applied.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | December 24. | 2,260,045 | 951 | .. | .... | 6 | .... | 32 | 4 | 39 |
| Paris | December 31. | 2,260,045 | 1,070 | .. | .... | 3 | .... | 60 | 6 | 37 |
| Paris | January 7. | 2,260,045 | 1,138 | .. | .... | 5 | .... | 33 | 3 | 48 |
| Glasgow | January 7. | 545,678 | 273 | .. | .... | 1 | .... | .... | 2 | 1 |
| Warsaw | December 31. | 439,174 | 204 | .. | .... | 14 | .... | .... | 10 | 4 |
| Calcutta | December 10. | 433,219 | 260 | 17 | .... | .... | .... | .... | .... | .... |
| Marseilles | December 31. | 376,000 | 87? | .. | .... | 4 | .... | 34 | 1 | 66 |
| Rome | December 3. | 373,356 | 196 | .. | .... | 4 | .... | 10 | 2 | 2 |
| Palermo | January 2. | 250,000 | 126 | .. | .... | .... | 2 | .... | .... | 2 |
| Palermo | January 8. | 250,000 | 122 | .. | .... | .... | .... | .... | .... | 6 |
| Belfast | January 7. | 224,422 | 161 | .. | .... | .... | .... | .... | .... | 1 |
| Genoa | December 31. | 179,493 | 109 | .. | .... | 8 | 1 | .... | .... | 1 |
| Genoa | January 7. | 179,447 | 170 | .. | .... | 8 | 2 | .... | 1 | 2 |
| Leipsic | January 7. | 170,000 | 70 | .. | .... | .... | .... | .... | 1 | 4 |
| Trieste | December 31. | 154,500 | 115 | .. | .... | 10 | .... | 2 | 2 | 6 |
| Toronto | January 14. | 130,000 | 19 | .. | .... | .... | .... | 1 | .... | 4 |
| Toronto | January 21. | 130,000 | 29 | .. | .... | .... | .... | .... | .... | 1 |
| Barmen | December 31. | 108,000 | 39 | .. | .... | .... | .... | .... | .... | 1 |
| Havre | December 31. | 112,074 | 67 | .. | .... | .... | .... | 3 | .... | 1 |
| Reims | December 31. | 97,903 | 57 | .. | .... | .... | .... | 1 | 1 | 4 |
| Mayence | December 31. | 65,701 | 39 | .. | .... | .... | .... | .... | .... | 3 |
| Cienfuegos | January 9. | 35,464 | 29 | .. | .... | 21 | .... | 1 | .... | .... |
| Cienfuegos | Janu ry 16. | 35,464 | 54 | .. | 1 | 41 | .... | .... | .... | .... |
| Gibraltar | January 1. | 23,631 | 11 | .. | .... | .... | .... | .... | 1 | .... |
| Sagua la Grande | January 7. | 15,605 | 5 | .. | .... | .... | 4 | .... | .... | .... |

United States.

*San Francisco—Small-pox.*—From January 1st to 17th there were 123 cases reported. The secretary of the health department reports as follows: "On the 14th instant the steamer Gaelic arrived from Hong-Kong with small-pox on board, and seven Chinamen affected with the disease have been removed from her. The vessel will remain in quarantine for some time. It is considered that the disease is decreasing already, and with the measures taken will soon be eradicated."

*Port Townsend, Wash.*—The Secretary of the Treasury, upon request of the local board of health, has authorized the revenue steamer Walcott to cruise between Port Townsend and Whidby Island, and, in connection with regular duties, notify vessels from San Francisco, where epidemic small-pox exists, to enter this port and comply with quarantine requirements before proceeding into interior.

*Key West.*—One case of small-pox is reported, under date of the 19th instant. The patient came from Havana about the first of the month. The usual precautions have been taken to prevent the spread of the disease.

## THERAPEUTICAL NOTES.

**Pumiline.**—This name has been given to a number of preparations made from the *Pinus pumilio*, a species of pine growing at various altitudes among the Alps. According to the "British Medical Journal," it is asserted that this species has more medicinal virtue than other pines, and the volatile oil obtained from specimens found above the snow line is said to be superior to the product of trees found in the valleys. The preparations mentioned are an essence, an extract, and jujubes. They are supposed to be useful in catarrhal and rheumatic affections.

## ANSWERS TO CORRESPONDENTS.

*No. 136.*—It is inert.

*No. 137.*—Spongio-piline is made of wool and small pieces of sponge felted together. The sheet, which is about half an inch thick, is coated on one side with a flexible, waterproof material, which serves the purpose of retaining heat and moisture.

*No. 138.*—1. We think you had better write to the Surgeon-General of the army and the Surgeon-General of the navy. 2. We presume that a graduate of an American medical college would be allowed to practice in Great Britain, but it is doubtful if he could be so registered as to confer upon him the status of a licentiate of the Royal College of Physicians or the Royal College of Surgeons.

*No. 139.*—No.

*No. 140.*—A gas light will answer perfectly well, if you are careful to hold the test-tube far enough above the flame.

*No. 141.*—According to Dr. W. H. Geddings, the mean winter temperature of Aiken, South Carolina, is 48·59° F., and its altitude 585 feet.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

### THE NATURE OF INHERITED DISEASE.

A LECTURE DELIVERED

AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL.

BY GEORGE G. VAN SCHAICK, M. D.,

INSTRUCTOR IN CLINICAL MEDICINE AND PATHOLOGY; MEMBER OF THE NEW YORK PATHOLOGICAL SOCIETY.

GENTLEMEN: At the close of my last lecture I was asked by one of you to give my views of the conditions, pathological or otherwise, entailed upon the system of those who inherit disease.

First, let us consider the mode of transmission. This is, according to the weight of evidence and of prevailing opinion, twofold: (1) We have direct transmission of a specific germ from parent to child, invariably affecting the ovum itself, and (2) transmission of a *tendency* to disease from parent to child.

The first is a distinct pathological process, proved beyond a peradventure, and of frequent occurrence. In this mode are transmitted certain forms of syphilis, some of the exanthemata, and other diseases. In fact, it is probable that any malady resulting from the development of a microbe may be directly inherited by the deposition of this microbe within the ovum. I do not doubt, for instance, that some cases of tuberculosis in which the disease is declared soon after birth are the result of this process. Cases of tuberculosis occurring in the new-born, whether general or local —such as the meningeal form—may be surmised to depend at times upon a directly infected ovum. I believe this form of heredity to be invariably rapidly shown in the child, and to take a straightforward, easily recognized course, similar, in all important points, to that occurring in the parent. Treatment, of course, may modify the march of events. A child may be directly poisoned by syphilis without showing it at birth, and we may by means of mercury prevent or retard the appearance of the specific symptoms. We should be careful, however, not to include in this class many cases which show themselves late in the offspring's life, and in a form not similar to the parental affection. Scrofulous and unhealthy children derived from syphilitic parents are not the victims of direct infection unless they show unmistakable syphilitic symptoms. They are merely the weak offspring of depraved constitutions. Not only is the theory of direct transmission of a disease-germ made certain by clinical evidence, but also by proofs gathered within the domain of natural history. It is well known to silk-worm raisers that the eggs of silk-worms affected by the disease peculiar to them, a disease of great virulence and fatality, contain the germs of the disease—a fact easily shown by microscopical investigation. Hervieux, of the Veterinary School of Alfort, in France, has reported the existence of cysticerci in the new-born of the pig, and filariæ have been found in fœtal puppies. (See Bouchut, "Pathologie générale.")

The diseases resulting from the second division in the mode of transmission demand more consideration at our hands, being the ones about which our knowledge is least. The form in which the disease passes from generation to generation, without direct infection, is one of the obscure points which science may yet enlighten. The most I can say is that a tendency to disease is transmitted. How may this tendency be defined? I would term it "a habit of the body, or of one or several of its organs or systems, leading to such a condition as will place the parts apt to be affected in the future in the most favorable state for the development of the pathological process." This tendency is the factor in the inheritance of diseases affecting the blood, the organs of special senses, the skin, the constitution, the nervous system, and the viscera. It is also the factor in the inheritance of particular malformations of various parts of the body or of its organs, and of different forms of ectopia.

The tendency to disease acquired by inheritance has been termed by Bouchut a part of the "generative impression." By "generative impression" I understand the collective impression received by the child before its birth, derived from its parents, and resulting in the renewal of family resemblance, type, tendency to disease, etc. And we know that disease-tendency, as well as family peculiarities, may be subject to atavism.

We know that tendency to disease is of a composite order. For instance, in pulmonary phthisis we know that not only is there an aptitude of the lungs to become good soil for the propagation of the tubercle bacillus, but there is often a tendency to general inflammations resulting in frequent catarrhal processes and a disposition to undue irritability of the air-passages, followed by frequent coughs, and a vicious conformation of the chest may also have been transmitted. There are other predispositions, more obscure in character, but the existence of which can not well be doubted. One of these is the tendency to increased cell-proliferation—a tendency which may lead to tubercle, as well, possibly, as to other diseases, such as epithelioma. You know that both tubercle and epithelioma are the result of the multiplication of cell-elements, differing only in form. In the one we have a gathering of cells of a low grade of vitality, terminating by caseification and subsequent breaking down, while in the other we have cells of a higher grade of vitality, attacking a highly organized tissue, and ending in a true necrosis. I think it very probable that the same predisposition frequently leads to different results, and, in point of fact, I believe that this very tendency to proliferation of cells results in epitheliomatous or tubercular processes, according to the mode in which tissues are attacked and irritated. We find scattered in medical literature a sufficient number of histories of cases in which these two diseases attacked members of the same family to allow of our concluding that the two forms of disease have some decided analogy of origin. This statement you may think disproved by the theory of the lymphatic origin of tubercle. This theory has counted among its supporters such men as Villemin, Foerster, Rindfleisch, Schüpfel, Wagner, Chauveau, and others. But I must say that I have never been able to understand that there were any anatomical facts justifying the assertion of such an origin. I believe that

the cell-elements of the tissues affected by tubercle are the seat of war, that they are primarily attacked, and that against the epithelium lining the air-vesicles and the bronchioles, or against the cells forming the parenchyma of the liver or other organs, the disease brings all its forces to bear. This, in my mind, constitutes a relationship between the two diseases. (See Laboulbène, "Anatomie pathologique.")

You will see by what I have said that I am no believer in the antiquated theory that hereditary diseases are developed from an infecting, dormant nidus existing within the human body, and transmitted from parent to child. Such an idea long prevailed, but it has been abandoned by the foremost thinkers. We no longer believe that the progeny of tubercular ancestors carry about with them a storage of explosive material, which for years may lie quiescent, and suddenly exert its destructive power. As you may observe, this doctrine was a fatalistic one in the very worst form. It made practically useless all efforts at prevention by prophylaxis. With the new doctrine we can hope, with the old we can only despair. Where nothing but a tendency exists, it can be combated and vanquished; but no one could expect to cope with a virulent nest of latent poison hidden somewhere in the body.

Heredity of disease is a wide subject, and is probably of more frequent occurrence than we have any idea of, for a number of reasons. One is that we do not recognize it in some cases becase it has come by atavism, or the process of skipping one generation. Another is that a tendency to disease may be transmitted to children by parents who have the tendency themselves, but who may die of some intercurrent illness ere they have been attacked by the disease they have transmitted to their progeny. People often die of phthisis long after the birth of children who in time succumb to it also. We must also consider the fact that about one fifth of all deaths occur from pulmonary troubles chiefly due to the tubercular process; this means an enormous inheritance of disease. And when we come to think of it, we wonder that with the multiplication of the human race there is not also a multiplication of disease sufficient to antagonize all increase of mankind. I think we have good reason to believe that the tendency to disease diminishes a great deal by the process of passing through successive generations. We know that in every living organism there is a force at work, known to us as the *vis medicatrix naturæ*. This force contends as much against disease-tendency as it does against actual disease, and its efforts are productive of a diminution in the severity of any affection that runs its course during long periods and that passes through large numbers of individuals. We know, for instance, that wherever an epidemic disease appears for the first time in a given region, its effects are apt to be far more severe than in places where it has long been endemic. For this reason I believe that phthisis, as well as many other diseases, tends to become less prevalent, and that, if we can only place individuals who are likely in time to become its victims through inherited tendency in the most unfavorable conditions for the growth of the disease-germ, we shall accomplish more than we can by treating the disease after it has declared itself. The means at our hands are, generally, all those that tend to promote health. Those means are our weapons. In time we shall grow more skillful in their use, and in time our good intentions will subserve some better end than the further paving of the place Dante speaks of.

## Original Communications.

### THE REDUCTION OF OLD DISLOCATIONS,

WITH REPORT OF A REDUCTION BY ARTHROTOMY.*

By JASPER J. GARMANY, M. D.

In considering this subject it shall be my endeavor to notice somewhat fully arthrotomy as a means especially adapted to the reduction of old dislocations. Arthrotomy would be indicated in a recent dislocation if reduction was found impracticable and there were evidences of serious pressure upon the vessels or nerves.

When shall we consider a dislocation old? I think it is old when the tissues contused and lacerated by the dislocation have healed. The resolution of subcutaneous wounds, like those treated antiseptically, may be said to be perfected in about three weeks. From three weeks up to three months many dislocations can be reduced by extension and manipulation.

If there are no contra-indications, such as evidences of implication of the vessels or nerves, extension should be made, if possible from the bone dislocated, and the force of this extension should be measured by a dynamometer if it is greater than the strength of one person. If there is evidence of calcareous degeneration of the vessels, the extension is dangerous. Extension should be preceded by rotary movements to break up adhesions.

If the tissues prove sufficiently yielding to admit of restoration of the length of limb without undue force, manipulation may appose the articular surfaces. If certain tendons become taut, they may be divided subcutaneously with advantage. If, after several attempts at intervals of a week or more, the reduction proves impossible, I believe an early arthrotomy, with a view to reduction or excision, is indicated.

These futile attempts at reduction greatly accelerate, nay, almost determine, the extensive changes about the joint which follow non-reduction. Of course, the movements acquired in a new-formed joint produce great changes, which will be considered further on. The changes before the third month affect the soft parts chiefly, although I am aware of several reported exceptions. The rent in the capsule has healed. The muscles, vessels, nerves, and other soft parts have formed adhesions to the contiguous tissues, perhaps to the end of the dislocated bone. The articulating surface of a cavity may be filled with tough fibrous tissue, which can only be removed by means of a gouge. The cartilages of incrustation may have become altered and partially absorbed. The muscles which have been stretched have become more or less tendinous, and those rendered lax contractured. If

* Read before the Society of the Alumni of Bellevue Hospital, December 7, 1887.

movements have been made, a capsule of dense fibrous tissue, supported by the contiguous tissues matted together by fibrous tissue, is formed. This capsule becomes lined with a synovial (?) membrane. These changes may be insurmountable even after arthrotomy, as in Nicoladoni's case, seventy-four days, and Volkmann's, three months, after dislocation at the hip joint. In both these cases several futile attempts at reduction by manipulation and extension had been made.

When a dislocation has existed longer than three months, the employment of extension and manipulation is scarcely to be recommended. I will except those cases in which no attempts have been made at reduction nor attempts to regain movement, for then the impediments to reduction may be overcome.

Cook reports a case of dislocation of the femur on the dorsum ilii (two inches and a half shortening, etc.) of thirteen months' duration which was accidentally reduced, and in which recovery took place as rapidly as after prompt reduction. There had been no efforts made to reduce the dislocation. I don't believe this point needs to be enlarged upon, for the cases are numerous to be cited in its proof.

In those cases in which several attempts have been made to effect reduction the changes are proportionate to the amount of inflammation occasioned by the frequency of the attempts at reduction and the length of time elapsed since the dislocation and the efforts at reduction. These changes are the exaggeration of those already described, together with changes in the bones. The stretched tendons may become ossified and the muscular tissue entirely disappear. The articular cartilages may become absorbed, and the shape of the articulating end or cavity changed. The cavity may become filled with deposition of bone salts into the fibrous tissue, and stalactite formations may surround the deformed dislocated end. It is in this class of cases that arthrotomy should be performed to determine between reduction, after breaking down the adhesions and making an opening to the articular surfaces, and excision of the ends of the bones. Tenotomy, except in rare cases, is not to be entertained. Fracture of the bone is dangerous, and subcutaneous section by means of the saw or chisel is, I believe, more dangerous than division of the bone after arthrotomy.

Blumhardt in 1847 reduced an old dislocation of the elbow after an arthrotomy. His example has been successfully followed of late years by many surgeons.

The reductions at the hip after arthrotomy have been failures, chiefly from sepsis, but there is no doubt that successes will soon be recorded. The question arises, When shall reduction or when shall excision after arthrotomy be performed?

If the former articulating surfaces can be fitted and retained together, and these surfaces are not diseased, an excision should not be entertained except as a secondary resort.

I believe it is permissible to employ tenotomy, and also to shape the cavity or articulating end by means of the gouge or bone-cutting implements. Margary, of Turin, employed this method at the hip in a case of congenital dislocation. He says the patient died from blood-poisoning from the use of septic catgut.

Excision should be reserved for cases in which reduction is impossible, the soft parts requiring too extensive division, or where the bone is diseased. It may be that the bone has elongated as in the young when the pressure is removed, and hence requires excision.

In general it may be said that the arthrotomy should be performed by the same incisions as are best adapted to excision, since the latter operation may be required.

Morbus coxarius has followed a prompt reduction of a dislocation at the hip, and I believe is more likely to follow after an arthrotomy where excision would be necessary.

I beg your attention while I recite briefly the history of the patient I present to you:

John S., a blacksmith, aged thirty-nine years, was admitted, March 24, 1887, into the Ninety-ninth Street Hospital. Eight weeks previous to his admission he had fallen, sustaining a subcoracoid dislocation of his left humerus. He said he fell on his hand, having extended his arm to save himself. A doctor attempted reduction the same evening. At the time of his admission, examination showed a subcoracoid dislocation of the left humerus. The movement in the new joint was very limited, being restricted to less than 10°, therefore rendering the member practically useless. The patient was etherized and efforts at reduction were made by my colleague, Dr. White, by the house staff, and by myself, without success. I then ordered Dr. McGrew, the house surgeon, to make an incision as if for resection, beginning just external to the coracoid process and extending downward in the axis of the limb four or five inches. The tissues covering the head of the bone were carefully examined before being divided. The capsule was opened and the long head of the biceps muscle was severed. The coraco-brachialis and the short head of the biceps were partially divided. By means of the fingers all adhesions to the head of the bone were then examined. The capsule was found to consist of exceedingly dense, fibrous tissue, and I found it necessary to divide it almost around the entire circumference of the head of the bone. An opening was now made into the glenoid cavity and the articular surface examined. The surface was smooth to the touch, although the muscles (supraspinatus, infraspinatus, and teres minor) were closely applied to it and taut. The tissues were separated and the head of the humerus was directed through the opening until its articular surface rested against the glenoid cavity. The head of the bone tended to become dislocated and had to be held in position while the wound was stitched, drainage being provided for above and below. The operation was performed with all antiseptic precautions.

A Velpeau bandage was applied to retain the dressing and arm in position. Two days later the wound was redressed, but the drainage-tubes were retained, as the parts had been greatly contused in the efforts at reduction. Eight days later the wound was again dressed, when it was found healed, except the openings for the tubes. The tubes were removed. The Velpeau bandage was retained for a month, when passive motion was commenced. After another month the motion was quite free, being about half that of the other side. He was able to earn his living as a blacksmith.

His present condition leaves little if anything to be desired, the movements being scarcely less free than on the other side. The strength of the muscles has fully returned.

It may be of interest to state that the case reported by Burkhardt—that of a woman, aged forty-eight, with a dis-

location of seven months' standing—is the only other case I have found reported as a success. In that case the great tuberosity was fractured in reducing the dislocation after arthrotomy, and the wound suppurated until the fourth week. External rotation was not recovered.

## ACUTE LEUKÆMIA DURING PREGNANCY.

By JAMES L. GREENE, M. D.,
MORGANTOWN, IND.

Much was originally written by Bennett and Virchow in a controversy over a claim for priority of discovery and scientific description of this disease, and almost every one who has written on this subject since the cessation of the original controversy has gone over the entire ground. In these latter controversies the principals seem to have had little more than the part of Patroclus when the Greeks and Trojans fought over his body. Consequently there seems to be little or no need of referring to the relative merits of the claims for priority of the original investigators of this very grave ailment.

The knowledge of this dreaded disease in our possession to-day is very unsatisfactory and incomplete. Many recent and excellent authorities show a sad variance of opinion as to its ætiology, and the greatest difficulty presented to the mind of an investigator of the pathology of leukæmia is the lack of knowledge of the physiological process by which the red and white cells of the blood are formed.

It occurs more frequently in men than in women. Osler* gives the proportion as at least two to one. The account of the few recorded cases of leukæmia in women which I am able to find contains but a mere mention of its relation to the reproductive function. Cameron, of Montreal, has furnished a paper on this subject, in which he says there are four recorded cases of leukæmia complicating pregnancy, and Dr. C. W. Earle, of Chicago, mentions a case in which pregnancy occurred during an attack of leukæmia.

The object of this paper is to bring before the profession the record of two cases occurring during pregnancy, together with the favorable results from radical treatment in one case. The patients whose cases I shall give presently have come under my care during the past year and a half, and are both from one family. I give also herewith some facts which I have gleaned from the members of the family relative to the case of a sister of the patients here mentioned, which case occurred before I became a student of medicine, and had a fatal termination:

Case I.—Mrs. S., a primipara, aged twenty-one, height five feet five inches, weight one hundred and seventy pounds, first came under my care for treatment on November 25, 1886. She was of robust constitution, and her health previous to her marriage had been perfect. She and her mother both informed me that she had never been ill, or required medicine of any kind during her entire life previous to her marriage, which occurred April 12, 1886. She conceived about June 13th. The "morning sickness" following conception was very severe and troublesome. She also had an attack of malarial fever of the remittent type in the latter part of August. During this attack of illness there was an attempt to abort, which, however, yielded to the usual remedies.

Following the attack of fever there was nothing of any moment in the case until November 25th, when the lady came to my office accompanied by her husband. After many interrogatories, she being very reticent, I found that she had been losing strength and becoming less able to perform her household duties since about October 15th. Her husband insisted, however, that she had never been thoroughly well since the attack of fever, and that he had importuned her many times to consult a physician, which she had persistently declined to do, regarding her ailment as only a natural sequence of pregnancy, a subject upon which she was painfully modest.

She was *profoundly anæmic*. From the ruddy glow of perfect health, attendant upon a quiet country life, which she had enjoyed previous to her marriage, her skin was transformed to one of pearly whiteness, smooth and waxy. The lips, gums, and tongue seemed bloodless. The general frame was flabby rather than wasted, which condition continued to the end. The pulse, at the rate of 100 in a minute, was large, but remarkably soft and compressible, and occasionally seemed to have a slight jerk or intermission. I failed to detect anæmic murmurs either in the heart or in the great vessels. In fact, repeated auscultations at various times during her illness revealed their presence but once.

The gastric symptoms were prominent and of considerable inconvenience. The food oppressed her and gave an uncomfortable sensation of fullness; the appetite at this time was not diminished, and the evening meal, she informed me, was sometimes ejected, not from nausea, but that by the evacuation of her stomach she obtained relief from the distressing sensation of fullness. There had been no diarrhœa at this time. The exhibition of a pill of aloin, belladonna, and strychnine, three days later, by another hand than mine, brought about a train of symptoms in this regard very much to be regretted.

The nervous symptoms were pronounced. She had a headache each day until ten o'clock A. M., and was troubled by continual dizziness. *Tinnitus aurium* was a constant symptom. She complained that she could "hear some one continually pounding beef." She also complained of occasional attacks of numbness in her left arm and leg. She was not certain about her vision, and, unfortunately, I am not prepared to scientifically test the visual power or to examine the retina. Later developments showed a marked failure of vision.

She had had epistaxis at various times since September 15th.

By a careful palpation I detected an enlarged spleen, and was inclined to the belief that the liver overspread its normal bounds. There was dyspnœa upon the slightest exertion. No examination of the blood was now made, but with these facts, and a knowledge of the fact that a younger sister of the patient had died of leukæmia, I made the diagnosis. An unfavorable prognosis was given and a consultation advised. Arsenic, in the form of Fowler's solution with quinine, was given in the mean time.

On November 30th I saw her again with Dr. E. B. Willan, of Trafalgar, Indiana. There were no new developments in the case except an increase of the dyspnœa on exertion, and an increased elevation of temperature. The thermometer registered 102° F. Dr. Willan suggested iron and electricity, which were added to the treatment, leaving off the quinine except in antipyretic doses when required. The advisability of producing a premature labor was discussed and decided against.

The treatment was assiduously carried out, but the patient lost ground rapidly. The appetite failed, slight œdema of the feet and face was discerned, the dyspnœa became more trouble-

* Pepper's "System," vol. iii, p. 909.

some, and the temperature was constantly elevated with an evening exacerbation, at several times reaching 104·2°. Dr. Payne, of Franklin, was called on December 7th. He advised palliative treatment only, fully confirming the diagnosis. The enlarged spleen was now easily detected; an examination of the blood on the following day showed the white and red corpuscles in the proportion of 1 to 20 (about). The gravity of the symptoms continued to increase. The dyspnœa was now of the most distressing character, recumbency being impossible. The œdema increased until the extremities were enormously distended. Ascites did not appear, however. Diarrhœa and vomiting, which refused to yield to any treatment, were added to the symptoms.

On December 18th, at four o'clock A. M., I was called to her in haste. I found her already in the beginning of the second stage of a premature labor. An examination showed the child presenting by the breech. At five o'clock the child was born, the forceps being required to accomplish the extraction of the head. There was a slight amount of hæmorrhage, the blood scarcely coloring the linen. *The blood from the divided cord was bright red.*

Stimulants and restoratives were employed, and she rallied well from the fatigue, which was extreme. Her condition improved until 3 A. M. of the following day, when collapse came. I was hurriedly summoned, but found her moribund, and nothing could be done. She died at 9 A. M., December 19th, twenty-four days from the time she first consulted a physician, and within six months from the onset of the disease.

Case II.—Mrs. C., aged nineteen, primipara, a sister of Mrs. S., whose case I have just given, was first brought under my notice on January 1, 1887, at which time I visited her at her home, and obtained the following history: She had been a healthy and vigorous girl, enjoying the life of a farmer's daughter until her marriage on September 8, 1886. She had never had any irregularity of her menstrual function, but was at this time suffering from what she regarded as a suppression of her menses. She was troubled with chilliness, anorexia, and thirst, with a slight elevation of temperature. I prescribed an emmenagogue, which was, however, inefficacious. The case then passed from my mind until March 22d, when I was again called to the residence. I now learned that her menstruation had not returned, except by a very slight "show" on February 3d; that she was troubled with constant nausea and vomiting; that chilliness, followed by fever, had been occurring each day for about ten days. The temperature was 102° F.; the pulse 110, and of good volume, but compressible; respiration, 25 in a minute. She had dyspnœa to a degree that seriously interfered with the performance of her household duties; dizziness and *tinnitus aurium* were a source of constant annoyance. She was pale and anæmic. I prescribed Fowler's solution, with elixir of pepsin, bismuth, and strychnine. On the day following, a microscopic examination of the blood was made, which showed a pronounced increase in the number and proportion of the white cells. The treatment was persistently followed, but no relief from the symptoms was obtained; on the contrary, they were augmented.

On April 5th, slight œdema of the feet was discerned, and, as the other symptoms were increasing, with no benefit being derived from medication, I decided that now, if ever, the production of an abortion would be justifiable.

Dr. R. C. Griffitt, of this place, was called in consultation. He confirmed the diagnosis, and concurred in the plan of treatment. The ovum was accordingly disturbed by passing a uterine sound well up to the fundus uteri. This was repeated three times on different days. On April 12th the ovum was expelled piecemeal. Antiseptic injections were used for three days, when the patient was on her feet again.

The interesting part of the case was the watch for improvement. The gastric disturbance, fortunately for the patient, improved first and rapidly; the dyspnœa upon exertion disappeared; the color slowly returned to the ears, lips, and gums; strength and spirits returned, and I dismissed the case June 1, 1887.

The base of the medication in the case was Fowler's solution, which was given regularly until the case was dismissed.

The case of the sister of these patients, Miss C., an account of which was furnished me by the father and mother, occurred in 1881–'82. She had been of rugged constitution with perfect health until the age of puberty, which occurred at thirteen. About the time of the establishment of the menstrual function she had measles, upon recovery from which she had dysmenorrhœa, and at times profuse menstruation. These symptoms continued until December, 1881, she then being past fifteen years of age, when the symptoms of leukæmia, delineated in the foregoing cases, appeared. The march to a fatal termination was slow but sure, and death occurred August 2, 1882, after weeks of the most distressing weariness, dyspnœa, and general anasarca.

These cases are interesting from several points of view.

1. The family history of both father and mother is of the very best character.

2. In two cases the beginning of the disease dates from conception, and in one from a disturbance of the menstrual function.

3. Improvement and recovery in one case followed immediately upon the termination of the pregnancy by artificial means.

With these facts before them, does any one doubt that the true ætiological factor in two cases was pregnancy, in one a disordered menstrual function; or that the artificial termination of the pregnancy in one case was the curative agent?

*December 15, 1887.*

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## A CASE OF HEMICHOREA RHEUMATICA.

By FRANZ FOERSTER, M. D.

Mrs. N., seventy-six years old, always enjoyed the best of health until three months ago, when she was forced through circumstances to give up her comfortable rooms and to take rooms in the basement of the same house. Since that time she has complained of rheumatic pains in different joints of the body, not severe enough to call for medical aid. A month ago the pain appeared most severe in the left shoulder, and did not cease after using several household remedies. On December 8th, while engaged in rubbing the aching shoulder, the patient remarked a peculiar twitching movement of the fingers of the right hand; the motions became vigorous, extending to the arm, and in a very short time the whole right side of the body was involved.

At this phase I was called in. I found the patient perfectly rational, but unable to control the motions even for the shortest time. The movements were continuous, rhythmical, and quite vigorous. The arm was in a state of the greatest excitement, the motions performed being, in alternation, flexion and extension, pronation and supination, giving in all the impression of a well-intended movement. The leg was less active, being partly flexed and performing a swinging motion. The muscles

of one side of the face were also involved, the face being thereby drawn into grimaces, while the tongue was in constant activity, interfering considerably with speech. The muscles of the trunk were also affected, causing a perpetual shifting of the position of the patient and a constant rising and falling of the right shoulder.

The condition of the patient was a most pitiful one; she was constantly asking that something might be given her to relieve the state she was in. A hypodermic injection of morphine, gr. ¼, and atropine, gr. $\frac{1}{150}$, had no effect in that direction. Codeine, gr. ½, and potassium bromide, gr. 10, repeated every two hours, were likewise ineffective, and only after several large doses of morphine was I able to give her rest for a short time. During the short sleep the motions ceased altogether, but were resumed with the same vigor on her awakening. On the third day the incessant activity and the imperfect nutrition were showing their weakening effect on the patient, and she was becoming more and more exhausted.

On the fourth day Dr. Peabody had the kindness to see the patient with me in consultation, and, the uselessness of morphine and potassium bromide being well established, he proposed chloral hydrate to be given in ten-grain doses every two hours, with due precaution. After the first two doses a revolution took place in the case, the patient fell into a deep sleep of several hours' duration, and when she awoke the motions had lost their vigorous character. Observing this favorable change and having in mind the flattering recommendations which von Ziemssen gives of chloral hydrate in chorea, I determined to press the use of the anæsthetic and bring about a state of affairs somewhat similar to that in Gairdner's case, in which chloral was given by mistake in a very large dose, and after the resulting intoxication was over the patient had lost the chorea entirely. The ten-grain doses were repeated, consequently, just as often as the patient had recovered from the effect of the dose previously taken; she was kept in this manner perfectly quiet and contented, passing away the time mostly in a light slumber. The nutrition did not suffer any under this treatment, and the violence of the attacks was decreasing visibly. When two drachms of the drug were taken, the patient was even able to control herself altogether, and it was only on special nervous excitement that a few choreic movements occurred. On the twelfth day after the attack the patient was in her ordinary health, with the exception of various abrasions and contusions and the articular rheumatism above mentioned.

On examination of the heart, I found a slight systolic blowing sound over the apex, the area of the heart-sound not increased. The urine contained during the attack a small percentage of sugar and an increased amount of urea. The temperature was slightly elevated, while the pulse varied from 70 to 100.

The points of most interest in this case I consider to be:

1. The advanced age of the patient (seventy-six years), she having been in perfect health until articular rheumatism set in.

2. The rapid invasion without a prodromal state, and the rapid course the affection took despite the violence of the same.

3. The apparently clearly established connection of articular rheumatism and the resulting endocarditis with the choreic attack in this case, being affirmative proof of the correctness of the observations of Sée, Hughes, Kirks, and others describing chorea to be often the outcome of an embolic process, due to the carrying by the blood-current of small particles of fibrin to certain nerve-centers.

4. The great advantage derived from the use of chloral hydrate. Although the same may have seemed to be specially contra-indicated on account of the advanced age of the patient, it did not produce any alarming symptoms whatever.

## A CASE OF COMPOUND COMMINUTED FRACTURE OF THE TIBIA AND FIBULA.

By GEORGE PURVIANCE, M. D.,
SURGEON, UNITED STATES MARINE-HOSPITAL SERVICE.

Charles J., aged nineteen, a native of New York, was admitted into the U. S. Marine Hospital at the port of Cincinnati, on the 18th day of January, 1887. At the time of his admission he was suffering from a compound comminuted fracture of the tibia and fibula, about two inches and a half above the ankle joint, with extensive laceration and contusion of the soft parts from the base of the toes to the knee. The injury had been caused by having his foot and leg crushed between the ends of two cars of lumber. From the extensive injury to the bones and soft parts, his condition was very critical, and the question of saving his life was the first to be considered.

*January 18, 1887.*—The day he was admitted into the hospital a temporary dressing of plaster of Paris, in the form of a stirrup-splint, was applied.

*19th.*—Pulse, 100; temperature, 39·5° C. (103° F.); appetite poor; sloughing considerable; the leg was washed, and a flaxseed poultice applied.

*20th.*—Pulse, 104; temperature, 40° C. (104° F.); there were nausea and vomiting.

*21st.*—More comfortable; pulse, 92; temperature, 38·4° C. (101° F.).

*22d.*—On account of the extensive sloughing it was impossible to continue the plaster dressing on the outer side of the leg, and one half of the splint was then removed, and the leg allowed to rest on the other half, and a poultice of flaxseed applied to the exposed side of the leg.

*23d.*—General condition about the same; discharge very profuse; carbolized dressing used, changing every three hours.

*24th.*—About the same; continued the same treatment.

*25th.*—Considerable hæmorrhage from the vessels of the inner side of the leg occurred in the night. I was called by the night nurse, and immediately removed all dressing, and the hæmorrhage was checked. No fixed dressing could be used, and the leg was placed in a fracture-box containing bran, but, on account of the extensive injury to the soft parts, it was impossible to make sufficient pressure on the leg to retain it in proper position for repair, and an amputation below the knee seemed to be demanded, and it was decided to perform the operation at once, but, upon removing the leg from the fracture-box and thoroughly cleansing it, a dark streak was discovered extending from the upper edge of the internal wound to the knee joint, indicating that the sloughing process might extend to this joint. For this reason it was deemed best to delay an operation for a few days, and thus prevent the necessity of a second amputation at a point higher up.

On account of the extensive sloughing of the soft parts and the comminuted condition of the bones, it was impossible, by the use of the ordinary appliances, to secure the quiet necessary for the union of the bones and the repair of the soft parts. In order, therefore, to obtain such rest and quiet as were necessary, a more suitable dressing had to be provided. It was finally decided to make a splint of tinned iron wire netting or gauze with one-eighth-inch meshes. A piece of the proper size was obtained, reaching from beyond the foot to the middle of

the thigh, and, after carefully molding it over the leg of another patient, it was applied. A perfect cradle was thus formed. The cradle was then suspended to a piece of wood three feet above the bed, and the leg allowed to swing, the movement being entirely in the hip joint. Equal pressure was obtained by proper adjustment of cords attached to the wire cradle, and to a piece of wood at intervals of about two inches.

The small size of the meshes of this wire netting and the equal pressure prevented any irritation, and the circulation of the leg was undisturbed. This dressing admitted of the most perfect and thorough cleansing of the leg by daily douching with an abundance of carbolized water. For this purpose a large bucket of water was suspended sufficiently high above the bed to obtain the required force, a long rubber tubing acting as a siphon, and the water allowed to play through the meshes upon every part of the limb. The wounds were afterward dressed with carbolized vaseline, applying this dressing either outside or inside of the wire netting.

The essential feature of this dressing or splint is, that while it is immovable it is also open, and while perfect cleanliness is easily obtained and a free circulation of air permitted, there is absolutely no movement of the fragments upon each other, though the entire limb may move at the hip joint. As an evidence of how perfectly tolerable this wire netting is to parts denuded of skin, I would state that at several points the wire came in contact with such surfaces, and granulations grew freely through the wire, and to such an extent that it was necessary to reduce them with nitrate of silver.

*January 25 to 31, 1887.*—Nothing worthy of note occurred. Pulse ranging from 88 to 100. Temperature from normal to 38·5° C. (101·2° F.). Continued washing and dressing twice daily.

*February 1st.*—Wounds granulating nicely.

*2d.*—Slight pain in the heel complained of.

*3d to 28th.*—No bad symptoms; general condition improving; leg doing well.

*March 1st to 10th.*—Patient very comfortable.

*11th.*—Patient complained of pain over the inner ankle; an abscess forming.

*12th.*—Abscess opened and discharged about 100 c. c. of pus.

*13th to 19th.*—Patient very comfortable.

*20th.*—The leg was removed from the wire splint, and upon a careful examination it was found that there was firm union of the bones, and the soft parts were in good condition. The leg was then placed in a fracture-box, in bran. Two small pieces were removed from the seat of fracture. After the leg had remained in the fracture-box a short time it was taken out and the patient allowed to sit up in a roller chair and move about the ward. From this point the patient continued to improve, and I consider him recovering with a good and useful limb. He is now walking about without the use of even a cane.

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**Phthisis and Contagion.**—"In an article in 'La clinique' on the 'Contagiosity of Tuberculosis,' by MM. Destrée and Slosse," says the "Lancet," "it is stated that from inquiries and observations made in Dr. Desmeth's wards during the present year it was found that, of fifty patients suffering from tuberculosis, contagion could be regarded as an undoubted ætiological factor in twelve, heredity in thirty; no cause could be traced in the remaining eight. The two factors, the authors say, are frequently present, and it is difficult to determine to which of them the preponderating influence is to be ascribed."

# THE PREPARATION OF SURGICAL DRESSINGS BY STERILIZATION WITH HEAT.

## ANTISEPTICS AS USED IN THE WOMAN'S HOSPITAL, BROOKLYN, N. Y.*

By CHARLES N. DIXON JONES, M. D.,
SURGEON TO THE HOSPITAL; FELLOW OF THE BRITISH GYNÆCOLOGICAL SOCIETY, ETC.

Gentlemen: It is no longer an hypothesis, but a definitely settled scientific fact, that suppuration can not be caused by chemical irritants; and it can be clearly demonstrated that wherever there is the formation of pus, micro-organisms have been at work. To paraphrase the law of Virchow, without the action of living bacteria there can be no suppuration.

We may go further and state that certain micro-organisms have been proved to be the *cause* if not the actual *materies morbi* of the greater portion of diseases which affect the human race. To the medical man the study of the micro-organisms concerned in these processes becomes a subject of paramount interest and importance.

As practical sanitarians and surgeons, it is desirable to know that the favorable conditions for the growth and development of disease-producing bacteria are dead organic matter, a limited supply of oxygen, water, and salts. And hence it follows that scrupulous cleanliness, effectual drainage, perfect ventilation, with copious supplies of sunlight, are of the utmost importance for all places of habitation, and especially hospital wards and sick-rooms.

There would soon be an end to all animal life but for the domination of physiological energies and the greater resistance offered by living tissue to the inroads of these parasites, which present a striking "resemblance to beasts of prey in that they first kill and then devour."

It is thus seen that every cause which tends to weaken the physiological force of the human organism, which reduces the vitality, prepares the way for a "fatal assault by swarming multitudes of pathogenic bacteria." Numerous experiments, extending over a period of several years, have been made by different observers, in order to determine the ætiology of the pus-forming process in man. Before bacteriological science had reached that perfection of method which it has now attained, such experiments as those of Councilman and others seemed to show that the simple introduction of irritating substances into the animal tissues was sufficient to set up a process of inflammation followed by suppuration and general infection. Klemperer and Scheuerlin, thinking that the results obtained by other observers might be due to imperfect sterilization of the skin of the animal experimented upon, performed a series of experiments, employing a more perfected technique, and both came to the conclusion that no suppuration would occur without the presence of micro-organisms. These observations have been confirmed by Straus, Becker, Chauveau, Krause, and Ruys.

Dr. Herman Knapp, in an admirable paper read before the Academy of Medicine in December of last year, shows

* Read before the Section in Surgery of the New York Academy of Medicine, January 9, 1888.

that fermentation and putrefaction are always dependent upon the action of living bacteria. But the question of the parallelism of suppuration with the other two processes is the principal topic of the author's studies, which he experimentally investigates under three heads: 1. Does traumatism of any kind produce suppuration? In answer to this question he says: "In extraction of cataract (in rabbits, of course) I have purposely bruised and lacerated the iris, evacuated almost all the vitreous, then stirred up the rest with a platinum needle that had been previously brought to a glow, and finally scratched with the same needle the ciliary processes in every direction, yet no suppuration ensued, whereas the smoothest and most cautious operations were invariably followed by suppuration when the wound was contaminated in some way by pyogenic fungi." From this and other experiments he concludes that mere traumatism never causes suppuration. 2. Do foreign bodies as such cause the formation of pus? Foreign bodies introduced antiseptically into the anterior chamber of the eye never caused inflammation and suppuration. In answer to the third question, Are there any kinds of chemical agents that cause suppuration? he reviews the experiments of other investigators, and then relates a series of experiments of his own where chemical irritants were introduced with great precautions into the anterior chamber and under the skin, completely confirming the results of other investigators and concluding that suppuration in every case depends upon the action of living microbes. In this way the parallelism of the three processes—fermentation, putrefaction, and suppuration—is established.

Dr. Harold C. Ernst, in a most interesting and convincing paper, relates the results of a series of some forty inoculation experiments extending over a period of a year or more. In these experiments pure cultivations of seven different forms of bacteria were used. Inoculations of pure gelatin cultivations of the *Staphylococcus pyogenes aureus* injected into a healthy guinea-pig produced death in twelve hours, and so in every case the experiments indicated that the virulence of these pathogenetic organisms was just as great at the end of a year, and after passing through a large number of generations, as when taken from their birthplace; and he concludes that no form of suppuration in man is unattended by bacteria. And lastly there are the experiments of Prudden on the ætiology of ulcerative endocarditis; the injection of *Staphylococcus pyogenes aureus* into the blood, combined with chemical or mechanical irritation of the valve or the endocardium, almost invariably produced ulcerative endocarditis.

Brassowski has corroborated the investigations of previous observers in a series of observations made at Mikulicz's clinic, and found that the *Staphylococcus aureus* and *albus* and *Streptococcus pyogenes* are the principal organisms found. It is usually supposed that in wounds healing by primary union and free from suppuration none of these organisms would occur. This observer has examined the secretions of wounds classed as strictly aseptic where primary union occurred, and arrived at the following conclusions: Under antiseptic iodoform dressings only a part (one fifth) of the wound remains quite free from micro-organisms. Result, primary union. In a portion (one half) the *Staphylococcus albus* may be present (in small numbers), and two thirds of these heal by primary union; in the other one third a slight suppuration occurs. In nine cases the *Staphylococcus aureus* and in two the *Streptococcus pyogenes* occurred. Both cause certain suppuration, but by suitable drainage from the start this may be limited to the vicinity of the drain openings.*

The recent investigations of Dr. John E. Weeks, published too late for incorporation in this article, confirm the foregoing statements.

Nélaton, who was counted among the most successful operators, was in the habit of saying that the man who discovered a method of preventing purulent infection would deserve to have erected *in his honor* a statue of gold.

"Lister† first taught us to apply systematically and accurately a method which would insure for our wounds protection against the hordes of intriguing microbes, and, although his particular method has been simplified and superseded in other countries, the underlying principles remain the same, and subtend all the modifications of the improvers."

The term "Listerism" or "antiseptics" has undergone all manner of misrepresentation and abuse. In a recent article I find it thus erroneously described:

"Listerism, then, is founded on the hypothesis that ordinary atmospheric air contains germs or seeds of disease, which, falling upon the field of operation, develop there, and in that development are answerable for the majority of the unsuccessful results of surgical practice. To prevent that development there was instituted the practice of charging the air surrounding the patient, and especially the field of operation, with a substance which was supposed to have the effect of destroying, or at least of neutralizing, the influence of those germs. As you are all aware, the substance finally selected was carbolic acid. This was employed in the form of a spray to play upon the wound, and of a solution for the hands, instruments, and sponges, in the proportion of 2½ per. cent., or 1 in 40."

This no more constitutes antiseptics than the ability to successfully extract a corn constitutes a surgeon.

It is the fashion of the day to rail at antiseptics and cry for cleanliness; it should be remembered that this is merely playing upon terms. Ordinary cleanliness is not asepsis; it is merely an attempt to obey the great moral precept. This has been conclusively demonstrated by Kümmel. Ordinary washing of a part does not give an aseptic surface. If a few scales of the surface epithelium are removed from a part of the skin thus prepared and placed in a cultivation medium, colonies of one or more species of bacteria will develop, and pyogenic forms are not infrequent. "Scientific antisepsis is an exalted degree of cleanliness, but this exalted degree of cleanliness can only be reached through scientific antisepsis."

What chemical purity is to the chemist, and sterilization to the bacteriologist, so is surgical cleanliness or antisepsis to the surgeon.

There is a wide field for research in the determination of the real effect of disinfectants and antiseptics. The sub-

* "Wien. med. Woch.," "An. of Surg." † Morris.

ject is so beset with fallacies, leading in some cases to totally erroneous conclusions, that it is not surprising that one meets on all sides with conflicting statements.

According to the investigations of Koch, the salts of mercury, and especially the chlorides, prove most valuable when heat is not permissible, though their poisonous nature, and the fact that the chloride is sometimes changed into inert calomel, is a drawback to their indiscriminate use.

Herroun thinks the value of bichloride of mercury much overrated, as he has cultivated ordinary septic bacteria in albuminous filtrates containing 1 in 2,000. It is precipitated by albumins if used of greater strength, and is readily converted by the sulphur of albuminous bodies into inert mercuric sulphide.

Koch * has also tested the value of hot air and steam in the destruction of bacteria and their spores. Rolls of flannel with anthrax spores and a thermometer wrapped up inside were subjected to steam, and the results compared with the effects obtained in hot air.

Thus, in hot air, four hours' exposure to a temperature of 130° C. brought the temperature inside the roll to 85° C., and the spores were not destroyed; on the other hand, exposure to steam under pressure at 120° C. for an hour and a half raised the internal temperature to 117° C., and killed the spores. By such experiments the superior penetrative power of steam-heat was established.

Parsons and Klein have shown that complete penetration of an object by steam-heat for more than five minutes is sufficient to kill all bacteria.

Dr. Sternberg has recently published an exceedingly interesting paper upon the heat death-point of bacteria. He concludes that a temperature of 100° C., maintained for a period of five minutes, destroys the spores of all the pathogenetic organisms tested (about forty varieties). Most organisms are destroyed at a temperature of 62° C.

In this connection it is important to refer to the conclusions of Dr. Fenger in a recent report of a series of investigations:

"What influence the asepsis of the material has on the results of the operations as to death or recovery is a question far beyond the scope of these investigations. It would require a large statistical material of well-observed cases, and more work than could be done by one observer. But it may be safe to conclude that it is desirable to work through an abdominal operation with perfect asepsis everywhere, if such a thing is possible. The above investigations have shown that such perfect asepsis can be attained. Thus, if we are ignorant of the extent of danger from non-sterile material, we are hardly justified in trusting to the innocence or innocuousness of such an uncertainty, while we can have the asepsis of the material an absolute guarantee against the dangers of infection."

The methods of the bacteriologists have made it possible for us to determine with absolute certainty whether the materials used in our operation are sterile or not. By means of cultivation media we may easily determine (1) the condition of the atmosphere in our operating-room, (2) the aseptic condition of the hands, (3) sponges, (4) silk catgut, (5) instruments, etc.

* Cruickshank.

I here present eight cultivation tubes, which were prepared as follows: Previous to two operations performed about a week ago, pieces of the sponges, silk, and catgut to be used were cut off and placed in sterilized tubes; these were carried to the laboratory of the New York Polyclinic, and were carefully placed by Dr. Syms in sterilized peptonized beef gelatin. As you perceive, bacteria have developed in the tube containing a piece of sponge removed at the close of the operation, and in one of the tubes containing a piece of silk; the others have remained sterile. Under the circumstances, the experiments have been too few to give positive conclusions, but they illustrate what may be accomplished by this method. The time at my disposal has been too limited to go into any extended investigation in this direction, but I hope to still further pursue this interesting and practical line of work.

The use of heat as a sterilizing agent by the bacteriologist in the preparation of his pure cultivation, and the uniform result which attends his experiments, has attracted the attention of some of the leading surgeons of Europe, and suggested to their minds that this agent might be employed in the preparation of their antiseptic dressings.

Dr. Robert F. Weir, who has perhaps done more than any other surgeon in New York to popularize antiseptic methods, in a recent lecture referred to this agent as a germicide possessing advantages above the others in "safety, cheapness, and accessibility." You are all familiar with the disadvantages and defects of the dressings prepared with carbolic acid and sublimate. I therefore desire to describe, in the brief space of time allotted to me, the apparatus, and a method of preparing a form of dressing which is intended to overcome, to a certain extent, some of the difficulties with which we ordinarily contend. Neuber was the first to attempt a systematic method of aseptic wound-treatment. Believing that all wound-diseases are due to the action of germs, he seeks to avoid their influence by an improved hospital hygiene, rather than by disinfection with a strong chemical solution. The operation-rooms are especially constructed with a view to cleanliness and drainage. The air admitted to the operation-room is sterilized by first passing it through a furnace and then a cotton filter.

The instruments, sponges, and dressings are sterilized by heat. The hands and region of operation are cleansed and sterilized with a 1-to-1,000 sublimate solution. Only sterilized water is used for irrigation. By these means he hopes to gain an aseptic healing of large operation wounds without drainage. It can hardly be doubted that a wound kept sterile without the lavish expenditure of 5-per-cent. carbolic or $\frac{1}{10}$-per-cent. sublimate solutions will heal more kindly than when these chemicals are used, but, as Nussbaum well says, the aseptic treatment of a wound is an ideal realized with great difficulty, the sterilization of a wound still more difficult, and a break in a single link of the chain will destroy the whole. On a recent visit to the Bürger Hospital, Strassburg, I was told by Professor Luecke that all the dressings used were simply sterilized and not impregnated with any chemical whatever, and he showed me an elaborate apparatus for their preparation. Here the most rigid aseptic wound-treatment is conscientiously followed

—a circumstance which most certainly has no small share in the production of the wonderful surgical results reported from this clinic.

The wonderful results of thorough and intelligent antiseptic precautions are perhaps nowhere better shown than in Professôr von Bergmann's clinic, in Berlin. All those engaged in the operation are dressed in clean white gowns, and the most careful washing and disinfection of hands is observed before every operation. All the gauze employed for dressings is sterilized by means of steam-heat at a temperature of 212° F. This is prepared as follows: After freeing from grease it is placed in a steam sterilizer and exposed to the influence of flowing steam at the temperature of 100° C. for a period of fifteen to thirty minutes; by this means it becomes perfectly sterilized. This sterilized gauze, without further treatment, is used for dressings in all but the larger operation wounds, and small tufts are used instead of sponges. In the more serious operation, where profuse secretion is apt to occur from the wound, it is thought best to obtain whatever advantage may be derived from the impregnation of the gauze with corrosive sublimate, as all the operations are performed in the presence of from two hundred to three hundred students who come directly from the anatomical rooms. During the operation the wound is irrigated with a 1-to-2,000 bichloride solution, except in operations on the abdomen, the pleural cavity, the mouth, rectum, and bladder, where 1-to-1,000 salicylic acid or 1-to-200 boric acid is employed.

This convenient little apparatus, here shown, which we owe to American ingenuity, known as the Arnold automatic steam cooker, will be found indispensable to the surgeon.

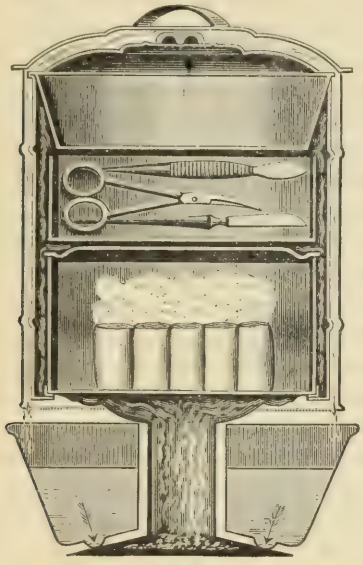


Fig. 1.

The sterilization is done by steam under slight pressure, which is generated very rapidly in the small, thin vessel under the pan. The pan is simply a reservoir to keep the steam generator supplied with water as it boils away. The steam passes up the tube into the drum. In this the perforated receivers or wire baskets are placed and completely surrounded with live steam; in this way gauze, sponges, instruments, and silk are sterilized at a temperature of 212° F. without exposure to air or water. The steam, instead of escaping into the room, is caught by a receiver and condensed, and flows back into the supply reservoir.

With an ordinary Bunsen burner the water boils in less than five minutes, so that in a period of twenty minutes all the materials for an ordinary operation may be prepared.

In private practice the sterilizer may be placed on the cooking range, or a kerosene-oil stove can be used. I ordinarily place the apparatus on a stove near the operating-table, so that during the etherization of the patient my materials are being prepared. When the patient is fully anæsthetized, the instruments and silk are removed from the sterilizer, and the dressings left within until needed.

I also exhibit a more complicated apparatus which is a modification of Koch's sterilizer (Fig. 2). It consists of a



Fig. 2.

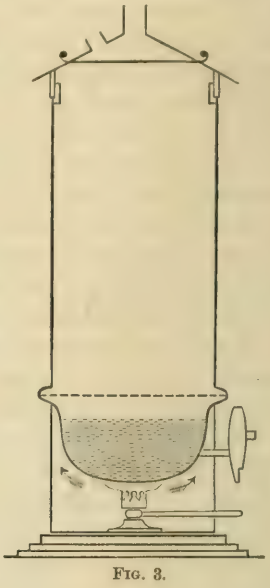


Fig. 3.

cylindrical vessel of strong tin plate, about half a metre or more in length, 25 ctm. in diameter, jacketed with thick asbestus to prevent loss of heat, and provided with a conical cap. The lid is also covered with asbestus, which is perforated at the apex to receive a thermometer. Inside the vessel is an iron grating or diaphragm about two thirds the way down, which divides the interior into two chambers, the upper or steam chamber and the lower or water chamber. A gauge outside marks the level of the water in the lower chamber; this should be kept about two thirds full. The apparatus stands on three legs and is heated from below with three Bunsen burners. When the thermometer indicates 100° C. the lid is removed and the dressings are lowered in a basket by means of a hook and string and the lid quickly replaced.

It requires twenty-seven minutes for the thermometer to indicate 100° C. with five pints of water in the receiver, and another fifteen minutes to completely sterilize the material placed within.

I believe the ideal apparatus to be one constructed on this model but made of riveted copper so that the water can be drawn off and the material dried at a temperature of 212° F., as indicated in the diagram (Fig. 3).

On removal from the apparatus the dressings dry on exposure of two to three minutes to the air. Or they may be placed in a drying oven for a few minutes.

*Antiseptics in Abdominal Surgery.*—Some few years ago Wegner made the remark that he and his contemporaries had doubtless all been reared in the fear of the Lord and the peritonæum, but now the peritonæum had ceased to be a surgical "*noli me tangere.*"

I would be the last to decry the marvelous progress which abdominal surgery has made under the influence of antisepticism, yet I believe that our antiseptic solution can not be used in abdominal surgery with that perfect freedom which has been so efficacious in preventing surgical infection in other classes of operations. Here the enormous absorptive power of the peritoneal cavity dominates the scene. In looking over the records of surgical operations, the deaths from mercurial poisoning are not a few. A recent writer says: "To meet this evil I have gradually diluted my spray and solutions, so as to reduce the whole question to one of cleanliness, and, I am happy to say, with the effect of very greatly adding to the success of my ovariotomy work." While I can not indorse this practice, yet it has been my endeavor during the past year or so to get along as far as possible without the use of carbolic acid and sublimate during the progress of an abdominal operation, and with the result of making the convalescence of the patient more normal in every respect. To make myself more clearly understood, perhaps I can not do better than give a description of antiseptics as now practiced at the Woman's Hospital, Brooklyn. All efforts are directed with scrupulous care to the disinfection of the instruments and person. The sponges are prepared according to the method described by Dr. Weir, and are used but once. Recognizing and fully appreciating the difficulty of securing at all times the intelligent co-operation of assistants and nurses, the number of assistants who touch anything in connection with the operation is limited to one. All instruments are scrubbed with a brush and soap before and after each operation. Previous to each operation they are placed in the sterilizer for fifteen minutes and then transferred to boiled water. All towels and silk used about the operation are sterilized by boiling. The vessels and basins used about the operation, consisting of glass or granite iron ware, are partially filled with water and placed in an oven for a period of two hours. The water used for sponges and irrigation is boiled and then cooled in covered vessels. The region of operation is washed, shaved, and then cleansed with a saturated solution of iodoform in ether. The room used for the operation is thoroughly cleansed and fumigated before each operation.

This hospital is the first to have a separate building devoted exclusively to abdominal surgery. This pavilion is separated from the main building, not by a space of a few hundred feet, but by a distance of two miles, so that there is no communication whatever. We now come to the practical question, Do the results justify all these extraordinary precautions and untiring vigilance on the part of the surgeon? In answer to this question I will read you a report of the operations performed in this hospital from January 1, 1887, to December 31 of the same year:

Thirty-five abdominal sections for the removal of ovarian tumors and diseased uterine appendages; of these 35 patients but one died, and this operation was not performed by the regular staff of the hospital.

Twenty of these cases required the use of a drainage-tube.

The abdominal cavity has been opened five times in the removal of cancerous uteri through the vagina; all of these patients have recovered.

There has been one case of suprapubic amputation of the uterus, with its annexa, for myoma, which ended in recovery.

There have been three exploratory incisions; in one of them, a case of peritonitis, the patient succumbed from shock.

There have been four operations for the radical cure of hernia, all of which ended in recovery.

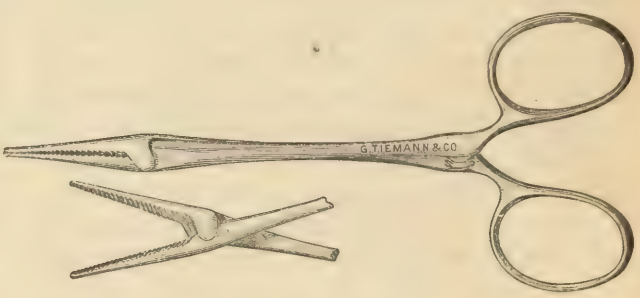
Fifty-two operations for lacerations of the cervix uteri and perinæum; all the patients recovered.

Besides these cases there have been performed in the children's department 14 cuneiform and 22 subcutaneous sections of the bones of the limbs for the cure of deformities, none of which have been attended by serious symptoms.

There have been a variety of other operations which I will not take your time to enumerate. The two deaths above recorded constitute the total mortality.

With one exception, these operations have been performed either by Dr. Mary D. Jones or myself.

I take this opportunity of presenting Collins's new hæmostatic clamp forceps, which is the simplest and most easily cleaned of any forceps with which I am acquainted, and I have adopted it almost exclusively in my practice.




Messrs. Tiemann & Co. have adapted this lock to forceps and scissors of different sizes. The lock is simplicity itself; attached to one blade there is a round pivot, which fits into an opening in the other blade. In order to hold the two blades in close apposition, as the forceps is closed, the male blade passes beneath a projecting arm attached to the female blade, somewhat similar to a Simpson obstetrical forceps. Its advantages are: (1) there are no crevices to hold dirt, so that it can be readily cleaned; (2) the lock can not be twisted off by clumsy nurses; (3) the blades are held firmly together, so that there is no wabbling.

**Treatment of Ingrowing Toe-nail.**—Patin recommends ("Gaz. des hôp.") for this affection that the nail be thoroughly bathed with water, then dried, and painted with traumaticin (10 parts of gutta percha to 80 parts of chloroform). Sometimes it is best to dress the toe with diachylon ointment after painting it. Or course, as complete rest as possible is to be given to the toe.

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## JEJUNOSTOMY.

To the three operations which have been resorted to, more or less *à titre d'experience*, during the past ten or fifteen years for the cure or relief of cancerous or cicatricial stenosis of the pylorus—excision, dilatation, and gastro-enterostomy—a fourth has now been formally added by Maydl, of Vienna; jejunostomy, in which a permanent fistula is established near the upper end of the jejunum, through which the individual is to receive all his food. Of its three predecessors, excision of the pylorus has been damaged almost beyond repair by its results, for few of us demand so much as a certain prominent surgeon who, when asked for his opinion of the operation, said that he had not yet formed one, but was waiting for more experience—he had performed it only fourteen times, and all his patients had died. Forcible dilatation of the pylorus is applicable only to cicatricial stenosis, holds out a prospect of little more than temporary relief, and has also a high death-rate. Gastro-enterostomy, in which a permanent communication is established between the small intestine and the stomach through its anterior wall, is an operation requiring not only exceptional skill and experience for its proper execution, but also so much time, from two to three hours, that the enfeebled patient is thereby exposed to serious danger. For jejunostomy it is alleged that it is of easy, rapid execution and accompanied by but slight risk of peritonitis; that in cancer of the stomach it affords a prolongation of the period of survival and a reduction of the discomfort or suffering approximately equal to those obtained by successful pylorectomy; that in cicatricial stenosis it is less dangerous and has a more durable result than forcible dilatation; and that it is less dangerous than gastro-enterostomy, but inferior to it in that it substitutes alimentation through a fistula for feeding by the mouth.

The idea is not an entirely new one. Surmay proposed it in 1878 as suitable in pyloric obstruction and in organic and even functional disorders of the stomach. In 1880 Langenbeck, and in 1884 Southam and Robertson, established an opening in the upper part of the duodenum in cases in which the weakness of the patients forbade excision or gastro-enterostomy; all three of the patients died after surviving from eight hours to seven days. In 1885 Pearce Gould and, two months later, Golding Bird performed jejunostomy in cases of cancer of the pylorus, rejecting excision and gastro-enterostomy because of the weakness of the patient in the first case and because of extensive adhesions in the second. Gould's patient died in sixty-six hours, of exhaustion; Bird's died on the ninth day, in consequence of the accidental injection of food into the peritoneal cavity through an opening by the side of the fistula. Maydl has done the operation twice, in April and June, 1887. His first patient survived seven weeks, during the first five of which his nutrition was satisfactory, but he lost flesh rapidly during the last two; the second patient died nine days after the operation, with all the signs of insufficient nourishment, and it was discovered at the autopsy that the opening had been made at a much lower point in the intestine than had been intended, about midway between the duodenum and the cæcum. Both patients had extensive cancer of the stomach, which was adherent in the first to the anterior abdominal wall, and in the second to the transverse colon, so that neither excision nor gastro-enterostomy was possible.

It can hardly be contended that this record proves more than that the operation can be done without much risk of causing death by shock or peritonitis. Only one patient survived long enough to furnish any means of judging whether or not food introduced solely through such a fistula can maintain life for any length of time; he improved until the fifth week, then began to lose flesh rapidly, and soon died, and it remains uncertain whether his failure was due to the progress of the disease or to the way in which he was fed. Practically, then, the question as to the possibility of giving sufficient food in this manner remains as it was before any of the operations had been done. Experiments upon animals have shown that they can be nourished thus, and the well-known case of traumatic intestinal fistula reported a few years ago by Busch shows that an otherwise healthy human adult can also. This patient was a woman who had been gored by a bull. Six weeks after the accident she was brought to the hospital in a state of extreme emaciation, with an intestinal fistula situated midway between the umbilicus and the pubes, out of which the contents of the bowels escaped freely. The appearance of the mucous membrane, as seen through the opening, indicated that the wound was in the upper part of the small intestine, and this opinion was strengthened by other features of the case. Busch introduced food into the lower segment of the intestine through the opening, and the patient soon regained her former strength and weight.

Of the difficulties which suggest themselves on physiological grounds, those which relate to the gastric and pancreatic ferments can readily be met by the introduction of these ferments with the food or by preliminary artificial digestion, but those which relate to the bile are not so easily disposed of, if, as is commonly held, the bile is something more than an excretion, and assists digestion and absorption. The fact that it is poured into the intestine in large quantity, most of which is reabsorbed, is taken to indicate that it contains alimentary or other products needing to be acted upon in the intestine in order to be fitted for use before reabsorption, and consequently its flow from the liver and its temporary retention in the bowel in contact with the food should be provided for. It is also known that the passage of food from the stomach into the duodenum provokes a free discharge of bile from the liver, and the question arises whether this flow may not be injuriously diminished by a withdrawal of the duodenum from participation in the di-

gestive process. This question, and that of the timely admixture of the bile with the food, appear to us to be the only serious ones, for the retention of the bile within the intestine, if it is once poured into it in sufficient quantity, can easily be effected by a suitable obturator in the fistula.

The technique of the operation is simple. A transverse incision three or four inches long is made to the left of the umbilicus, and carried through the outer part of the rectus and the adjoining muscles, and to a somewhat smaller extent through the peritonæum. The omentum and the colon are pressed upward and to the right; the upper end of the jejunum is sought for by passing the finger along the lower surface of the mesocolon to the back of the cavity, and when it is thought to have been found its identity should be confirmed by sight as well as by touch. Maydl's experience in his second case shows that it is unsafe to depend upon resistance to traction as evidence that the upper end has been seized. A point about a foot below the duodenum is selected and secured in the opening with twelve or fifteen interrupted silk sutures passed through its muscular coat and the parietal peritonæum and fascia in such a way as to encircle an area on the surface of the intestine about half an inch in diameter. The rest of the opening is closed in the usual manner, no drainage-tube being placed in the abdominal cavity. A silk loop should be stitched at each end of the exposed area, to facilitate its subsequent perforation, which should be made after the lapse of a few days—a week, if the patient's condition will permit of the delay—with a small Paquelin point, and should not be larger than a medium-sized catheter.

It is too early to determine the future of the operation, but its position with reference to pylorectomy and gastro-enterostomy, in case nourishment by such a fistula proves sufficient, may be measurably foreshadowed. The former will be abandoned or reserved for cases of small, non-adherent tumors; gastro-enterostomy, if such results as those recently published by Rockwitz, of Strassburg, should prove to be obtainable by others, may be preferred in simple stenosis and in cancer when the disease does not involve too much of the stomach and the patient is not too feeble. Jejunostomy will be applicable at least in cases not admitting of other operative treatment for the diminution of suffering, and perhaps even for the indefinite prolongation of life. It will also be an operation which the comparatively inexperienced but strictly antiseptic surgeon can confidently undertake, and it may also serve in some cases as a sort of operative lightning-rod which will afford a means for the relatively harmless discharge of the *furor secandi*.

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## THE CARE OF THE INSANE IN THE STATE OF NEW YORK.

A BILL looking to more suitable provision for the indigent insane of the greater part of the State of New York is shortly to be presented before the Legislature. It is entitled "An Act in Relation to the Care and Custody of the Pauper Insane and Indigent Insane in the Counties of this State, except New York, Kings, and Monroe Counties." We have been shown a copy of the bill, which was drafted by Professor Theodore W. Dwight, a member of the State Charities Aid Association's Committee on the Insane, and our examination of it has convinced us that it ought to be passed at once, and its provisions honestly carried out. It provides for the gradual transfer of the insane, whether their malady is acute or chronic, from the county poorhouses and the city almshouses to the State hospitals. For this purpose the State is to be divided into as many asylum districts as there are State hospitals for the insane. Each State hospital is to receive the pauper insane of its district at a uniform weekly rate of $1.50 for each patient, chargeable to the counties. For this sum the patient is to be clothed, fed, and otherwise cared for in the hospital, and to receive free transportation from his home under the guidance of a trained attendant sent from the hospital for the purpose. The bill further provides for the erection of a number of inexpensive new buildings on the grounds of the various State hospitals, to furnish suitable accommodations for the chronic pauper insane now confined in the poorhouses and almshouses of the State.

It is represented that the bill accords with the views of the State Commissioner in Lunacy, as expressed in his annual reports to the Legislature, as well as with those that have been put on record in the annual reports of the State Board of Charities, and that it meets with the approval of persons skilled in the care and management of the insane. It is within our knowledge that it has the earnest support of many discreet and conservative members of the medical profession, and there is reason to expect that it will receive the formal approval of our representative medical societies. Not the least among its titles to adoption is the fact that it is indorsed by the State Charities Aid Association, which has issued an appeal to its forty-three county visiting committees and its other members, in which it presents cogent arguments showing not only the humane purposes of the bill, but also the economical character of its provisions from the financial point of view. The State Charities Aid Association has already accomplished much in the way of simplifying and improving the machinery of public assistance in the State, it is well known to be utterly free from any elements capable of soiling the purity of its purposes, and its constitution is such as commands the respect of every good citizen who has taken pains to inform himself upon the matter. Its indorsement of the bill, therefore, ought of itself to be enough to secure its passage. It is understood that the reason for excepting the counties of New York, Kings, and Monroe from the provisions of the bill is that further legislation is needed to suit the special conditions of those counties.

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# *MINOR PARAGRAPHS.*

## THE ATTEMPTS TO BURN THE HOSPITAL FOR THE RUPTURED AND CRIPPLED.

THE first of a series of attempts to destroy the Hospital for the Ruptured and Crippled resulted, as our readers are aware, in the death of one of the employees of the house. Several subsequent attempts, following each other in rapid succession, led

to an investigation by the Fire Marshal, in the course of which suspicion fell upon one of the patients, a little girl. The girl confessed that she was the offender, and was handed over for the time being to the Society for the Prevention of Cruelty to Children. It is now announced that, at the coroner's inquest held over the remains of the deceased employee, an official of the society stated his belief that, notwithstanding the child's confession, she was not really the person who committed the offence; also that the coroner instructed the jury that there was no evidence against the child, whereupon a verdict was rendered to the effect that the deceased had come to her death by suffocation in consequence of the act of some unknown incendiary. This verdict may be a just one, and certainly there is no disposition on the part of the community to look upon the self-accused child as a criminal if it can be avoided, but it seems to us that this summary declaration of her innocence is hardly so satisfactory as a conclusion to the same effect would have been if it had been reached by a more formal and thorough inquiry.

### AN ABDOMINAL SALPINGOTOMY IN THE LAST CENTURY.

A Russian lady, Mrs. Tkatchef, contributes to a recent issue of the "Gazette hebdomadaire des sciences médicales de Montpellier" an interesting account of a case in which, in the year 1784, Dr. Charles Augustus Seydel, of Sarepta, in the province of Astrakan, Russia, diagnosticated an ovarian tumor as large as the head of a child two years old, attached to the uterus by a pedicle. As his patient continued to suffer severely, in spite of ordinary methods of treatment, he decided to attempt the removal of the tumor by laparotomy. On the 21st of February he opened the abdomen by an oblique incision extending from the umbilicus to the right inguinal ring. The adhesions were found to be such as to render the removal of the tumor impracticable, and it was discovered that the mass was not an ovarian tumor, but an enlargement of the Fallopian tube. It was tapped and drained, giving issue to a thick, chocolate-colored liquid. During the operation the protruded intestines were protected with a towel soaked in warm milk. The abdominal wound was closed at first only with a plaster, but afterward with sutures. For the first few days the discharge from the sac, a thick and fœtid liquid, was removed at stated times with a silver tube, but, as this grew more and more unsatisfactory, the doctor sucked it out with his mouth four times a day. The patient had fever for about a week, after which she improved steadily and the opening finally closed. She was heard from two years after the operation, and was then in perfect health. A decoction of cinchona bark and various balsamic preparations were employed in the treatment of the wound, and care was taken to prevent adhesion of the intestinal coils to the peritonæum by interposing pieces of linen soaked in oil of roses.

### THE LAST OF ANOTHER ANÆSTHETIC ALKALOID.

There appears great reason to conclude that "drumine," an alleged anæsthetic alkaloid derived from the *Euphorbia Drumondii*, is not only not an anæsthetic, but also not an alkaloid. It seems to be a compound made up in great part of calcium oxalate. Such at least is the conclusion pointed to by the investigations of several contributors to a recent issue of the "Pharmaceutical Journal and Transactions." Moreover, it is announced that the purveyors of "drumine," having found it unsatisfactory, no longer furnish it. It will be remembered that "drumine" was brought into notice by Dr. John Reid, of Melbourne. Its career is not unlike that of "gleditschine." Some of our European contemporaries have seen fit to speak of the "gleditschine" affair as "an American swindle." The "Bulletin général de thérapeutique," commenting on the matter of "drumine," more politely refers to it as "*une mystification*," without any adjective denoting its Australian origin.

### A NEW OBSTETRICAL ANÆSTHETIC.

It is not of a new drug that we are about to speak, but of so common a feminine characteristic as the passion for dancing. One of the "Union médicale's" *feuilletonistes*, the vivacious if not always strictly accurate "Simplissime," tells the story of a woman who was the subject of this passion in an extreme degree. She went to a ball when she was seven months pregnant. Feeling the pains of labor come on, she simply cursed her luck and kept on dancing. The more violent the pains grew, the more furious energy she displayed in her capers, for she was resolved to postpone her departure as long as possible. Finally, while she was taking part in a *galop*, the waters broke. But no sympathy did the poor woman get. Nobody divined the real cause of the flow of water, but the bystanders seem to have become enraged at her, thinking her uncanny. They set upon her and pursued her in her flight through the streets, but her pluck and agility enabled her to elude them at last, although none too soon, for within five minutes of the time when she first thought it safe to sit down on the ground her child was born. "Simplissime" remarks that nowadays various diabolical procedures are resorted to, under the guise of hypnotism, to persuade women that their labor is painless, but he doubts if they have ever been quite so effective as the demon of the dance was in this poor woman's case.

### LA CHARITÉ AND THE SISTERS OF ST. AUGUSTINE.

La Charité has been secularized, apparently in spite of the efforts of the medical staff to induce the *assistance publique* to retain the Sisters. It seems that the bureau has not even had the grace to thank the Sisters for their past services, whereupon M. Potain, M. Desnos, M. Féréol, M. Luys, M. Laboulbène, and M. Blachez, physicians, and M. Trélat and M. Desprès, surgeons, of the hospital, have addressed a letter to the *Supérieure*, in which they bear touching testimony to the loyal and efficient service of the Augustinian Sisters. The full text of the letter is published in the "Union médicale."

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 7, 1888:

| DISEASES. | Week ending Jan. 31. | | Week ending Feb. 7. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 10 | 2 | 9 | 1 |
| Scarlet fever | 131 | 20 | 163 | 26 |
| Cerebro-spinal meningitis | 2 | 2 | 1 | 1 |
| Measles | 36 | 7 | 48 | 7 |
| Diphtheria | 136 | 52 | 192 | 38 |
| Small-pox | 1 | 0 | 11 | 1 |

**The Medical Society of the State of New York.**—The following is the report of the Committee on Nominations for officers for the ensuing year: For President, Dr. S. B. Ward, of Albany; for vice-president, Dr. A. Walter Suiter, of Herkimer; for treasurer, Dr. C. H. Porter, of Albany; for secretary, Dr. William Manlius Smith, of Syracuse. For censors, *Southern District*, Dr. John S. Warren, of New York County; Dr. Wal-

ter B. Chase, of Kings County; Dr. W. H. Helm, of Westchester County; *Eastern District*, Dr. Joseph Lewi, of Albany County; Dr. Thompson Burton, of Montgomery County; Dr. Leroy McLean, of Rensselaer County; *Middle District*, Dr. Henry Flood, of Broome County; Dr. Robert Frazer, of Oneida County; Dr. I. N. Goff, of Madison County. *Medical Department of Syracuse University*, Dr. I. N. Goff, of Madison County. Committee of Arrangements, Dr. E. L. Partridge, of New York; Dr. F. C. Curtis, of Albany; Dr. C. S. Merrill, of Albany. Committee on By-Laws, Dr. George Seymour, of Utica; Dr. F. A. Castle, of New York; Dr. W. M. Smith, of Syracuse. Committee on Hygiene, Dr. E. V. Stoddard, Dr. E. F. Brush, Dr. J. P. Creveling, Dr. Alfred C. Mercer, Dr. W. H. Bailey, Dr. A. N. Bell. Committee on Legislation, Dr. Alexander Hadden, Dr. Henry T. Peirce, Dr. F. C. Curtis. Committee on Ethics, Dr. A. Jacobi, Dr. Arthur Mathewson, Dr. H. R. Hopkins. Committee on Prize Essays, Dr. G. F. Shrady, Dr. F. P. Foster, Dr. Eugene Beach. Committee on Publication, Dr. W. M. Smith, Dr. C. H. Porter, Dr. Daniel Lewis, Dr. O. B. Douglass. Honorary Members, Dr. Duane D. Simmons, of Tokio, Japan; Dr. Francis J. Shepherd, of Montreal; Dr. B. F. Baer, of Philadelphia; Dr. George E. Fenwick, of Montreal; Dr. D. M. Wilcox, of Lee, Mass. Eligible to Honorary Membership, Sir Morell Mackenzie, London, Eng.; Professor William Pepper, Philadelphia; Dr. Max Schede, Hamburg; Dr. Reginald Harrison, Liverpool; Mr. Howard Marsh, London; Dr. Francis Bacon, New Haven. Delegates to the Massachusetts Medical Society, Dr. A. Jacobi, Dr. J. O. Roe, Dr. B. A. Sherman; to the Vermont Medical Society, Dr. D. M. Totman, Dr. M. L. Bates, Dr. W. O. Moore; to the Pennsylvania Medical Society, Dr. A. Jacobi; to the New Jersey Medical Society, Dr. Prince A. Morrow; to the Canadian Medical Association, Dr. James McFee and Dr. George H. Rider; to the Connecticut Medical Society, Dr. George H. Fox, Dr. Clarence C. Rice, Dr. A. M. Phelps, Dr. M. L. Bates; to the Virginia Medical Society, Dr. F. R. Sturgis; to the British Medical Association, Dr. John O. Roe. The Committee on Quarantine reported progress. The Special Committee on the Management of the Insane reported as opposed to the return of the Management of the Insane to the Counties. The reports were adopted.

**The Clinical Society of the New York Post-graduate Medical School and Hospital.**—Dr. James K. Crook has been elected secretary of the society.

**The French Fund for Promoting the Cure of Consumption.**—According to the "Gazette hebdomadaire de médicine et de chirurgie," the total amount thus far subscribed to the fund for encouraging the study of the cure of tuberculosis is 58,394fr. 10.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from January 29 to February 4, 1888:*

RAYMOND, H. I., First Lieutenant and Assistant Surgeon. Ordered to Fort Bidwell, California.

FISHER, W. W., First Lieutenant and Assistant Surgeon. Ordered to Presidio of San Francisco, Cal.

S. O. 25, A. G. O., January 31, 1888.

*Promotions.*

PAGE, CHARLES, Lieutenant-Colonel and Surgeon. To be Assistant Surgeon-General, with rank of Colonel. November 17, 1887.

MCKEE, JAMES C., Major and Surgeon. To be Surgeon, with rank of Lieutenant-Colonel. November 17, 1887.

GIRARD, ALFRED C., Captain and Assistant Surgeon. To be Surgeon, with rank of Major. November 17, 1887.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service, for the two weeks ending February 4, 1888:*

WHEELER, W. A., Passed Assistant Surgeon. Granted leave of absence for thirty days. January 24, 1888.

WHITE, J. H., Passed Assistant Surgeon. Granted leave of absence for two days. January 26, 1888.

WATKINS, R. B., Assistant Surgeon. Granted leave of absence for thirty days. January 28, 1888. Resignation accepted, to take effect March 15, 1888. January 28, 1888.

VAUGHAN, G. T., Assistant Surgeon. Appointed an Assistant Surgeon, January 25, 1888, vice A. D. Bevan, resigned. Assigned to temporary duty at Marine Hospital, Boston, Mass. January 26, 1888.

CARMICHAEL, D. A., Passed Assistant Surgeon. Detailed as attending surgeon and acting chief clerk, Supervising Surgeon-General's Office. February 2, 1888.

URQUHART, F. M., Passed Assistant Surgeon. Granted leave of absence for twenty days on account of sickness. February 3, 1888.

WILLIAMS, L. L., Assistant Surgeon. Ordered to examination for promotion. February 2, 1888.

**Society Meetings for the Coming Week:**

MONDAY, *February 13th:* New York Ophthalmological Society (private); New York Medico-historical Society (private—anniversary); New York Academy of Medicine (Section in Surgery); Lennox Medical and Surgical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

TUESDAY, *February 14th:* New York Medical Union (private); Medical Societies of the Counties of Delaware (semi-annual) and Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations.

WEDNESDAY, *February 15th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society (clinico-pathological).

THURSDAY, *February 16th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *February 17th:* Chicago Gynæcological Society.

SATURDAY, *February 18th:* Clinical Society of the New York Post-graduate Medical School and Hospital; St. Louis Medical Society.

## Proceedings of Societies.

### MEDICAL SOCIETY OF THE STATE OF NEW YORK.

*Eighty-second Annual Meeting, held in Albany, Tuesday, Wednesday, and Thursday, February 7, 8, and 9, 1888.*

The President, Dr. ALFRED L. LOOMIS, of New York, in the Chair.

*Tuesday's Proceedings.*

The PRESIDENT called the meeting to order at 9.25 A. M. Prayer was offered by the Rev. Mr. RAYMOND.

**The President's Address.**—In his address the president recommended that every member should review in his own

mind his experience, and, if he had learned something new or not generally known to the profession, that he should present it briefly either here or at some local society. He recommended that the societies of other counties take steps, as had that of the county of New York, to enforce the law regulating the practice of medicine. The medical examiner's bill, formerly before the society, had the approval of the profession throughout the State, and the speaker felt confident that if the society went unitedly and earnestly to the present Legislature with the bill as it now stood it could be made a law. He recommended that the committee on legislation be instructed to urge its passage. Questions put to medical experts in courts should not be prepared by lawyers unfamiliar with medical science, but by a medical scientist, and he recommended that the subject be referred to the committee on legislation to report whether legislation in that direction was desirable. Some tendency was being manifested to create county asylums for the insane, which the speaker thought experience universally condemned, and he recommended that a special committee be appointed to report on this subject on the last day of the present session. He also recommended the appointment of a special committee to report on the question of placing quarantine in the hands of the general government. He disapproved the recent action of the society tending toward the rapid increase of its membership, for any increase of quantity at expense of quality would be injurious. It would tend to weaken the society as a scientific organization. He recommended that a special committee be appointed to report at the next annual meeting regarding the concerted labor of physicians and pharmacists in the revision of the pharmacopœia in 1890. The names of those taken from the society by death during the year were enumerated, with special mention of Dr. Clark and Dr. Carpenter.

**The Committee on the President's Address** was named as follows: Dr. Wey, of Elmira, Dr. Ford, of Utica, and Dr. Lewis, of New York.

**Committee on Credentials.**—Dr. James Spencer, Dr. O. B. Douglass, and Dr. W. B. Brown were appointed.

**Business Committee.**—Dr. F. A. Castle, Dr. J. W. Whitebeck, and Dr. A. W. Suiter were appointed.

**Report of the Committee on By-laws.**—Dr. Weir, of the committee, reported that the constitution and by-laws of the Medical Society of the County of Westchester had been examined and approved.

**The Committee on Legislation.**—The report was read by Dr. Johnson. It referred to the medical law enacted last winter on the rights and duties of county medical societies to disband on a majority vote. The committee on by-laws had turned this subject over to the committee on legislation. That committee had taken no action, and, on motion of Dr. Piffard, further inquiry into the subject was dropped.

The business committee recommended divisions of the society for the morning session of the first day into medical and surgical sections. The recommendation was adopted.

**The Use of Alcohol in Certain Forms of Fever.**—Dr. H. Kretzschmar, of Brooklyn, read a paper on this subject in which he said that in certain forms of disease alcohol was a remedy which, if properly administered, was not only instrumental in prolonging life, but frequently was a most important factor in preserving it. Alcohol was generally spoken of as standing midway between food and medicine. In that sense it was an evil. In reality it possessed the qualities of both in marked degree. Neither the amount to be given nor the time of administration should be left to the judgment of patient or friend. Alcohol was the prince of antiseptics, and was the most reliable medicine we had in diphtheria. It dissolved the exudation in the throat, allayed the temperature, and calmed the pulse, showing its destructive effects upon the germs of the disease. Among other diseases in which alcohol was beneficial was phthisis, especially when there was elevation of the temperature.

Dr. F. A. Castle said that he put the stimulant in several small bottles, since, when exposed to the air, it lost certain valuable medicinal properties.

**Neuro-therapeutic Memoranda.**—Dr. J. Leonard Corning read a paper in which he described the application of medicinal agents in the immediate neighborhood of the cord in certain tetanic or painful conditions. He first measured the distance to the point at which he wished to deposit the fluid by inserting a needle, and afterward introduced the needle of the syringe. He had injected a solution of strychnine in experiments on animals and the treatment of disease of the cord in man usually at the tenth or eleventh dorsal vertebra. The benefits in certain cases, especially of functional troubles, were unquestionable. He also spoke of the benefit he had derived from the prolonged use of the interrupted current in rheumatic paralysis of the face.

**Reflex Nervous Disturbances.**—Dr. W. E. Ford, of Utica, in this paper related cases in which certain nervous phenomena were presented, which were treated by the removal of the causes of peripheral reflexes, and at the same time by such methods as tended to calm and restore the general nervous system. Some cases were those of chorea, epilepsy, and masturbation. Some of the causes of peripheral reflexes were a diseased state of the ovaries and tubes, phimosis, and urethral caruncle. The removal of these alone, unaided by bromides and other agents directed to the general system, would not cure the case nor give so marked relief. He desired to impress the fact that the term reflex as at present used had much too wide a range. We should no more speak of functional disease than of functional health.

Dr. E. D. Fisher thought that we should not consider a disease which had become chronic as due to peripheral irritation; being chronic, it was due to a lesion of the central nervous system. In that case removal of the cause of the original peripheral irritation would not cure the symptoms which had become founded upon a central lesion.

Dr. Corning thought that many ovaries had been cut out and many other serious operations had been performed in the interest of the so-called reflex theory, when the real cause of the trouble lay in a lesion of the central nervous system.

**Influence of Obesity in Young Women upon the Menstrual and Reproductive Function.**—Dr. Andrew F. Currier, of New York, drew the conclusions, from the testimony presented, that obesity occurring in young women caused disordered menstruation, and usually sterility, whether the patient had previously borne children or not. If utero-gestation were completed in such patients the child was likely to manifest deficient vitality. The quantity of the flow was almost always less than normal, of abnormal quality, the duration a few hours or a day. Pain was almost a constant symptom. It was in the sacral region in nearly all cases. Vicarious menstruation was common. Constipation was usually present. There was often a hereditary predisposition to early obesity. It might be brought on by luxurious habits, sluggish disposition, passive sexual indulgence, free use of starchy and saccharine foods. Suggestions as to treatment were based on the ætiology.

**Bovine Tuberculosis.**—Dr. E. F. Brush, of Mount Union, read a paper on this subject. He commenced by remarking that, after all discussions respecting tubercle, we were confronted with the question, "Is bacillary tuberculosis conveyed to the human race from animals affected with this disease?" Of all domesticated animals, the bovines were the most subject to tuberculosis; indeed, the human and the bovine races

were pre-eminently tubercular. To no other animal did we owe so much for food and clothes as to the cow, and it would be strange if we did not acquire from her some malady. It was certain she did not acquire tuberculosis from man. The percentage of cattle infected with tuberculosis in England was placed at 5 per cent., and increased till, in some of the thoroughbred Jersey herds of the Northern States, Professor R. A. McLean declared that 20 per cent. were so affected. The reason why more human beings were not infected was that the normal temperature in the human race was so much lower than in the bovine that the germ would not grow till the temperature was raised in the former to the degree naturally existing in the latter—namely, 101° to 103° F. The same rule held also in localized tubercular deposits where the temperature was raised by reason of injury to a degree permitting the growth of the bacillus. The cultivation of tuberculosis in other animals confirmed this view, as the resistance to tuberculosis decreased in proportion as the natural temperature of the animal increased. Thus in the dog, with the lowest temperature, resistance was good, while in the common fowl, with the highest temperature, resistance was *nil*.

The speaker continued that the Federal Government had contributed half a million of dollars to stamp out pleuro-pneumonia, which did not affect the human race, while scrofulosis, which decimated the human race, was left uncontrolled. He expressed the opinion that tuberculosis in man was derived from the bovine race, and pointed to the curious fact that where these animals were not domesticated, pulmonary phthisis was unknown. He said that if bovine tuberculosis were stamped out by means of laws regulating the breeding of bovine races, it would soon become eliminated from the human race, and he was of the opinion that medical men should be instrumental in procuring the enactment of such laws.

**Action of Caustic Applications on the Nasal Mucus.**—In a paper on this subject, Dr. F. H. Bosworth, of New York, said that chemical agents differed in no essential particular from the potential cautery in their action upon the mucous membrane. He preferred chromic acid to other chemical agents in the treatment of cases under discussion. With this caustic he pinned down the mucous membrane at points exactly as might be desired. A single application often cured cold in the head by reducing the hyperæmia of the Schneiderian membrane.

*Surgical Section.*

Dr. A. M. Phelps, of New York, in the Chair.

**Note on the Treatment of Lupus.**—Dr. H. G. Piffard, of New York, in a paper on this subject, related six cases of lupus treated by hydro-naphthol in a 10-per-cent. solution of liquor gutta perchæ or in a 20-per-cent. solution of rubber plaster. The solution was applied daily for a week, when a crust formed. If the plaster was used it was allowed to remain a week.

Dr. P. A. Morrow, of New York, also read a paper on the treatment of lupus, advocating the method of scarification which acted by dividing the small vessels.

**Extraction of Cataract without Iridectomy, with a Report of 100 Successive Cases.**—Dr. Hermann Knapp, of New York, read a paper with this title. He said that the revival of the old method of extraction would have proved a failure to-day, as it had in previous attempts, but for the introduction of cocaine, eserine, and the antiseptic method. These counteracted its two chief drawbacks—viz., prolapse of the iris and suppuration. In the 100 cases under consideration, prolapse of the iris occurred in 11, in all of which, however, the patients obtained good sight, except in one case, in which the prolapse was secondary to suppuration—the only case of suppuration and failure that had occurred in the whole series. It referred to a man who suffered from purulent dacryocystitis and diabetes, with 6 per cent. of sugar in his urine. Four patients regained only moderately good sight, but they were cases of complicated cataracts, and 95 patients regained good sight, of whom 19 had perfect vision (20 per cent).

This unusual high rate of restoration of good sight the speaker believed to be due to the frequency and harmlessness of secondary division of the capsule, which he had done in 47 cases of this series.

**Fatal Meningitis consecutive to Operation for Extractions of Cataract.**—Dr. David Webster, of New York, read a paper with this title, in which he stated that on the fourth day after the operation chemosis set in, on the eighth day panophthalmitis was well marked, symptoms of meningitis appeared on the twelfth day, and the patient died a week later. The case, he believed, was unique.

**New Urethral and Bladder Instruments** were demonstrated by Dr. F. N. Otis, of New York.

**Galvano-puncture for Enlarged Tonsils.**—Dr. F. H. Potter, of Buffalo, read a paper in which he described such treatby plunging a sharp-pointed electrode twice into the enlarged tonsil at frequent sittings. The danger of hæmorrhage was thus avoided.

**Results of Mechanical Treatment of Hernia founded upon the Observation of 1,000 Cases.**—Dr. W. B. De Garmo, of New York, read a paper in which he stated that he had effected a permanent cure in about one fourth of all cases of hernia, taken indiscriminately, which he had treated by mechanical methods alone.

**Nominating Committee.**—The President appointed as member at large, Dr. H. G. Piffard; first senatorial district, Dr. A. M. Phelps; second, Dr. L. H. Miller; third, Dr. A. Vander Veer; fourth, Dr. W. C. Hamlin; fifth, Dr. George Seymour; sixth, Dr. W. C. Wey; seventh, Dr. John L. Heffron; eighth, Dr. J. O. Roe.

**Removal of Laryngeal Growths with O'Dwyer's Snare, in Conjunction with Intubation of the Larynx.**—Dr. Clarence C. Rice, of New York, read a paper on this subject, in which he referred more particularly to cases occurring in children, in whom a satisfactory diagnosis was very difficult. He first applied cocaine to the pharynx, and then gave chloroform when proper. O'Dwyer's snare was more convenient and less dangerous in the hands of the general practitioner than were the ordinary wire snare or forceps.

*Discussion on Acute Bright's Disease.*

**Pathology and Clinical History** were discussed by Dr. Francis Delafield, of New York, who said that he had studied nephritis with greater satisfaction than ever before during the past three years. He divided acute Bright's disease into three classes: Exudative nephritis, parenchymatous or cellular degeneration, and diffuse nephritis. The first was characterized by congestion and exudation of plasma, emigration of white blood-cells from the vessels, etc. The exudative form was divided into four varieties: First, a mild form, which gave rise to symptoms during life, but which left no lesions in the kidneys after death; second, a more severe form, in which were inflammatory products in the kidneys after death; third, a form characterized by the excessive production of pus-cells; fourth, a form in which the inflammation was prolonged over an unusual length of time, and caused more extensive changes in the kidneys. Here we would expect that the products of inflammation would collect in the tubules or in the stroma between the tubules, part being found in the urine and part in the kid-

neys after death; also that the quantity of the inflammatory products would be in proportion to the severity of the inflammation, and that a certain number of pus-cells would belong to the especially severe cases; further, that in mild forms no inflammatory products would be found after death. This form of nephritis accompanied many infectious diseases; it also complicated the puerperal state. In the mild cases the only symptoms were those in the urine, which was somewhat diminished in quantity, of normal or high specific gravity, containing albumin in small quantities, a few casts, and some blood. In the more severe cases the changes were more decided. The patient presented constitutional symptoms varying in number and severity, febrile movement, headache, muscular twitching, general convulsions, dyspnœa, dropsy, pulse of high tension, etc. In acute parenchymatous nephritis these symptoms were somewhat changed. It might be a primary affection, or complicate scarlet fever, diphtheria, etc. The invasion might be sudden, present marked prostration, restlessness, delirium, stupor; it might lead to loss of flesh and strength, and also to the typhoid state. Dropsy was slight or absent. The urine was not so much diminished as would be expected; the specific gravity was not changed; albumin, casts, and red and white blood-cells were present in considerable quantity.

Disturbance of the circulation was frequently associated with it. It was one form of scarlet-fever nephritis; it occurred in diphtheria, in pregnancy. The urine was scanty, colored by blood, of normal or low specific gravity, contained much albumin, numerous casts of all kinds, and blood. The invasions might be sudden and short, terminating fatally, or be prolonged over months, or the invasion might be gradual. The prognosis was bad, as the disease was permanent and progressive, and sooner or later proved fatal.

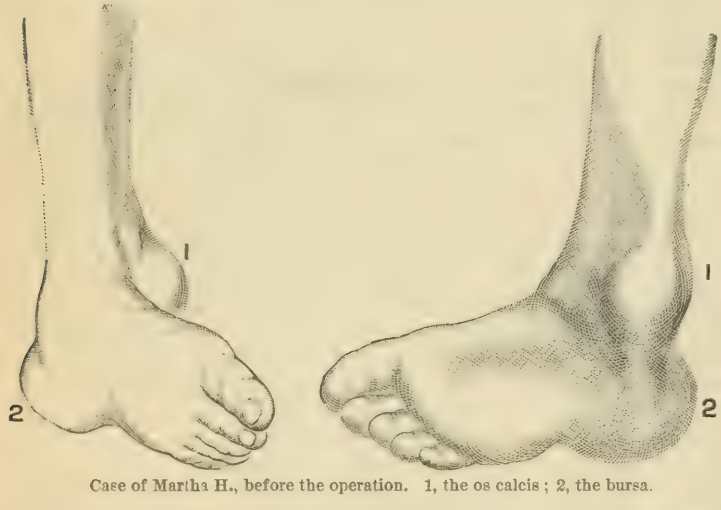
(*To be continued.*)

## NEW YORK SURGICAL SOCIETY.

*Meeting of January 11, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**Congenital Club-foot cured by Excision of a Wedge-shaped Piece from the Tarsus.**—Dr. H. B. Sands presented a patient, together with plaster casts showing the condition before and after operation. The following history was given: Martha H., aged twelve, when first seen presented an exaggerated congenital deformity of the foot, which had never been treated. The condition was equino-varus with extreme supination, so that the child walked upon the dorsum and outer side of the foot, where a large bursa had developed that at first sight appeared to be the os calcis; the latter bone, however, was drawn inward and upward in a position of extreme supination. The case was of interest as compared with that of the second patient, who had been treated by a different method.




Case of Martha H., before the operation. 1, the os calcis; 2, the bursa.

The operation was performed on November 5, 1887. An incision four inches in length was made on the outer edge of the dorsum, the bursa being first dissected out. A wedge-shaped piece of bone was then removed from the outer border of the tarsus, which included portions of the os calcis and cuboid, with the articulation between them. As this proved to be not enough to overcome the deformity, the rest of the cuboid and the external cuneiform bone were next excised. The deformity still persisted, so that it was found necessary to remove portions of the middle and internal cuneiform, with a large part of the scaphoid. The abnormal rotation was then mainly overcome, but it was still necessary to divide the tendo Achillis, which allowed the foot to be held in almost perfect position, slight plantar flexion, however, remaining. A plaster-of-Paris splint was at once applied. Four days after the operation there seemed to be undue constriction from the bandage, whereupon the dressings were changed; they were not disturbed after this until December 3d, when the wound had entirely healed with the exception of a superficial ulceration. As there was an excess of integument, the healing process did not proceed as rapidly as it would have done under other circumstances. By December 17th the wound had entirely healed. On January 5th the splints were removed. At the present time the pronation of the foot was perfect, but there was still a slight talipes equinus, which was said to be a common defect after the operation. This might perhaps be overcome subsequently by the usual orthopædic treatment. The child had not been encouraged to walk very much as yet, since the bony union might yield to the weight of the body, and the power of locomotion be thus impaired. There was a considerable amount of motion at the ankle joint.



Case of Martha H., after the operation.

**Congenital Club-foot cured by Excision of the Astragalus, with Portions of the Os Calcis, Cuboid, and External Malleolus.**—The case of Sadie S., aged six, was presented by Dr. Sands in order to illustrate a method of treatment different from that adopted in the former case. One objection urged against excision of a wedge-shaped piece from the tarsus was that it did

not correct the deformity so well as when the entire astragalus was removed. Another objection was that the foot was thereby shortened and the arch destroyed or weakened. When the astragalus alone was removed the shortening of the leg tended to overcome the plantar flexion, so that it was sometimes found unnecessary to divide the tendo Achillis in order to correct this part of the deformity. The operation alluded to was praised also because it left the arch of the foot undisturbed. But in the present case it became necessary also to remove a wedge-shaped piece from the tarsus. An incision two inches and a half long was made on the outer part of the dorsum extending backward just below the external malleolus. The astragalus was first removed, but this had little effect on the deformity. The anterior extremity of the os calcis and a small portion of the cuboid were then excised, and, after removal of a portion of the external malleolus three eighths of an inch in length and division of the tendo Achillis, a perfect position was obtained. A plaster-of-Paris splint was applied, the dressing being first changed at the end of four weeks, when the wound was found to have healed by the first intention. The splint was reapplied and removed in three weeks, when the patient



Before the operation. After the operation.

Case of Sadie S.

was discharged. Tenotomy had been performed for equinus of the opposite foot. When the child left the hospital the result seemed to be very good as regarded motion at the ankle, but the speaker could not say whether this would remain. He thought that there was a considerable difference of opinion regarding the comparative merits of orthopædic treatment and bloody operations in the management of club-foot, which was due to the fact that orthopædic surgeons usually dealt with cases at an early stage of the deformity. In the case of older children it was often necessary to operate because the bones themselves had undergone great changes in shape and position. There was some danger that surgeons might go to the opposite extreme in operating upon young children who would be benefited by the simple use of apparatus. But, in such cases as those presented, operative treatment alone would avail.

Dr. C. T. Poore said that he had examined the astragalus removed from the second patient, and found that the head and neck inclined inward at an angle of 55°, the normal inclination in a child of that age being about 10° or 15°. There was also a depression of the head and neck downward of about 55°. There was, in addition, marked deformity of that portion of the bone which articulated with the tibia; the latter was probably a secondary deformity. He had recently seen in a neighboring city a woman, thirty years of age, with marked congenital talipes equino-varus, who had been for some time under treatment by forcible twisting of the anterior portion of the foot; there had been some improvement in the position of the feet, but there was no motion between the individual bones, and the feet presented a wooden appearance, so that he doubted if a useful foot could be obtained. The speaker did not see how any operation short of removal of bone could be successful in such a case as the one under discussion. The deformity in Dr. Sands's case was due, first, to a change in the neck of the astragalus, and, secondly, to the curving in of the os calcis. It might have been possible to save the articulations of some of the small bones by excising a V-shaped piece from the os calcis, and then shortening the astragalus. The absence of motion seemed to be due to thickening of the posterior part of the capsule of the ankle joint. Dr. Parker advocated division of this ligament. The speaker had performed the operation described, of removing a V from behind Chopart's groove, five or six times with very good results. He had never seen such a marked deformity as that in the patient presented. With regard to the danger of having bandages too tight, he said that he had once lost a patient because there was too much constriction by the inner bandage.

Dr. Sands thought that in the case of the first patient flexion was good. The slight degree of equinus would have been overcome if the astragalus had been removed.

The President thought that much of the difficulty in walking in the case of the first patient was due to the fact that dorsal flexion to a right angle was impossible, so that the patient was always obliged to keep the affected limb in advance of the other. To avoid this difficulty, by making dorsal flexion possible, Bœckel, of Strassburg, practiced excision of the astragalus. If the impediment to this motion in the present case was due to bony contact between the astragalus and the anterior edge of the tibia, there was but little reason to expect any improvement in the course of time.

Dr. Sands said that the equinus, as well as the other deformity, was corrected when the astragalus was removed. Time would be required before good motion could be obtained. The advantage alleged for simple removal of the astragalus—namely, that the arch of the foot would not be impaired—could not be urged in the second case, because the deformity was not relieved until portions of the os calcis, cuboid, and external malleolus had been removed. The leg was somewhat shortened, but when the child left the hospital the malleoli were at quite a distance from the ground.

The President said that he had removed the astragalus in two cases; in one case there was good motion subsequently.

Dr. Poore said that he had once removed the astragalus for malignant disease, and the result was good.

Dr. J. A. Wyeth said that he had performed wedge-shaped excision of the tarsus twice, sawing through the head of the astragalus, and also removing a little of the scaphoid. The result was better than he had expected. In the first case there was great deformity; not only was the foot rotated on itself with the sole turned upward, but the toes pointed directly backward.

Dr. Sands remarked that it was important to remember that no two cases were exactly alike. He had once operated upon a young woman who had had paralysis since infancy, being obliged to walk with crutches. There was considerable rotation. He removed the head and neck of the astragalus, and the deformity was at once rectified. The surgeon could never tell before the operation just how much bone he would be obliged to remove.

Dr. Poore asked if the principal deformity was not due to malposition of the neck of the astragalus.

Dr. Sands said that he could not tell. It might be necessary to remove a portion of the os calcis also.

Dr. Wyeth believed that it was better to deal with the tarsus as if it were a single bone, excising sufficient to overcome all resistance to reposition.

**Excision of the Knee Joint; Recovery with Good Union.**—Dr. Poore presented a girl fifteen years of age who had had trouble with her knee nine years before with dislocation of the tibia backward. The joint was thereupon excised in October last, the fragments being secured with three nails. The wound healed under a single dressing. The patient was in bed forty days and had been up and about since the expiration of that period. Now there was good bony union, and the shape of the limb was excellent; there was shortening to the extent of one inch.

In reply to a question by Dr. Sands, Dr. Poore said that he had found no tuberculous foci in either the bones or the tissues around the joint. To Dr. Wyeth's question he replied that the dislocation was not traumatic.

**Subperiosteal Resection of a Portion of the Superior Maxilla for Epulis.**—Dr. Frank Hartley presented a boy upon whom he had operated for sarcoma involving the upper jaw. The growth had increased in size rapidly during the preceding two months. The operation was performed on December 15th; the incision was made within the mouth, the periosteum of the hard palate being preserved as far as possible. The tumor proved to be a mixed round-celled and spindle-celled sarcoma, containing a few giant cells. The patient showed only a slight deformity.

Dr. Wyeth said that he had been greatly interested in this case because he had performed the operation himself, having presented to this society a man from whom he had removed nearly all of the left upper maxilla without any external incision. It was no longer necessary to make such an extensive incision through the cheek as was formerly done.

**Ununited Fracture of the Femur treated by Excision of the Ends of the Bones without Wiring; Recovery with Good Union.**—The President presented a young man who, when first seen in September, 1887, had an ununited fracture of the middle third of the left femur, with nearly two inches shortening. The fibrous union was broken up by forcible bending under ether, and the limb was kept in plaster of Paris for a month, but union did not take place. An incision was then made in front over the projecting end of the upper fragment; the lower fragment was found overriding it posteriorly. The ends were cut square and the fragments were placed in apposition, but no sutures were introduced. A drainage-tube was inserted, and a thick antiseptic dressing was applied, which served also as a temporary splint; the limb was kept on an inclined plane. At the end of a week the dressing was removed and reapplied after removal of the tube. A fortnight later, the wound having then healed, a plaster-of-Paris bandage was applied; after the expiration of a month union was found to be well advanced. After another bandage had been worn for several weeks, union was perfect. There was now shortening to the extent of from an inch and a half to an inch and three quarters. The knee was still stiff, and the patient walked with a marked limp, but an improvement in this was reasonably to be expected.

Dr. L. S. Pilcher asked if any cause for the failure of union had been discovered. The president replied in the negative.

Dr. W. T. Bull asked if there was any special reason why the bone was not wired. The president said that he believed that he could obtain union without wiring and wished to make the experiment.

Dr. Bull said that he had operated in a similar case at the New York Hospital within a year. The patient, a truckman, had a fracture at the lower third of the femur. At the end of three months, after treatment with extension and splints, there was no union. For three months more efforts were made by subcutaneous drilling of the fragments to secure union, but without avail. At the end of six months the fracture was exposed by an incision eight inches long on the outer side of the limb and one four inches long on the inner side. The ends were overlapping and much thickened by new bony deposit. It was found impossible to turn out the ends and wire them, and they were placed in apposition, a plaster of Paris splint being applied with the antiseptic dressing. Some "slipping by" of the ends occurred, as shown by the shortening, but the wound united under one dressing, and union was firm in three months from the operation. The knee was stiff and the shortening was two inches. A similar case had been under treatment by one of his colleagues at the same time, but, though the ends were wired and the wound healed promptly, union failed.

Dr. Sands remarked that in the patient who was presented the upper fragment seemed to be quite prominent. He thought that if a number of successful cases were recorded it would prove that the method adopted by the reporter was a valuable one.

The President said that this was the third successful case in his practice.

Dr. Bull thought there was at least two inches shortening.

The President said that there was no more shortening than there had been at first. In reply to a question by Dr. Bull, he said that no attempt had been made to restore the function of the knee joint by rupturing the adhesions in the joint.

**Exploratory Incision for Supposed Pyonephrosis.**—Dr. Wyeth reported the following case: On beginning his term of service at Mount Sinai Hospital in September, 1887, he found in the ward a man, fifty-four years of age, who had been admitted some months before. Several calculi were removed from his bladder by the lateral incision. A fistula existed at the site of the wound for two or three months, but eventually closed. After this he developed pain in the left kidney, and had fever (the temperature ranging as high as 104° F., and once reaching 107°). Dr. Gerster had aspirated the kidney, but found no pus. Dr. Wyeth repeated the operation and obtained a few drops of pus. On exposing the kidney through the lumbar incision, no enlargement was found and no sign of abscess. The capsule was torn through at the lower end of this organ and two drainage-tubes were introduced, but at no time did any pus escape through them. The peculiar feature in the case was that from the time of the operation the patient had no more pain or rise of temperature, and made a complete recovery.

To a question by Dr. Bull, Dr. Wyeth said that the pain was distinctly localized in the left kidney. The few drops of pus found in the aspirator-needle evidently came from the pelvis of the kidney.

**Everted Dorsal Dislocation of the Hip.**—The President said that he was able to complete the history of the case of everted dorsal dislocation of the hip reported by him at the last meeting in December. The dressings were removed from the patient on the day of the report, three days later the dislocation recurred, and a week later the patient died, apparently in consequence of the progress of her pulmonary disease.

The autopsy showed the absence of fracture of the acetabulum or femur, and that the repeated recurrence of the dislocation had been due to the interposition between the bones of a portion of the lower and anterior part of the capsule, which lay as a flat band across the lower part of the acetabulum, and prevented the head of the femur from fully entering the socket. The outer branch of the Y-ligament was ruptured, as was believed always to be the case when eversion was present. The soft parts behind the joint were greatly lacerated, and a large abscess had formed there.

In reply to a question by Dr. Sands, he said that he knew

of no other case in which such interposition of the capsule had been seen at the hip, but a number of cases of its occurrence at the shoulder had been reported.

## SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

*Meeting of December 7, 1887.*

The President, Dr. HERMANN M. BIGGS, in the Chair.

**The Reduction of Old Dislocations, with Report of a Case of Reduction by Arthrotomy.**—A paper with this title was read by Dr. J. J. GARMANY (see page 142).

Dr. L. A. STIMSON considered that Dr. Garmany's case was one of great interest and that the result was very good. He thought that the differences between old dislocations with regard to reduction were due not solely to time, but also to other considerations, such as the presence of the capsule between the articular surfaces. This condition might be rare, but that it did sometimes exist had been proved. In considering the treatment of old dislocations, he would divide it into two heads. First, reduction proper; second, alternative measures if reduction was impossible. The dangers of forcible reduction were very great, medical literature being filled with cases of failure or death, there being no fewer than forty cases of rupture of the axillary artery, a danger which no man could foresee. He did not believe that it was by traction that the artery was ruptured, but by excessive abduction of the humerus, causing elongation of the branches of the axillary artery and resulting in their being torn away at their junction with the trunk; this danger should render it inadvisable to attempt forcible reduction. In other joints than that of the shoulder the conditions, of course, differed. At the elbow joint (especially in the young) overgrowth of bone, due to stripping up of the periosteum, was frequent and rapid and caused a serious condition, or the sigmoid cavity might become filled up with fibrous tissue, either condition rendering reduction impossible.

With regard to alternative measures, he believed that, theoretically, arthrotomy was better than forcible reduction, but experience had not yet proved it to be very successful. He believed arthrotomy to be exceptionally dangerous in recent cases or in those which had recently been under violent attempts at reduction. In one case he had laid a joint open a second time and had found the articular cartilage ragged and ready to drop, the cause of which was, he thought, cutting the adhesions too close to the bone in the first operation.

He thought that the advisability of undertaking arthrotomy depended upon the joint involved, and even upon each individual case. Arthrotomy at the hip joint presented a dreary list of failures—seven or eight that he could recall, two of which had occurred within the last year; of these, only one case, Dr. McBurney's, at St. Luke's Hospital, had been successful as regarded reduction of the dislocation, and in that case caries of the head of the femur had followed.

At the elbow, if the patient was young and the dislocation four or five months old, the form of the joint would be destroyed by growth of bone due to relief of pressure. This would be most marked in the humerus and radius. In one old case it had been reported that the neck of the radius was elongated an inch. In such cases there was nothing to do but excise or leave it alone.

At the shoulder joint he had never had a case of excision or arthrotomy following dislocation. He related the history of a case of subcoracoid dislocation five months old which he had dismissed one year ago after an attempt, under ether, to better the condition, which had been only partly successful. The patient had returned a month ago with a seemingly normal and perfectly good joint. This he could only account for by absorption of the intervening capsule.

Dr. L. H. SAYRE said that he would agree with Dr. Stimson with regard to non-removal of adhesions in arthrotomy. He would be guarded in advising an operation, but, if one was necessary, it would depend upon the conditions found whether arthrotomy or excision would be better.

Dr. R. T. MORRIS said that the literature of the subject of old dislocations was black with the histories of accidents that had happened to the patients during attempts at forcible reduction. The antiseptic surgery of to-day had opened a new field for work in managing old dislocations, and, now that we were not afraid to open joint cavities, a large proportion of old dislocations could be successfully treated by operative methods. A certain number of reductions could be effected by methods which avoided cutting, and in three cases of old dislocation of the head of the femur upon the dorsum of the ilium Dr. A. M. Phelps, of New York, and Dr. Moore, of Rochester, had thrown the head of the bone into the great sacro-sciatic notch and obtained very satisfactory results.

As a rule, however, it must be remembered that in attempting to reduce an old dislocation by ordinary methods we were trying to do an intricate surgical operation subcutaneously, or in the dark, the instrument being the dislocated bone. As the surrounding tissues were changed in character and position as soon as the reparative processes were completed, it would certainly seem to be an unsurgical procedure to attempt to work in the unknown territory, as the Irishman played the fiddle, "by main stringth." He wished to put himself on the side of those who believed in accurate operative measures when dealing with the majority of old dislocations.

In the case of an old dislocation at the ankle joint he had resected the astragalus and tibia and fibula at their articulation. The fresh bony surfaces were united by silk-worm gut and primary bony union was obtained. Since the date of the operation the medio-tarsal articulation had become such a free one that the foot was not stiff and the act of walking was well performed.

Dr. L. W. HUBBARD thought that every one recognized the great danger in forcible attempts at reduction of old dislocations, and that all manipulations should be made with great care. It seemed to him that the principal point for discussion in Dr. Garmany's paper was the choice of operations—arthrotomy or excision. In making the choice, the nature of the articulation must be taken into consideration.

In a ball-and-socket joint, like the shoulder, with a large and loose capsule, the surrounding structures not adherent and the joint easy of access, the operation of arthrotomy was undoubtedly to be tried before resorting to an excision. At the elbow, on the other hand, we had a hinge-joint with close bony approximation, an adherent capsule, and ligaments the removal of which endangered the life of the bone. Also, as had been shown by Dr. Stimson, there was a tendency here to rapid development of new bone, rendering an arthrotomy difficult. The results of excision at the elbow were uniformly good, and he thought excision preferable to arthrotomy at this joint. In cases of chronic dislocations of the knee joint following tuberculous disease of the articulation, he had seen excellent results from the application of apparatus making traction and pressure in the proper direction.

Dr. L. W. HOTCHKISS thought that too great stress could not be laid upon the dangers attendant on attempts at reduction of dislocations of long standing by extension and forcible manipulation. He thought that, inasmuch as in each case the amount of mobility and utility in the joint depended on the kind of joint involved, and on the kind of dislocation, the method of

treatment, operative or other, should be regulated accordingly, each case being a law unto itself. In view of the good results of conservative treatment as compared with those of arthrotomy, he would be disposed to reserve the latter operation for exceptional cases. At the elbow joint he was inclined to favor excision rather than arthrotomy.

Dr. Garmany insisted on the advisability of early arthrotomy after futile attempts at reduction. The case of a very old dislocation, where no attempts at reduction had been made, was cited as one of the numerous examples proving that the tissue changes depended largely on these attempts. So far as his experience went, the lacerated tissues could be freely exposed under strict antisepsis.

**Nodulated Tumor in the Axilla.**—Dr. Samuel Alexander presented a case in which the tumor had appeared three years after the initial lesion of syphilis, the patient not being under treatment at the time of the appearance of the growth. Under the internal use of potassium iodide the tumor had greatly decreased in size.

Dr. Morris would not distinguish this from a sarcomatous growth on the strength of the mere fact of diminution in size under such treatment, as some malignant and some benign growths had rapidly decreased in size under the use of the following ointment:

℞ Potassium iodide..... 3 jss.;
Water..... f 3 jss.;
Lanolin.....ad ℥ j.

It caused limited activity of development.

**Pott's Disease.**—Dr. W. W. French reported a case which presented some features new to him, and he desired to learn the experience of the society in similar cases.

J. H., aged six years, was brought to his office, October 28, 1887, on account of a lump on the back. The mother had died of phthisis; the father had diarrhœa. The child was fairly well nourished, appetite good, no shortness of breath, no cough, no night-sweats, no fever. Three years ago she had fallen out of a swing. A year and a half later a small projection had been noticed on the back, which had grown larger during the last six months. Examination showed a decided projection of the spinous processes of the third lumbar vertebra, involving to a less degree the second and fourth. Her body was inclined to the left, and the belly was protuberant. There was no redness or tenderness over the projection, no pain on striking upon the heels. There was rigidity of the spine. No lesion of the lung could be detected, but auscultation over the projection revealed a blowing murmur more distinct on the left side. The murmur was not audible over the abdomen except as transmitted along the iliac arteries. On account of the tense and protuberant abdominal walls, palpation gave no information, and percussion did not reveal a definite tumor.

Dr. French asked, first, if it was usual in Pott's disease to observe a murmur over the prominence, and, if so, how it was explained. Second, how a pulsating sarcoma of the vertebræ in this situation could be diagnosticated.

In reply, Dr. R. H. Sayre said it was rare to find a murmur at the point of curvature in Pott's disease. In the adult he had seen cases where aortic aneurysm had produced such erosion of the vertebræ that the deformity resembled that of Pott's disease, and he had seen the mistake made of confounding the diseases. He thought the age of Dr. French's patient would exclude aneurysm, and the case was therefore of unusual interest as showing the obstruction of the lumen of the vessels to be due either to the sharpness of the curve itself or to pressure of an abscess.

**Cystic Tumor of the Testicle.**—Dr. Parker Syms presented a specimen which he had removed from a patient at the Colored Hospital. The patient had tertiary syphilis, and had had two attacks of gonorrhœa. The tumor was of three years' growth, and had followed an injury. From the coverings, he was inclined to regard the cyst as a spermatocele, but no spermatozoa had been found.

Dr. R. H. Sayre presented a hip joint removed from a subject in the dissecting room of Bellevue Hospital Medical College. No history could be obtained. The left thigh was flexed, adducted, and rotated inward. There were no sinuses. The capsule was ruptured below, and there was pus in the surrounding tissues. The acetabulum was perforated. It was not known whether there had been any communication with the rectum. There was a marked exostosis on the brim of the pelvis, and also on the upper edge of the acetabulum, which appeared to have shifted its position upward. The disease seemed to be confined principally to the acetabulum, the neck of the femur being but little injured.

**Pneumothorax.**—The President presented a lung from a case in which the introduction of a hypodermic needle into the chest for diagnostic purposes seemed to have given rise to the condition. (For the history of the case, see page 49.) Too little attention, he remarked, had been drawn to the danger from the indiscriminate diagnostic use of the hypodermic needle.

Dr. Syms said that he remembered hearing of such a case from a friend who made the autopsy. The patient, a child, had had bronchitis or broncho-pneumonia, following some acute disease. Both pleural cavities had been explored by a hypodermic needle in search of fluid. A few hours afterward the child had died with extreme dyspnœa. The autopsy revealed the fact that there was a double pneumothorax. Both lungs were compressed against the spine. The needle had passed through the lower margin of each lung. One opening in each lung transmitted air when placed under water.

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## ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

*Fourth Meeting, held in New York, January 18, 1888.*

The President, Dr. William H. Baker, of Boston, in the Chair.

**Electricity in Gynæcology.**—Dr. E. L'H. McGinnis, of New York, read a paper entitled "The Use of Galvanism in Gynæcology" (see page 121), and Dr. A. H. Buckmaster, of Brooklyn, read a paper on "The Electrical Treatment of Fibromyomata."

Dr. Freeman, of Brooklyn, having been invited to open the discussion, said that he agreed to most that had been stated in the papers. Regarding Dr. Buckmaster's remarks on the spontaneous cure of uterine fibroids, he thought some further explanation was required. He had seen several cases of spontaneous cure, but on further study he had come to the conclusion that they were not really cases of fibroids, but of exudations in the pelvis. When such exudations became fixed it was difficult to say in some cases whether they were not fibroids. Apostoli's method of treatment by electricity was undoubtedly a good one, and was in advance of methods previously used. The speaker, however, had never employed it, having had such satisfactory results with his own method, which he had practiced twelve years. It was the method he had explained before the society a year ago. Some had said that they had never known a fibroid to disappear entirely under electrical treatment. The speaker had observed complete cure in several cases. The two important symptoms connected with such tumors, pain and hæmorrhage, were almost invariably controlled, although the tumor might not entirely disappear. The speaker showed the needle employed by him, and took exception to Dr. Buckmaster's statement that the

method by the introduction of the needle through the abdominal wall into the tumor need be mentioned only to be condemned. The speaker had never had any untoward result except in one case, and that had been due to his own carelessness, as he passed the positive pole through the uterine substance between two fibroids. The danger was so small that it need not be taken into consideration. He thought that, if electricity were used more, opium would be used less, which would be a great gain. He mentioned a case of very large uterine fibroid in which one treatment with a powerful current relieved the patient of marked symptoms and reduced the tumor considerably in size. One or two treatments often sufficed to practically cure small fibroids with their attendant symptoms. Cases of multiple fibroids were not proper subjects for this treatment.

Dr. A. D. Rockwell, of New York, who spoke by invitation, did not believe that complete reduction of fibroid tumors was obtained by electrolysis very often. He would not say that it never occurred, but he felt sure that as a rule nothing more than moderate reduction was accomplished. He had never seen a fibroid on the exterior of the body destroyed completely by electricity, and there we had full sway in treatment. He believed in the electrical treatment of uterine fibroids, not for the purpose of driving them away, but rather for the relief of the symptoms which followed in their wake. Symptomatically, they could thus be cured.

Dr. Moseley, of Baltimore, said the president had stated, in a paper read two years before, that he did not measure the strength of the current employed, but went by the feeling of the patient. He asked those present whether they judged of the amount to be used by milliampères.

The President remarked that his opinion of two years ago was not his opinion to-day; he now always used the galvanometer.

Dr. Freeman had formerly reckoned by the number of cells employed, but during the past two years he had measured the strength of the current, and had gone as high as 400 milliampères.

Dr. J. B. Hunter, of New York, thought that in Apostoli's method so powerful a current was tolerated only on account of its being distributed over a large surface. Apostoli never gave the patient an anæsthetic; he was guided in his treatment by her sensations.

Dr. A. F. Currier, of New York, thought the electrode shown by Dr. Martin, of Berlin, at the last International Medical Congress was simpler and more convenient than one of clay. Little had been written about the influence of electrical treatment upon sterility, a subject which, in the light of his recent experience, he considered of much importance. In one of two cases the patient had an infantile uterus, and was operated upon by one of the most distinguished gynæcologists in New York, but she still remained sterile. She then came under the speaker's care, and he began the use of electricity. After two months she discontinued treatment for a time, when her husband told him she had become pregnant. About two weeks ago he had delivered her of a child.

Dr. Buckmaster did not doubt the good results of treatment by Dr. Freeman, yet he thought the use of the needle through the abdominal wall was dangerous. There had been some deaths, and if there had been only one, it was sufficient to justify the replacement of this method by the other. He thought the reduction in the size of fibroids resulted from disappearance of the watery elements, which did not return. He thought the current employed by Dr. Martin, of fifty milliampères, was sufficient.

Dr. McGinnis did not maintain that fibroids entirely disappeared, but it made no difference whether they did or did not; the symptoms were overcome, and that was sufficient. The patient knew nothing further about the tumor if any remained, except when it was of large size.

## Book Notices.

*Transactions of the American Surgical Association.* Volume the Fifth. Edited by J. Ewing Mears, M. D., Recorder of the Association. Philadelphia: P. Blakiston, Son, & Co., 1887. Pp. xx–383.

The appearance of another volume of the "Transactions of the American Surgical Association" will be welcomed by all who have at heart the advancement of sound surgical knowledge. We have had occasion in former years to congratulate the association upon its prosperous condition and the excellent work it had done, and we are happy to say that the present volume shows no diminution in the value of the papers presented or in that of the discussions following their reading. The volume opens with the address of the president, Dr. McGuire, of Richmond, on "The Need and Value of Co-operative Work in Surgery." He concludes the address by making some suggestions in regard to changes in the constitution, among which is the abrogation of the code restriction so as to allow the association "to admit to fellowship some men in this country who are really needed in the association."

The chief work of the meeting was devoted to two subjects, namely, suprapubic cystotomy and laparotomy. The papers and discussions on these subjects occupy about two thirds of the volume.

Dr. Dennis, of New York, introduced the first subject with a paper upon "Suprapubic Cystotomy; its Technique, illustrated by Anatomical Preparations." Dr. John H. Packard read a paper upon "Suprapubic Cystotomy for Purposes other than the Extraction of Calculus." After giving a history of the operation, he related some cases in which it was performed for retention of urine from stricture of the urethra or enlarged prostate. Dr. A. Van Derveer, of Albany, followed with a paper entitled "To what Extent can we classify Vesical Calculi for Operation? With a Report of Cases and Remarks on Different Methods employed."

The discussion following the presentation of these papers was exceedingly interesting, and many points were brought out which had not been referred to in the papers.

The subject of laparotomy was introduced by a paper by Dr. J. Collins Warren, of Boston, on "The Process of Repair after Resection of the Intestine, and Intestinal Suture," based upon operations performed upon animals in the physiological laboratory of the Harvard Medical School. Dr. C. B. Nancrede, of Philadelphia, followed with a paper entitled "Should Laparotomy be done for Penetrating Wounds of the Abdomen involving the Viscera." Dr. R. A. Kinloch, of Charleston, related a case of "Pistol-shot Wound of the Abdomen treated by Laparotomy and Suturing the Intestines." Dr. W. W. Keen, of Philadelphia, concluded this portion of the subject by reporting a case of "Pistol-shot Wound of the Abdomen, involving the Liver, Stomach, Superior Mesenteric Artery and Vein, Small Intestines, and Kidney; Laparotomy." These papers on laparotomy are exceedingly valuable, and refer to diagnoses, experimental investigation, and theoretical considerations on the operation and its results. They will well repay careful reading. The remaining papers presented were as follows: "Report on a Case of Ventral Hernia successfully treated

by Operation, with a Suggestion as to the Method of Operating," by Dr. J. Edwin Michael, of Baltimore; "The Prognosis of Sarcomata of the Breast," by Dr. Samuel W. Gross, of Philadelphia; "Medico-legal Aspect of Cranial and Heart Wounds," by Dr. D. Hayes Agnew, of Philadelphia; "Comparison between the Surgical Diseases of the White and Colored Races," by Dr. Louis McL. Tiffany, of Baltimore; "An Experimental Study of the Effects of Puncture of the Heart in Chloroform Narcosis," by Dr. B. A. Watson, of Jersey City; "Some Remarks on Hypertrophy of the Tongue, otherwise known as Lingua Vituli," by Dr. T. J. Dunott, of Harrisburg; "Vaginal Hysterotomy," by Dr. J. Ford Thompson, of Washington; "Synopsis of the Treatment of a Case of Aneurysm of the Left Subclavian Artery, in which Three Methods were successfully employed," and "A Femoral Aneurysm cured by Elevation and Flexion of the Limb," by Dr. T. G. Richardson, of New Orleans; "Wounds, their Aseptic and Antiseptic Management," by Dr. David Prince, of Jacksonville; "Splenectomy for Dislocated or Wandering Spleen," by Dr. James McCann, of Pittsburgh; and "A New Kolpoplastic Operation for Atresia or Defect of the Vagina," by Dr. Christian Fenger, of Chicago. We have read the volume with great pleasure and profit, and we think it a book that no surgeon can afford to be without.

### GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—E. Onimus and C. Legros, "Traité d'électricité médicale." 2d ed. (17*fr.*) —— "Procès-verbaux, mémoires et discussions du deuxième Congrès français de chirurgie." (14*fr.*)

J. B. Baillière & fils, Paris.—J. Merley, "De l'albuminurie intermittente cyclique ou maladie de Pavy." (2*fr.* 50.) —— A. Herzen, "Le cerveau et l'activité cérébrale au point de vue psycho-physiologique." (3*fr.* 50.) —— C. Vibert, "Étude médico-légale sur les blessures produites par les accidents de chemin de fer." —— B. Ball, "La folie érotique." (2*fr.*) —— Bécono, "Anévrysme traumatique jugulo-carotidien." (0*fr.* 50.) —— J. Honnorat, "Processus histologique de l'œdème pulmonaire d'origine cardiaque." (3*fr.*) —— J. Béchamp, "Nouvelles recherches sur les albumines normales et pathologiques." (6*fr.*) —— A. Béchamp, "La théorie du microzyma et le système microbien."

A. Delahaye & E. Lecrosnier, Paris.—C. Bataille, "Traumatisme et névropathie." (4*fr.*) —— L. Baumel, "Maladies de l'appareil digestif." (9*fr.*) —— A. E. Bourgoin, "Traité de pharmacie galénique." 2d. ed. (14*fr.*) —— P. Durey-Comte, "Contribution à l'étude du rétrécissemen, congénital de l'artère pulmonaire." (3*fr.* 50.) —— P. Labadie-Lagravet "Urologie clinique et maladies des reins." (18*fr.*) —— P. Mavrikos, "Contribution à l'étude de l'érysipèle chez le nouveau-né." (1*fr.* 50.) —— P. Muller, "De la toux utérine." (2*fr.* 50.) —— Reliquet, "Rétrécissements péniens compliqués de cowperites supprimées." (0*fr.* 50.) —— A. Véroudart, "Des limites de la conservation après les traumatismes de la main." (4*fr.*) —— A. Ygouf, "De la rage paralytique." (3*fr.*)

O. Doin, Paris.—E. Maurel, "Recherches microscopiques sur l'étiologie du paludisme." (6*fr.*) —— P. Yvon, "Manuel clinique de l'analyse des urines." (7*fr.*) —— Chastaing and Barillot, "Chimie organique." (4*fr.*) —— T. Cruard, "Hygiène de l'enfance." (1*fr.* 50.)

G. Masson, Paris.—G. Carlet, "Précis de zoologie médicale."—Duboué, "Des progrès accomplis sur la question de la rage et de la part qui en revient à la théorie nerveuse."

G. Steinheil, Paris.—G. J. Witkowski, "Histoire des accouchements chez tous les peuples." 2 vols. (25 *fr.*) —— Metaxas-Zani, "Des anaplasties secondaires." —— Laborde and Houdé, "Le colchique et la colchicine." (5 *fr.*) —— P. Renault, "Manuel de trachéotomie." (1*fr.* 50.)

### BOOKS AND PAMPHLETS RECEIVED.

Transactions of the American Gynæcological Society. Vol. xii. For the Year 1887. New York: D. Appleton & Company, 1888. Pp. 512. [Price, $5.]

The Rules of Aseptic and Antiseptic Surgery. A Practical Treatise for the Use of Students and the General Practitioner. By Arpad G. Gerster, M. D., Professor of Surgery in the New York Polyclinic; Visiting Surgeon to Mount Sinai Hospital and the German Hospital, New York. Illustrated with Two Hundred and Forty-eight Engravings and Three Chromo-lithographic Plates. New York: D. Appleton & Company, 1888. Pp. 11-332. [Price, $5.]

A Manual of Practical Hygiene. By Edmund A. Parkes, M. D., F. R. S., etc. Edited by F. S. B. François de Chaumont, M. D., F. R. S., etc. Seventh Edition. Philadelphia: P. Blakiston, Son, & Co., 1887. Pp. xx–766.

A Synopsis of the Physiological Action of Medicines, prepared for the Use of the Students of the Medical Department of the University of Pennsylvania, with the Approval of the Professor of Materia Medica. By Louis Starr, M. D., and James B. Walker, M. D., assisted by W. M. Powell, M. D. Third Edition, enlarged. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 72. [Price, 75 cents.]

Rectal and Anal Surgery, with a Description of the Secret Methods of the Itinerants. By Edmund Andrews, M. D., LL. D., Professor of Clinical Surgery in the Chicago Medical College, etc., and E. Wyllys Andrews, A. M., M. D., Adjunct Professor of Clinical Surgery in the Chicago Medical College, etc. With Original Illustrations. Chicago: W. T. Keener, 1888. Pp. vi–111.

Photographic Illustrations of Skin Diseases. An Atlas and Text-book combined. By George Henry Fox, A. M., M. D., etc. Hand-colored Plates. Part I. Nearly One Hundred Cases from Life. Part II. Ninety Illustrations from Life. Second Series, complete in Twelve Parts. New York: E. B. Treat, 1888.

Hypertrophy of the Tonsil of the Tongue, with History of Cases. By J. W. Gleitsmann, M. D., etc. [Reprinted from the "Medical Record."]

Traumatic Hæmatoma of the Larynx. By J. W. Gleitsmann, M. D., etc. [Reprinted from the "Medical Record."]

Proceedings of the Nebraska State Medical Society at its Eighteenth and Nineteenth Annual Sessions, 1886 and 1887.

Les névropathies réflexes d'origine nasale. Par Albert Ruault. [Extrait de la "Gazette des hôpitaux."]

Notice sur l'hématoscope d'Hénocque. Indications techniques de ses applications, spectroscopie, diaphanométrie et photographie du sang, du lait, etc. Paris: G. Masson, 1886.

Méthode d'hématoscopie et appareils pour l'analyse spectroscopique du sang. Par M. le Dr. A. Hénocque.

## Reports on the Progress of Medicine.

### SURGERY.

By MATTHIAS L. FOSTER, M. D.

**The Osteogenic Factors in the Development and Repair of Bone.**—Macewen ("Annals of Surgery," Oct., Nov., 1887) demonstrates that osteogenic material is contained neither in the periosteum, as has been ordinarily believed for over a century, nor in the medulla, as some modern writers have advocated, but in the osteoblasts, either embryonic or fully formed, occupying the Haversian canals and spaces as well as the subperiosteal surface and the medullary spaces of the bone itself. This conclusion he arrives at by the successive demonstration of the following propositions: "(*a*) When the periosteum has been mechanically detached from an extensive area of an adult healthy bone and replaced after the lapse of some hours, union between the bone and the periosteum can take place without sloughing or observable augmentation ensuing. (*b*) The periosteum may be separated from the bone for a period of days by inflammatory products, after the withdrawal of which reunion between the periosteum and the bone may take place without necrosis ensuing, showing that the temporary separation of the periosteum from the bone, even as a pathological result, is not necessarily attended by death of bone. (*c*) The periosteum covering a portion of bone may be completely destroyed or permanently removed, yet the denuded bone

may not only retain its vitality, but may throw out cells which will cover it, and form a new periosteum. (*d*) A portion of bone which has its continuity severed on all sides, and at the same time has had all its periosteum removed, is capable of living and growing. (*e*) Not only do detached portions of bone deprived of their periosteum live when reimplanted in their original position, but such portions are capable of living after transplantation. Parts of deeper layers of bone, which had no periosteal connection, have been transplanted and have lived and grown. (*f*) The periosteum does not initiate the reproduction of bone. Bones are subject to constant interstitial changes. (*g*) Bone may be regenerated independently of the medulla, which may itself be reproduced. (*h*) The histogenetic phenomena support the observations, showing that the periosteum does not generate bone." He explains the formation of osseous plaques on the inner surface of the periosteum after subperiosteal removal of bone by supposing a certain portion of the osteoblastic layer covering the surface of the bone to be removed with the periosteum. This is very likely to happen in the majority of cases in which such removal is necessary, because upon irritation of bone there is a large increase in the number of the round cells, mainly embryonal osteoblasts, occupying the Haversian canals, so that, passing in the direction of least resistance, large numbers congregate on the surface of the bone beneath the periosteum. The periosteum, in consequence of the irritation, becomes hyperæmic, softer, and more swollen, and the meshes of its lower stratum become loaded with osteoblasts. From such a center osseous nodules and plates may spring. In subperiosteal resection of the elbow joint a series of these osseous plates is usually found adherent to the inner surface of the periosteum. If these are left *in situ* new bone forms which interferes with the motion of the joint. This, he maintains, never happens if the periosteum is subjected to a careful scrutiny and all of the bony plates removed, union by fibrous tissue taking place.

**Removal of the Tongue.**—Barker ("Lancet," Oct. 15, 1887) describes the following modification of Kocher's operation for removal of epithelioma of the tongue: In the case described the disease occupied the right side of the tongue and the submaxillary lymphatic glands on the same side. Kocher's incision was first made downward from the lobe of the right ear to the body of the hyoid bone, then horizontally to the median line, and then upward to the symphysis. The involved glands were then dissected out, and the lingual artery was tied. The operator then attacked the tongue from within the mouth, detached it from the jaw, and, when it was well isolated, cut it obliquely across at its root. The first wound was then open to the mouth and pharynx. A rubber feeding-tube was passed well down into the œsophagus, the outer end being fastened to the right ear. The entire area of operation was then cleaned, dried, and dusted with iodoform, and the neck padded with salicylic wool. The patient was by this means fed by the stomach, with no disturbance of the dressings and no pain for sixteen days, until the floor of the mouth was nearly healed. As no food passed through the mouth, the wound could be treated in the same manner as a similar wound elsewhere. Healing was rapid and unaccompanied by any trouble.

**Lymphoma.**—Beale (*ibid.*) reports a case of slowly progressive lymphoma affecting the larynx, eyelid, cerebral membranes, and cervical glands. It is of interest to note that the lymphomatous material was limited in these unusual situations to those parts in which adenoid tissue normally exists. A large growth from the dura mater had eaten a hole through the skull, through which it protruded, causing a fluctuating swelling in the forehead. The subconjunctival swelling grew slowly for about six months, when it was excised, and found to be composed of lympho-sarcomatous material. A tonsil and a portion of the thickened tissue of the larynx were removed. All of the operative procedures were quite successful as far as they went, gave relief to the patient, and were not followed by return of the growths or increased activity of the remainder. Hence Beale suggests that in the more chronic cases of lymphomata it may be possible to give much temporary relief and prolong life by operative procedures even when they are adopted when there is no imminent danger immediately threatening the life of the patient. The painless eating away of the frontal bone by the tumor is also worthy of notice.

**Cerebral Hæmorrhage.**—Braddon (*ibid.*), after a consideration of the dynamics of cerebral hæmorrhage, concludes that the destructive effect of an intracerebral hæmorrhage is due to the hydraulic force of the leakage; that, as the disruptive power increases in hydrostatic ratio, every second of time is of paramount importance; and, lastly, that there is a hopeful method of treatment. The indication for treatment is to lower the blood-pressure within the cranium, and this is not accomplished by the procedures usually followed. He favors Trousseau's plan of making the patient sit up, eat, and, if possible, exercise. Nitrite of amyl, the nitrites generally, and pilocarpine decrease tension. Heat applied to the hypogastrium acts similarly. But the chief treatment should consist of compression of one or both carotid arteries, in the same manner as is done to check otherwise uncontrollable hæmorrhage during operations on the brain. In cases evidently near a fatal issue he recommends trephining and opening into the outpoured mass of blood. The means for checking the hæmorrhage should then be applied.

**The Histology of Reunited Intestine.**—Bishop ("Med. Chron.," Oct., 1887) makes an interesting contribution to this subject, and illustrates it with seven microscopic photographs of various stages of repair. He considers that the process of union may be divided into three distinct stages passing almost imperceptibly into one another. These he names primary, or peritoneal union; secondary, or the stage of contraction; and tertiary, or cellulo-fibrous union. In some cases he found the union complete at the end of the third month, in others it was incomplete after four months. The first stage is rapid, often being complete in forty-eight hours, commencing almost as soon as the bowel is at rest if septic matter is absent. An effusion of plastic lymph takes place, which gradually becomes organized in the same manner as other similar deposits, and forms connective tissue uniting the opposed surfaces with each other and to any other peritoneal surface with which it happens to be in contact. It springs from the serous coat alone, the connective-tissue granulations covering the muscular coats being too far apart to have any action in retaining the two divided surfaces in position, and therefore taking no part in the primary stage of union. The second, or intermediary stage, is characterized by contraction of the connective tissue uniting the peritoneal surfaces. In the final stage this connective tissue has for the most part disappeared, while the subserous and submucous layers appear united by cellulo-fibrous bands forming a distinct commissure, which becomes firmer and less open at the upper and lower angles as contraction goes on, until finally the cicatrix becomes almost imperceptible. As the permanency of the primary adhesions depends largely on the persistence of peritoneal irritation kept up by the sutures, the author considers silk to be the best material to employ, for catgut quickly softens and is absorbed; but these should not project beyond the line of union, since, if they do, they will probably produce lasting union with the surrounding parts. If septic matter should be present, or if the lymph should be too weakly organized, the barrier may be broken down and general peritonitis result from the introduction of septic material into the peritoneal cavity.

**Exophthalmic Goitre.**—At a meeting of the Med.-Chirurg. Society of Edinburgh ("Edin. Med. Jour.," Oct., 1887) Professor Frazer showed a patient who ten years before had presented all the symptoms of exophthalmic goître. At that time Professor Lister removed all he could of the thyreoid gland by excision and scraping. Five days afterward the pulse-rate had fallen to 72, and the heart's action was regular. In a few weeks the exophthalmia had become markedly reduced. Eight months afterward the patient began to have convulsions at each menstrual period. These continued for two or three years, growing less severe until they ceased. There was no evidence of myxœdema to be found, but a portion of the thyreoid gland, probably the isthmus, which was not removed at the operation, could be detected on palpation.

**Causes of Subcutaneous Inflammation and Suppuration.**—Grawitz and De Bary ("Archiv für patholog. Anat. u. Physiol. u. für klin. Medicin," Bd. cviii) report some very interesting experiments showing that the introduction of pus bacteria into the subcutaneous tissues is not in itself sufficient to cause suppuration, but that other factors must be present to furnish a suitable condition for their growth and multiplication. Throughout their experiments they carefully cleansed and disinfected the integument at the proposed site of injection, employed a thoroughly clean needle of small caliber, and immediately closed the

wound made by the needle with iodoform collodion. It was found that with these precautions large quantities of neutral fluids were absorbed after subcutaneous injection, both when sterilized and when infected with the *Staphylococcus pyogenes aureus* or *citreus* to a greater extent than the most careless experimenter would ever accidentally infect sterilized fluids. They therefore consider the wound made by the needle to be the point of danger, as here the bacteria are held, multiply, and spread through the tissues, while those in the meshes of the subcutaneous tissue are absorbed before they can do any damage. In this manner they explain the observation of Uskoff that suppuration was produced by the injection of large quantities of neutral fluids, and negative the assertion of Orthmann that the suppuration so produced was due to the admixture of bacteria. In some cases the integument over the injected fluid died, and in these cases suppuration supervened. Histologically, the connective-tissue cells at the site of the injection were found swollen and nuclear. When the solution had been colored with methyl-blue, the coloring could be plainly seen in the sheaths of the neighboring nerves, demonstrating that narcotic substances so injected probably exercise a local effect. Subcutaneous injections of certain germicidal irritant fluids—such as a solution of bichloride of mercury (1 to 1,000), absolute alcohol, and tincture of iodine—were followed by severe inflammation, but no suppuration unless the integument became necrotic. After successive injections of solutions of chloride of zinc, varying from one to five per cent., into the same portion of a muscle of a rabbit, a fluid impregnated with *Staphylococcus pyogenes aureus* was injected into the same place. The muscle was found disintegrated, but there was no pus. After the injection of a few cubic centimetres of a five-per-cent. solution of nitrate of silver into a dog, an abscess was formed containing pus, from which no bacteria could be obtained. Of solutions not germicidal, but able to arrest the development of bacteria, acids and alkalies produced no suppuration, even after the addition of bacteria, though five-per-cent. solutions of the caustic alkalies reduced the tissues to a soft hæmorrhagic mass. Injections of 1-to-4 solutions of ammonia caused the formation of pus, cultivations of which in agar-agar remained sterile. When bacteria were injected with it, flourishing colonies of the same form of bacteria as those injected could be cultivated from the pus. Hence they conclude that ammonia, in sufficient concentration to cause severe inflammation and suppuration, furnishes in the subcutaneous tissues a suitable material for the growth of bacteria. Oil of turpentine they determine to be a germicide of the first rank. Instruments immersed in it for two minutes are, they maintain, absolutely aseptic, and are not injured as by solutions of bichloride of mercury and carbolic acid. Injections of this oil failed to produce suppuration in rabbits and guinea-pigs, but in dogs abscesses were formed which contained a peculiar pus with no bacteria. Small amounts of croton-oil produced fibrinous exudations, but no pus; larger quantities caused poisoning. These observations show that certain chemical substances, in the right quantity and strength, can, without bacteria, produce suppuration in certain classes of animals, or may render the tissues suitable for the growth of bacteria which, injected alone into the normal subcutaneous tissue, can not, unaided, cause a suppurative inflammation.

**Sudden Death after a Blow on the Testicle.**—Ivanoff ("Bulgarische med. Spir."; "Ctrlbl. f. Chir.," No. 30, 1887) records the following case: A middle-aged man was engaged in an altercation with a woman in the street when she struck him a violent blow on the scrotum. He sank at once unconscious and died in a few minutes, before the surgeon could arrive. At the autopsy nothing abnormal except slight hyperæmia of the brain was found to account for the death. Ivanoff considered death to have resulted from syncope due to the excessive pain caused by the blow on the testicle.

**Spontaneous Expulsion of a Vesical Tumor after Perineal Section.**—Brahl ("Progrès méd."; "Ctrlbl. f. Chir.," 1887, No. 30), in a case of vesical tumor, performed perineal section, introduced his finger, and felt a hard incrusted mass lying behind the neck of the bladder. This slipped from his grasp and he was unable to find it again. The next day the patient expelled with much pain a tumor five centimetres long by two centimetres broad and thick, covered with calculous material. The tumor was gray, of homogeneous structure, and poorly supplied with blood-vessels.

**Primary Carcinoma of the Kidney coincident with Renal Calculus.**—Hartmann performed lumbar nephrotomy on a man who presented the symptoms of renal calculus to a marked degree. An abscess was opened and a large calculus, together with several small ones, was removed. A few days later the patient died. On autopsy, a carcinoma of the kidney was found involving the upper part of the ureter. Secondary deposits extended through the diaphragm into the pleura of the same side and involved the liver.

**Bullet Wound of the Liver.**—Lediard ("Lancet," Oct. 22, 1887) details a case in which a bullet entered the seventh intercostal space a little external to the mammary line and made its exit in the eleventh intercostal space two inches from the spine. There was considerable discharge containing bile, as shown by chemical tests. There was some pneumothorax and afterward empyema. The bullet probably passed through the convex surface of the liver, perforated the diaphragm twice, and grazed the lung. The patient recovered.

# Miscellany.

**The William F. Jenks Memorial Prize.**—The first triennial prize, of two hundred and fifty dollars, under the deed of trust of Mrs. William F. Jenks, will be awarded to the author of the best essay on "The Diagnosis and Treatment of Extra-uterine Pregnancy." The conditions annexed by the founder of this prize are, that the "prize or award must always be for some subject connected with obstetrics, or the diseases of women, or the diseases of children"; and that "the trustees, under this deed for the time being, can in their discretion publish the successful essay, or any paper written upon any subject for which they may offer a reward, provided the income in their hands may in their judgment be sufficient for that purpose, and the essay or paper be considered by them worthy of publication. If published, the distribution of said essay shall be entirely under the control of said trustees. In case they do not publish the said essay or paper, it shall be the property of the College of Physicians of Philadelphia." The prize is open for competition to the whole world, but the essay must be the production of a single person. The essay, which must be written in the English language, or, if in a foreign language, accompanied by an English translation, should be sent to the College of Physicians of Philadelphia, Pennsylvania, U. S. A., addressed to Ellwood Wilson, M. D., Chairman of the William F. Jenks Prize Committee, before January 1, 1889. Each essay must be distinguished by a motto, and accompanied by a sealed envelope bearing the same motto and containing the name and address of the writer. No envelope will be opened except that which accompanies the successful essay. The committee will return the unsuccessful essays if reclaimed by their respective writers, or their agents, within one year. The committee reserves the right to make no award if no essay submitted is considered worthy of the prize.

**Quack Advertisements in Religious Newspapers.**—From time to time medical men and medical journals have protested against the prostitution of the columns of religious newspapers to the use of advertisers of quack nostrums. This protest does not apply to temperately worded representations of what seems to have been accomplished by, or what may reasonably be expected of, a remedy or device for the cure of disease or injury. But it does apply to advertisements couched in language which bears the stamp of falsehood on its face, or which is of such a character as to arouse suspicion in the mind of an intelligent man, uninfluenced by a money consideration. The editors of most religious journals are, as a rule, men of so much intelligence that they will hardly attribute to trade-jealousy alone the objection which medical men have to the recommendation of "sure cures" for baldness, fits, rupture, consumption, and so on, to persons who are apt to regard their religious teachers as safe guides in matters of health or disease, and who are not sufficiently familiar with the subtleties of the newspaper business to distinguish between the responsibilities of the editor and

those of the publisher. As a fact, most readers of periodicals have the impression that the advertisements they contain are indorsed by the editor. Advertisers rely upon this fact, and we can not understand the casuistry which satisfies the conscience of a man who edits a periodical, ostensibly devoted to religion, which replenishes its coffers with the price of palpable falsehoods. If it were true that a religious paper could not be financially successful without taking money for the advertisement of worthless or delusive remedies, a course might be suggested worthy of the main object of these papers. But it is not true, for there are a few happy illustrations of the fact that, even in a religious newspaper, "Honesty is the best policy." We call the attention of our large circle of readers to this matter in the hope that they will use their influence to put an end to what we regard as a serious blemish in religious newspapers, and one which injures the good reputation which they ought to enjoy. And we call the attention of those religious newspapers to which our remarks may apply to this matter in the hope that we shall not have to recur to it in a more explicit manner.—*Medical and Surgical Reporter.*

**College Athletics.**—Several members of the faculty of Cornell University have written letters on this subject to the editor of the "Cornell Era," among them Professor Burt G. Wilder, who says: "What compensating good results from intercollegiate athletics? The 'crews' and 'teams' embrace perhaps fifty out of our thousand students. Admitting, for the sake of argument, what is far from proved, that 'training' is conducive to real and permanent health, *it affects directly only five per cent. of the whole number of students*, and those, too, who are already exceptionally sound and strong, leaving the vast majority to the dubious privileges of supplying money—and noise."

**The Cornell Professors' Private Libraries.**—According to the "Cornell Era," among the scientific libraries belonging to individual members of the faculty are Professor Comstock's 700 volumes on entomology, Professor Gage's 500 on microscopy, histology, and physiology, and Professor Wilder's 1,500 on comparative anatomy, especially that of the brain.

**The New York Academy of Medicine.**—It was announced at the last meeting of the Academy that Dr. Edward L. Keyes had been made corresponding secretary, to succeed the late Dr. Carpenter.

**Changes of Residence.**—Dr. William S. McMurdy has moved to No. 135 West Forty-second Street, and Dr. Henry S. Oppenheimer to No. 49 East Twenty-third Street.

**The Philadelphia Clinical Society.**—At the annual meeting, held on the 27th of January, officers were elected as follows: President, Dr. Mary E. Allen; vice-presidents, Dr. Clara Marshall and Dr. Marie B. Werner; treasurer, Dr. L. Brewer Hall; recording and reporting secretary, Dr. Mary Willits; corresponding secretary, Dr. Emma Musson; councillors, Dr. Amy S. Barton, Dr. I. G. Heilman, Dr. A. Victoria Scott, Dr. Edward E. Montgomery, and Dr. James B. Walker.

**A Congress of Obstetrics, Gynæcology, and Pædiatrics,** says the "Progrès médical," is to be held in Madrid, in April, under the auspices of the *Sociedad Ginecológica de España.*

**The Turin Academy of Sciences,** according to the "Deutsche Medizinal-Zeitung," has awarded the grand prize of 12,000 francs to M. Pasteur.

**The Health of the State of New York.**—According to the State Board of Health's "Monthly Bulletin," the whole number of deaths reported for the month of December, 1887, was 7,886, including 1,500 (19 per cent.) from diseases classed as zymotic. From diarrhœal diseases the ratio was 9·85 in a thousand; from typhoid fever, 13·19; and from croup and diphtheria, 111·97.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending February 3d:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending January 14th corresponded to an annual rate of 23·3 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Sunderland, viz., 14·2, and the highest in Manchester, viz., 34·9 in a thousand. Small-pox caused 27 deaths in Sheffield, 1 in Bristol, 4 in Leeds, and 1 in London.

*London.*—One thousand nine hundred and forty deaths were registered during the week ending January 14th, including 25 from measles; scarlet fever, 25; diphtheria, 16; whooping-cough, 152; enteric fever, 22; and diarrhœa and dysentery, 11. Diseases of the respiratory organs caused 579 deaths; different forms of violence, 69; and 11 suicides were registered. The deaths from all causes corresponded to an annual rate of 23·6 in a thousand. In greater London 2,458 deaths were registered, corresponding to an annual rate of 23·2 in a thousand of the population. In the "outer ring" 15 deaths from diphtheria; measles, 10; fever, 6; and whooping-cough, 37, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending January 14th in the sixteen principal town districts of Ireland was 35·4 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 14·4, and the highest in Dundalk, viz., 48 in a thousand.

*Dublin.*—Two hundred and forty-two deaths were registered during the week ending January 14th, including 4 from measles; whooping-cough, 7; diphtheria, 2; scarlet fever, 10; typhus, 1; enteric fever, 4; diarrhœa, 3; and dysentery, 1. Diseases of the respiratory organs caused 60 deaths. Six accidental deaths were registered, and in 43 instances the causes of death were uncertified. The deaths from all causes corresponded to an annual rate of 35·7 in a thousand.

*Scotland.*—The deaths registered in eight principal towns during the week ending January 14th corresponded to an annual rate of 24 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 10·8, and the highest in Paisley, viz., 31·2 in a thousand. The aggregate number of deaths registered from all causes was 607, including 26 from measles; diphtheria, 8; whooping-cough, 26; fever, 8; and diarrhœa, 10.

*Hobart Town.*—Forty-six deaths were registered during the month of November, including 3 from enteric fever.

*Calcutta.*—One thousand and forty-one deaths were registered during the month of October, 1887, showing an annual ratio of 28·8 in a thousand of the population. There were 73 deaths from cholera, against 47 in the preceding month.

*Havana.*—Two deaths from yellow fever and 57 from small-pox were reported for the week ending January 21, 1888.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | January 14. | 2,260,045 | 1,127 | .. | .... | 8 | .... | 33 | 4 | 24 |
| Glasgow | January 14. | 545,678 | 253 | .. | .... | .... | .... | 3 | .... | 6 |
| Amsterdam | January 7. | 389,916 | 180 | .. | .... | .... | .... | .... | .... | 4 |
| Amsterdam | January 14. | 389,916 | 215 | .. | .... | .... | .... | .... | .... | 5 |
| Copenhagen | January 3. | 290,000 | 158 | .. | .... | .... | .... | .... | 6 | 4 |
| Munich | December 31. | 269,000 | 139 | .. | .... | .... | .... | .... | 4 | 7 |
| Munich | January 7. | 269,000 | 147 | .. | .... | .... | .... | 1 | 2 | 6 |
| Palermo | January 15. | 250,000 | 123 | .. | .... | .... | .... | .... | 1 | 3 |
| Genoa | January 14. | 179,415 | 139 | .. | .... | 9 | .... | .... | 1 | .... |
| Leipsic | January 14. | 170,000 | 44 | .. | .... | .... | .... | .... | 1 | 3 |
| Trieste | January 7. | 154,500 | 105 | .. | .... | 7 | .... | 1 | 1 | 2 |
| Bremen | January 7. | 122,000 | 48 | .. | .... | .... | .... | .... | .... | 1 |
| Havre | January 7. | 112,074 | 64 | .. | .... | 1 | .... | 3 | .... | .... |
| Mayence | January 7. | 65,701 | 27 | .. | .... | .... | .... | .... | .... | 1 |
| Merida | January 16. | 48,711 | 16 | .. | .... | .... | .... | 2 | .... | .... |

UNITED STATES.

*New York.*—The following is a report of an analysis of the water of New York Bay, by Assistant Surgeon J. J. Kinyoun, Marine-Hospital Service:

The cities and towns discharging their sewage into the New York Bay have an estimated population of 3,000,000 of people. In view of

this fact, a chemical and biological examination of the bay water was undertaken, for the purpose of determining its contents, and also to find how long it would support life of the different micro-organisms, more especially that of Asiatic cholera. Accordingly, specimens were obtained at different places, being collected in sterilized flasks. The first was obtained at the Narrows; the second alongside the steamship Britannia (lying in quarantine); the third at Hoffman's Island; and the fourth at Swinburne Island. These different specimens were collected within thirty minutes, and just at incoming tide.

Chemical examination of one litre:

| | |
|---|---|
| Narrows— | |
| Chlorides of potassium and sodium | 20·8 grammes; |
| Carbonates | trace; |
| Iodine | " |
| Free ammonia | " |
| Albuminoid ammonia | 0·158 gramme. |
| Steamship Britannia— | |
| Chlorides of potassium and sodium | 20·82 grammes; |
| Carbonates | trace; |
| Iodine | " |
| Free ammonia | " |
| Albuminoid ammonia | 0·158 gramme. |
| Hoffman's Island— | |
| Chlorides of potassium and sodium | 21·64 grammes; |
| Carbonates | trace; |
| Iodine | " |
| Free ammonia | " |
| Albuminoid ammonia | 0·158 gramme. |
| Swinburne Island— | |
| Chlorides of potassium and sodium | 21·814 grammes; |
| Carbonates | trace; |
| Iodine | " |
| Free ammonia | " |
| Albuminoid ammonia | 0·158 gramme. |

Reaction was slightly alkaline.

Plate cultivations were made from each of the different specimens, and at the end of five days had developed colonies of bacteria. Examination showing the number of micro-organisms:

| | | | |
|---|---|---|---|
| Narrows | 4,500 | to cubic | centimetre; |
| Britannia anchorage | 10,200 | " | " |
| Hoffman Island | 9,600 | " | " |
| Swinburne Island | 11,700 | " | " |

The micro-organisms found in each were several varieties of micrococci and one of a large bacillus. These were transferred to cultivation-tubes for further observation. On November 12th, test-tubes, partly filled with sea-water, were thoroughly sterilized and inoculated in the usual manner with pure cultivations of the spirilla of Asiatic cholera, and also of Finkler and Prior. Cultivation-tubes were inoculated from the water from day to day for the purpose of determining the longevity of the growths. During the first five days the water seemed to exert a slight inhibitory influence over their development. It was further observed that until January 20th, a period of sixty-nine days, the characteristic growth of the spirillum of cholera Asiatica could be produced in peptone gelatin. That of Finkler and Prior has a yet longer lease of life.

Examinations made from time to time, both by the plate method and direct staining, show conclusively that these spirilla have not only been kept alive, but have also greatly increased in numbers.

After closely studying the currents of the upper bay, I am led to believe that, if dejecta from cholera patients should be thrown into the lower bay, cholera could gain a foothold on the contiguous shores, where every condition favorable to its development and propagation sometimes exists.

## THERAPEUTICAL NOTES.

**Oil of Wintergreen.**—Oil of wintergreen, says the "Lancet," is identical with a volatile oil obtained by distilling the bark of *Betula lenta*, the sweet birch, or black birch, or cherry birch, or mountain mahogany of the middle and northern United States and Canada, and also with the oil derived by distillation with water from *Spiræa ulmaria*, or meadow-sweet, the principal agent in all being methyl salicylate. Like other salicylates, these oils possess the property of causing ringing noises in the ears when a sufficient dose is given, which varies for different individuals. Ten minims from three to six times a day is the usual quantity administered, suspended in simple or syrupy water or cod-liver oil. These oils are not so useful in acute rheumatism as in the milder attacks of chronic rheumatism or rheumatic gout. Dr. Squibb strongly recommends them in the "Ephemeris," vol. iii, No. 2.

## ANSWERS TO CORRESPONDENTS.

*No. 142.*—The *pied d'alouette des champs* is the *Delphinium consolida* (larkspur).

*No. 143.*—The next meeting of the American Gynæcological Society will be held in Boston on Tuesday, Wednesday, and Thursday, the 18th, 19th, and 20th of September.

*No. 144.*—Ovulation and menstruation are very well treated of by Mr. Lawson Tait, in his work entitled "The Pathology and Treatment of Diseases of the Ovaries."

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### ON THE USE OF THE VAGINAL TAMPON IN THE TREATMENT OF CERTAIN EFFECTS FOLLOWING PELVIC INFLAMMATIONS.*

BY THOMAS ADDIS EMMET, M. D.,
SURGEON TO THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK, NEW YORK.

AT the suggestion of our president, we are to consider the value of a certain mode of treatment with which the name of the late Dr. V. H. Talliaferro, of Atlanta, Ga., is so closely connected. Without any knowledge of my views on the subject, I was requested to treat of it in the affirmative. The president either overestimated my power to present the subject with equal plausibility from either standpoint, or he had come to the conclusion that there would be no opposition to the mode of treatment.

I must confess that until recently I had been greatly prejudiced against the practice of packing the vagina for the removal of pelvic inflammations. I had seen a great deal of damage done in the practice of others, and the patients who may have been benefited had not then come under my observation. It seemed evident to me that too much was alleged for the method so long as no fixed rule had been determined as to the condition for which the practice would be beneficial. But, notwithstanding my prejudice, I have endeavored to gain the needed information, and, as a result of my observation, I hope that I can now present a sufficient foundation upon which, with the aid of the experience gained by others, we may rest, for the future, the merits of this mode of treatment. I must, however, express my dissent from the reasons given by Dr. Talliaferro, and I do not consider his method of application the one likely to be followed by the most beneficial results. But, before entering upon a consideration of the subject proper, I must present, briefly, an outline of my course of study bearing upon pelvic inflammations in the female. It has extended over many years, and it is necessary to pass this in review to show that the deductions drawn by me, and to be presented hereafter, are consistent with my observation and experience.

As the first advocate for the use of hot-water vaginal injections in the treatment of pelvic inflammations, I think I may maintain, without fear of being deemed egotistical, that their employment was a great advance. Yet, in common with others, I have long realized the fact that under certain conditions the use of hot injections is but palliative, and is occasionally inert. When properly employed, they seldom fail to soothe and quiet the nervous system, but occasionally it is found that no permanent benefit follows the long-continued use of the agent. It was this failure which led me years ago to study closely the condition of the pelvic blood-vessels in disease. In the course of my observations I attempted to inject, post mortem, the vessels in the female pelvis, but I labored under the disadvantage of knowing nothing of the previous histories of the subjects operated upon. This difficulty I endeavored to meet by selecting several cases where the cervix had been lacerated, and I expected to find with this lesion a condition which in life had been accompanied at some time with more or less pelvic inflammation. I detected little or no change in the arteries, but was somewhat surprised to find that it was impossible to thoroughly inject the veins, as they seemed at some points to have lost all definite form, and the material employed for injection became easily extravasated.

At a later date, and in a paper on "The Philosophy of Uterine Disease," which was published in the "New York Medical Journal," July, 1874, I made the following statement: "We must appreciate that in no other part of the body have we such a matted network of vessels in the same space. In consequence of the erectile character of all the tissues, these vessels become varicose from any continued obstruction to the circulation, and have an almost incredible venous capacity. As a stream of water will saturate the ground and lose itself in a marsh, so will the circulation through the pelvic cellular tissue, and become in disease equally sluggish. . . . In this overdistended condition of the veins the balance is lost, and they are no longer able to return to the general circulation the quantity of blood received by them from the arterial capillaries. . . . Unless we can control the pelvic circulation, and at least impart a temporary tone to these vessels, it will be found in the end that little has been accomplished."

In a paper presented by me at the last meeting of the American Gynæcological Society, and which many of you now present will recall, I referred to some observations which I had made as to the result of prolapse of the uterus and of traction upon the pelvic blood-vessels. I pointed out that, as the veins were without valves, their extremely tortuous courses were necessary both as a check upon the circulation and to overcome the action of gravity. I stated I had observed, when making traction upon the connective tissue about a vein in the living subject, that the diameter of the vessel would rapidly increase in proportion as its tortuous course was made a straight one. In this connection I showed that it was evident, as the uterus became prolapsed in the pelvis and the veins were consequently straightened out, that they became proportionately distended. The caliber of the arteries, on the contrary, was not affected by any degree of prolapse until it had become a partial procidentia. As the uterus began to escape from the vaginal outlet, for the first time the diameter of the arteries was influenced by the traction, and with the effect of lessening their caliber so as thus to greatly reduce the amount of blood circulating in the pelvis. But, until the point of procidentia had been reached, the degree of prolapse acted as a source of irritation to proportionately increase the quantity of blood forced by them into the already overdistended veins. These became less and less able, as the degree of prolapse increased within the limit, to advance the current of blood, which would become nearly stagnant at certain points.

* Read before the Alumni Association of the Woman's Hospital in the State of New York at its fourth meeting.

It will also be remembered that in this paper and in a previous one I stated as my opinion that what had been generally termed "thickenings in the broad ligaments" were, as a rule, but dilated and overdistended veins; that the veins, following their tortuous courses through the connective tissue of the pelvis, receive, in a state of health, a uniform support to their coats from the natural elasticity of the tissues surrounding them. Therefore the circulation through these vessels would, in a state of health, be so regulated from this uniform pressure that it would be impossible for the veins to become overdistended. When, however, an injury had been received from childbirth, or when a local peritonitis with adhesions had existed, so that the integrity of the pelvic fascia had become impaired, the needed elastic support from the connective tissue would be lost and the veins must become overdistended. This is the condition, from one or other cause, so frequently met with in practice, and for its relief I pointed out the principle that this varicose condition of the veins could only be corrected by such means as were fitted for "taking in the slack," as it were, of the relaxed fascia, and thus regaining the lost support to the vessels. This support might be obtained, in many instances, after injury, by repairing the floor of the pelvis and thus restoring the proper degree of tension for the pelvic fascia and connective tissue. In other cases the aid of a pessary would accomplish the same end, when properly fitted. I believed its action to be a means for taking in this slack or overstretch, and that it gave the relief by bringing this about, and by lessening the degree of prolapse, more than by a change of version.

One more point remains to be considered. Whenever a local peritonitis occurs in the pelvis and adhesions form, the line must be shortened and in the opposite direction there must necessarily be a proportionate slacking up of the connective tissue. The inflammation from the peritonæum may not involve this tissue to any serious extent, but, in consequence of the adhesions, the natural elasticity of the neighboring tissue becomes thus impaired and rapid distension of the veins follows. Adhesions forming between the opposing surfaces of the inflamed peritonæum have the effect naturally of crowding the uterus lower in the pelvis and thus causing more or less of a prolapse. If, as is frequently the case, the inflammation is situated in Douglas's *cul-de-sac*, we should have, with the adhesion of opposite surfaces, a retroversion in addition to a prolapse of the uterus.

I have called attention elsewhere to the fact that when cellular tissue in different parts of the body has been once inflamed it seldom, if ever, regains its vitality. That particular tissue must either be absorbed, or it must break down into pus; it disappears, and the space, or cavity, which would otherwise remain is filled up through the natural or inherent elasticity of the neighboring tissues, or by adhesive inflammation. The cellular tissue situated between the folds of the broad ligament is essentially isolated from the connective tissue in the other parts of the pelvis; therefore if it is once destroyed it can not be supplied from elsewhere. But any inflammation of sufficient extent to destroy this tissue must involve the peritonæum covering it. Peritoneal adhesions form as a consequence, the ligament is flattened out by the traction so that the walls of the vagina and the tube on that side approximate, and a lateral version of the uterus to the injured side remains as a permanent deformity.

We have now reached a point in the consideration of the subject when the following query may be presented: Under what conditions are we likely to obtain the best results from the use of the hot-water vaginal injections, and when might we expect a good result from the uniform pressure which will be exerted by properly tamponing the vagina? No other mode of treatment yet known can accomplish so much as is gained by the use of hot-water vaginal injections in all acute pelvic inflammations. The hot water acts as a poultice in exciting contraction of the arterial capillaries. Its continued use can diminish the circulation in the parts with which it is brought in contact, as is done in the hands and arms of a washerwoman while in the exercise of her vocation. Nearly thirty years ago I recognized the fact that the reaction from a continued application of heat was contraction in the muscular coats of the arteries, and hence its application and value in lessening the supply of blood going to the seat of an acute inflammation.

The use of the hot-water injections is invaluable in the treatment of all stages of inflammation involving the cellular or connective tissue of the pelvis, in lymphangeitis, in phlebitis, and in the early stages of pelvic peritonitis. On the other hand, the vaginal tampon in my experience has only been beneficial after all acute symptoms have subsided. If this one feature is not recognized as a cardinal point, the indiscriminate use of this means of treatment will always be attended by unsatisfactory results, and with much unnecessary suffering to the patient.

The only class of cases in the treatment of which I have derived any special benefit from the use of the vaginal tampon has been where I have supposed the blood-vessels had degenerated into a varicose condition, and where this state of the veins has been brought about, as I have shown, from the effects of local peritonitis with adhesions, from the loss of the connective tissue, and from injury where the fascia has been involved.

Let us now consider the use of the tampon in the condition I have described as being the one fitted for its action. I have laid down the rule that its use can accomplish no good but may do much harm, so long as any inflammatory symptoms can be detected. We must trust to the use of the thermometer to show the absence of an elevated temperature in the pelvis, and to the want of other symptoms indicative of existing inflammation. In the absence of other symptoms we must exclude to a great extent the presence of pain on pressure as an evidence of active inflammation, its chief value then being but an indication of the manner in which the tampon should be applied.

Where adhesions have formed and the natural elasticity of the tissues has been impaired, the introduction of the speculum, or pressure made with the finger at certain points, must give rise to more or less pain. Traction is thus made through the connective tissue on the peritonæum and along some shortened line of adhesion.

But we are to be all the more careful when pain does

exist under these circumstances, through fear of setting up a fresh attack of peritonitis. The most important point that we have to consider is to ascertain, if possible, the *modus operandi* of the tampon, for only by the possession of this knowledge can we determine upon the fit subjects for its application. Experience certainly teaches that by the use of hot-water vaginal injections contraction of the arteries is excited, and that these injections are most useful in active inflammations. By the same means we have ascertained that the tampon does positive harm when not indicated, acting as a source of irritation so long as any acute inflammation exists, and that it does not lessen the circulation through the arteries, as their coats are not sufficiently compressible.

We therefore can draw but one conclusion, and in doing so we reach the point that the tampon acts mechanically, by compressing the dilated veins and by lifting the uterus to its natural position in the pelvis, so that the circulation between the arteries and the veins may be equalized. If the floor of the pelvis has been injured in childbirth, one or both agents may have to be employed to prepare the woman for the needed surgical operation. And it is only by the proper execution of this operation that we can restore the fascia and connective tissue in the pelvis to a state of integrity, and thus indirectly give the necessary support to the vessels.

But we have a different condition to deal with in treating the effects of a local peritonitis. As soon as the adhesions have been separated by the steady pressure of the tampon the pelvic tissues begin to regain their tone. And as the prolapse is corrected by the use of the tampon, and the uterus is steadily maintained in its natural position, the smaller veins are able to regain their natural and tortuous course with the improved condition of the connective tissue. So far in the treatment of a case the use of the tampon is most satisfactory, but as we advance the progress becomes slower. We have at last reached the point where the permanency of our previous success in the treatment of the case must rest upon our being able to effect a radical change in the condition of the degenerated venous diverticula. But it is just in this condition where I believe we gain the chief advantage in the use of the vaginal tampon. We should not, however, be misled by expecting too much, and we must realize that we can only gain permanent good through use of the agent after a long and tedious application, which may extend over the course of months. Moreover, the patient must be, as a rule, favorably situated in a hospital for receiving the treatment, and the operator is only able to do full justice to the patient in proportion to his experience.

I am unable to understand how anything is accomplished unless these diverticula are destroyed through the long, steady, and uniform pressure which is maintained by the tampon when properly applied. It is impossible to suppose that these degenerated vessels ever could regain their tone. A certain amount of shrinkage doubtless takes place after they have been for a long time kept from being overdistended. But the continued pressure exerted by the tampon is but the application of a principle which has been long employed in general surgery. It is reasonable to suppose, therefore, that the contents of these vessels become gradually organized, more or less adhesive inflammation is excited by pressure, and eventually the tract throughout is obliterated.

The length to which my paper has already extended will not admit of my going into a recital of the cases which I have treated. A brief history of the following one, however, I think will not be without interest and profit:

Shortly after the 1st of October I admitted into my private hospital a woman about thirty-five years of age who had given birth to several children, nearly all of whom were born by unusually rapid labors. She had got up very slowly after the last labor, and the symptoms were clearly given of the existence of some pelvic inflammation for long afterward. After having devoted more than five years to receiving local treatment, and after many efforts had been made to fit a pessary, she became a confirmed invalid from her inability to get about. At my first examination I found a doubly lacerated cervix presenting just within the vaginal outlet, which latter was unusually relaxed and open. There existed an exaggerated prolapse of both vaginal walls, and the dark color of the mucous membrane showed clearly that there was a marked venous congestion throughout the pelvis. There was a small fibroid on the posterior wall of the retroverted uterus, and below it lay both ovaries very much enlarged, with a small mass on each side of them, which seemed to be the fimbriated extremity of the Fallopian tube. Every portion of the pelvis within reach of the finger was tender on pressure, but no distinct inflammatory product could be detected except in the region of the utero-sacral ligaments. The sensation conveyed to the finger was as if the pelvis was filled with air along the sides of the vaginal walls. As the patient lay on her back it was impossible to reduce the uterus, and as one portion of the vagina was pushed up it only caused some other part to roll out. The knee-and-chest position gave her great relief, the uterus easily returned to its place, the vagina dilated to its ordinary size, and in a few moments after her assuming this position the mucous membrane regained its natural color. Her general health was good, and she was free from suffering so long as she maintained the recumbent position. But on assuming the upright one she suffered from nausea and felt "as if she would drop to pieces." For several years she had had the hot-water vaginal injections properly administered. These at first gave her relief, but for a long time there had been no apparent benefit, and they were finally abandoned as the space in the vagina lessened.

At my first examination the case seemed so hopeless that I gave it as my opinion that it would be necessary to remove the ovaries. She positively declined submitting to the operation, as she had done before in consulting others. In twenty-four hours I satisfied myself that no good could be accomplished by attempting to fit a pessary. From necessity she had acquired some dexterity in the introduction of damp cotton into the vagina to give her some support when she was obliged to be about, but it often proved a source of irritation. I placed her in the knee-and-chest position and introduced a Sims speculum. The instrument, however, proved unnecessary, as the vaginal outlet in this position became sufficiently patulous to allow of the examination of the whole canal without it. I had determined to use the tampon, but before placing it I thoroughly smeared the whole vaginal surface with vaseline. After the parts had regained their normal color, I proceeded to fill, but not to pack, the vagina with dry cotton, the fibers of which I had previously separated as much as possible with my fingers.

In a short time I had to remove it in consequence of the pain produced, and I had the same result a few days later when I attempted to repeat the experiment.

I have long held that the practice of packing the vagina, when dilated in this position, is wrong, for it places the veins on the stretch and straightens out their convolutions, as occurs when the uterus is in the position of prolapse. The uterus is certainly thus placed as much above the "health line" in one case as it is below it in the other. But in this instance I had laid in the cotton so loosely that I had not anticipated the result, although I had filled the canal.

At my next attempt with the patient in the knee-and-chest position, so as to get the ovaries out of the way, I introduced only enough cotton to enable me, with the pressure of my finger over it, to keep them from prolapsing as she turned over to her back. I then proceeded to pack the vagina to a moderate degree. This tampon she retained comfortably for two days with the greatest relief, and from that time to the present she has continued to improve. I daily packed the vagina, and the ovaries gradually became smaller, until at length they no longer presented themselves, and for several weeks they have been beyond the reach of my finger. At the end of two months and a half I discarded the use of the tampon, after having gradually lessened the quantity. I was then able to fit a pessary, which has answered every purpose, and which keeps the uterus moderately anteverted, notwithstanding the small fibroid on the posterior wall. The puffy or air-like condition along the sides of the pelvis has disappeared, and the vagina is not now unusually enlarged. The uterus has decreased in size, the laceration in the cervix is of less depth, and, as there are no reflex symptoms, an operation for its repair will not be necessary. But she can not possibly become a well woman until she has had the operation for restoring the integrity of the pelvic floor. With the pessary she is able to walk a mile and more with comfort. The pessary which I have found applicable for her case is an elastic rubber ring which I procured in London. Its diameter is three or four times that of a similar instrument made in this country, and the increased thickness is a great advantage. The broad surface can not cut into the tissues, and its size is just sufficient to dispose of any slack in the pelvic fascia.

I believe that this case was an extreme one, that the veins were in an unusually enlarged condition, and that the steady pressure excited by the tampon during the two months and a half had obliterated them. And yet I am satisfied that, if she does not have the operation performed, other vessels will become gradually overstretched, and she will relapse into her old condition within a year.

Before closing I will briefly present some practical points as to the material best fitted for the purpose, and give the method of introducing the tampon. Pledgets of cotton saturated with glycerin would naturally be the first material which would be suggested for tamponing the vagina. But in practice I have found that such a tampon is unfitted for the purpose. It would be as difficult to offer a substitute for the use of pure glycerin as for the hot-water vaginal injection in the treatment of pelvic inflammations in the female. Both eventually produce the same result in exciting contraction of the arterial capillaries, while neither exerts any special action on the venous circulation.

The resilient power is lost to the cotton fiber on being macerated in the serous or watery discharge excited by the endosmotic action of the glycerin. Consequently, the cotton packs closely together; it no longer fills the same space, so that the uniform pressure which should be exerted by the tampon is lost, and it eventually excites irritation by its presence.

Sheep's wool has been used, as experience proves it to be better fitted for the purpose. Doubtless it is so in consequence of the protection afforded to each fiber by the oily substances coating it, so that it is essentially impervious to moisture. But I found difficulty in obtaining the wool in the condition I wanted it and within a reasonable price.

In quest of a substitute I began by smearing the vaginal wall with vaseline and then packing the canal with dry cotton. As I introduced the cotton, while the patient was lying upon her back, I soon found that the dry cotton caused a great deal of irritation and annoyance in its passage through the vaginal outlet. At the beginning it was made evident that the absorbent cotton was unfit for the purpose from its ready absorption of all moisture. At length I decided that the best material was the cleanest quality of cotton wool as sold in the shops and put up in rolls. For the tampon I prepared a number of pieces of cotton of about the width and thickness of four fingers. I then made a ball of each by turning the four corners or edges together, and while grasping these I thoroughly smeared the outer surface with vaseline. Each ball was then of about the size of an English walnut and kept its shape as it was packed loosely into a tin box for use. It was found advisable to have these balls of cotton as nearly uniform as possible and of about the size that I have indicated.

On beginning the operation it is sometimes necessary to place the patient on the knees and chest before the uterus can be replaced. Then several balls are to be introduced and placed at a point where the uterus can be held by means of the finger while the patient is turning upon her back. I have already stated my reasons for preferring this position in introducing the tampon. One ball of cotton after another should be placed in the vagina and passed closely along the index finger of the other hand which is engaged in pressing back the perinæum and in holding up the uterus or that portion of the tampon already introduced.

If one part of the vagina is more sensitive than another we must learn to "humor" it by making less direct pressure until tolerance becomes established. When the sensitiveness is situated in the neighborhood of one of the broad ligaments we must pack the cotton on the opposite side of the cervix to act as a crutch. If the inflammation is chiefly about the utero-sacral ligaments, it is easy to tampon so that the uterus will be lifted without making direct pressure. The tampon should be placed so as to make as little direct pressure to the left as possible along the course of the rectum. After the introduction of a sufficient amount of cotton we are to pass the index finger carefully over every portion to be certain that it is uniformly placed and to smooth down the entire surface. When this "finishing off" is properly done it is possible, from the coherency of the cotton and vaseline, to pack but a portion of the vagina. It

may be but the upper part, or to one side, and it is likely to remain in position.

There are two practical points in the application which, if not carried out carefully, will cause all our efforts to miscarry. The first is to keep the uterus, throughout the whole course of treatment, as nearly as possible in its natural position and at the same plane in the pelvis. The other is to place the fresh tampon without delay after the other has been removed. I have been in the habit of renewing the tampon daily for the patients in my private hospital. But if it could be kept deodorized, the longer it remained undisturbed the more thoroughly would both of these indications be met in practice.

The best instrument for removing the cotton is a piece of whalebone with a rough screw cut in the end, a simple device for the application of which we are indebted to the late Dr. Sims. This is easily passed alongside of the finger and twisted into one portion after another. It is well to leave that part directly under the uterus until the last, so that the finger may be slipped beneath the cervix, at the proper moment, to hold it in place until the fresh tampon can be introduced. To facilitate this, everything should be prepared beforehand. It is very evident if the uterus is allowed to prolapse, that just in proportion as it does so the circulation must be disturbed, and that if there is any advantage to be gained from maintaining a steady and uniform pressure, it must be, as nearly as possible, a continuous one. Therefore there should be no unnecessary delay in returning the tampon, as the blood begins again to rapidly dilate the vessels as soon as the pressure is removed.

A serious drawback to the satisfactory progress to be gained by this mode of treatment is the recurrence of the menstrual period, when the use of the tampon has to be discontinued. Just before the period is expected I remove the tampon and immediately introduce one of the rubber rings which I have already referred to, and one of a sufficient size to admit of the introduction of the finger between it and the vaginal wall at any point. These rings are about three quarters of an inch in diameter, and so long as the patient remains in the recumbent position their broad surface offers a fair substitute for the tampon both in exerting a direct pressure upon the larger vessels and by taking up the slack in pelvic tissues. As soon as the flow has ceased I have a large hot-water vaginal injection administered and then employ the tampon as before in the continued treatment of the case.

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## SEPTIC PERITONITIS FOLLOWING LAPAROTOMY.*

By P. F. CHAMBERS, M. D.

The technique of the operation of laparotomy has now become so thoroughly perfected that to all surgeons any attempt at a description of methods would be superfluous. Traumatic peritonitis, the great *bête noire* of a few years ago, is now a thing of the past; but there still remains a danger to which I wish to call your attention—viz., septic peritonitis. Though a firm believer in the use of antiseptic precautions, I do not wish to introduce it as a factor in my paper, knowing that there are many leading laparotomists who deny their efficacy, and a discussion of the question would lead away from my subject. At the same time, believing as I do that one of the chief causes of septic peritonitis is the introduction of septic matter at the time of the operation, I should hold myself culpable did I not resort to every antiseptic precaution possible. The causes of septic peritonitis following laparotomy I would class in the following order:

1. A failure on the part of the operator, either through carelessness or inability, to thoroughly cleanse the abdomen. 2. The introduction of septic material, at the time of operating, by sponges, instruments, or the hands of the operator. 3. Oozing from the stump or from broken adhesions. 4. The detritus entering the abdominal cavity around the pedicle when it has to be treated externally, or from the bursting of mural abscesses into the abdominal cavity.

The first cause—a failure to thoroughly cleanse the abdominal cavity. In most instances where there has been a discharge into the peritoneal cavity at the time of operating, all that will be necessary will be a thorough cleansing with sponges, but it should be so thoroughly done that there should be no discoloration of the last sponge. Of course, in some cases it is almost an impossibility, especially in those where there has been a free discharge of colloid or dermoid material into the abdominal cavity, produced by a premature rupture or tearing of the sac. I have met with several cases where it was impossible to remove the material. It was of a mucilaginous nature, and adhered with great tenacity to the omentum and intestines. I have never yet seen these patients fail to be attacked with septic peritonitis, and but few of them recover. In the more severe cases the method proposed and so ably practiced by Mr. Tait, of washing out the abdominal cavity with warm water, I have seen attended with most beneficial effects. Do not hesitate as to quantity of water. Pour quart after quart into the cavity; do it gently, however, so as to produce as little shock as possible by concussion, and, with the hand in the cavity, move it about gently among the intestines, so that the water will reach every part, and wash away all the material. Then sponge out every particle until the cavity is well dried.

The second cause—the introduction of septic material by the sponges, instruments, hands, etc.—has been so fully and repeatedly discussed in papers on antiseptic surgery that I will not now take it up.

The third—oozing into the cavity after the operation—is due to so many and such varied causes that it is extremely difficult to lay down any rules as to the methods of prevention. Should there be a tendency to a bloody oozing from the pedicle or from broken-up adhesions, the surgeon should, of course, see that it was entirely stopped before closing the abdomen; but, as in many laparotomies there is a serous oozing from the abdominal parietes, there is nothing we can do to check it, but have to turn our attention to the best means of drainage.

The fourth was a much more frequent cause when the

* Read before the Alumni Association of the Woman's Hospital in the State of New York at its fourth meeting.

method of treating the stump externally was more popular than now. In many cases it is a very difficult matter to prevent the sloughing material burrowing down next to the pedicle, and thereby finding its way into the peritoneal cavity. Now that the stump is, in the majority of operations, dropped back into the abdomen, the accident is much less frequent. Septicæmia resulting from mural abscesses is nothing new to any of us, and I think that many more cases of septic peritonitis than at first supposed could be traced either to a slight opening and gradual oozing, or to a sudden bursting of the abscess into the cavity.

The prognosis in all cases of septic peritonitis is extremely bad. In fact, most of the deaths following laparotomies are, I think, due to it. It usually manifests itself within forty-eight or fifty-six hours after the operation, and runs a course of from three to nine days. The first and most unfavorable symptoms are vomiting of a dark, greenish material and beginning tympanites. The pulse increases in rapidity, reaching in fatal cases 140 to 160. The temperature in some cases rises very quickly, but in others it may take two or three days before it reaches 102° F. The vomiting is persistent and the tympanites may become so great as to uncomfortably distend the abdominal wall, and, from pressure upon the heart and lungs, make the breathing quick and painful. After the second or third day the patient will sometimes, though not always, become stupid, and, if she is not soon comatose, a delirium will set in that will last to the end. The stupor is occasionally so profound that it is with difficulty that the patient is aroused, and I have known the abdomen to be opened and reclosed, the patient as unconscious of it all as if profoundly etherized, only waking up after the dressings had been reapplied. I recall with distinctness a patient of Dr. Thomas's in the Woman's Hospital while I was house surgeon:

He had removed the uterus for a large myoma, and for the first few days the patient did remarkably well. On the fourth day she began to show all the signs of septicæmia. The stupor increased from day to day until finally nothing could arouse her. The doctor removed the clamp, cut away all the sloughing material, and, with his finger pushed down and around the pedicle, he broke up all adhesions, and then washed everything thoroughly with an antiseptic solution. To our surprise the patient awoke before we could reapply the dressings, and for two hours was perfectly conscious, when the stupor began to return. The cleansing was repeated and was followed with equally good results. The patient made a good recovery, but for two weeks the dressings had to be reapplied every two to four hours.

The order in which I should be inclined to class the different steps of treatment, according to merit and importance, is as follows: To free the system of the septic material already absorbed. To prevent a reabsorption by getting rid of the source of trouble. Stop the vomiting, and, lastly, use stimulation and nourishment to the fullest extent. Instead of the free administration of opium, as advocated by the late Professor Alonzo Clark and practiced for years in all attacks of peritonitis, the most favorably accepted method now is to expel the septic material by purgatives. A saline cathartic will not only relieve the distended bowels of fæca matter and gas, but will very frequently check the vomiting when everything else has failed. The pulse decreases in frequency, and the temperature falls two or three degrees, plainly indicating the voidance of the cause of trouble. To prevent the shock of the operation it is often necessary to give ♏ vij of Magendie's solution of morphine, and in some cases it may have to be repeated at long intervals, but in the great majority the smaller the amount of opiates the better. The patient soon gets over the pain of the operation, and, if she has progressed favorably without anodynes and the pain does not return, she is in every way better for not having had them. In most septic patients they not only are not beneficial, but are often very dangerous. I have repeatedly seen only a very few minims of morphine produce profound narcosis from which it was very difficult to arouse the patient, and I have no doubt there have been many deaths from this cause. Should the symptoms indicate the presence of septic material in the abdominal cavity in too great a quantity to be removed by the cathartics, then the abdomen should be reopened and the entire cavity washed out as previously described. In this connection I should like to report a case which came under my care in Dr. Thomas's service at the Woman's Hospital:

Miss X., aged thirty years, was admitted into the Woman's Hospital, giving a history of severe and exhausting uterine hæmorrhage. On examination, a fibroid tumor, intra-mural, of the size of a child's head, was found filling the pelvis. From the previous history it was deemed advisable by Dr. Thomas to perform Hegar's operation, which he proceeded to do at once. The operation was performed in the usual way, both ovaries and tubes were removed without the slightest trouble, and the abdominal wall was closed with silver-wire and catgut sutures. There was no discharge into the abdominal cavity, and, so far as we could judge, all antiseptic precautions had been practiced. The patient did well up to the third day, when she began to have symptoms of septic peritonitis. The pulse and temperature rose rapidly, and the vomiting became so incessant that it was out of the question to administer either food or medicine by the mouth. By the evening of the fourth day the pulse had reached 160 and the temperature 103°. I decided, in Dr. Thomas's absence, but with his approval, to open the abdomen. She was too weak to take ether, so I preferred to give chloroform, a few whiffs of which produced complete anæsthesia. Very little dark serous fluid was found down in Douglas's *cul-de-sac*, and the peritonæum was in an acute state of inflammation. There seemed but little hope of saving the patient, yet, nevertheless, I determined to test the virtues of hot water. The entire abdominal cavity was washed out, and then thoroughly dried with the softest sponges obtainable, manipulating them with great care. The abdomen was then closed, leaving in, however, a glass drainage-tube. The vomiting did not return; the pulse and temperature, before morning, had dropped to about normal, and from then on the patient made a steady recovery. The drainage-tube was allowed to remain in position for five days, until all discharge had ceased.

Should the sepsis be due to the sloughing material of the stump, then the result will depend very much on the ability of the surgeon or nurse to practice thorough cleanliness. All the sloughing material should be removed by the knife or scissors, and all pockets in and around the stump freely opened, and kept thoroughly washed out with anti-

septics or freshly boiled water. The mural abscesses should, of course, be looked after, and just as soon as the phlegmon has broken down into pus it should be well opened, cleansed, and carefully attended to.

The vomiting and tympanites are troublesome symptoms, and often baffle all treatment. Should the cathartics fail I should be inclined to give the stomach perfect rest—that is, to give absolutely nothing by the mouth. If, however, the patients crave drink, as they often do, then hot water in teaspoonful doses is probably the best. Aromatic spirit of ammonia, oxalate of cerium, creasote, black coffee, etc., all have their merits, and in a few instances seem to be of service, but are really of little benefit so long as the septic material is in the system. For the tympanites many European authorities are now advocating tapping the colon with a small trocar and cannula. As to its advantages I am unable to speak from personal experience. I have only tried it in one case, and seen it tried by Dr. Thomas in another. The tympanites did disappear, but, as neither patient recovered, it is somewhat doubtful whether the tapping was really of any benefit. I should, however, be inclined to try it again should I be so unfortunate as to have another similar case.

In all cases stimulants and nourishment should be given as much as possible by the mouth and rectum if the patient can stand it, or by either method if not by both. To reduce fever, if the patient is strong enough—that is, if there is no danger of failing heart action—give antipyrine in gr. x or gr. xv doses, and apply the ice-cap and coil. The cathartic preferable is either a saline aperient alone or calomel followed by a saline. The best method of drainage—when drainage is deemed necessary—is that with the glass drainage-tube.

## DR. DETTWEILER'S METHOD OF TREATING PULMONARY CONSUMPTION:

*An Appeal for the Establishment of an Institution for the Rational Treatment of Pulmonary Consumption.**

By PAUL H. KRETZSCHMAR, M. D.,
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Explanations and excuses are frequently offered by recent writers on the question of treating pulmonary consumption for doing so; some one has even gone so far as to make the remark, "If a professional man has nothing else to do he writes a paper on phthisis." I believe, on the other hand, that there exists in the whole subject of medical science no more important question to-day than that relating to the best possible means of diminishing the dreadful death-rate from pulmonary consumption. Not only to the members of our profession, but to the humanitarian, to the philanthropist, and to everybody taking interest in the welfare of society at large, the subject of successfully treating consumption is an important and entirely practical one. The statement can be made, without fear of contradiction, that more people die within the limits of the United States from consumption than from all the epidemics of contagious disease put together, and that no active measures are inaugurated to bring about a change for the better.

It is true that wealthy persons unfortunate enough to suffer from pulmonary consumption may derive much benefit from a long-continued residence in the well-known health resorts in Colorado, in New Mexico, or in Switzerland; they may be cured by submitting to proper treatment in the world-renowned institution for the cure of pulmonary consumption of Dr. Hermann Brehmer in Goerbersdorf in Germany, or at Dettweiler's sanitarium at Falkenstein, or they may prolong life by exchanging our cold and variable winter climate for that of Florida, Georgia, or North Carolina; but what are our poor patients to do? Having no means to employ either of these useful and frequently successful agencies to battle with the powerful enemy, they seek relief in the dispensaries and hospitals of our large cities, and after a shorter or longer period of suffering, and after having swallowed a large quantity of cough mixtures, more or less morphine, and probably a variety of quack medicines, they die. This statement sounds harsh, and it is not a pleasant one to make before a learned medical audience, but nevertheless it is the naked truth. I admire the honesty and frankness of our colleague, Dr. A. Seibert, who says, in a paper read before the Society of Physicians of the German Dispensary on November 12, 1886: "The poor patients suffering from chronic pulmonary disease—perhaps excepting old cases of emphysema—all die, and most of them without even gaining as much as temporary arrest in the destructive work of the disease. This at least is my experience after practicing for a number of years among the poor Germans of this city." If any one doubts the truth of what has been said, let him watch the routine mode of treating dispensary patients presenting the early symptoms of pulmonary consumption, or let him make inquiries as to the prophylactic measures employed by the average physician to prevent the development of the disease; let him visit our general hospitals and convince himself that the poor sufferers do not receive any kind of rational treatment. The so-called hospitals for consumptives are not hospitals at all in the good sense of the word; they are simply homes where patients find a place with comparative comfort—to die.

Can we present to the members of the profession and to our wealthy and benevolent citizens such facts as will induce them to establish institutions for the cure of consumption where the sufferers from chronic pulmonary disease may reasonably expect to derive benefit from treatment?

The cardinal question to be discussed is the one relating to the curability of pulmonary consumption, and the next one is, by which method, applicable to our large cities, can we obtain the best possible results.

In regard to the curability of pulmonary phthisis, most observers are firmly of the opinion that pulmonary phthisis in rare instances terminates favorably without regard to treatment; that under appropriate management and treatment the disease should be regarded as curable. Most observers are also of the opinion that tuberculosis and pulmonary consumption are identical, although well authen-

* Read before the Section in Materia Medica and Therapeutics of the New York Academy of Medicine, January 27, 1888.

ticated cases are on record where bacilli could not be detected in the expectoration of patients presenting all the symptoms and signs of pulmonary consumption. Without discussing this highly interesting and very important question, the fact seems to have been proved that bacilli which were present at one stage of the disease disappeared later on. Demme* reports a case of a child eight years of age and of previously good health which developed bronchopneumonia and consolidation of the left lower lobe after a severe attack of measles; she suffered from cough, loss of flesh, and hectic fever. At first no bacilli could be found; later on, however, when the expectoration became thick and yellow, three or four tubercular bacilli appeared in each field. During a period of two months the bacilli could be detected, but as the general health of the patient improved and the consolidation became absorbed they disappeared. Soon afterward the same child developed acute rheumatism and endocarditis and died. The autopsy revealed, aside from the pathological conditions due to endocarditis, a few cheesy deposits in the lungs; very few and only degenerated or dying bacilli could be detected. Two bronchial glands of the size of hazel-nuts in the stage of cheesy degeneration were subjected to a most careful search, but in a large number of preparations only *two* dying bacilli could be found. Nauwerk† reports a similar case. I am indebted to Dr. H. Brehmer, who has during a period of thirty-two years treated over 13,000 phthisical patients, for the following statement: "Until recently I discharged patients as cured if all the symptoms of pulmonary consumption had disappeared and if the physical signs showed nothing else but the result of previous disease; now I do not give a clean bill of health to any of my patients except they present the requirements of former days and their sputa have remained entirely free from bacilli for at least five consecutive weeks." Dr. Brehmer also informed me that during 1885 out of 488 phthisical patients treated in his sanitarium there were seven who were and remained free from bacilli, and that in the following year out of 521 patients seven again—though some of these had suffered from hæmoptysis, and all had elastic fibers in their sputa—remained free from bacilli. In 1885, 77 patients belonged to the first stage, 4 without bacilli, and of the remaining 73, 14, or 19 per cent., were discharged cured; 258 patients belonged to the second stage, presenting diagnosticable cavities; 3 of them never expectorated bacilli; of the remaining 255, 16, or 6·3 per cent., were discharged free from bacilli and cured; of 328 patients suffering from tuberculosis in its first and second stages, 30, or 9·1 per cent., were cured; the remaining 159 belonged to the third stage. In 1886 the total number of patients amounted to 521, 7 of them without bacilli; 58 of these belonged to the first, 298 to the second, and 165 to the third stage; of 356 patients available for treatment, 46, or 13 per cent., were discharged cured. Dr. P. Dettweiler, of Falkenstein, has published a pamphlet‡ relating to the permanent cure of seventy-two cases of pulmonary consumption, from which I now quote: "We have treated in Falkenstein 1,022 cases of consumption, the diagnosis depending on the physical signs and the general condition of the patients, together with the presence in the sputa of elastic fibers, and more recently of tubercular bacilli. Of these we have discharged as entirely cured 132, as relatively cured 110. In regard to the latter class, I wish to state that it includes cases where the general health of the patient and the condition of the heart and lungs would indicate a perfect recovery, if it were not for some one or another of the symptoms of chronic pulmonary disease remaining. Of the 132 classified as permanently cured, I addressed inquiries to 99, whose residences and addresses I knew, and who had been discharged as cured at least three years ago. Some of them had undergone treatment almost ten years previously. I received 98 answers, which showed that 11 had died, some from consumption, some from other causes; accepting 25 per mille as the annual average death-rate, this number is not a large one, covering as it does a period of from three to nine years; 12 had had relapses, but were enjoying comparatively good health at present; 3 were at present suffering from pulmonary disease; and the remaining 72 had continued to enjoy good health—3 for nine years and over, 12 for eight years and over, 4 for seven years and over, 7 for six years and over, 14 for five years and over, 15 for four years and over, and 17 for three years or more. In all cases a short note from the family physician accompanied the patient's statement." Dr. Dettweiler, who himself has been suffering from pulmonary phthisis and had at one time been an inmate of Dr. Brehmer's sanitarium as a patient, and was afterward one of his assistants, closes his report with these words: "If it is of interest or of value to hear the testimony of a physician who has lived for over fifteen years among phthisical patients, and who has suffered himself from the disease for even a longer period, but who is now so far cured that even with the most careful examinations bacilli can not be found, I formulate my opinion as follows: *Under appropriate treatment, if the disease has not made too much progress and if the treatment is continued a sufficient length of time, more than one half of all cases of bacillary phthisis should be cured, and they will remain so if the patient will live accordingly afterward.*"

Dr. Meissen, in an able article published in the "Deutsche Medizinal-Zeitung," No. 59, 1885, entitled "Contribution to our Knowledge of Human Phthisis," speaking of the results obtained in 731 cases treated in Dettweiler's sanitarium at Falkenstein, gives the following statistical report: "The 731 cases were taken without selection from the records of the institution. They comprise 105 cases of initial pulmonary phthisis, 442 cases of active pulmonary phthisis, 125 cases of progressive pulmonary phthisis, 6 cases of florid pulmonary phthisis, 52 cases of stationary pulmonary phthisis, and of these, 483 patients were benefited by treatment and 248 either died or did not improve. As we can hope for successful treatment in initial, active, and stationary cases only, the others—florid and progressive phthisis—ought to be excluded from the list, and it would then appear that, of 600 patients with pulmonary phthisis, 483 were improved and 117 were not benefited by treatment, and, while of all the

* "Berliner klinische Wochenschrift," 1883, p. 217.

† *Ibid.*, p. 283.

‡ Frankfurt am Main, 1886. Johannes Alt.

patients 66 per cent. improved and 33 per cent. did not, of those available for treatment 81·5 per cent. improved and 18·5 per cent. did not." Dr. Meissen says further: "I have classified the result of treatment simply as 'improved' and 'not improved,' for I believe that in a very few cases we can, after three months' treatment, speak of a positive cure. By 'improved' I mean not only a temporary disappearance of one or more of the unpleasant symptoms of the disease, or a slight improvement in the physical signs, but a decided and lasting gain in every particular, more especially an increase in the weight and in the strength of the patient, a stronger heart's action, and an increased capacity of the lungs, such as a careful and painstaking physician can observe during the duration of treatment. In the cases reported the average duration of treatment was ninety days; but I should expect still better results if the patients would remain longer, although even then each case must be judged for itself. As an evidence that early treatment is of vital importance, it may be here stated that of 105 patients with initial phthisis 104 improved, of 53 with stationary phthisis *all* improved, and of 442 with active phthisis 334 improved and 108 did not."

These clinical facts, observed by the most trustworthy and experienced phthiso-therapeutists, are in perfect accord with scientific researches, as shown by the experiments made by Dr. E. L. Trudeau, of Saranac Lake, and described in a paper entitled "Environment in its Relation to the Progress of Bacterial Invasion in Tuberculosis." * Dr. Trudeau's experiments are of such importance and show so plainly the true mode of fighting successfully the powerful enemy that I can not refrain from speaking of them at some length. The doctor, who is known as a careful and enthusiastic worker, tried to find some satisfactory answers to these three questions:

1. What result ensues when both bacillary infection and unhygienic surroundings are made to co-exist in tuberculosis?

2. Are unhygienic surroundings, when every known precaution has been taken to exclude the bacillus, sufficient of themselves to bring about the disease?

3. Is bacillary invasion invariably progressive in animals placed under the best conditions of environment attainable?

*Experiments.*—Fifteen rabbits were made use of, and divided in three lots, each set of animals being placed under conditions best adapted to answer, in the results noted, the three questions referred to above.

*Experiment No. 1.*—Five rabbits were inoculated in the right ung and in the left side of the neck with five minims of sterilized water in which was suspended a sufficient quantity of a pure culture (third generation) of the tubercle bacillus to render the liquid quite perceptibly turbid. The needle of the Koch's inoculating syringe was inserted subcutaneously on the left side of the neck and in the third intercostal space to a depth of thirty millimetres on the right side. These animals were then confined in a small box and put in a dark cellar. They were thus deprived of light, fresh air, and exercise, and were also stinted in the quantity of food given them while being themselves artificially infected with the tubercle bacillus.

*Experiment No. 2.*—Five healthy rabbits were placed under the following conditions: A fresh hole about ten feet deep was dug in the middle of a field, and the animals, having been confined in a small box with high sides but no top, were lowered to the bottom of this pit, the mouth of which was then covered with boards and fresh earth. Through this covering a small trap-door was cut, which was only opened long enough each day to allow of the food, consisting of a small potato to each rabbit, being thrown to the animals. So damp was the ground at the bottom of this pit that the box in which the rabbits were confined was constantly wet. Thus these animals were deprived of light, fresh air, and exercise, furnished with but a scanty supply of food while breathing a chill and damp atmosphere, though free from disease themselves and removed as far as possible from any accidental source of bacterial infection.

*Experiment No. 3.*—Five rabbits, having been inoculated in precisely the same manner as the animals in the first experiment, were at once turned loose on a small island in June, 1886. It would be difficult to imagine conditions better suited to stimulate the vitality of these animals to the highest point than were here provided. They lived all the time in the sunshine and fresh air, and soon acquired the habit of constant motion so common in wild animals. The grass and green shrubs on the island afforded all the fresh food necessary, and, in addition, they were daily provided with an abundant supply of vegetables. Thus, while artificially infected themselves, they were placed in the midst of conditions well adapted to stimulate their vital powers to the highest point attainable.

Results.—*Experiment No. 1.*—Four of the inoculated rabbits confined in the cellar died within three months; in all of them the injected lung was extensively diseased, the other lung and the bronchial glands being also more or less involved, and tubercles in various stages, but sufficiently advanced to be macroscopical, were found in the pleura, peritonæum, spleen, and liver; from these lesions pure cultures of tubercle bacilli were obtained. The fifth rabbit survived, and was killed four months after injection. At the autopsy the right lung was found solidified and shriveled, the upper portion being almost entirely destroyed, while a bronchial gland as large as a hazel-nut, filled with creamy pus, occupied the right chest; tubercles, which in many places had become cheesy, studded the upper portion of the left lung. The other organs were healthy.

*Experiment No. 2.*—The five uninoculated and healthy rabbits placed in the damp pit were all living at the end of four months. They were emaciated, and their coats were rough, but they still seemed about as active as at the beginning of the experiment. They were all killed within a few days of each other; but a careful examination of their organs revealed nothing abnormal in any of them.

*Experiment No. 3.*—One of the five rabbits which were allowed to run at large died just one month after inoculation. The lower portion of the lung was solidified, the bronchial glands enlarged, as well as the axillary glands on the left side, and a few tubercles were made out in the spleen. The left lung and all the other organs were sound. The four other rabbits remained apparently in perfect health, and so active had they become that two of them could only be captured by the aid of a gun. All four animals were killed at the beginning of November, or four months after inoculation. They were loaded with adipose tissue, and their flesh was so firm and red as to be in striking contrast to the blanched and flabby muscles of the other rabbits previously examined. All the organs were healthy, and even the points of inoculation could not be made out.

* Read before the American Climatological Society, Baltimore, June, 1887.

Instructive as it would be, it would lead us away too far from the purposes of this paper to dwell at length upon the lessons which these experiments teach us; suffice it to call attention to the fact that the large majority of those animals—lot 3—which were placed under the best possible hygienic conditions did not develop tuberculosis, although infected in precisely the same manner as those of lot 1, all of which became victims of tubercular infection.

If clinical experience and scientific investigation alike teach us that pulmonary consumption as well as artificially produced tuberculosis may readily terminate in recovery, and if we admit the truth of the statement made in the first part of this paper, that almost all of our poor patients do not recover, we must come to the conclusion that the mode of treatment practiced by us is not the proper one. It is the writer's opinion that the results which have been obtained by Dr. P. Dettweiler in the sanitarium at Falkenstein, in the Taunus hills near Frankfort, in Germany, are such that his method of treating phthisical patients should be made known to the profession in this country, and that an effort should be made without delay to establish a similar institution for the treatment of patients with limited means within easy reach of New York city. Although Dettweiler's mode of treating consumption does not reject the use of drugs altogether, its principal aim is to increase the vitality and the resisting power of the cells of the body, so as to enable them to effectually combat the bacterial invasion, by placing the patients under the closest personal supervision, and by the strictest individualization of each case. The strong points in Dettweiler's method of treating consumptives are: the most liberal and, we might say, specific use of pure mountain air—specific in the sense that the patients are either lying or walking in the open air almost day and night, as will be described farther on; the administration of a rich, liberal, and peculiarly adapted mode of diet; the very free use of milk; the general, but well controlled, use of wine and cognac, with or without milk; and the adoption of such climatic, balneological or therapeutical agents—including the use of compressed or dilated air, massage, and the douche—as each case for itself may indicate.

The sanitarium in Falkenstein was founded in 1874 by a stock company—the shareholders not to receive more than five per cent. dividend on their investment, the surplus income to be used for the improvement of the institution, and, later on, for the establishment of similar places for the treatment of the poorer classes—and has been a success ever since, both financially and as regards its reputation among the medical profession. It is situated on the southern slope of the Taunus mountains, about fourteen hundred feet above the sea-level, near the city of Cronberg, about two hours' ride by rail and stage from Frankfort. It consists at present of three large buildings, together with such necessary annexes as gas-works, cow-stables, laundry, etc. The largest of the three buildings presents the form of a horseshoe, to protect the inhabitants from the rather heavy north winds which prevail there occasionally, and contains eighty rooms with over one hundred beds, and the post and telegraph offices, parlors, reading-rooms, billiard-room, offices, examination-room, and the douche in the basement. The next building, connected with the others by an arcade, contains the large, high, and well-ventilated dining-room, which seats about two hundred people comfortably, the kitchen being outside of the building. The third building contains the residences of the medical superintendent and his associates. Many improvements have been made during the year just closed. The climate of Falkenstein is not alleged to have any specific influence on the diseased organ; it does not differ in any essential part from that of southern Germany in general, except that during July and August the temperature is quite high. The air is comparatively free from dust or other impurities, although I believe that it would not be difficult to find localities within easy reach of New York city with still purer air; well-cultivated pine and oak forests are in the immediate neighborhood, with numerous attractive walks scattered through them, and with plenty of seats and places for rest. A number of rotating pavilions are erected at different parts of the grounds, and a large arcade extends along the entire front of the principal building; the view from the latter, or from any part of the front of the house, is really beautiful.

One of the points which Dettweiler considers as of greatest importance in obtaining favorable results *is the treatment of phthisical patients within institutions* where they are constantly under the personal supervision of the attending physician. The medical profession of Germany seems to approve of this view, and everybody must admit the good showing which these institutions make as compared with the usual results obtained elsewhere. A number of larger and smaller establishments for the rational treatment of pulmonary consumption exist in different parts of Germany; in Goerbersdorf, where the cradle of them stands to-day as the model sanitarium of Dr. H. Brehmers, two others have been established; even Falkenstein has a second one. Dr. Driver, of Reiboltsgrün, in Saxony, and Dr. Jacubasch, of Andreasberg, in the Harz Mountains, are proclaiming good results in their respective places. *Why should we not try the system in this country?* The smallest details of the patient's life are controlled by the supervising physician, and nothing of any importance is left to his or her judgment. The daily exercise in the open air, the use of lung-gymnastics, the administration of stimulants, even the changing of garments, are matters not left to the judgment of the patients. Dettweiler says the physician who wishes to manage successfully such an institution must himself be a good man, the possessor of a big heart and much patience, and he must be supplied with all the instincts of a "shepherd's dog." The relation of teacher and pupil, in the fullest and best sense of the word, must exist between the physician and his patients, and, without entering into the field of popular medical lectures, the patients should be taught to understand the physiological and hygienic laws which it is so essential for them to follow if they desire to come out victorious in the battle with the bacillus tuberculosis. The physician's office should be the patient's confessional chamber, and every possible effort should be made to foster implicit confidence in, and strict obedience to, the physician among the patients.

In connection with other phthiseo-therapeutics, Dettweiler praises the invigorating influence of pure mountain air, and its great value as a powerful agent in the treatment of consumption, but, contrary to the general usage, he does not allow his patients to use it at first without positive instructions from the attending physician. He maintains that the patient who has been in many instances confined to his room for weeks previous to his journey to the sanitarium, anticipating wonderful effects from pure air, indulges in an excessive use of it. Considered as a chemical compound, pure air can not injure anybody, but its physical properties may be such that harm may follow its indiscreet use in certain cases. New patients are not permitted to walk outside of the immediate vicinity, or even remain outdoors for a long time, until after the first careful examination, which is generally made by two physicians the day after arrival; the limit of outdoor exercise is then agreed upon, also the hours of rest in the open air, and the first instruction in lung-gymnastics is given. Under ordinary conditions, the duration of outdoor living is increased daily and the greatest importance is placed in "resting" in the open air. Over ninety *chaises-longues*—lounges made up of rattan and upholstered with horse-hair—are placed over the verandas, the arcade, and the rotating pavilions, and the patients, after being acclimated, spend many hours daily—dressed properly, and covered with blankets in accordance with the season—lying upon them. It is this "permanent air-treatment" to which I referred as "specific" in its nature, for I have never observed this kind of treatment anywhere else. We can easily understand how this method may be successfully carried out during the warm season of the year; but even during the coldest period of the winter, while snow and ice cover the surrounding ground, all the patients—excepting only those with the severest cases and those suffering from intercurrent diseases—are subjected to this permanent air-treatment. During the winter before last, which was an exceptionally cold one, a daily record was kept, and it was found that some of the convalescing and more energetic patients extended the so-called "*jour médical*" to ten and eleven hours, about 6 per cent. belonging to this class, while 8 per cent. rested in the manner described over nine hours, 8 per cent. over eight hours, 18 per cent. over seven hours, 18 per cent. over six hours, 12 per cent. over five hours, and most of the remaining spent at least two or three hours on their rattan lounges. For the purpose of showing the influence of the weather on the number of patients partaking of the permanent air-treatment, Dr. Dettweiler and his associate kept an exact record during the year 1885 of the proportion of patients which were compelled to remain indoors all day and were visited by the attending physician at their rooms. The record reads: January, 10 per cent.; February, 7½ per cent.; March, 9½ per cent.; April, 9⅛ per cent.; May, 9½ per cent.; June, 7⅕ per cent.; July, 7½ per cent.; August, 6¼ per cent.; September, 7¼ per cent.; October, 9⅖ per cent.; November, 10¼ per cent.; December, 10½ per cent.—an average of 8½ per cent. during the summer months, and 9½ per cent. during the balance of the year. Considering the fact that those remaining through the winter belong to the more serious class of patients, the difference is very small. Only in exceptional cases—in highly anæmic subjects, and those suffering from continuous and decided fever with frequent chills—is the permanent air-treatment not indicated. Those suffering from chills during the early hours of the day do not occupy the lounges until after dinner. Six hours is the average time spent on the lounge; many remain there until ten o'clock at night, passing the time reading or writing, playing dominoes or chess, the verandas and pavilions being well lighted after dark. Card-playing and games of chance are prohibited. Dettweiler maintains that experience, extending over a period of more than ten years and over a large amount of material, has convinced him that immunity against the unfavorable influences of sudden changes of temperature, diminished cough, increased appetite, and lessened fever are results obtained by the permanent air-treatment. Dettweiler being a careful observer and a man in whose judgment those who know him place confidence, the question naturally presents itself, Why should we not profit by his experience and introduce this very simple and still so effective mode of treatment in a properly situated sanitarium near New York city? Another feature of the treatment as used in Falkenstein—although not original with Dettweiler—supposed to strengthen the system and to harden it against unfavorable external influences—is the systematic use of massage and the regular daily rubbing down of patients, early in the morning and before rising, by trained nurses, first by means of dry towels, afterward with alcohol, and occasionally with salt-water. The cold douche—given at first only for fifteen and never over fifty seconds, generally applied sideways, at first as a rain-shower and afterward as a stream, always administered by a physician—is added in most cases to the other invigorating measures.

As one might expect, much attention is paid to the patient's diet and to the condition of the alimentary canal. Dettweiler considers anorexia, next to pyrexia, the most important factor in destroying the life of our phthisical patients. As in other respects, so in regard to nutrition, much attention should be paid to the individual needs of each case, and, if necessary, all the delicacies of the season should be laid before the patient to tempt the appetite; it is certainly necessary to cater to the peculiarities of some in order to overcome their dislike for food. With these exceptions the patients take all their meals together, one physician being always with them, and the time for meals is thus arranged: First breakfast, consisting of coffee, tea, chocolate, or milk, with cakes or rolls and butter or honey, from 7 to 8.30 A. M. Second breakfast, bread and butter with milk, always as much as desired, or bouillon and cold meat, at 10 o'clock A. M. Dinner, the principal meal, consisting of soup, fish, or boiled meat, roast, with a variety of vegetables, salad and compote, and dessert, at 1 P. M. With the dinner each patient drinks from one third to half a bottle of Rhine or Hungarian wine; immediately after, but not taken in the same room, a cup of coffee, either white or black, is served. At 4 o'clock P. M. those whose condition requires additional nutrition partake of fresh milk, and a nice little room is arranged for this purpose within the cow-stable. A warm supper, consisting

of soup, warm and cold dishes of meat, with compote, is served at 7 P. M.; some patients are permitted to drink beer with this meal, but most of them take a glass of wine. Instructions are given to eat slowly and chew well; milk especially must be taken only a swallow or so at the time; sometimes it is even directed to be drank from the tablespoon. The food is well prepared and cooked rather rich, and the changes are not confined solely to the bill of fare, but the manner of cooking is also changed often. Dr. Dettweiler himself directs the management of the kitchen. He says that few of the patients do not enjoy the meals at Falkenstein; 86 per cent. of all patients gain an average of nine pounds each during a period of less than three months, while only 14 per cent. do not increase in weight. Dettweiler compares his "permanent air and rest treatment" with the administration of such a liberal and rich diet, amounting almost to overfeeding, to "Weir Mitchell's cure," and he speaks very highly of the favorable results obtained through the latter.

The free use of alcohol, more especially of pure brandy, is one of the features of Dettweiler's treatment which has frequently been criticised, but Dettweiler himself is very decided in his opinion about the value of alcohol as a remedial agent in cases of pulmonary phthisis; he says that he would give one half of the entire materia medica for this one remedy, and that the proper use of alcohol is of the greatest value not only in all cases of phthisis—whether accompanied by consuming fever or combined simply with well-defined anæmia—but also in all diseases where the general system is deranged, or where the functional activity of any of the more important organs is much below the physiological requirements. With this conviction well settled in his mind, he prescribes alcohol in every case in strict accordance with its requirements, never as a matter of routine—always with good results. The phthisical patient with a fair appetite and free from fever does not require more than three fourths to one bottle of good Rhine wine, claret, or Hungarian wine, either white or red, daily, to be taken with the meals. If, however, anæmia is a prominent feature, if the skin is cool, if slight chills are of frequent occurrence, or if the subnormal temperature of the morning extends toward the forenoon hours, he orders what might be called "the brandy treatment," the good effect of which he recognizes more every day. Under such circumstances he orders two teaspoonfuls of pure brandy to be taken every hour or two from morning till night, amounting to about eighty grammes during the day, and to be followed by a glass of brandy milk-punch before retiring. If for any reason alcohol should be administered in another form, the patients carry a flask of strong Rhine or Hungarian wine with them and partake of it in somewhat larger quantities, as is done with brandy. The regular use of brandy or wine through the day is continued generally for a few weeks only, but he advises the moderate use of stimulants during the further course of the treatment after longer walks, in cool weather, or if the patient feels easily fatigued; and he has never yet seen any of his patients acquire intemperate habits from following his advice. Dettweiler makes the following strong statement: "I should least be willing to abandon the use of alcohol in fever, the most powerful enemy of the phthisical patient. After numerous trials and experiments with a large variety of remedies, I will say freely that I would rather dispense with the use of salicyl, quinine, or antipyrine, than with good wine or brandy."

It is hardly necessary to state that the laws of hygiene are carried out strictly at Falkenstein, that the patients sleep with their windows open during the night, that pure water is at hand, that the greatest cleanliness prevails, that cuspidors filled with a solution of bichloride of mercury are placed everywhere, that the patients are instructed to make use of them instead of expectorating all over the place, that the drainage is of the best, etc. The average attendance during the last years has been 160 in the summer and 120 in the winter. The expenses, including wine, brandy, milk, douche, bath, and medical attendance, amount to not over twelve marks, or three dollars a day. The place is generally overfilled, and a number of patients sleep in houses outside of the institution proper, but all of them are subject to the same strict supervision of the attending physician which is exercised over those living within the walls of the sanitarium.

In conclusion, I wish to say that within the limits of this paper it would have been impossible to describe the mode of treating so complex a disease as pulmonary consumption is in its details; that it was rather the intention of the writer to call the attention of the profession to a mode of treatment which seems entirely rational, and which has given such general satisfaction. Criticism has been intentionally avoided, although room for improvement might be easily detected. Let us profit by the experience of others, let us avoid their mistakes, but let us urge not only the advisability but the necessity for establishing an institution for the rational treatment of pulmonary consumption within easy access of New York city.

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# NEURASTHENIA AND LITHÆMIA: THEIR DIFFERENTIAL DIAGNOSIS.*

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Neurasthenia is now almost a household word, and, equally with the term malaria, affords to the profession a convenient refuge when perplexed at the recital of a multitude of symptoms seemingly without logical connection or adequate cause. The diagnosis of neurasthenia, moreover, is often as satisfactory to the patient as it is easy to the physician, and by no means helps to reduce the number who have been duly certified to as neurasthenic, and who ever after, with an air too conscious to be concealed, allude to themselves as the victims of nervous exhaustion. The doctrine to be taught and strongly enforced is that many of these patients are not neurasthenic, and under hardly any conceivable circumstance could they become neurasthenic. They do not belong to the type out of which neurasthenia is born, either mentally or physically.

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* Read before the New York Neurological Society, February 7, 1888.

Many of them are unintellectual, phlegmatic, and intolerably indolent, and are pleased at a diagnosis which touches the nerves rather than the stomach, bowels, and liver. Instead, therefore, of rest, quiet, and soothing draughts, they need mental and physical activity, less rather than more food, depletion rather than repletion.

These patients are lithæmic and not neurasthenic. The nervous system is strong enough, and would give no trouble were it not poisoned by the abnormal products of digestion that enter the blood and circulate freely through every tissue of the body. Now, while protesting against the too indiscriminate diagnosis of neurasthenia, I would by no means have it understood that I am not a firm believer in the propriety of classifying under this head that great family of symptoms which the late Dr. Beard was the first to distinctly formulate and label.

My aim, on the contrary, will be to more firmly establish the reality of neurasthenia, and at the same time to elucidate the points of differential diagnosis between this disease and that functional disturbance of the liver that we term lithæmia. The subject has long seemed to me to be of the utmost importance. Only lately a patient consulted me, complaining of neurasthenia, for which she had been treated for a long time without benefit. Now, neurasthenia is a disease by no means incurable, and the fact that no benefit had been derived led me to doubt the diagnosis. True enough, a more careful examination revealed evidences of intestinal and liver indigestion, and an abundance of uric acid in the urine. For years she had taken but little exercise, and indulged her appetite without restraint. Under a complete reversal of this order of affairs—more exercise in the open air, simpler diet, and simple remedies directed toward correcting the disordered digestive function—many of her most persistent and annoying symptoms have quite disappeared. Every general practitioner, I doubt not, could duplicate many times such cases as this; and yet, on the contrary, how often has the neurologist been called upon to deal with just the reversal of this state of things, where a typical neurasthenic has been regarded as simply hypochrondriacal, or treated by alteratives and purges for a supposed torpidity of the liver. The fact that both lithæmia and neurasthenia are so frequent, that there is such an apparent similarity of symptoms, and, above all, that they demand measures of treatment so radically diverse, is, to my mind, sufficient reason for bringing the subject prominently forward for discussion.

As a practical illustration, therefore, of this statement of fact, I will give two cases, each of them typical of the class to which it belongs, and both of them illustrating most effectively the necessity of a correct diagnosis as a guide to proper methods of treatment.

*Case of Neurasthenia.*—Mr. O., aged thirty-six, consulted me for symptoms that had for the past five or six years greatly interfered with his happiness and capacity for work. Physically he was well developed, standing five feet ten inches in his stockings, and weighing 170 pounds. His complexion was fair, his eyes were blue, his hair was blonde, and his nutrition was apparently unimpaired.

Intellectually he was far above the average. He could speak correctly in two languages other than his own, besides understanding and writing a third, and all this he had mostly acquired through self-instruction. In addition to the labor necessitated by these scholastic acquirements, he had devoted himself for years, with few intervals of rest, to the details of an exacting mercantile business. The symptoms to be described were essentially the same as those he had suffered from for the past five years.

He complained first, and perhaps most of all, of a settled melancholia, associated with a morbid and utterly baseless fear of financial ruin, and yet he was by no means ill-tempered or irritable. On the contrary, he was in his most depressed moods a model of dignity and gentle demeanor. His pulse was 80 or more and somewhat irregular, rendering him fearful of heart disease; but this was only one of a number of morbid fears that had from time to time distressed him. His appetite was fair at all times, and his weight varied but little from year to year. Constipation was a somewhat troublesome symptom.

He looked strong, and yet he was as easily exhausted physically as mentally. He possessed no reserve force, and gave out utterly whenever he attempted to overstep the bounds of the most ordinary effort. At one time his eyes would be bloodshot, and at another perfectly natural, showing a tendency to local and transient hyperæmia, due principally to innervation.

Misled, perhaps, by the constipation from which he suffered, the medication to which he had been subjected had been directed in good measure toward correcting the function of food assimilation, but with no marked effect. To this time he had not given up the general supervision of his business, but soon after coming under my observation he was induced to leave New York indefinitely. He journeyed to the West, visited the Yellowstone region, and at San Francisco took steamer for China. He was absent some eighteen months, and returned a well man, nor has he since relapsed into his former condition.

This case I regard as one of neurasthenia pure and simple. The patient needed no remedy directed to the liver, to the bowels, or to any special function. If he had been unable to pursue the course he did, remedies directed to the restoration of the impoverished nerve-force would have been in order, and not cholagogue cathartics or bitter tonics. What he needed above all things was absolute rest for the exhausted nerve-forces, and an entire change of air and scene. As we can have an acute catarrh which soon wears off, leaving no appreciable ill effect, so we can have an acute neurasthenia, which also passes away, leaving the system strong and well; but, as a succession of acute catarrhs may finally develop into a chronic catarrh which is practically incurable, so many attacks of acute neurasthenia may finally develop into chronic and permanent neurasthenia. The exhaustion that results from any excessive strain upon the mental and physical powers is simply an attack of acute neurasthenia, and differs from chronic neurasthenia very much as any acute attack differs from its chronic form. It is a question only of permanence and degree, but the basis of both is impoverishment of nervous force, and waste of nerve-tissue in excess of repair. Nervousness is really nervelessness.*

As illustrative, on the other hand, of the lithæmic condition, I offer the following case:

* "A Practical Treatise on Nervous Exhaustion," George M. Beard, M. D.

Mr. N., aged forty-three, a stout gentleman with a somewhat sallow complexion, consulted me for a variety of symptoms which he supposed to be neurasthenic, and for the relief of which he had taken many "nerve tonics," together with a "course of electricity," but with no appreciable benefit. He suffered from periodical attacks of constipation, and at these times he became so depressed and irritable as to render his family exceedingly uncomfortable. He himself suffered most of all from this lack of mental control, and deplored it beyond measure. For his constipation he had been accustomed to take much fruit and to rely on the saline waters, but gave little heed to his diet, eating heartily of whatever he liked, and invariably taking wine with his dinner. He slept well, and when by the use of these waters or after an attack of diarrhœa the clogged system became in a measure unloaded, he felt as well and as active as ever. Several examinations of his urine revealed the fact that when he was constipated and depressed uric acid was present in abundance, but when his bowels moved freely and he was feeling fairly well hardly a trace could be found. Noises in the ear were a most annoying symptom, ceasing when the urine cleared, and invariably coming on in full force with the appearance of uric acid.

When it was explained to this patient that he was not in any way neurasthenic, but that the cause and cure of his distressing symptoms depended largely if not altogether upon his food and drink and his habits of exercise, the statement seemed a revelation to him. He readily consented to a great decrease in the albuminoid forms of food, total abstinence from alcoholic stimulants, and out-of-door exercise by walking for at least five miles each day.

No medication was attempted through the whole course of this régime, unless the occasional dose of a third of a tumbler of Rubinat water could be thus designated.

Under this dietetic change and increased bodily exercise the improvement in the condition of this patient was radical and rapid. The action of his bowels became regular and free, and in saying this all is said as regards his other symptoms. The condition of his bowels was the index of his mental and physical condition. When he was constipated, uric acid, the product of imperfect oxygenation, invariably appeared in the urine, associated with cold hands and feet, noises in the ears, heaviness or rather a sense of constriction about the head, and excessive irritability of temper. With the relief of the constipation all these symptoms disappeared, and so long as he faithfully follows the prescribed method of living his functions are properly performed.

Functional diseases of the nervous system, and indeed all forms of functional derangement, are perhaps practically more important for our consideration than those that are organic or structural in character. Long experience has taught us how very little all our boasted therapeutics amounts to in dealing with any progressive degeneration of nerve-tissue.

John Quincy Adams, referring to himself a short time before his death, said that the house was tumbling to pieces and the landlord refused to make further repairs. In the degenerative changes brought on by disease, by injuries, or excesses, very much the same rule prevails, and when nature withholds her aid our art is practically powerless. With what in our ignorance we term functional diseases the case is widely different; nature stands ever ready to aid in the cure if only the opportunity be given. Neurasthenia is probably seldom if ever taken for organic disease of the nervous system except by the patient himself, and therefore no mistakes of treatment need follow in this connection, but it is frequently mistaken for lithæmia and other faults of assimilation that result in radical errors of treatment. It might be suggested that the presence of uric acid in the urine ought to be a sufficient diagnostic sign, but uric acid is found in neurasthenic patients and is not at all times found in the lithæmic.

Other objective as well as subjective symptoms therefore enter as no unimportant factors in aiding toward a correct diagnosis.

According to my own experience, one of the most common and distinctive points of differential diagnosis between lithæmia and neurasthenia is the difference in the character of the mental phenomena. Both the lithæmic and the neurasthenic suffer from mental depression and a profound sense of misery, more marked indeed in the former than in the latter condition. While, however, the neurasthenic may suffer from the deepest melancholy, and imagine himself heir to a thousand ills, he becomes the victim, as a rule, of no such irritability and unreasonable outbursts of temper as the man whose brain is actually poisoned by the imperfectly transformed products of digestion. The neurasthenic may be at times extremely irritable, but this irritability is more passive than active, and any ebullition of angry feeling is quite evanescent. His demeanor is, as a rule, quiet, and there is but little manifest tendency to make those dependent upon him miserable by his words and actions. The touchy mood of the lithæmic, on the contrary, may last for days or weeks. It is due to actual toxæmia, is often if not generally accompanied by obstinate constipation, and may be relieved completely by the action of a cholagogue cathartic.

In neurasthenia, again, cold hands and feet are not by any means the rule, but in intestinal and liver derangements the nitrogenized wastes circulating in the blood cause, by their irritation, tonic spasm of the arterioles, resulting in the cold hands and feet so bitterly complained of by the sufferers from lithæmia. The condition of the tongue is an important diagnostic aid. In lithæmia it is coated far more frequently and to a greater extent than in neurasthenia, but in some cases of lithæmia the tongue is but slightly affected. It may appear at first sight perfectly normal, and it is only when looked at carefully from the side that an unnatural brownish color is observed. It is in such cases as this that mistakes in diagnosis are frequently made. As regards the pulse, it may be said that in lithæmia it is slow rather than fast, and in neurasthenia fast rather than slow. In neurasthenia the oxalates are frequently found in abundance, while in lithæmia the oxalates are not usual.

It is not my purpose, nor do I deem it possible, in a single article, to enter exhaustively into the consideration of the symptoms of neurasthenia as they differ from those of lithæmia. The symptoms of the former are innumerable; those of the latter comparatively few and well defined. No one example of neurasthenia illustrates more than a very small fraction of the great army of symptoms that have been observed in connection with this disease, and it is for

this reason that so many have expressed doubts as to the propriety of any such formulation as neurasthenia.

On the other hand, making allowances for constitutional differences and occasional aggravated forms, cases of lithæmia are very much alike, and when one has seen a few such cases he has seen them all.

If it were practicable to take a hundred cases of neurasthenia and write the sum-total of symptoms, objective and subjective, and do likewise with the same number of lithæmic cases, the result would be an interesting study—indicating that, in the fullness of their manifestation, the two diseases are symptomatically very wide apart, however similar they may appear when compared singly.

The treatment of neurasthenia and lithæmia is as widely different as their nature and causation. In the management of individual examples of both these conditions the minor treatment is often necessarily varied to meet special annoying symptoms.

In lithæmia, for example, constipation may be met by the moderate use of mineral waters, especially of the Carlsbad and Rubinat varieties, because of the large amount of sulphate of sodium they contain, and occasionally more active cholagogue cathartics can be used with advantage. The natural lithic waters are also of value and always in order. As for neurasthenia, the remedies suggested for its relief are as numerous as the symptoms which it presents, and their enumeration alone would fill a page.

If we once fully appreciate the fact that the two diseases demand diametrically opposite methods of treatment, that the relief of lithæmia in great measure depends upon, as it is caused by, the food we eat and what we drink, as well as habits of exercise, and that neurasthenia is caused by worry and work and nervous strain, our knowledge of the effects of food in the organism, together with the exercise of ordinary sense and judgment, will enable us to deal intelligently with both these conditions.

## A CASE OF
# HYPERTROPHIC CARDIAC DILATATION
### PRESENTING MANY SYMPTOMS STRIKINGLY SIMILAR TO THOSE OF
# ANEURYSM OF THE THORACIC AORTA.

By W. P. SPRATLING, M. D.,
NEW JERSEY STATE ASYLUM FOR THE INSANE.

The case related below was of unusual interest, possessing as it did the more prominent features and symptoms, with one exception, of an aneurysm of the aorta within the thoracic cavity. A similarity of symptoms present in two different diseases must mean a similarity of causes or conditions which create these symptoms. Such was the case here, as will be presently shown. The pathological changes to be met with, or the causes which produce such changes, either within the walls of a dilated heart or in the coats of an artery at the point where the morbid change had its inception, or at any point to which the change had progressed, need not be mentioned or reviewed here. It suffices to show that the result, as illustrated by this, was virtually the same.

Before describing the heart as it appeared at the post-mortem examination, it may be well to give a brief history of the case.

I was requested to see Miss K. L. for the first time on the evening of November 25, 1887. I found her an extremely delicate young lady twenty years of age. She had never enjoyed good health, and had for the past two years been an invalid. When first seen she was seated upon the edge of a low bed with her body bent well forward. She was making pressure with both hands just over the region of the stomach, and plainly showed that she was suffering most agonizing pain. The least exertion or effort to sit upright would bring on violent fits of coughing.

Gastric irritability was present to an extreme degree. She could not retain for a moment either food or medicine upon the stomach. Nausea was constantly present. The skin was hot and dry. Jaundice was fairly well marked, the conjunctivæ being more deeply stained than the skin. The temperature was 102° F. The radial pulse could not be felt on the right side and was barely appreciable on the left, being so rapid and irregular that it could not be satisfactorily counted. The feet and hands were cold. There was considerable œdema of the feet, also some ascites. The liver dullness extended three inches lower than normal. Percussion, when most gently practiced over this organ, as it emerged from under the lowermost rib, gave rise to much pain.

Inspection of the chest showed a large and irregular prominence located on the median line about four inches above the ensiform cartilage. It measured three inches in diameter and stood out fully half an inch above the surrounding surface. The percussion-note over this elevation was decidedly dull. Auscultation over it gave negative results. The area of the heart's dullness was greatly increased. This may be better appreciated when the size of the organ is made known. No distinctive bruit could be heard at any point. The heart's beats numbered 130 to the minute.

The examination was not thorough or at all satisfactory, owing to the great suffering of the patient, her efforts at vomiting, and her frequent changes of position. An aneurysm of the aorta, ascending portion, was suspected. Absence of bruit was taken into consideration, but not regarded as of decisive importance in view of the other symptoms present.

The patient was given morphine in sufficiently large doses to allay cough and pain and to relieve gastric irritability. Other medicines were ordered to be given during the night. Next morning she was more comfortable, sitting up, and comparatively free from pain. Efforts at vomiting were very infrequent. She had taken a small quantity of milk at breakfast and had retained it. Restrictions were put upon the diet and all unnecessary exertion cautioned against.

Eight hours after my second and last visit she died very suddenly.

An autopsy was held twenty-six hours after death. The body was poorly nourished. Rigor mortis was not well marked. The thorax being opened, the heart and larger blood-vessels were examined *in situ*. At a casual glance the heart seemed to occupy half the thoracic cavity. No lung-tissue was visible. A fruitless effort was made to pinch up the pericardium, but it was found to be so intimately adherent to the heart that careful and tedious dissection was required to remove it. Upon lifting the heart from its bed, all its cavities were found to be greatly distended. The greatest change had occurred in the left auricle. Its capacity had been increased to eight ounces, as

was afterward estimated. A large incision was made into it, through which the contained mass of dark, firmly clotted blood was pressed out. The walls of the auricle had undergone no atrophy, and were of normal thickness. The capacity of each cavity of the heart had been increased from two to three ounces above the normal. The walls of the right and left ventricles had undergone considerable hypertrophy. The heart muscle presented on section a much paler appearance than usual. When freed of all contained clots, the heart weighed twenty-two ounces and a quarter.

Upon examination of the interior of the heart, the mitral orifice was found to be much contracted, the opening having the appearance of a narrow slit. The valve's segments were thickened and rigid. All the other valves were in fair condition. The external measurements of the heart were as follows: From base to apex, eight inches and a quarter; greatest breadth, six inches and three quarters; thickness, four inches and a half. Its size and capacity were most remarkable, considering what a normal heart should be in such an individual.

Death in this case was undoubtedly due to heart paralysis, as the result of sudden and complete overdistension, since each cavity was found filled with clotted blood.

Morris Plains, *January 1, 1888.*

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## A CASE OF EXTRA-GENITAL CHANCRE, AND PROPOSED MEASURES FOR PREVENTING THE SPREAD OF SYPHILIS.

By WILLIAM C. WOOD, M. D.,
GLOVERSVILLE, N. Y.

A little more than three years ago I was consulted by a young man who had an indurated chancre on the knuckle of the little finger of his right hand. In a drunken row he had struck a companion on the mouth, just scratching the skin—"hardly drew blood," he said. It refused to heal in spite of the salves he applied, and he wanted to know what it was.

At that time I was treating the person struck for syphilitic sore mouth. I informed him of the nature of the sore and put him on specific treatment. This he followed up faithfully for about two months, developing meanwhile slight constitutional symptoms, but, being of dissipated habits, he soon neglected to attend to himself.

About eighteen months later he sent for me to come and see his baby. Arriving at his house, I found he had married over a year before, and that the child, which was but a few weeks old, had "had a rash ever since it was born." It died the day I saw it—clearly enough from hereditary syphilis. I could not get him to take medicine, as he said he felt well enough without it. He soon after, however, began to have a cough, took patent medicines, drank to excess, and generally neglected himself until about a month ago, when he again called me. He was then in the last stages of phthisis, and soon died.

I report the case to call attention to the lesson it teaches—namely, the necessity of some State regulation isolating the syphilitic. If so much ado is to be made about leprosy as was done by the authorities in Philadelphia some time since, how much more should we make strenuous efforts to "wipe out" this disease, which is certainly as productive of misery and death as the other, and is as much to be dreaded and shunned!

The proposition I would advocate would be something like the following, which, while it renders the recognition and licensing of prostitution necessary, does so for the protection of society; for is it not true that the innocent suffer to a large extent from syphilis?

1. The registration of prostitutes and their examination by competent medical officers at stated periods.

2. The reporting of all cases of syphilis coming under their notice by private practitioners, each physician to make a sworn statement to the Board of Health monthly of all cases of syphilis coming under his notice. Then let the patient be examined by a board of specialists (to prevent any possible mistakes), and, if found syphilitic, be placed in quarantine for a time to be determined; after that to report at stated intervals to the board.

Marriage without the consent of the board to be promptly and severely punished.

I think it could be so arranged that if the patient submitted quietly and willingly to the directions of the "sanitary board," there need be but little if any publicity attached.

This may seem a severe method, but the disease requires severe measures to stamp it out. Just look at it! A man contracts syphilis. He avers, and I have every reason to believe him, that he takes care of himself and avoids, so far as he can, exposing others; yet from striking him on the mouth another gets syphilis, gives it to his wife, a child is born to die of the same disease, and we can not tell how far or through what channels it may yet spread.

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## TWO CASES OF GANGRENE FOLLOWING THE HYPODERMIC USE OF COCAINE.

By J. A. NICHOLS, M. D.,
PLATTSBURG, N. Y.

In a moderately active surgical practice the writer has, within the past two years, resorted to the method of Dr. Corning in producing local anæsthesia by the hypodermic injection of a solution of cocaine for minor surgical operations many times—no fewer than thirty. No untoward results have attended its use, either local or constitutional, save in the two cases cited below.

Case I.—F. D., aged sixty-five, robust and healthy, came to me with a crushing injury to the third finger of the right hand, rendering amputation of the last phalanx necessary. Local anæsthesia was produced by the injection of fifteen minims of a 4-per-cent. solution of cocaine hydrochloride (Parke, Davis, & Co.) after first applying an elastic ligature. Strict antisepsis was observed. The flaps, made amply long, were of healthy tissue, and not constricted by the sutures. The operation, from the injection of the cocaine to its completion, did not occupy more than fifteen minutes. On the fourth day the finger was examined, and both flaps were found to be gangrenous. The finger was re-amputated, under the use of cocaine as before, but with much better result, healing taking place by first intention.

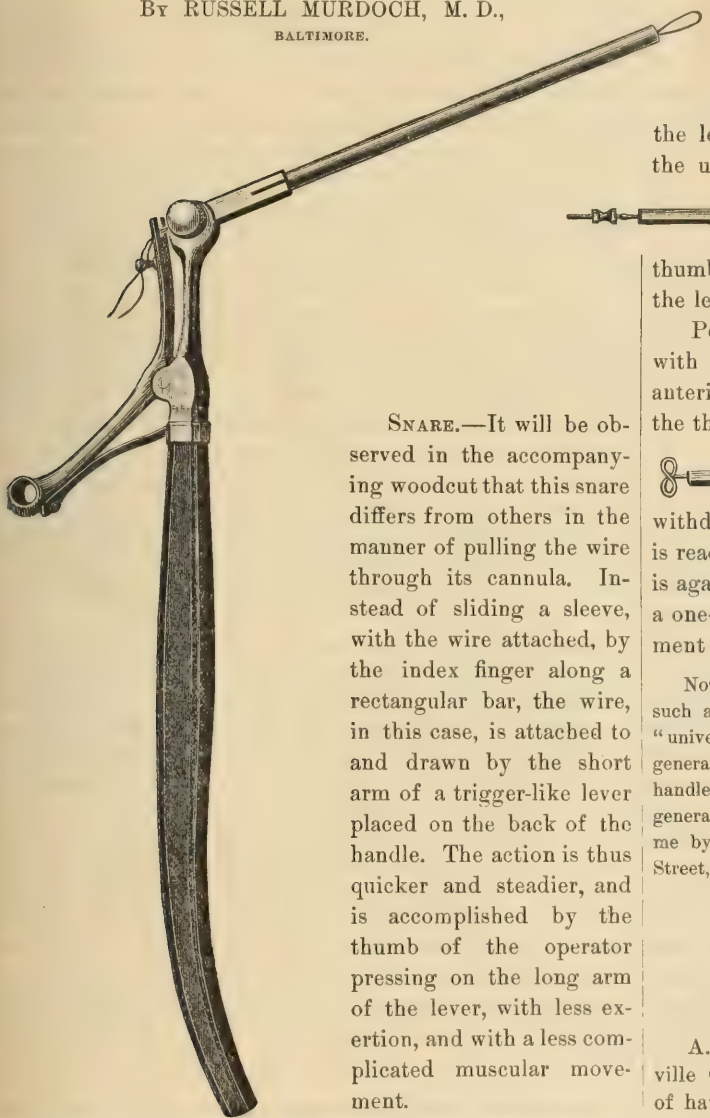
Case II.—H., aged twenty-four, healthy, presented himself for treatment with congenital phimosis. Cocaine was used as in the preceding case, and circumcision performed antiseptically, requiring twenty minutes. The operation was almost bloodless. The line of incision was painted with flexile collodion, the patient was confined to his bed, and cold-water dressings were applied. On the third day evidence of gangrene manifested itself, attacking both mucous membrane and integu-

ment. The patch of sphacelus was an inch and a half long and half an inch wide. The space left healed by granulation.

This was the eighth circumcision performed by the writer in which cocaine was used, and the only one attended with anything but good results. Inasmuch as these are the only two cases of gangrene I have had following any surgical operation, either with or without the use of cocaine, the question arises, What part, if any, did the cocaine play in its causation?

## EAR INSTRUMENTS.

By RUSSELL MURDOCH, M. D.,
BALTIMORE.



Snare.—It will be observed in the accompanying woodcut that this snare differs from others in the manner of pulling the wire through its cannula. Instead of sliding a sleeve, with the wire attached, by the index finger along a rectangular bar, the wire, in this case, is attached to and drawn by the short arm of a trigger-like lever placed on the back of the handle. The action is thus quicker and steadier, and is accomplished by the thumb of the operator pressing on the long arm of the lever, with less exertion, and with a less complicated muscular movement.

Furuncle Knife.—This second instrument, like the cannula of the snare, is passed through the sleeve portion of the handle, and, unlike it, is not fixed by the set-screw, but is allowed to have free play through it. It is then, by means of a spool-like button, attached to the forked extremity of the small end of the lever, in order to make which attachment the button has to be lifted over the fork, and therefore, to accomplish that purpose, the proximal end of the knife is made flexible by a closely wrapped spiral wire around a central thin flexible core. In order, also, that the backward motion of the lever may alone be imparted to the knife without its accompanying upward one



and thus locking the knife in the sleeve, this flexible end rises with the lever, while the stiff, closely fitting rectangular shank passes directly backward. The sleeve, however, is split in front, so as to allow a slight downward movement of the blade. This, added to the acute angle at which the blade is set to the shank, does away with a part of the usual downward pressure from the hand, as the knife rapidly cuts its way through the exquisitely painful furuncles of the external auditory meatus.

Cannula Forceps.—This consists of a cannula, and a piston split into blades in front, and flexible, with a similar spool-like button for attachment to the lever in the rear. The lever operates the blades with the utmost precision, and imparts to them, as long as the



thumb presses on the milled extremity of the long arm of the lever, the most unyielding grasp.

Porte-acide.—This likewise consists of a fixed cannula with a movable piston, also attached to the lever. The anterior cup-shaped extremity is made to protrude by the thumb on the lever, and, when armed with the acid, is



withdrawn; then, when it is thus guarded, the desired spot is reached in the meatus, and it is protruded, after which it is again shielded and withdrawn. The convenience of such a one-handed application is the chief claim that this instrument offers for presentation to the profession.

Note.—It need hardly be remarked that other instruments in use, such as a probe, tenotome, etc., can be inserted in the sleeve of this "universal" handle, and fixed by the set-screw; or that the size and general shape of the above-described instruments, as well as those of the handle, have been freely borrowed from well-known instruments in general use. The modifications above described have been made for me by Charles Newhause, instrument-maker, No. 506 North Eutaw Street, Baltimore.

## ANTIPYRINE IN ASTHMA.

By JOHN L. DODGE, M. D.,
HOUSE PHYSICIAN, LOUISVILLE CITY HOSPITAL.

A. E., aged sixty, a laborer, was admitted into the Louisville City Hospital, November 16, 1887. He gave a history of having suffered from asthma for three years, and of having attacks almost every night during this period. The heart was normal. There was no bronchitis, and but very little emphysema. From November 16th to December 17th he had from one to two attacks every night, and occasionally one during the daytime. During this time lobelia, grindelia robusta, iodide of potassium, and, lastly, pyridine, were tried. For a while these remedies seemed to diminish the severity of the paroxysms, but did not affect their frequency. Toward the last, however, they seemed to lose their effects, and from December 12th to December 17th the attacks became more frequent and more severe. On December 17th I ordered antipy-

rine in fifteen grain doses, at 6 P. M., 12 P. M., and 12 M. The next morning the patient reported having passed a comparatively comfortable night, having had only one paroxysm, and that a light one. The dose was repeated on the 18th, with the same happy effect. On December 19th I ordered antipyrine, five grains every three hours during the day, and fifteen grains at 9 P. M. and 3 A. M. This was kept up until December 23d, when the medicine was withdrawn, as the paroxysms had ceased entirely. The next day there was some slight gastric disturbance, and arsenic, nux vomica, and pepsin were ordered. This mixture was given for two days and its use was then discontinued, as he complained of nothing, and pronounced himself well.

On January 6, 1888, he was dismissed at his own request, there having so far been no return of his asthma.

I fully share with the profession the well-founded prejudice against reporting single cases of this kind, but the relief was so remarkably quick and complete that I can not refrain from making it public, especially as this seems to be a new field for antipyrine.

## Correspondence.

### LETTER FROM LONDON.

*The Hendon Cow Disease and Vaccinia.—The Medical Profession and Homœopathy.—The Case of the Crown Prince of Germany.—A Medical Man Convicted of Murder.*

London, *January 10, 1888.*

Looking back over the year that has just closed, there does not appear to have been any event in the medical world of striking importance. The discussion on the causation of scarlet fever by a disease in the cow, originating from the investigations of Messrs. Power and Klein, has perhaps created the greatest interest. The latest contribution to this discussion was made at a special meeting of the Pathological Society just before Christmas, when Professor Crookshank gave the results of his investigations carried out on behalf of the Agricultural Department of the Home Office. He described a disease occurring in cows, manifested by the formation of vesicles and ulcers on the teats and udder, and transferred from one animal to another by the hands of the milkers. He considered that this disease presented the same clinical features as those described in the Hendon epidemic, because it affected man, producing pustules on the fingers, in the same manner as had been observed in the Hendon outbreak. From the ulcers he had succeeded in cultivating a *Streptococcus* corresponding in every respect with that obtained by Dr. Klein. Although the milk from these cows was extensively distributed, none of the consumers of it were affected with scarlatina. Further investigation showed that he had to do with true Jennerian cow-pox, which was proved by the discovery of a boy at one of the farms with an ulcer on his hand and another on his cheek, which latter developed into a typical pock, and calves inoculated from the boy developed true vaccinia. It ought to be added that Dr. Klein does not admit that the disease Professor Crookshank described is identical with that known as the Hendon disease, so doubtless further researches will be called for.

For some time past a correspondence has been carried on in the columns of our leading daily paper, the "Times," on the subject of homœopathy. It was originated by Lord Grimthorpe, who had decided to take up the cudgels on behalf of the homœopathists in consequence of the intolerant attitude adopted toward them by the general body of medical practitioners. Lord Grimthorpe is very well known to readers of the "Times" as one who is constantly rushing into print and discussing matters of which he has not thorough cognizance, and the present occasion forms no exception to the rule; but his letters are always amusing, whether one accepts his facts or not. He has succeeded in drawing from a well-known specialist, who writes over the initials R. B. C., a very clear statement of some of the reasons why regular practitioners will not meet homœopaths in consultation. I often wonder and try to find out what the layman's idea of homœopathy is, but I have not yet succeeded. That any one educated as a medical man can really believe that a medicine becomes more potent the more it is diluted, and that shaking the medicine after dilution still further increases its potency, seems impossible; it reminds one of the state of affairs two centuries or more ago, when a certain Sir Kenelm Digby had a powder which, if placed on the sword or other weapon that had caused a wound, would heal the wound. The difference between the two beliefs, if there is any, is only in degree. "R. B. C." practically said we did not meet homœopaths, because we believed them to be knaves, a view which is certainly supported by the eagerness which some of the most distinguished homœopaths have displayed to be received back into the true fold after they have made their fortunes.

The opinion seems to be gradually gaining ground here that, after all, the disease from which the Crown Prince of Germany is suffering may not be cancer. It is said that the new growths which caused so much alarm some six weeks ago have completely subsided, which certainly does not look much like the behavior of any form of cancer with which most of us are familiar. Then, again, the suppuration which was reported not long ago is strongly suggestive of chronic inflammation rather than malignant disease, but Sir Morell Mackenzie and the others who have examined the illustrious patient refuse to say anything at present indicative of a confession of an error in diagnosis.

There has recently been a very painful trial for murder in Ireland. Dr. Cross, a retired surgeon-major, has just been convicted of poisoning his wife with arsenic. The evidence was circumstantial; the lady died after some few weeks' illness, and at the last was attended only by her husband, who was alone with her when she died, and who made untrue statements as to the cause of her death. Within a few days of his wife's death, Dr. Cross married a young lady who had previously lived with him as his wife at a hotel in Dublin. It was this very speedy marriage that caused the relatives of the deceased woman to make inquiries which culminated in an exhumation of the body and in the discovery of a large quantity of arsenic in the viscera. There was no evidence as to when Dr. Cross obtained the poison or how he administered it, but his conduct was not consistent with innocence, and public opinion approves of the verdict.

**Glassblowers' Syphilis.**—"Professor E. de Smet, of Brussels, in lecturing on a case of syphilis occurring in the mouth of a glassblower," says the "Lancet," "referred to several epidemics which have been reported as having occurred among artisans of this description, and remarked that only two plans for preventing these outbreaks had been devised—viz., giving a separate movable mouth-piece to each man and instituting frequent rigorous periodical inspections of the persons of the employees. The first plan is always declared by the workmen to be impracticable from the loss of time which it would occasion by fitting the different mouth-pieces on the tubes. The second would of course be resisted by the men, but he thinks their objections could be overcome by showing them the danger to themselves and their families of the present system."

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Edited by FRANK P. FOSTER, M. D.
NEW YORK, SATURDAY, FEBRUARY 18, 1888.

## DANGER IN THE COFFEE-CUP.

HAS coffee any noxious property? The coffee-lovers say not, though they readily concede that the abuse of tobacco, alcohol, or opium may result in serious damage. It is assumed that coffee is a unique substance without power to harm, regardless of the quantities absorbed, or the age, temperament, and disposition of the one who makes use of it. Now, is this really true? Guelliot, of Reims, France, would have us believe otherwise. He publishes observations upon twenty-three cases of chronic *caféisme* in the "Revue générale de clinique et de thérapeutique" for December 15, 1887, that are at once instructive and interesting. Coffee, it seems, is by no means an inert substance, but is capable of producing serious disturbance in the digestive tract and the nervous system. Women are the greatest sufferers, seventeen, or nearly seventy-four per cent., of the cases under observation having been those of women. This large percentage is owing to several circumstances. One is the too frequent mode of feminine life—monotonous, sedentary, and often lacking in inspiration. Staying in the house too much breeds a sort of insanity always, and turns a home into a hospital. Another reason for peculiar susceptibility to coffee-poisoning is the naturally impressionable nervous system of womankind. A third factor in the case, which Dr. Guelliot ignores, is the fact that men indulge in stronger stimulants. They seek an "ideal condition" (Maudsley) through the medium of tobacco, alcohol, or opium, leaving coffee and tea to the indoor sex. An absurd nursery rhyme hits off this difference rather well:

"Hinkety-winkety, wolloppy wee,
How does the Emperor take his tea?
He takes it with spices,
He takes it in slices,
And that's how the Emperor takes his tea."

But *revenons à nos moutons*—the coffee-bibbers. Characteristic symptoms of *caféisme* are anorexia, disturbances of sleep, trembling of the lips and tongue, attacks of gastralgia, different kinds of neuralgia, dyspepsia, and leucorrhœa that is often profuse and always the most persistent symptom of coffee-poisoning. The following is the order of abnormal manifestations, according to Dr. Guelliot's table, found in twenty-three cases: Anorexia in eighteen, disturbances of sleep in sixteen, trembling of the lips and tongue in sixteen, leucorrhœa in twelve, gastralgia in eleven, dyspepsia in ten, neuralgia in various forms in ten, cephalalgia in eight, vertigo and convulsive attacks in four, obstinate constipation in four, and constipation alternating with attacks of diarrhœa in three. One woman under observation, thirty-five years of age and of attractive appearance, having a fondness for grains of roasted coffee, kept her pocket full of them, and, like the sailor's wife that the witch in Macbeth tells about, "she munched, and munched, and munched," with the result of gradually breaking down her health. This woman's brunette shades of coloring gave way in time to an earthy hue. There was gastralgia, with extreme constipation, and then enteralgia, followed by progressive emaciation and anorexia. Alarm at her condition reduced the munching process and led to its final abandonment.

The quantity and quality of the coffee are ætiological factors of the first importance. In Belgium, for instance, coffee seems not such a bad thing, probably from the fact that it is largely mixed with chicory. But in oriental countries coffee is blacker than it is painted. Writing in the last century, Zimmermann says: "The Turks suffer as well as ourselves from the abuse of coffee. It makes them feeble, stupid, impotent even, especially when opium is used as well. Thus it comes about that the Turks despise their coffee-bibbers as we do our drunkards." Youth is another circumstance that favors *caféisme*. It is not uncommon for ignorant parents of the lower class to give their children coffee instead of milk. A child of eleven months, looking more like a picked crow than a baby, was brought into one of the hospitals for treatment. Its only food for a long time had been coffee pure and simple, sometimes with a little milk added, oftener not. One whole week of persistent effort was necessary to induce the unfortunate infant to take milk, which it did willingly at the end of that period. The heathenish parents considered such nourishment insufficient and removed the little one, in order to carry on the starving process unmolested. When the poor tot first came under observation its deep yellow skin hung in folds over its frail body, after the manner of a misfit garment handed down from an elder relative. A more melancholy spectacle than this unhappy child can hardly be imagined. It was thin, dried up, miserable, and altogether a most sorry-looking little animal.

Chronic *caféiques* are invariably thin, sometimes of almost rail-like slenderness. This distinguishes them from the victims of alcoholic intoxication, who are often fat and ruddy. The features are pinched, the face is pale and wrinkled, the complexion is yellowish-gray and earthy. The pulse is usually weak, compressible, and frequent. There is an anæmic murmur about the heart, though our French investigator finds palpitation extremely rare. He calls attention to the fact that, even when insomnia does not exist, sleep is troubled by anxious dreams of drowning, death, wild beasts, and the like. Menstruation is regular, the flow being augmented with occasional slight metrorrhagia during the inter-menstrual periods. *Caféisme* has no apparent effect upon the feminine reproductive organs. One woman, who had indulged in eight or ten cups of coffee a day from earliest childhood, reported the successful termination of eleven pregnancies. In men, one effect of *caféisme* is to diminish and sometimes abolish sexual desire. This is as true of the European as of the Asiatic. The neuralgias that are induced by coffee-poisoning are more remarkable for persistence than intensity. There may be

cramps and muscular twitchings. Migraine has also been caused by it. In the matter of treatment, moral suasion, hydrotherapy, regulated exercise, sedatives, and tonics are in order.

In what does the abuse of coffee consist? Impossible to say, for the only standard of comparison is the individual himself—oftener herself. In a general way, two or three cups daily may be considered the maximum quantity consistent with health. Coffee is a good thing, pleasant and refreshing, alike useful to the man of brain and the man of brawn. Not every one is poisoned by it. Burton mentions it in the "Anatomy of Melancholy" (1621) and attributes to it qualities we gratefully recognize to-day. "The Turks," he says, "have a drink called coffee (for they use no wine), so named from a berry as black as soot and as bitter, which they sip as warm as they can suffer, because they find by experience that that kind of drink so used helpeth digestion and procureth alacrity." Anything that "helpeth digestion" is a real benefaction, and whatever "procureth alacrity" deserves well of humanity at large. Because coffee intoxicates and is sometimes injurious, it does not follow that its proscription would necessarily be a good thing. Let us trust that no prohibition society will make total abstinence from coffee a political watchword. Rather let perish in the abyss of oblivion all observations upon *caféisme!* Dr. Guelliot affirms that he would be more than "desolated" should his exposition of the evils of coffee cause that delicious beverage to fall under the ban of any temperance society. Perhaps there is but small cause for alarm, as tradition favors the use of coffee and tea. Science also, in the shape of the excellent Liebig, has pointed out the fact that the same peculiar principle existing in certain otherwise different plants has made decoctions of these same plants the favorite drink of almost all nations. This principle, he states, called theine, caffeine, or theobromine, according to circumstances, furnishes the elements of the bile. Hence its peculiar adaptation to the needs of the human system. Thus it will be perceived how it helpeth digestion and procureth alacrity, containing as it does properties that in some form go to build up the complex machinery of man. As excess of anything is limitation, so too much coffee is a hurt and a hindrance Used and not abused, it is an every-day blessing deserving of gratitude and praise.

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## ERYTHROPHLŒINE, ANOTHER ALLEGED ANÆSTHETIC.

In certain happy communities on the west coast of Africa judicial inquiries in criminal cases are carried on with a simplicity calculated to make many a civilized Dogberry tear his hair with envy. Circumstantial evidence, the question of insanity, flaws in the indictment, the inscrutable moods of jurymen, and all the other elements of doubt that hover about our clumsy processes of trial are wholly done away with. The procedure is simply to compel the accused to take an ordeal poison; if it has no effect on him, or only a certain sort of effect, he is innocent, but, if it has certain other effects, he is adjudged guilty, and forthwith stoned to death or got rid of by some other cheerful process. Among the poisons employed for the purpose is a potion made from *casca-bark*, *sassy-bark*, or *saucy bark*, the bark of a leguminous tree called by Don the *Erythrophlæum guineense*, by Procter the *Erythrophlæum judiciale*, and by Guillemin and Perrottet the *Fillæa suaveolens*. Besides using this bark as an ordeal poison, the natives are said to employ it as a remedy for dysentery, diarrhœa, and colic. So long ago as the year 1859, Dr. William A. Hammond and Dr. S. Weir Mitchell made a series of experiments on animals with sassy-bark, and an interesting summary of their observations, as well as those afterward made by others, is given in Stillé and Maisch's "National Dispensatory." Among the effects noticed by Hammond and Mitchell was "a degree of anæsthesia." In 1876 Gallois and Hardy discovered in the bark an alkaloid to which the name of erythrophlœine has been given.

In the "Allgemeine medizinische Central-Zeitung" for 1888, No. 3, Dr. L. Lewin, of Berlin, gives an account of his experiments with this alkaloid, abstracts of which are to be found in the "Internationale klinische Rundschau" for January 22, 1888, and in the "Revue générale de clinique et de thérapeutique" for January 26th. Lewin first mentions his experiments with *haya* or *hayab*, a red mass spoken of by Livingstone as causing stiffness and insensibility of the tongue when taken into the mouth. Weak watery solutions of this substance, instilled into the eye in cats, caused after the lapse of from fifteen to twenty minutes an anæsthesia which lasted from ten to twenty-four hours. Injected into frogs and other animals, they caused a diminished frequency of the heart's action, followed by cardiac paralysis, and from time to time a convulsive wave passed over the animal, beginning at the eyes, advancing to the surface of the abdomen, and extending to the tip of the tail. In animals capable of vomiting, emesis occurred immediately after the injection.

Lewin subsequently became convinced that the poisonous principle of *hayab* was identical with the alkaloid erythrophlœine, and he proceeds to give an account of his experiments with the latter. Doses of two centigrammes (about three tenths of a grain) proved fatal to dogs, and proportionately smaller doses to rabbits. A solution of the strength of two tenths of one per cent., instilled into a cat's eye, caused in the course of fifteen or twenty minutes an anæsthesia more profound and more lasting than the observer had before thought possible; even with weaker solutions the effect was perceptible at the end of a day, two days, and two days and a half. Under the use of the solution mentioned, the cornea remained clear; when, however, a two-per-cent. solution was used, intense irritation and cloudiness of the cornea were caused, but they subsided spontaneously in the course of a few days. When erythrophlœine was injected into one of the limbs of an animal intensely tetanized with strychnine, no more spasms took place in that limb. In guinea-pigs, in fifteen minutes after an injection under the skin of the back, an incision reaching to the muscles could be made, and the muscles themselves punctured, without calling forth any expression of pain. If too large doses were used, the animal died in convulsions, but Lewin thinks that the action of the drug is readily controllable if very small doses are used at the start.

Lewin imagines that erythrophlœine is destined to cast cocaine quite into the shade. We shall see. The previous experiments to which we have referred, together with others by Brunton and Pye, show that the agent is, to say the least, one with which too much care can not be taken when it is used on man. It is always well to be cautious in the use of new drugs, and it is imperative in the case of violent poisons concerning which little is known. Besides, several proposed substitutes for cocaine have recently proved illusory, and that may temper the ardor of those who are inclined to supersede a tried and comparatively safe drug with others about which we have yet almost everything to learn.

## *MINOR PARAGRAPHS.*

### PROFESSOR NEWBERRY.

It is always gratifying to members of the medical profession to learn of the conspicuous achievements of any of their number in the domain of pure science. Our readers will therefore receive with pleasure the announcement, made in the "Pall Mall Gazette," that this year the Murchison medal of the Geological Society of London is to be awarded to Dr. J. S. Newberry, of the faculty of Columbia College. Equally gratifying is it to learn from a letter published in the same paper, quoted in the New York "Evening Post," of the writer's appreciation of Professor Newberry's services in the United States Sanitary Commission during our civil war, when he was still a practitioner of medicine.

### NEW VISITING-LISTS.

Dr. Charles H. Shears has prepared a new visiting-list, and it is issued by the publishers of this Journal, with the title of "The New York Medical Journal Visiting-list and Complete Pocket Account-book." Besides a considerable amount of condensed information of a miscellaneous character, it contains pages arranged for three hundred and seventy-five accounts, to be kept according to a novel and highly ingenious plan. A special feature of the book is that its use can be begun at any time.

We are indebted to Dr. Adolf Kállay, of Karlsbad, for a copy of the seventh annual volume of his "Illustrirter ärztlicher Almanach," a pocket account-book of an exceedingly neat appearance. In its general plan it much resembles the "Agenda Medica" of the French. Besides the blank pages for memoranda, it contains a great deal of information about the medical schools of Europe, useful therapeutical data, and comparative tables of weights and measures and of thermometric scales, together with biographical sketches and portraits of Krassowsky, Senator, and Mavrogeny.

### ITEMS, ETC.

**The Alumni Association of Bellevue Hospital Medical College** held its annual dinner on Tuesday evening of this week, at the Hotel Buckingham, Dr. David Webster presiding. There was a large and representative attendance of the alumni, and the occasion was highly enjoyable.

**The Clinical Society of the New York Post-graduate Medical School and Hospital.**—At the meeting to be held this evening, Dr. Henry D. Chapin will read a paper on "The Nutrition of Infants."

**A Change of Residence.**—Dr. Walter Mendelson has moved to No. 179 West Seventy-fourth Street.

**The "Gynecan" Hospital.**—An institution bearing this title has recently been established in Philadelphia, with the object of rendering medical and surgical assistance to women who are afflicted with diseases peculiar to their sex. It is to be maintained as a charity, and is an outgrowth from the old dispensary, which for many years has been doing much good work among the poor of that city.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 14, 1888:

| DISEASES. | Week ending Feb. 7. | | Week ending Feb. 14. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 9 | 1 | 14 | 2 |
| Scarlet fever | 163 | 26 | 160 | 21 |
| Cerebro-spinal meningitis | 1 | 1 | 2 | 2 |
| Measles | 48 | 7 | 64 | 10 |
| Diphtheria | 192 | 38 | 187 | 54 |
| Small-pox | 11 | 1 | 7 | 0 |

**Society Meetings for the Coming Week:**

Monday, *February 20th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *February 21st:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and Westchester (White Plains), N. Y.; Ogdensburg, N. Y., Medical Association.

Wednesday, *February 22d:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society (conversational).

Thursday, *February 23d:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland).

Friday, *February 24th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *February 25th:* New York Medical and Surgical Society (private).

## Proceedings of Societies.

### MEDICAL SOCIETY OF THE STATE OF NEW YORK.

*Eighty-second Annual Meeting, held in Albany, Tuesday, Wednesday, and Thursday, February 7, 8, and 9, 1888.*

The President, Dr. Alfred L. Loomis, of New York, in the Chair.

(*Concluded from page 158.*)

**Acute Bright's Disease in Children.**—Dr. A. Jacobi, of New York, discussed this part of the subject in a paper to be published hereafter.

**Changes in the Eye in Acute Bright's Disease.**—Dr. D. B. St. John Roosa, of New York, said there had been practically nothing new to add to this subject since Graefe wrote upon it many years ago. Affections of the eye in Bright's disease, acute or chronic, were comparatively rare. When uræmic amaurosis did occur it came on suddenly, without warning. There was absolutely nothing to be seen with the ophthalmoscope. Was such amaurosis caused by poisoning of the blood or by sudden filling up of the cranial cavity? These were questions for the pathologist. In some cases the pupils reacted. The amaurosis was usually recovered from.

**Cardiac Changes in Acute Bright's Disease** were discussed by Dr. Van Santvoord, of New York, who said that cardiac dilatation, hypertrophy, and exhaustion might occur secondarily, as in chronic Bright's disease. He asked the question, What gave out, the heart muscle or the nervous mechanism, or both? Certain conditions indicated to him that it was the nervous mechanism. The danger-signal was the high tension of the pulse. The indications for treatment were to lower the tension on the one hand, and to strengthen the heart on the other.

**Acute Bright's Disease in the Puerperal State.**—Dr. Fordyce Barker, of New York, discussed this subject. He preferred the term albuminuria, as Bright's disease carried terror with it. In his experience structural organic lesion of the kidney did not exist in more than a small proportion of the cases. In about one case out of ten Bright's disease existed prior to pregnancy. Pregnancy had the effect in some cases of increasing the mother's nutritive powers, and she grew plethoric; in others it caused diminished nutrition, the patient becoming chlorotic, anæmic, or hydræmic. The treatment was different in the two classes of cases, especially as regarded diet. Jaborandi and pilocarpine were dangerous in the albuminuria of pregnancy. Labor should be induced only in the presence of uræmic symptoms. Albuminuria was present in about one out of twenty-five cases of pregnancy, convulsions from uræmia took place in about one in 450. The speaker related three cases of uræmic symptoms in pregnant women which seemed to have been controlled by nitro-glycerin administered in doses of one one-hundredth of a grain. He thought amblyopia and amaurosis alone should not be considered indications for the induction of premature labor.

**Treatment of Acute Bright's Disease.**—Dr. W. S. Ely, of Rochester, in discussing this portion of the subject, emphasized the necessity for considering each case individually. The patient might recover by simple hygienic methods, be benefited by diuretics, or be cured by mineral waters alone. His symptoms might be so grave as to demand for their relief the most prompt and powerful measures.

**Intubation of the Larynx of an Adult; Exhibition of New Instruments.**—Dr. J. O'Dwyer, of New York, read a paper with this title, in which he stated that he had operated in marked syphilitic stenosis of the larynx in the adult in four cases, and once in diphtheritic laryngitis in the adult. In one of the syphilitic cases he had intubated the larynx fifty or sixty times, at first once a week, afterward at intervals of seven weeks. The longer the tube could be worn the less likely was the cicatricial band to contract. There had been no pulmonary disturbance from entrance of food through the tube.

**The History of Abdominal Section in Albany, with a Report of Seventy-five Cases.**—Dr. Albert Van Derveer introduced his paper by urging the importance of reporting all cases of abdominal section. The first case on his list, the first in Albany, was that of Dr. March, in 1849. The patient recovered. Dr. March operated in seven cases. The speaker traced the causes of death, and pointed out some of the conditions necessary for success.

*Discussion on Salpingitis.*

Dr. Goodell, Dr. Mann, and Dr. Mundé, who had been announced to speak, were absent.

**Causes.**—Dr. C. C. Lee, of New York, discussed this part of the subject.

**Prognosis.**—Dr. George Seymour, of Utica, said of prognosis that the simpler and most common forms of salpingitis, whether acute or chronic, might all be classed as having an actual tendency to recovery under favorable conditions. Catarrhal salpingitis occurred from anything which would cause endometritis proper. It was rarely primary. It was almost always due to extension of endometritis; true salpingitis was more frequently caused by septic influence than catarrhal salpingitis was; serious salpingitis occurred frequently after abortion, from decomposing membranes, etc.

**Medical Treatment.**—Dr. F. A. Castle, of New York, summed up his remarks by saying that the medical treatment of salpingitis did not differ from that of pelvic inflammations generally. Owing to the difficulty of making an early diagnosis, and the seriousness of pelvic inflammation generally, it was important that in all such conditions all precautions should be taken as soon as they were seen.

**Surgical Treatment.**—Dr. W. M. Polk, of New York, said the cases most frequently calling for operative measures were pyosalpinx and hæmatosalpinx; hydrosalpinx less frequently. The abdominal median line was not always to be chosen for the opening. He referred to his remarks on a former occasion on cutting down upon and breaking up adhesions of the tubes and ovaries in certain cases. In catarrhal salpingitis the tubes should not be removed. Dr. Castle had well pointed out the danger of pus entering the peritoneal cavity from the tubes on massage.

**Results of Operative Treatment.**—Dr. W. Gill Wylie had to report 78 laparotomies done during the past year—8 hysterectomies, with 1 death; 15 cases of removal of large ovarian tumors, with 1 death from nephritis; and 41 operations for removal of the Fallopian tubes or fibroma, with 1 death, also from nephritis. He had removed the tubes altogether in 115 cases, with 6 deaths. About 3 per cent. of the patients had menstruated after the operation. No patient was changed in temperament or appearance.

Dr. Van Derveer agreed with Dr. Polk as to the tearing up of adhesions. Immediate recovery should not be expected after removal of the tubes for pyosalpinx.

**Treatment of Complete Procidentia Uteri by Alexander's Operations.**—Dr. C. C. Lee read a paper with this title. [It will be published in a future number of this Journal.]

**The Management of Pelvic Inflammations in Women.**—Dr. W. W. Potter, of Buffalo, read a paper on this subject, in which he called attention to the importance of minor pelvic inflammations, suggested a classification into simple pelvic inflammation or cellulitis, compound pelvic inflammation or cellulo-peritonitis, and complicated pelvic inflammation. He pointed out the influence of the relics of inflammation on the general health, the great value of support and pressure, and the employment of simpler measures before resorting to operations.

**Vaginal Hysterectomy, with a Report of Eight Cases.**—In a paper with this title Dr. W. M. Polk spoke of vaginal hysterectomy only for cancer. Dr. Sarah E. Post had collected 732 cases, all that had been reported, with a mortality of 24 per cent. The results now were much better; as to the after-results, she quoted Martin and Fritsch. She had described his method of operating.

*Wednesday's Proceedings.*

**The Report of the Committee on By-laws** favored receiving delegates from chartered medical institutions, and extending to members of county societies present, but not delegates, all privileges of members excepting that of voting. The report, with its recommendation, was adopted.

**The Committee on the President's Address** reported in favor of instructing the committee on legislation to urge the passage of the compromise medical examiner's bill; of referring the question of a medical expert to put questions to medical witnesses to the committee on legislation; of referring the matters of the custody of the insane and of quarantine to special committees; and of the appointment of a committee to prepare biographical sketches of deceased members. The report was adopted. Dr. Roosa's motion to allow one delegate each from the New York Polyclinic and the New York Post-graduate Medical School was carried.

**Distinctions between Functional and Organic Disease of the Nervous System** was the title of a paper by Dr. W. H. Thomson, of New York. He defined organic nervous disease as one accompanied by characteristic, invariably present, and recognizable organic change in nerve texture. True functional nervous disorders would have no community of origin, or be mixed, with organic nervous diseases. No organic nervous disease existed the symptoms of which were intermittent. Functional nervous diseases were invariably peripheric in origin. Nerve-centers were affected in these cases only secondarily by abnormal afferent impressions. In treatment, one should search for the point of afferent irritation.

**The Dietetic Treatment of the Gouty Diathesis.**—Dr. W. H. Draper, of New York, read a paper on this subject. There were many factors in the production of gouty diathesis, he said, relating to quantity as well as quality of food. It was a common belief that gout was due to excessive indulgence in animal food, yet he had found no class of people who had feebler power of converting carbohydrates. The author excluded from the diet of the gouty starches, sugars, wine, and beer, and recommended nitrogenous foods. Fruit was not borne well by the gouty.

**Report of the Committee on Hygiene.**—Dr. E. V. Stoddard, of Rochester, read the report. The efforts of the committee had been largely directed to organizing committees in the several county medical societies. Such committees should consist of not more than five and not fewer than three members. The committee suggested certain changes in the organization of local health boards and in the appointment of health officers, to reduce political influence and secure increased efficiency.

**The Treatment of Gunshot Wounds of the Cranium.**—Dr. Joseph D. Bryant, of New York, read a paper on this subject, and Dr. John H. Girdner, of New York, demonstrated the use of the induction balance and telephonic probe. As yet he had not been able with the induction balance to locate a ball in the brain situated more than an inch and a half from the surface. The telephonic probe was a perfect instrument, certain in its indications. The loudness of the sound varied in different individuals, but it was always distinct.

**Extensive Compound Cranial Fracture; Considerable Loss of Brain Substance, complicated with Fungus Cerebri; Recovery.**—Dr. A. Ross Matheson, of Brooklyn, read the history of a case, and presented the patient, a man who had sustained his injury in 1873, when eleven years old. He now had good health and a clear mind.

**Fracture of the Skull with Depression.**—Dr. Henry Flood read this paper. The cases in which fracture of the outer plate took place without injury of the inner plate were so few as not to deserve clinical consideration. The frontal sinus occupied a much smaller space than was generally supposed.

**The Interdependence of Local, State, and National Health Boards; a Plea for their Unification,** was the title of a paper by Dr. Charles Stover, of New York.

**Special Committees** were appointed by the president as follows: 1. To report on the treatment of the insane of the State, Dr. A. Jacobi, Dr. W. E. Ford, and Dr. C. R. Agnew. 2. To report on quarantine matters, Dr. Daniel Lewis, Dr. Charles Stover, and Dr. E. V. Stoddard. 3. To report on revising the pharmacopœia, Dr. F. A. Castle, Dr. Laurence Johnson, and Dr. E. V. Stoddard.

**Pernicious Vomiting of Pregnancy.**—Dr. A. S. Hickey, of Auburn, read the history of a case in which the patient's life was saved by rectal alimentation.

**A Portable Storage Battery** was exhibited by Dr. E. S. Jeffrey.

**The Preservation of Dead Bodies.**—Dr. A. Walter Suiter, of Herkimer, showed in this paper that important advances had not been made on older methods, and also the defects of the methods commonly employed by undertakers to-day, especially in a medico-legal aspect. Solutions of metals, particularly of arsenic, were commonly employed, and that would make it impossible to detect crime from poisoning with such agents. The author requested that this subject be referred to the Committee on Legislation, to consider the advisability of the passage of a law regulating the embalming process. The request was granted.

**Discussion on Intestinal Obstruction.**—Dr. Lewis A. Stimson, of New York, opened the discussion with a paper which will be published hereafter.

Statistics showing the results of all forms of treatment were needed, and he moved that a committee be appointed by the president to receive communications on this subject from members of county societies. Carried.

*How Long should Cases be treated Medically?*—Dr. W. C. Wey, of Elmira, said that, if Mr. Tait was justified in the remark that he would as soon open the abdomen as put his hand into his pocket, there should be no medical treatment at all in these cases. The diagnosis of intestinal obstruction was often not easy and sometimes impossible. The speaker recited a few cases in which the symptoms had pointed indubitably to intestinal obstruction, yet medicinal remedies had led to recovery. Medical treatment should be continued until such time as the symptoms pointed to serious danger of further delay if surgical procedures were not resorted to.

*When should Operative Measures be resorted to?*—Dr. Albert Van Derveer, of Albany, emphasized the necessity for the surgeon ever to be ready for these cases, and to operate early. Sudden intestinal obstruction was analogous to shock produced by traumatism. When an operation was decided upon there should be no procrastination, and the operation should be done with the greatest surgical skill. When at an autopsy a band was found constricting the intestine which nothing but opening the abdomen could have removed, it was poor consolation to the physician to say he had done all that medical measures could offer.

Dr. A. G. Gerster, of New York, in the informal discussion, showed the increased difficulty of diagnosis after the lapse of time. There would always be some difficulties surrounding the subject which could not be cleared up.

Dr. R. F. Weir, of New York, would advise the physician in a case of ordinary symptoms of obstruction, such as vomiting and persistent colicky pain, to pass the case over to a surgeon.

Dr. W. Gill Wylie, of New York, related some cases in which, besides pain and vomiting pointing to obstruction, there had been chills and symptoms pointing to a collection of pus,

and, on doing laparotomy, he had found the obstruction to be due to a condition attended by the formation of pus. The patients recovered. He had refused in these cases to call a physician in consultation from fear that he would advise delay which might prove fatal.

*The Choice of Operation.*—Dr. Roswell Park, of Buffalo, considered more especially the choice between enterotomy and enterostomy. Enterostomy was to be performed when no idea could be formed of the situation of the obstruction, when a malignant element precluded the possibility of permanent benefit, and when the patient's powers had been undermined by the severity of the disease.

*How should the Operation be Conducted?*—Dr. Weir preferred chloroform as the anæsthetic. Rapidity of operation was the salvation of the patient. Free exposure of the abdominal contents should be secured. Gallstones obstructing the caliber of the gut had been broken up with a needle inserted through the intestinal coats, and had also been forced along to the colon by manipulations. Where invaginated gut could not be reduced it should be cut off, even if it sacrificed a considerable portion of the intestine. If an antiseptic was used in the peritoneal cavity, it should be salicylic acid. Very little opium was advisable, and very little nourishment should be given by the mouth after the operation. If symptoms of peritonitis developed, purgation should be employed. The rule should be to operate early.

*The Results of Laparotomy for Acute Intestinal Obstruction.*—Dr. B. Farquhar Curtis, of New York, showed in an analysis of 339 cases a mortality of 68 per cent. The very high death-rate was due to the bad condition of the patients, the operation having been too long delayed. The operation should also be as brief as possible. Enterostomy had given a death-rate nearly as great, and offered very little chance of cure.

Dr. Jacobi thought that every physician should be prepared to do the operation. Dr. Bacon, of Hartford, had recently relieved two patients with intestinal obstruction by injection of fluid into the bowel—cases in which some surgeons would have advised laparotomy.

**Discussion on the Treatment of Tubercular Affections of Joints.**—Dr. Gerster opened the discussion with a paper on *surgical treatment.* The cases were divided into those in adults and those in children. In the former, mechanical treatment was unsatisfactory; excision of the diseased part was called for. In children, good results usually attended the wearing of an apparatus. If abscess formed, puncture was preferable to incision. When children were operated upon, the surgeon should bear in mind the danger of causing arrest of growth in the limb. To prevent subsequent troublesome hæmorrhage he did not render the limb bloodless by the Esmarch bandage, but elevated the limb, and then applied one or two turns of the elastic constrictor. The after-treatment would depend upon whether motion was or was not desired. When motion was to be preserved, passive motion should not be made so long as much swelling and pain persisted.

**The President's Address.**—The president (Dr. Alfred L. Loomis, of New York) invited attention to the following problems: 1. The relation of microbes to disease processes. 2. Inoculation as a means of modifying or preventing disease. 3. The causes of abnormal temperature in disease. 4. The effects of antipyretics in the treatment of disease. By way of introduction, he stated briefly some of the methods of investigation employed in different ages, and compared them with methods of to-day. As to the first problem, might not microbes have the power of originating and controlling many of the morbific processes which took place in disease? It might be regarded as demonstrated that, when certain pathogenetic microbes had gained entrance into the body and reached localities which afforded certain conditions for their development, they multiplied and formed colonies, but what these conditions were had not been definitely determined. Were micro-organisms present in all morbid processes, could they originate *de novo*, and was there a mutability of the bacteria? Did microbes act as invariable and sole causes of disease, or were they the result of pathological processes instituted in their absence? The diseases in which it had been maintained that specified microbes had been discovered were enumerated. They might also exist in others. No reliable evidence had yet been presented to show that microbes originated spontaneously. The only diseases in which a bacterial origin had been completely demonstrated in man were erysipelas, splenic fever, and relapsing fever. As to the second problem, the fact that individuals who had once passed through certain infectious diseases, or a mitigated form of them, were afterward not susceptible to the infection of those diseases, might be regarded as strong evidence of the possibility of such immunity being obtained by inoculation with the attenuated virus. The diseases regarded as proved to be preventable by inoculation were small-pox, splenic fever, and perhaps hydrophobia. As to the third problem, we were driven back to the question of the nature of fever. Fever was something which we had not yet grasped. Chemical transformations produced definite results, whether occurring within the tissues or outside the body. The body took cognizance of the potential of food, and during certain changes, which were true combustions, a definite unalterable value was exhibited as kinetic energy in the form of heat.

Muscular action was an insignificant factor in the production of animal heat, except as it excited metabolic energy.

The varying circumstances of man's environment necessitated some heat-regulating mechanism.

The evidence of the existence of a regulating mechanism operating independently of chemical change was insufficient.

There appeared to be no reason for regarding the increased heat production of fever as requiring mechanisms other than those acting in the normal production of temperature.

The existence of two cerebral inhibiting heat mechanisms had been fairly established, and as much might be said of like spinal ganglia. The production of heat in fever was in exact consonance with metabolism. In the present state of our knowledge we could only theorize as to the character of the material in the circulating media, which initiated the primary irritation in febrile conditions. Regarding antipyretics, no one could contend that they had the power of shortening the duration or of greatly modifying the severity of infectious diseases.

Whether antipyretics acted by reducing heat production or by increasing heat dissipation was undetermined. The practical question was, if temperature reduction did not shorten the duration and mitigate the severity or avert serious complications in disease, and if the ratio of mortality was not diminished by antipyretic treatment, on what basis were we justified in their use? We removed one of the many phenomena of fever. If this could be accomplished without serious loss of vitality, or not at the expense of reserve force, we were justified in their use; but we should not imagine that by reducing the temperature we were controlling fever.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of January 25, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

**Ichthyol in Surgery.**—Dr. Edward Martin read the following paper: Ichthyol was first described by Schrötter, and

used in the treatment of skin diseases by Unna. It is obtained as a clear yellow-brown oil by distilling bituminous matter found in the Tyrol and containing the fossil remains of fishes and marine animals. By the action of sulphuric acid on this distillate, and subsequent neutralization with soda or ammonia, either the sodium or ammonium sulphichthyolate is produced. The latter compound is preferred by Unna. The ammonium sulphichthyolate is a reddish-brown, clear, syrup-like liquid of burning taste and odor, soluble in water, making a clear red-brown solution; also soluble in equal parts of alcohol and ether. The ichthyol preparations are characterized chemically by their richness in sulphur (ten per cent.), so intimately united that it can only be extracted by complete decomposition (Lartigeau); they easily take up oxygen, acting as powerful reducing agents (Baumann).

Clinically, the ichthyolates are described by Unna as being powerful antiphlogistics, causing anæmia and rapid subsidence of swelling in all tissues. This antiphlogistic effect is ascribed to the drug's action on the endothelium of the blood-vessels, depriving it of oxygen in virtue of its reducing properties, and contracting the lumen of the vessels. This explanation is not, perhaps, entirely satisfactory, but physiological studies have not yet given us a better one. The cornifying effect of the drug on the epithelium of the rete is undoubted.

Surgically, what are the indications for the drug? Lartigeau states that it is indicated in all subcutaneous and inflammatory tumefactions, œdemas, vascular dilatations, incipient furuncles, and local manifestations of rheumatism. Elliot praises it highly in burns of the first and second degree (five-per-cent. solutions in water), as producing rapid subsidence of pain and inflammatory symptoms. He finds its application to obstinate varicose ulcers associated with eczema rubrum (sodium compounds, three to five per cent.) at times productive of marvelous results. In his hands it is also useful in cicatrices, and in a few cases of rheumatism and neuralgia has given immediate and marked relief from pain. Schweninger states that in rheumatism, lumbago, ischias, tic, gout, and migraine, local applications of ichthyol act more powerfully in allaying the pain than any known medication.

Lorenz is astonished at the fabulous efficacy of the drug. In acute and chronic joint rheumatism, acute muscular rheumatism, mastitis, panaritis, and contusions, a few rubbings with pure ichthyol or fifty-per-cent. ichthyol compounds are peculiarly successful in allaying pain and hastening healing. In chronic and acute joint rheumatism relief often follows a single rubbing, while this is the rule in acute muscular rheumatism. The pain of gout disappears, the shining red skin becoming quickly wrinkled. A beginning mastitis or panaritis is always aborted, or if fully developed the pain is much relieved. Its prompt use prevents the discoloration following contusions. It immediately allays the pain of a burn, and prevents blistering. Finally, a ten-per-cent. solution hastens the cicatrization of badly healing ulcers. Loring dilutes with water when the pure ichthyol compound can not be borne, and prevents irritation of the skin by careful washing and drying before each application.

Von Nussbaum states that a single application of ichthyol one part, water four parts, lanolin five parts, has allayed the itching of eczematous ulcers which had resisted all known applications for weeks and months, and promptly brought about rapid cicatrization on being continued a few days. Arthritic pains which for weeks have made day and night miserable are relieved at times in half a minute after the application of a strong ichthyol ointment. In erysipelas it produces results obtainable by no other means—namely, the immediate arrest of the disease. Von Nussbaum's treatment was first the thorough disinfection and drainage of the wound; then, if the disease continued to extend, over its whole surface a thick layer of ichthyolate and vaseline, equal parts, was spread and covered by a layer of ten-per-cent. salicylated cotton. The erysipelas advanced not a line farther, and in a single day the swelling disappeared, and the red, shining, puffy surface became yellow, brown, and wrinkled. This remarkable effect Von Nussbaum ascribes not to the influence of the drug on Fehleisen's cocci, but rather to a change produced in the tissues by virtue of which they cease to favor the growth of the microorganisms.

Stelwagon has had excellent results in the abortion of furuncles by ichthyol preparations. Agnew (D. Hayes) considers the ichthyol preparations more powerful than any known therapeutical agent in bringing about reduction of inflammatory enlargements, and has had particularly good results in recently enlarged lymphatics. He uses sulphichthyolate of ammonium and iodide of lead, equal parts, applied generously and covered in by oiled silk.

The writer has used ichthyol in—(1) Six cases of cervical adenitis, with absolutely no relief, cure being subsequently brought about by iodine or the knife. (2) Fifteen cases of marked inflammatory induration of the subcutaneous tissues, with invariably a speedy and in some cases almost magical reduction, and this after other means had been tried unsuccessfully. (3) In two cases of furuncles without good effect. (4) In one case of cellulitis without marked effect till the knife was used (in this case staphylococci were found, but no chains). (5) In four cases where pain was the most marked feature of inflammation, with complete relief in three and no effect in the fourth. (6) In one case of erysipelas of the scalp, with immediate cure. This is not different from the results obtained by Nussbaum.

With the exception of the case of eysipelas, the writer used a ten-per-cent. ointment of ammonium ichthyolate in lanolin, fearing lest, in the case of stronger applications, the effects might be ascribed to counter-irritation. It is possible that stronger preparations would have proved efficacious in the treatment of adenitis in which the weak ointment signally failed.

The extravagant praises bestowed by some authors on ichthyol savor more of proprietary advertisements than scientific contributions, and the variety of affections for which it is recommended might well make one doubtful as to its complete efficacy in any single instance. An analysis of the cases in which it has proved serviceable will show, however, that they can be relegated to one of two classes: 1. Affections characterized by inflammatory enlargement. 2. Affections characterized by pain of peripheral origin, probably depending on inflammation or congestion. For either of these conditions, theoretically, a powerful antiphlogistic would be indicated, so that the clinical indications for the use of the drug correspond to its alleged therapeutic effect. When the surface is irritated, weak solutions (three to five per cent.) should be used; but when the skin is intact and the subcutaneous tissues are to be affected, pure or one-half-strength ointments give the best results. In using strong preparations the skin should be washed with soap and warm water, and thoroughly dried before each application. Ichthyolates can be combined with any of the ointments, or can be dissolved in water.

The writer's success with the drug, even where it was not used in the most efficient manner, has convinced him that the praise bestowed on it by the Germans is well merited. Where suppuration has actually taken place the weak ointment is not of service, but in the allaying of inflammatory pain and the resolution of subcutaneous induration (excepting adenitis) the results are most satisfactory.

# Book Notices.

*Text-book of Therapeutics and Materia Medica*, intended for the Use of Students and Practitioners. By Robert T. Edes, A. B., M. D., formerly Professor of Materia Medica and Jackson Professor of Clinical Medicine in Harvard University, etc. Philadelphia: Lea Brothers & Co., 1887. Pp. xi 17 to 552. [Price, $3.50.]

The author of this book is already favorably known by his "Therapeutic Handbook of the United States Pharmacopœia," and the present work seems destined to take a prominent place as a text-book on the subjects of which it treats. It possesses all the essentials which we expect in a book of the kind, such as conciseness, clearness, a judicious classification, and a reasonable degree of dogmatism. The style deserves the highest commendation for its dignity and purity of diction—features which are not very commonly met with in these days of rapid book-making.

The student and young practitioner need a safe guide in this branch of medicine, which more than any other is inclined to run to opposite extremes. Such they can find in the present author, who evidently has learned to travel along the much-recommended *via media*, which in reality has so few travelers. The simple but forcible truth conveyed in his sentence in the introduction, that "it is quite of as much importance to realize what drugs can not do as what they can," can not be too much emphasized. It is one which the author seems to have had constantly in view, and which will enhance his book for the purpose of ready reference. The drugs are classified according to their actions, and when a drug has several properties it receives full treatment under one classification, and reference is made to the other sections in which it is mentioned. All the newest drugs that promise to have more than a fleeting reputation are treated of in the work.

Where there is so much that is praiseworthy we dislike finding any fault, but are induced to pick out the flaws by the author's frank statement that he will cordially welcome candid criticism. We think that fuller instructions regarding doses might be advisable in some instances.

The remarks on the "uses of cathartics" are extremely practical and to the point. It is not quite clear to us why oxalate of cerium should appear under the caption of "Protectives and Vehicles," seeing that it is recommended only in the vomiting of pregnancy. Nothing is said of phosphorus as a remedy in rickets—an omission which is not intelligible in view of what has been written on the subject within the past few years. One more criticism and we have done. It would, in our mind, have materially increased the value of the work as a text-book if the more important antagonists, incompatibles, and synergists of each drug had been mentioned. The clinical index at the end will be found very useful. We heartily commend the book and congratulate the author on having produced so good a one.

## BOOKS AND PAMPHLETS RECEIVED.

The Intestinal Diseases of Infancy and Childhood. Physiology, Hygiene, Pathology, and Therapeutics. By A. Jacobi, M. D., President of the New York Academy of Medicine, etc. Detroit: George S. Davis, 1887. Pp. xv–301. [Physicians' Leisure Library, No. 5, 1887. Price, 25 cents.]

Similia Similibus Curantur? Addressed to the Medical Profession. By Charles S. Mack, M. D. Boston and Providence: Otis Clapp & Son, 1888. Pp. 31. [Price, 40 cents.]

Transactions of the Medical Society of the State of New York for the Year 1887. Published by the Society.

The Structure of White Thrombi. By W. H. Welch, M. D., Professor of Pathology in Johns Hopkins University, Baltimore, etc. [Reprinted from the "Transactions of the Pathological Society of Philadelphia."]

Shakespeare and the Medical Sciences. The Presidential Address, delivered on October 12, 1887, at the opening of the Fourteenth Session of the Bristol Medico-chirurgical Society. By L. M. Griffith, M. R. C. S. Eng., etc. [Reprinted from the "Bristol Medico-chirurgical Journal."]

An Address from a Special Committee of the College of Physicians of Philadelphia to the Medical Societies of the United States; concerning the Dangers to which the Country is Exposed by the Ineffectual Methods of Quarantine at its Ports, and in regard to the Necessity of National Control of Maritime Quarantine. To which is appended the Report of the Committee of the College of Physicians of Philadelphia appointed to Investigate the Efficiency of our Quarantine Arrangements for the Exclusion of Cholera and other Epidemic Diseases.

The Galvano-cautery Sound and its Application, especially in Hypertrophy of the Prostate, with Reports of Cases. By Robert Newman, M. D., of New York. [Reprinted from the "New England Medical Monthly."]

A New Point in the Diagnosis of Graves's Disease. By R. Norris Wolfenden, M. D., etc. [Reprinted from the "Practitioner."]

# Miscellany.

**The Health of Boston.**—During the week ending Saturday, February 11th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 23 cases and 7 deaths; scarlet fever, 22 cases and 3 deaths; typhoid fever, 12 cases and 2 deaths; measles, 21 cases. There were also 29 deaths from consumption, 38 from pneumonia, 3 from whooping-cough, 14 from heart disease, 6 from bronchitis, and 5 from marasmus. The total number of deaths was 213, against 162 in the corresponding week last year.

**The Health of Michigan.**—It appears by the State Board of Health's summary of returns for the four weeks ending January 8th that during that period diphtheria was reported from fifty-seven places, scarlet fever from fifty-four, typhoid fever from thirty-nine, measles from twenty, and small-pox from one.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending February 10th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending January 21st corresponded to an annual rate of 23 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 17, and the highest in Portsmouth, viz., 28·8 in a thousand. Small-pox caused 25 deaths in Sheffield, 3 in Bristol, and 2 in Nottingham.

*London.*—Two thousand deaths were registered during the week ending January 21st, including 14 from measles; scarlet fever, 42; diphtheria, 22; whooping-cough, 138; enteric fever, 26; and diarrhœa and dysentery, 15. Diseases of the respiratory organs caused 591 deaths; different forms of violence, 78; and 10 suicides were registered. The deaths from all causes corresponded to an annual rate of 24·4 in a thousand. In greater London 2,512 deaths were registered, corresponding to an annual rate of 23·7 in a thousand of the population. In the "outer ring" 11 deaths from diphtheria; measles, 8; and whooping-cough, 39, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending January 21st in the sixteen principal town districts of Ireland was 31·4 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 10·3, and the highest in Sligo, viz., 72·2 in a thousand. In Dublin 216 deaths were

registered, including 2 from measles; whooping-cough, 5; diphtheria, 3; scarlet fever, 7; typhus, 1; enteric fever, 6; diarrhœa, 3; and dysentery, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending January 21st corresponded to an annual rate of 23·3 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 17·5, and the highest in Dundee, viz., 26·5 in a thousand. The aggregate number of deaths registered from all causes was 588, including 15 from measles; diphtheria, 5; scarlet fever, 3; whooping-cough, 24; fever, 6; and diarrhœa, 13.

*Lima.*—The United States minister states, under date of January 5, 1888, "that on the 2d day of January the Sanitary Congress met under the auspices of the Minister of Foreign Relations, and was officially installed, there being present, for Peru, Dr. Francisco Rosas, Dr. José Mariano Maceao, Dr. Lino Alarco; for Ecuador, Dr. Celso Bambarén; for Bolivia, Dr. Julio Rodriguez and Dr. Andrés S. Muñoz. Secretary, Dr. Picardo Pimentel, of Ecuador." The minister also transmits a translation of a cutting from "El Comercio," Lima, January 4, relative to the cholera in Valparaiso, as follows:

"CHOLERA.—Though we have no official telegram upon the state of the epidemic in Chili, we know of a telegraphic dispatch received by private persons from Valparaiso stating that *the flail* is making many victims, and has reached up to 130 cases daily, deaths being from 80 to 90."

*Buenos Ayres.*—One thousand two hundred and thirty-six deaths were registered during the month of November, 1887, including 99 from small-pox; enteric fever, 23; scarlet fever, 2; and diphtheria, 62.

*Montevideo.*—Three hundred and sixty-eight deaths were registered during the month of November, 1887, including 29 from small-pox and 6 from enteric fever.

*Merida.*—The United States consul reports that pellagra is prevalent among the Indians, and that 9 deaths from that disease occurred during the week ended January 23, 1888.

*Santiago de Cuba.*—The sanitary inspector reports for the week ending January 28, 1888, that "no contagious diseases have appeared this week, excepting one case of yellow fever, . . . . ending fatally at the military hospital. No small-pox cases have been reported, and the sanitary condition of both the city and port is excellent."

*Havana.*—Seven hundred and sixty-five deaths were registered during the month of January, 1888, including 9 from yellow fever; small-pox, 269; enteric fever, 12; diphtheria, 7; scarlet fever, 1; hydrophobia, 1; so-called pernicious fever, 11.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | January 21. | 2,260,045 | 1,167 | .. | .... | 6 | .... | 37 | 4 | 39 |
| Glasgow | January 21. | 526,088 | 235 | .. | .... | .... | .... | 2 | 1 | 3 |
| Warsaw | January 7. | 439,174 | 249 | .. | .... | 11 | .... | .... | 9 | 3 |
| Warsaw | January 14. | 439,174 | 219 | .. | .... | 5 | .. | .... | 3 | 3 |
| Rome | December 10. | 373,356 | 173 | .. | ... | 9 | .... | 2 | .... | 3 |
| Rome | December 17. | 373,356 | 170 | .. | .... | 4 | .... | 1 | 1 | 1 |
| Rome | December 24. | 373,356 | 217 | .. | .... | 5 | .... | 3 | .... | 3 |
| Copenhagen | January 10. | 300,000 | 152 | .. | .... | .... | .... | 1 | .... | 4 |
| Munich | January 14. | 275,000 | 146 | .. | .... | .... | .... | .... | 1 | 5 |
| Edinburgh | January 21. | 262,733 | 120 | .. | .... | .... | .... | 2 | 1 | 1 |
| Palermo | January 22. | 250,000 | 143 | .. | .... | .... | .... | .... | 2 | 5 |
| Bristol | January 14. | 226,510 | 105 | .. | .... | .... | .... | 1 | 5 | .... |
| Belfast | January 21. | 224,422 | 151 | .. | .. | .... | .... | 4 | 2 | .... |
| Toronto | January 28. | 130,000 | 24 | .. | .... | .... | .... | .... | .... | 6 |
| Stuttgart | January 21. | 125,510 | 42 | .. | .... | .... | 1 | .... | .... | .... |
| Bremen | January 14. | 122,000 | 46 | .. | .... | .... | .... | .... | .... | 2 |
| Barmen | January 14. | 109,000 | 56 | .. | .... | .... | .... | .... | .... | 1 |
| Leith | January 21. | 74,320 | 25 | .. | .... | .... | .... | .... | .... | 1 |
| Mayence | January 14. | 65,701 | 39 | .. | .... | .... | 1 | .... | .... | 1 |
| Cienfuegos | January 23. | 35,464 | 30 | .. | .... | 20 | .... | 1 | .... | .... |
| Guayaquil | January 7. | 30,000 | 72 | .. | 8 | 22 | .... | 16 | .... | .... |
| Guayaquil | January 14. | 30,000 | 64 | .. | 2 | 18 | .... | 21 | .... | .... |
| Sagua | January 14. | 15,605 | 8 | .. | .... | 3 | .... | .... | .... | .... |
| Sagua | January 21. | 15,605 | 11 | .. | .... | 5 | .... | .... | .... | .... |

**The New York State Medical Association.**—The next meeting of the Fifth District Branch will be the fourth annual meeting, to be held in Brooklyn, on Tuesday, May 22d. There will be a morning and an afternoon session. All Fellows are solicited to contribute to the meeting, either by reading papers, notes, or communications, or by exhibiting specimens. All papers offered are the property of the branch, and will be published in a current medical journal. The secretary, Dr. E. H. Squibb, P. O. Box 94, Brooklyn, desires to be notified of the title of any paper to be offered as early as convenient.

**The Long Island College Hospital.**—The commencement exercises of this institution will be held at the Academy of Music, Brooklyn, on Friday, March 9th, at 8 P. M. The Rev. T. De Witt Talmage, D. D., will deliver the address to the graduates, and the valedictory will be given by Dr. George W. White. Professor A. Jacobi will address the Association of the Alumni of the college on Monday, February 27th, at 8 P. M., at the college building. The subject of his address will be "The Heart and Blood-vessels of the Young." On Wednesday, March 7th, at 3 P. M., the association will hold its annual meeting, at the college building. After the transaction of the regular business, the association will listen to the reading of the prize essay. The annual dinner of the association will take place on Thursday, March 8th, at 7 P. M., at Remsen Hall.

## THERAPEUTICAL NOTES.

**Mixtures for the Treatment of Rheumatism.**—Dr. J. M. Chaplin of Bowling Green, Ohio, writes to us recommending the following formulæ:

1. *For acute rheumatism.*

| | |
|---|---|
| Salicylic acid (from oil of wintergreen) | 4 drachms; |
| Sodium bicarbonate | 5 " |
| Peppermint water | 4 ounces; |
| Potassium citrate | 2 drachms; |
| Wine of colchicum seed | 4 " |
| Syrup | to 8 ounces. |

Half a tablespoonful to be given every three or four hours.

2. *For subacute rheumatism.*

| | |
|---|---|
| Potassium citrate | 1 drachm; |
| Essence of lemon | 3 drachms; |
| Syrup | 2 ounces; |
| Tincture of chloride of iron | 3 drachms; |
| Water | to 4 ounces. |

A teaspoonful, diluted with water, to be given every four hours.

When malarial poisoning is suspected, Dr. Chaplin adds about half a drachm of liquor potassii arsenitis to either mixture.

**An Idiosyncrasy with regard to Antipyrine.**—Dr. W. A. Sturge writes as follows in the "British Medical Journal" for February 4th: "A member of my family liable to migraine was attacked in the ordinary way a few days ago, and I administered for the first time a dose of five grains of antipyrine in powder, with the following curious result: Five minutes after taking it, the 'deadly sickness' which was previously present seemed to give way, and an 'expanding sensation' was felt, rising from the stomach upward. Almost immediately she sneezed violently for about twenty times running without pause. The face and eyes became deeply suffused; tears began to flow; quantities of mucus flowed from the nose; the breathing became hard and labored, accompanied by a feeling of suffocation; there was complete inability to lie down. A violent cough slowly came on, and large quantities of mucus were expectorated; at the same time there was very profuse sweating. After these phenomena had lasted for about half an hour, intense itching was felt on the insides of both thighs, and on examination there was found a thick outcrop of urticaria, which soon extended on to the abdomen. There was also a strong coppery taste in the mouth—not continuing, but coming on in violent bouts—and an equally strong smell of the same metallic nature, also intermittent. There was loud singing in the ears, which felt intensely congested. The pulse was quick and very full. After the symptoms had lasted about three quarters of an hour from the commencement, they gradually disappeared, some tightness of the chest and running at the nose remaining for four or five hours longer. The sickness accompanying the migraine disappeared completely as soon as the drug had begun to work; the headache also disappeared for a time, but came back slightly about four hours afterward."

**An Ointment of Cocaine.**—The "Revue générale de clinique et de

thérapeutique" quotes Lustgarten as recommending the following formula for an ointment to be used for anal and vulvar pruritus and the pains of herpes zoster:

| | |
|---|---|
| Oleate of cocaine | 0.1 to 1 part; |
| Lanolin | 18 parts; |
| Olive-oil | 2 " |

**A Dangerous Mixture,** according to Mr. R. H. Parker ("Brit. Med. Jour.," Jan. 21, 1888), is that of potassium chlorate with syrup of iodide of iron. He remarks that a case of death from its administration has lately been reported from Australia. The danger lies in the liberation of iodine, and, as heat favors the reaction, it is added that the process, which might be slow in the medicine bottle, would be much more rapid in the stomach.

**The Removal of Warts by the Internal Use of Arsenic.**—Mr. B. G. Pullin, of Sidmouth ("Bristol Med.-chir. Jour.," Dec., 1887), gives the histories of a number of cases in which he has cured warts on the hands by the use of small doses of arsenic, from one to three minims of Fowler's solution twice a day. He states that in every instance the cure has been complete and rapid.

**A Russian Ointment for Frostbite.**—Under the name of *russische Frostsalbe*, the "Internationale klinische Rundschau" gives the following formula, taken from the "Pharmaceutische Post":

| | |
|---|---|
| Bone-marrow | 40 parts; |
| Hydrochloric acid | 30 " |
| Ointment of althæa | 120 " |
| Extract of opium | 2½ " |
| Camphor | 10 " |
| Venice turpentine | 20 " |

The process of making the ointment is not given.

**Camphor and Charcoal as an Application to Ulcers.**—M. Egasse states in "Nouveaux remèdes" (without mentioning the source of his information) that Barbocci recommends a mixture of equal parts of camphor and animal charcoal as a cleansing and anodyne application to deep chronic ulcers.

**The New York Academy of Medicine.**—At the next meeting of the Section in Ophthalmology and Otology, Monday evening, the 20th inst., Dr. Herman Knapp will read a paper entitled "Removal of an Orbital Exostosis," and Dr. W. O. Moore will read a paper on "Diabetic Affections of the Eye."

At the next meeting of the Section in Theory and Practice of Medicine, Tuesday evening, the 21st inst., Dr. H. M. Biggs will read a paper entitled "Some Observations on Aortic Aneurysm, with a Report of Thirty-three Cases with Autopsies."

At the next meeting of the Section in Pædiatrics, Wednesday evening, the 22d inst., Dr. A. Caillé will read a paper entitled "Prolapse of the Inverted Lower Portion of the Right Ureter through the Urethra in a Female Child two weeks old," and give a demonstration of utensils for preparing and administering sterilized milk; Dr. G. H. Fox will read a paper on "The Ætiology and Treatment of Infantile Eczema"; and Dr. E. C. Wendt will read a paper on "Some Recent Views regarding the Pathology and Treatment of Pertussis."

At the next meeting of the Section in Obstetrics and Gynæcology, Thursday evening, the 23d inst., Dr. H. J. Garrigues will read a "Report of Cases of Laparotomy for Ruptured Uterus."

At the next meeting of the Section in Materia Medica and Therapeutics, Friday evening, the 24th inst., Dr. L. D. Bulkley will read a paper entitled "On the Value of frequently repeated Doses of Arsenic in the Treatment of Bullous Diseases of the Skin, especially in Children."

At the next meeting of the Section in Laryngology and Rhinology, Tuesday evening, the 28th inst., Dr. F. H. Hooper, of Boston, will read a paper on "Adenoid Vegetations in Children, their Diagnosis and Treatment"; and Dr. C. J. Blake, of Boston, will speak of the relation of such growths to disease of the middle ear. Dr. Beverley Robinson, Dr. F. H. Bosworth, Dr. R. P. Lincoln, Dr. D. B. Delavan, Dr. Gorham Bacon, Dr. Samuel Sexton, Dr. C. C. Rice, Dr. D. B. St. J. Roosa, and Dr. H. D. Noyes are announced to take part in the discussion. A novel feature of the programme is entitled "presentation of questions," and it is stated that "These will be welcomed from any source, and may be sent by mail or handed in at the meetings."

## ANSWERS TO CORRESPONDENTS.

*No. 145.*—According to Retzius, in the brachycephalous races of man the ratio of the transverse to the antero-posterior diameter of the skull is as 7 to 8, while in the dolichocephalous races it is as 7 to 9.

*No. 146.*—The International Medical Congress met in London in 1881.

*No. 147.*—While there is no particular "demand" for American physicians in South America, those who are well educated are, we believe, always welcome. The Argentine Republic is a very progressive country, and an American would probably feel more contented there than in most other South American countries. Medical fees there are much the same as in the United States. Every applicant for a license to practice is required to pass an examination before the faculty of the School of Medicine, which is under the control of the Government. The examinations have special reference to the applicants' knowledge of the climatology of the country and of the characteristics of disease peculiar to it.

*No. 148.*—He is still a member.

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**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# AN ACCOUNT OF A CASE IN WHICH RECOVERY TOOK PLACE AFTER LAPAROTOMY HAD BEEN PERFORMED FOR SEPTIC PERITONITIS DUE TO A PERFORATION OF THE VERMIFORM APPENDIX.

*WITH REMARKS UPON THIS AND ALLIED DISEASES.**

By HENRY B. SANDS, M. D.,

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On the morning of Friday, December 30, 1887, I received a note from my friend, Dr. Simon Baruch, of this city, requesting me to meet him in consultation without delay. We met at noon, when I received the following account, which is here reproduced in Dr. Baruch's own words:

"I visited G. W. at 8 A. M. on the 29th of December. He stated that he had been suffering pain in the lower abdominal region since the previous afternoon, but that during the night the pain had grown worse, and that he had vomited several times. His mother regarded it as an attack of acute indigestion. I found the right iliac region exquisitely tender to the touch, but the other portion of the abdomen, especially the left iliac region, only tender on deep pressure. Slight tympanites. Has not vomited since 4 A. M. Pulse, 120; respiration, 36; temperature, 102·4°.

"*Diagnosis.*—Perityphlitis, and I gave the mother an unfavorable prognosis. Turpentine enema was ordered, and all food and drink withheld. Poultice to lower part of abdomen. Teaspoonful of U. S. P. solution of morphine every two hours if necessary for pain. At 1 P. M., pulse, 120; respiration, 30; temperature, 101·4. Has not required anodyne, pain being entirely relieved by poultice and emptying of lower bowel; ordered small quantities of beef-tea. At 8 P. M., temperature, 101·4°; pulse, 116; respiration, 30; comfortable.

"*December 30th.*—8 A. M., temperature, 101·6°; pulse, 130; respiration, 30. Has taken five ounces of beef-tea and two ounces and a half of milk, as there was neither nausea nor vomiting. Local tenderness not lessened, tympanites increased. Decided dullness on percussion over iliac region. Although there had been no pain, no vomiting, and patient expressed himself as decidedly more comfortable, the continuance of exquisite tenderness, together with the dullness over right iliac region, the increase of tympanites and pulse-rate, and the example of three previous fatal cases, induced me to believe that the time for action had arrived. I told the mother that as a surgical operation of serious nature might become necessary, I would like to have Dr. Sands to see patient at the earliest possible moment."

At the time of our first consultation the boy was quite ill with what was believed to be peritonitis. Pulse, 130; temperature, 101·6° F.; respiration, 32. Abdomen moderately distended and painful, the pain being most marked in the right iliac region, which was also exquisitely sensitive and slightly dull on percussion. Careful examination of this region failed to discover any tumor, nor could any swelling be felt when the forefinger was introduced into the rectum.

I diagnosticated the case as one of acute septic peritonitis, caused by perforation of the vermiform appendix, and advised an immediate resort to laparotomy. Dr. Baruch replied that, while he fully approved of my proposal, the family would be unwilling to consent to so serious an operation without further counsel, and it was accordingly agreed to make every necessary preparation for the procedure, and to ask Dr. Lange and Dr. Bull to meet us in consultation at half-past three o'clock in the afternoon. Dr. Lange failed to come, but Dr. Bull saw the patient, and agreed with me as to the propriety of surgical intervention. He recommended at first an oblique incision above Poupart's ligament, such as is commonly made in opening perityphlitic abscesses. He felt inclined to evacuate the matter, if practicable, without laying open the general peritoneal cavity, which he said could be entered later, if necessary, by extending the incision, as he had recently done in a similar case. But I felt confident that the patient was suffering from septic perforative peritonitis, and that laparotomy would afford the only chance of cure; I therefore expressed my preference for opening the peritoneal cavity directly by means of a vertical incision through the abdominal wall, situated over the caput coli, because this would give easy access to the diseased parts, and allow more thorough work. Dr. Bull, after consideration, said that if I had made up my mind to perform laparotomy, the plan I had suggested would, he thought, be the best. Dr. Baruch also coincided with my proposal. At four o'clock in the afternoon, about forty-eight hours after the onset of the attack, with the assistance of Dr. Baruch and Dr. Hartley, and my pupil, Mr. Wiggins, I operated in the following manner:

Ether; vertical incision, four inches long, beginning at a point half an inch above and to the outer side of the middle of Poupart's ligament, and ending about the same distance below the level of the umbilicus. Incision afterward prolonged at its lower end three quarters of an inch inward parallel with Poupart's ligament. When the skin had been divided, the connective tissue was found œdematous, a fact which showed the intensity of the existing inflammation, and afforded a partial explanation of the dullness which had been noticed on percussion. The deeper layers, however, had a more natural appearance until the peritonæum was reached. This was thickened and opaque, and bulged into the wound like a piece of intestine. A hypodermic syringe inserted into it drew matter, whereupon the peritoneal cavity was laid open by a free incision. When a little air and about an ounce of fœtid pus had escaped, the diseased parts could be readily inspected. The parietal peritonæum, and that covering the commencement of the large and the adjacent coils of the small intestine, were covered with pus and recent lymph. The peritonitis was not general, but there were no limiting adhesions between the intestinal convolutions, which separated spontaneously from one another and rolled out through the wound. The inflammation was evidently recent, spreading, and severe. When the iliac fossa was examined, a nearly spherical fæcal concretion, about a quarter of an inch in diameter, was found lying free in the peritoneal cavity, just below the cæcum. A similar concretion had partly escaped from an opening seen at the base or commencement of the vermiform appendix, the remainder of which, not gangrenous, lay upon the back part of the cæcum. The length of the appendix was about an inch and a half. When the fæcal concretion just referred to had been picked out with a forceps, another one escaped in a similar manner from the opening in the appendix, the margins of which were not gangrenous.* These were very slightly trimmed off with scissors, and then brought together with three interrupted silk sutures, both ends of each

* Read before the New York Surgical Society, February 8, 1888.

* One of the concretions was saved and examined by Dr. Hartley, who found it to consist of ordinary fæcal matter containing what appeared to be disintegrated fruit-seeds.

suture being cut off close to the knot. As the coats of the intestine were thick and rigid at the seat of perforation, and the serous membrane was covered with inflammatory exudation, I did not attempt to employ Lembert's suture, but united the edges by means of threads passed through the entire thickness of the gut. The diseased parts were next irrigated with warm water (at about 105° F.), and afterward syringed out with half a pint of a solution of mercuric bichloride, 1 to 1,000. Upper part of wound closed for an inch and a half by the silver sutures, embracing all the layers of the abdominal wall; the remainder lightly dusted with iodoform, and packed with iodoform gauze (50 per cent.), a piece of which was inserted between the parts sutured above and the coils of the small intestine, which were covered with lymph, and inclined to protrude. A few layers of moist bichloride gauze, a pad of borated cotton, and a gauze bandage completed the dressing, which was left undisturbed for two days.

Immediate improvement followed the operation, the temperature fell to 98·5° within an hour, and no unfavorable symptoms occurred to interrupt convalescence. The pulse and temperature fell within a few hours to almost the normal standard, and the pain and vomiting disappeared. The iodoform gauze was all removed by the fifth day, but the dressings were renewed daily for three weeks, after which they were changed less often. The temperature rose on two occasions to 100°; at other times it was below 99°. The bowels were cleared out by a laxative on the eighth day, and afterward acted regularly. The sutured intestine remained closed, and the large wound, which scarcely suppurated at all, is now nearly healed, and there seems to be no tendency to hernia. The patient is shown to the society at the present meeting, because he is about to leave New York for his home in North Carolina.

As the members are aware, laparotomy for peritonitis due to non-traumatic perforation of the stomach or intestine is a modern operation, the first one having been done by Mikulicz, who performed the operation in 1880,* and reported it in 1885. Weir, in 1887,† was able to collect only fifteen cases in which the operation had been performed for perforative lesions of the intestine not due to traumatic causes. More recently I have known or read of similar cases, but, as my present communication is not intended to be statistical, I do not report them. It may be well to state, however, that out of nine of the fifteen cases reported by Weir the vermiform appendix was the seat of either perforation or gangrene, and of these, in four instances the disease of the appendix was not found until after death. A case is also reported in which there existed a perforation of the cæcum. This was also unrecognized during life. In the remaining five cases the diseased appendix was found and removed at the time of operation. All the patients died except Hall's,‡ in whom, during an operation for a supposed strangulated hernia, the hernial sac was found to contain an appendix vermiformis which was the seat of a perforation caused by tubercular disease. The appendix was tied and cut off, the peritoneal cavity was exposed freely by extending the incision upward, and then thoroughly cleansed. The wound was drained by a rubber tube and filled with iodoform gauze, and the patient recovered. Hall's management of this case was judicious and skillful, and he certainly rescued his patient's life. But his discovery of the perforated appendix was accidental, and I am acquainted with no case like mine in which a perforative peritonitis, due to disease of the appendix, has been diagnosticated, and treated by laparotomy with a favorable result.

I avail myself of the present opportunity to discuss the surgical treatment of certain inflammatory affections originating in the right iliac fossa—namely, those which proceed from disease of the cæcum or its appendix. The subject is one of growing importance, and the surgical treatment of the diseases mentioned has been greatly improved in recent times. Nevertheless, there are some current notions concerning their morbid anatomy and treatment which appear to me to be erroneous, and which I am anxious to correct. My studies in this direction began early, and antedate the time when Parker performed his well-known operation for perityphlitis in 1866. Before this was done I made, at his request, a number of dissections in order to ascertain how the cæcum and appendix could be approached with the least danger of wounding the peritonæum, and found, as would naturally be imagined, that these parts could be most safely reached by raising the peritoneal bag from the iliac fascia, as is usually done before tying the iliac arteries. But, for reasons I shall presently give, this plan was not adopted by him in his operations. In common with other surgeons, I have for many years past followed the method which he recommended, and have had reason to be satisfied with it when endeavoring to open perityphlitic abscesses at the usual period, when they have reached a certain size and position. But if very early operations—that is to say, within the first two or three days—are undertaken, I should think it would be preferable to proceed in the manner I have above mentioned, which I will try later to describe.

In 1880 * I published an article on perityphlitis which gave the views I then entertained respecting that disease, and which contained an account of twenty-six cases I had either treated myself or had seen in consultation. Since that time my experience in this class of affections has been much larger than before, but how large I am unable to say, for I have been busy, and have neglected to keep a record of what I have observed. I regret this more especially because I have always found my own experience to be far more serviceable to me than that of others. I do not mean that it is of greater value intrinsically, but it is more valuable to me as a means of arriving at the truth. I freely admit the importance of statistics when accurately compiled, but I have so often found them misleading, if not absurd, that I am apt to regard them with suspicion. They are too often gathered by persons who have had only a very limited personal experience in the subject about which they write, and who fall into the easy error of putting under the same heading things so essentially different from one another that they are entirely unfit for purposes of comparison. Their numbers seem tempting, and not infrequently deceive both the author and the reader; but the conclusions reached, though at first sight convincing, are ascertained, when the statistics are carefully examined, to have a foundation which

* "Sammlung klinischer Vorträge," No. 262.

† "Med. Record," xxxi, 652.

‡ "N. Y. Med. Jour.," vol. xliii, p. 662.

* "Notes on Perityphlitis," "Annals of the Anat. and Surg. Soc.," Brooklyn, vol. ii, p. 249.

is insecure. Although, for the reasons I have given, I have no figures to present, having none of my own and not feeling competent to deal with the figures of others, I venture to express some views which I have been led to adopt after considerable study and experience, and which I believe to be in accordance with our present state of knowledge concerning a topic which is still involved in some obscurity.

In speaking of inflammatory affections occupying the iliac fossa, I desire to restrict my remarks to those morbid conditions which are dependent on disease of the cæcum or its appendix. Those who desire to obtain information of a more general character would do well to read an admirable essay entitled "Iliac Phlegmons," written by Matas, and published in the "New Orleans Medical and Surgical Journal" for 1886. Unfortunately, inflammatory diseases originating in the cæcum or the vermiform appendix are both common and dangerous. Furthermore, it has been well established that perforations of the cæcum are extremely rare as compared with those of the appendix.

I shall use the word perityphlitis in its broader sense, including under that designation all inflammatory processes starting from the cæcum or vermiform appendix which lead to the development of a circumscribed tumor. Cases in which ulceration or gangrene causes a slowly spreading septic peritonitis, as well as those in which acute peritonitis is set up by the direct entrance of fæces into the peritoneal cavity, belong to a separate category, and should be considered by themselves. Indeed, the latter are described by most writers as constituting a distinct class, and are termed cases of perforative peritonitis. The words typhlitis, paratyphlitis, and perityphlitis (when the latter is employed, as recommended by Virchow, to denote an inflammation of the serous membrane covering the cæcum) have, perhaps, an etymological and pathological importance, but I have never found them to possess much clinical value, and have therefore ceased to employ them. In practice I have learned to distinguish four varieties of allied disorders, which I will now endeavor to describe.

First, there is a kind of perityphlitis which is characterized by the fact that the inflammatory tumor disappears by resolution. Pain in the abdomen, usually most marked on the right side, the presence of a tender, deep-seated lump in the right iliac fossa, fever, and sometimes nausea and vomiting, are the common symptoms. The tumor may become large, and may perhaps be felt through the rectum. Sometimes the tumor extends downward into the true pelvis, at other times it is situated considerably above Poupart's ligament; sometimes it lies in the track of the cæcum, at other times to the inner or outer side of it; its usual situation corresponds with that of the cæcum itself, which is generally resonant on percussion, and can be appreciated as lying in front of it. In rare cases the tumor can be made out to actually involve the cæcum, when the resonance just mentioned is occasionally absent. Cases thus characterized by their termination in resolution often present mild symptoms, but the latter are frequently acute, especially during the first few days after the onset. Under suitable treatment the disease generally disappears after the lapse of a week, but now and then resolution is much longer delayed. I have recorded a case in which such a tumor persisted for a period of five months, and then subsided apparently by resolution.

Respecting the pathology of this class of cases we are obliged for the most part to speculate, because, unless the patient dies from some other cause during the course of the malady, we can learn little or nothing about it by examination post mortem. Nevertheless, our speculations may not be unprofitable, as there are some well-established facts to guide us.

It will, perhaps, be useful to consider first those rare examples of the disease in which perityphlitis is due to fæcal impaction, or to the presence of foreign bodies, or of irritating substances in the caput coli. Generally an accumulation of fæces in the cæcum gives rise to no inflammatory action, as every surgeon knows who has seen many persons suffering from chronic stricture of the rectum or colon. Often in these instances both the large and the small intestine may be distended with fæces without causing any but mechanical symptoms due to pressure. Simple fæcal impaction of the cæcum has been so extremely rare in my experience that for a long time I made the mistake of doubting its existence. It may be sometimes diagnosticated by the doughy resistance of the tumor, and by the absence of the resonance usually present in the early stage of the other varieties of perityphlitis, or by the persistence of a tumor after the inflammatory symptoms have subsided. For this condition, as well as for the morbid state in which irritating matters of whatever nature reside in the cæcum, a cathartic is said to be the proper remedy, and this is perhaps true. But, when the diagnosis is at all doubtful, I believe it is a better plan to defer the administration of laxatives until the inflammation has subsided under the use of opium and local applications. This will probably happen if the disease is owing to impaction, while, as we all know, mischief often results from giving cathartics when no real impaction exists.

But, as I have stated, inflammatory tumors of the class referred to are seldom due to fæcal impaction of the cæcum, and some other cause must be invoked to explain their formation. And here I am inclined to view the appendix, rather than the cæcum itself, as the source of the trouble. We know that the appendix is far more commonly diseased than was formerly believed, and Toft declares that this organ is found to be unhealthy in thirty-six per cent. of all persons examined after death. A strong argument in favor of the frequent origin of mild cases of perityphlitis in the appendix is afforded by the familiar instances in which the disease is several times repeated at intervals of months or years and finally excites an abscess, from which one or more fæcal concretions, evidently derived from the appendix, are discharged. Such cases must have been seen by nearly every surgeon, and one can not avoid the conclusion that the successive attacks are identical in origin, and have all been caused by the irritation of one or more concretions in the appendix, which, having set up repeated mild processes of inflammation, at last gave rise to suppuration. Such an explanation would appear to be more rational than the view which has been advanced that cæcal irritations cause non-

suppurative inflammations, while diseases of the appendix cause abscess.

Another circumstance indicating the frequent origin of this variety of perityphlitis in the appendix is the locality of the inflammatory tumor. As has been observed, this is usually situated behind the cæcum, but it varies considerably in position, being sometimes below this division of the intestine, even within the pelvic cavity, and at other times on one side of it, either the inner or the outer. Occasionally I have found the tumor high up and toward the median line. Now, these variations in the situation of the perityphlitic swelling correspond closely with the anatomical variations, which have been ascertained to affect the appendix itself. As a rule, it springs from the lower and back part of the cæcum, behind which it lies curled upward, its length usually being in the adult from three to five inches; but it has been found as short as one inch and as long as nine inches. Moreover, it may arise from the inner or the outer side of the cæcum, and, instead of running behind the latter, may occupy a lateral position. Finally, it may be directed downward toward or even beyond the brim of the pelvis. Now, the correspondence between the several positions of perityphlitic swellings and the anatomical variations in the situation of the appendix is certainly remarkable, and suggests that the relationship described may be intimate and causative.

But, however we may explain the pathology of this class of cases, it is certain that they are of frequent occurrence. I was once told by an eminent surgeon that he had never met with a case of perityphlitis which terminated by resolution. I am unable to reconcile his experience with my own, and think that his must have been either small or exceptional, for I have seen almost as many examples of this kind as of any other. Furthermore, I have often sought for information on this point from busy medical practitioners, many of whom have testified that such cases were, in their experience, the rule, suppuration being the exception. All, however, acknowledged that they were common. Unfortunately, we are unable to distinguish this class of cases from those that are destined to go on to suppuration, but the recognition of them is surely important when the question of very early operation presents itself for consideration. As bearing on this point, it is well to remember that, although cases of perityphlitis which afterward end in resolution usually pursue a mild course, they are often attended with acute and threatening symptoms during the first two or three days—a fact which may be fairly ascribed to the existence of a localized adhesive peritonitis.

The second group of cases I have observed in practice are those which issue in the formation of a circumscribed abscess. I am unacquainted with any means short of mechanical exploration by which we can at an early period discriminate these cases from the ones belonging to the first class. According to my experience, the lapse of a week is generally required before the diagnosis in this respect begins to clear up. After that time has passed I am accustomed to see matters growing either better or worse, and in the latter case I suspect an abscess has formed. Such abscesses, I have taught for many years, are extraperitoneal. I have so fully dwelt upon this topic elsewhere that I should avoid allusion to it on the present occasion if I were not convinced of the high importance of holding correct anatomical views in the event of resorting to what are termed early operations. But, inasmuch as the question has a practical side, and since it has been maintained in this society * that, as a rule, perityphlitic abscesses are intraperitoneal, I must endeavor to show that such is not the case. Whether, in the very beginning, such abscesses are sometimes intraperitoneal is a point I do not wish to consider, as it is irrelevant to the present discussion. But I contend that what we all recognize as a perityphlitic abscess is situated outside of the peritonæum. Neither do I mean to assert that circumscribed peritoneal abscesses are unknown, for I have seen such purulent collections, and they have been carefully described by Grisolle and other writers. What I wish to say is that they are rare. The usual course taken by the pus formed in a perityphlitic abscess is as follows: It is found at an early stage in the lax connective tissue that lies between the iliac fascia and the peritonæum adjacent to the cæcum and appendix. Meanwhile the peritoneal cavity is shut off and defended by adhesions which have taken place between the cæcum and appendix on the one hand and the peritonæum lining the iliac fascia on the other. Were it not for this, general septic peritonitis would almost certainly ensue. Supposing the matter to occupy at first the situation mentioned, its subsequent progress is easily understood when we keep in mind the relations of the loose connective tissue above mentioned. As the pus increases in quantity it generally descends along the iliac fossa and strips up the peritonæum, which is here very loosely attached to the iliac fascia. The serous membrane is thus made to cover the front and sides of the advancing abscess, and it plays an important part by protecting from infection the general peritoneal cavity. Should the abscess continue to increase after it has reached the level of Poupart's ligament, it will be prevented from passing down upon the thigh by the firm union between the fascia iliaca with the fascia transversalis, and will, if the abscess points, most likely come to the surface above Poupart's ligament, the matter being situated, as will be noticed, between the fascia transversalis in front and the peritonæum behind. Often, as we know, the course taken by the pus is not that which has been described. It may pass down into the pelvis toward the rectum or across toward the opposite side of the body, or upward toward the kidney. Sometimes it reaches the diaphragm, which it may perforate, thereby entering the chest, and occasionally it ascends behind along the psoas muscle. These remote extensions of the abscess are often seen in neglected cases. Now, it should be observed in this connection that the burrowing is favored, and the course taken by the matter is often determined according to well-established anatomical peculiarities, the retroperitoneal tissue being lax and abundant, and

* Weir, "A Plea for Earlier Operations in Perityphlitic Abscesses," etc., "Med. Record," vol. xxxi, p. 653. Weir seems to base his opinion on two authors, namely, With and Fitz. I have examined carefully the writings of both, but have failed to discover any evidence.

therefore easily invaded. But in no one of these cases does the peritonæum give way. When it does, and the contents of the abscess enter the serous cavity, death from acute septic peritonitis is almost inevitable. But such an accident is more often spoken of than seen, and it has never yet occurred to me in the course of my practice. Time will not allow me to discuss this question further, and this is perhaps unnecessary, because I feel sure that my views are accurate, having often had occasion to verify them at post-mortem examinations. To render my explanation clear, I have caused to be prepared the accompanying diagrams, and I append, for the instruction of any who may be in doubt upon this point, a list of works in which conclusive evidence can be obtained. The question is not one of opinion merely, but has been settled by anatomical demonstration.*

I have insisted upon the extraperitoneal situation of these abscesses, because if the fact is ignored or denied the dangerous mistake of cutting into the peritoneal cavity when they are incised will be of frequent occurrence. Prudent surgeons take scrupulous care to avoid this error.

Concerning the treatment of this class of cases, I wish to confine my present remarks to the consideration of a single inquiry, namely, When is the best time to operate? The question is not so simple as some are disposed to think, and I should say that no rule could be laid down which could be applied to all cases. Those who are vehement in their advocacy of surgical interference at a very early period †—that is to say, within the first two or three days of the disease—and who religiously obey the dogma "*Ubi pus ibi evacua*," seem to overlook the fact that by strictly carrying out one principle they may be violating another of equal importance. The question presents more than one aspect for consideration, and is worthy of deliberate examination.

In the first place, I ought to state that I have been unfortunately misunderstood and criticised for having argued in favor of a fixed time for evacuating these abscesses, whereas I have said distinctly "that the question of operation is one that can not be settled by time alone, and that all the circumstances of the case should be carefully considered."* In reviewing my experience, I find that I have most often opened such abscesses at some time between the first and second week after the commencement of the disease, and rather toward the end than the beginning of the period referred to. By those who advise a resort to very early exploration, such practice would be called dilatory, but I have good reason to be satisfied with it, for I have



Fig. 1.

Each one of the figures represents a horizontal transverse section of th right side of the pelvis, including the cæcum. A drawing by Tillaux was employed as a model. Although not strictly accurate, the figures will convey my meaning. In Fig. 1 an incipient abscess is shown ; Fig. 2 and Fig. 3 illustrate a more advanced stage of the disease, the abscess having reached the anterior abdominal wall. In Fig. 2 the peritonæum is seen to have been pushed aside from the abscess ; in Fig. 3 the abscess is represented as being covered in front by a layer of peritonæum, which is in contact with that lining the anterior abdominal wall. In the last case incision of the abscess would involve opening the peritoneal cavity, unless adhesion had taken place, or the pouch of serous membrane could be dissected away from the abscess-wall.

* In the discussion which followed the reading of the paper, Dr. Bull, who argued that perityphlitic abscesses were situated within the peritonæum, remarked that my references would probably only show how an erroneous opinion was apt to be handed down and copied without discrimination. It may be proper to state, therefore, that twelve of the authorities given offer evidence obtained by examinations made after death. Moreover, Dr. Bull will be found among the authors I have cited as holding the same view as the one I have advocated as correct.

1. Dupuytren, "Leçons orales," Paris, 1833, tome iii, p. 341.
2. Burne, "Med.-chir. Transact.," London, 1837, vol. viii, p. 222.
3. Grisolle, "Archives générales," 1839, tome 49, p. 162.
4. Sands, "Med. Record," vol. xiii, p. 56.
5. Hun, "N. Y. Med. Journal," vol. viii, p. 630.
6. Otis, *ibid.*, vol. xxvii, p. 527.
7. Wynkoop, "Trans. of the N. Y. Path. Soc.," vol. ii, p. 40.
8. Wakeman, *ibid.*, p. 66.
9. Kelsey, "Am. Jour. of the Med. Sci.," 1878, vol. ii, p. 85.
10. "Nouveau dict. de médecine," 1844, tome xxxvi, p. 467.
11. "Dict. encyclopédique," 1 série, tome xi, p. 476.
12. Oppolzer, "Wien. med. Wochenschrift," 1863, Band 13, S. 81.
13. Heineke, "Handbuch der Chirurgie," Pitha und Billroth, Bd. iii, Abt. ii, Lief. ii, S. 25.
14. Bull, "N. Y. Med. Jour.," vol. xviii, pp. 242, 248.
15. Gerster, "Aseptic and Antiseptic Surgery," New York, 1888, p. 247.
16. Bardenheuer, "Mittheilungen aus dem Kölner Bürger-Hospital," Köln, 1887, viertes Heft, S. 83.
17. Matas, *op. cit.*, p. 9.
18. Koenig, "Lehrbuch der speciellen Chirurgie," vierte Auflage, Band 2, S. 154.
19. Follin, "Pathologie externe," tome 5, p. 787.
20. Tillaux, "Traité d'anat. topog.," Paris, 1877, p. 760.

† Bull, "Med. Record," vol. xxix, p. 265 ; Weir, *op. cit.*

* "Annals Anat. and Surg. Soc.," Brooklyn, 1880, ii, 256,

never known any harm to come from the delay. While I do not wish to put myself on record as unqualified in my objections against early operations, since these may in the

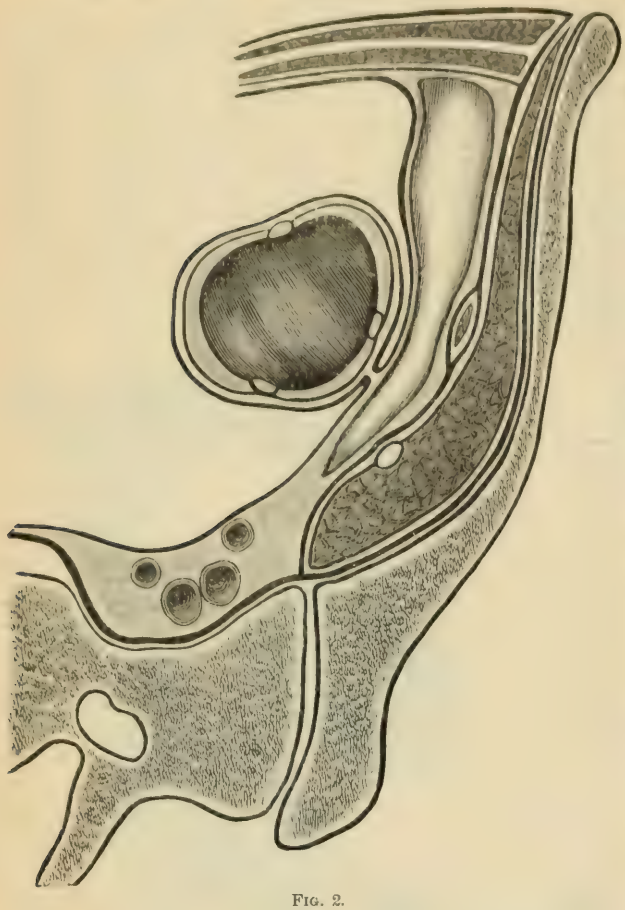


Fig. 2.

future turn out to be expedient, I am obliged to deprecate the methods at present advocated of making early explorations, believing that they are premature, dangerous to life, and based upon an erroneous conception of the existing pathological conditions. A clear distinction should be borne in mind between cases of general septic peritonitis and those of perityphlitic abscess, which, as we well know, rarely, even when neglected, rupture into the peritoneal cavity. This danger has been urged in favor of early surgical interference, but it has been much exaggerated, and, as I have already remarked, such an accident has never come within my personal experience. Moreover, while it may readily be shown that perforation of the appendix often leads to fatal suppuration after the lapse of three or four days, this is not true unless the peritoneal cavity is directly invaded. In cases of perityphlitic or retroperitoneal abscess I have never known one of large size to form in less than ten days, and usually a much longer time is required. Bull* has reported a case in which he maintains that he opened a deep-seated perityphlitic abscess within the first forty-eight hours, but a careful examination of the patient's history, as related, makes it evident that the disease had existed for at least ten days. To be sure, the patient had been in bed only forty-eight hours, but "for ten days previously he had experienced a steady dull pain in the inguinal region, with occasional paroxysms which were more severe." This latter circumstance, when coupled with the subsequent discovery of an abscess, makes it clear that the disease had been going on all this time unrecognized. The fact that the man during this period had been able to travel and be up in the day-time is not unusual, and does not prove that he was well. If what I believe to be true regarding the mode of origin and progress of these abscesses is admitted, the reasons for postponing mechanical procedures for some days after the commencement of the disease, instead of resorting to immediate operation, must be obvious. In Parker's operation, which is the one generally performed, the pus is evacuated by cutting through the fascia transversalis and the parts superficial to it a short distance above Poupart's ligament. Now, this can not be done at an early period, because at that time the peritonæum, being neither pushed aside nor adherent, would be wounded before the abscess could be opened; and such an accident is always

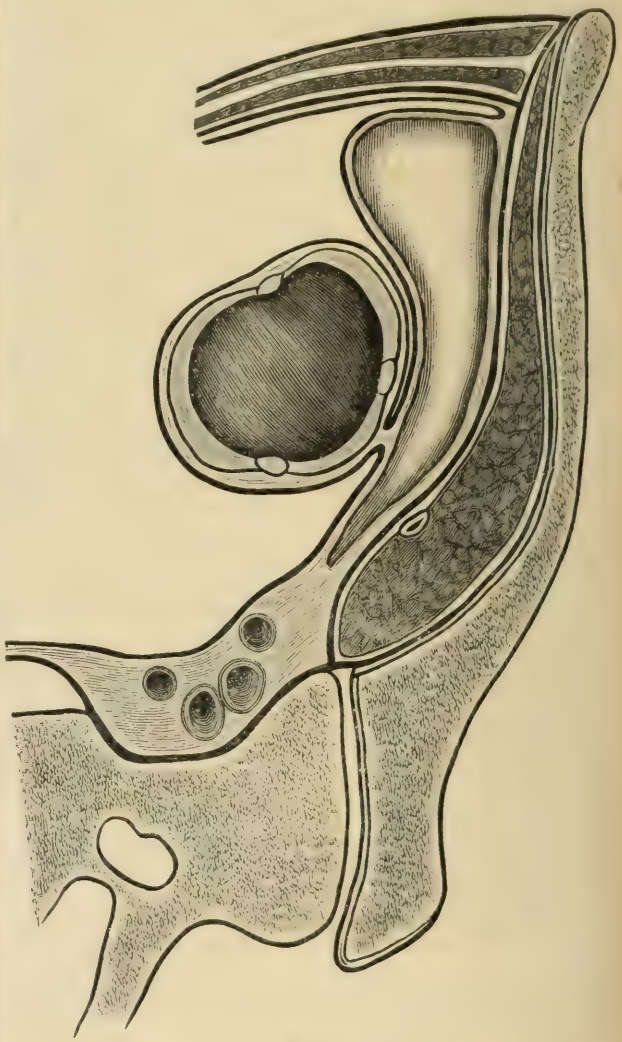


Fig. 3.

avoided by careful operators. Of course, if we adopt the view that these abscesses are situated within the peritonæum, we should proceed with less caution; but, as I have

* Bull, *op. cit.*, p. 265.

said, such a theory is untenable, and surgeons, with few exceptions, regard intraperitoneal incisions as unsafe. What difficulties may be encountered when operations are carelessly performed may be illustrated by an account of a case which occurred last summer in one of the largest hospitals in New York. It does not appear in the history-book, but a credible eye-witness of the operation has been good enough to furnish me with the following narrative: A male patient was admitted suffering with abdominal pain, nausea, and vomiting. The right iliac region was tender, and in it was detected a small indurated swelling, very deeply situated. The swelling became more distinct and larger by the fifth day, when, upon introducing an aspirating needle above Poupart's ligament, fœtid pus was discovered at the depth of four inches. An incision was then made over the tumor, and when the sac of the abscess was thought to be reached the needle was withdrawn. But when the supposed abscess was cut into, it turned out to be a piece of intestine which overlay the abscess, and which had been transfixed by the needle. An artificial anus was established and the abscess was opened and drained alongside the wounded intestine, but the patient died five days afterward with symptoms of peritonitis. There was no autopsy.

Similar objection may be raised against an early or indiscriminate resort to an aspirating needle when employed with the hope of detecting the presence of pus. I have elsewhere advocated the use of this instrument as a valuable means of diagnosis in doubtful cases, but I am always apprehensive when I introduce it deeply, and I never employ it in the early stage of perityphlitis, because I am afraid of infecting the peritonæum. This is a real danger, although its existence has been doubted. The risk is also much greater when large needles are inserted, as has been recommended.* Recently Roosevelt has reported an instance in which a competent surgeon caused fatal peritonitis by accidentally perforating the diaphragm with an aspirating needle used in a case of empyema.† And a similar risk undoubtedly exists of infecting the peritonæum in cases of perityphlitis if the exploring needle is employed at a very early period. It may be impossible to puncture the abscess without previously perforating the peritonæum or the intestine, and the former may be contaminated either by the contents of the abscess or of the intestine. A case in which death from the cause first mentioned took place has been related by Gerster,‡ who condemns the early use of the exploring needle in the disease under consideration. I am inclined to discourage such explorations, because I fear that they are becoming dangerously frequent. If it is taught with authority that they are absolutely safe, they will certainly be resorted to by many inexperienced practitioners, who may wish to make a quick and easy diagnosis. I was once called to see an eminent physician who had been punctured in the manner described, but, as no pus was found, he was treated with medicine and got well. Fortunately, no harm came from the exploration, which seems to me to have been unnecessary and reckless.

* Bull, *op. cit.*, p. 265.

† "N. Y. Med. Jour.," xlvii, 49.

‡ Gerster, *op. cit.*, p. 248.

Even when the exploring needle is employed late the peritonæum may be wounded before the cavity of the abscess is reached, provided the puncture is made in front and in the usual situation. I have done this and have seen it done so often that I have ceased to regard the detection of pus with an aspirator as an indication that the abscess can be reached in the ordinary way without endangering the serous membrane. The old rule of keeping the needle *in situ* in order that it may serve as a guide to the knife should be followed with great caution. In case the peritonæum is found and is non-adherent, the needle should be withdrawn, and, unless the serous membrane can be got out of the way, the opening of the abscess should be deferred until adhesions have taken place. If the peritonæum has been torn, as it sometimes is, in consequence of the movements of the needle, the rent should be carefully disinfected and closed by sutures, provided, of course, the abscess does not leak. The simultaneous incision into the peritoneal cavity and the cavity of the abscess would, in my judgment, be a blunder, as it would then be difficult to prevent the occurrence of septic peritonitis. Under the circumstances described I have repeatedly found that, if left without further operation, the abscess would subsequently burst into the wound. Within the past few months I have had two such cases, which may be cited by way of illustration. Last October I operated, in consultation with Dr. John B. McIntyre, of this city, upon a patient who had a large perityphlitic swelling. No needle was used, but, feeling certain that a large abscess existed, I made the usual incision, hoping to reach it with safety. But the peritonæum was found to be lying upon the wall of the abscess, over which it could be freely slid, whereupon I abandoned further operation, and, having stuffed the wound with iodoform gauze, directed the application of a carbolized flaxseed poultice. At the time of the operation the man was very ill, and I feared he might die unrelieved. Forty-three hours later, however, the abscess ruptured into the wound, and he afterward made a speedy recovery. Last December I operated in the same manner upon a woman I saw with Dr. Robert J. Devlin. In this case the abscess did not break into the wound until thirty-one days after the operation, and during this interval no opportunity was afforded of safely incising the abscess, which appeared to be deeply seated. But no harm came from the delay beyond the postponement of the desired relief.

From what has been said it will be seen that I am opposed to explorations and incisions within the first two or three days, as these are recommended to be performed. My experience has taught me that often in cases of perityphlitis operations of any sort are unnecessary, and that even when an abscess has formed, some danger may be avoided by deferring the operation of incision until it has made a certain progress and reached a situation where it can be readily opened. But I have no desire to dogmatize, and I am not at all confident that the practice I have thus far followed will finally prove to be the best. I admit that delay is attended with risk, although the latter has been, in my opinion, considerably magnified, and I should strenuously urge the immediate evacuation of a fæcal abscess situated

in the vicinity of the peritoneal cavity if this could be done safely. If, without employing dangerous methods of diagnosis, we shall ever be able to determine with precision the presence of such an abscess, I believe it will be found expedient to open it forthwith. But, under these circumstances, I should perform an operation with the expectation of discovering the abscess somewhere behind the peritonæum, deep in the iliac fossa, and I should take particular pains to leave the serous cavity undisturbed. I would endeavor to raise the peritonæum from the iliac fossa and approach the cæcum on its posterior aspect, as I did in the above-mentioned experiments which I made in 1865 for Dr. Parker. This I have never done in the living subject, but I believe it to be feasible, and Bardenheuer states that he has operated successfully in this manner in cases of chronic perityphlitis.

The third set of cases I have seen are of the kind exemplified by the subject of the present paper. Although occasionally confounded with perityphlitis, they are not cases of perityphlitis at all, as we usually understand that word, but of perforative peritonitis, due to the direct escape of fæcal matters from the perforated appendix into the peritoneal cavity. They are familiar to every practitioner, and differ from perityphlitis in their pathological anatomy, symptoms, and treatment. The essential feature in their morbid anatomy is the immediate invasion of the serous cavity by fæcal matters, and the consequent occurrence of septic general peritonitis. The symptoms are usually characteristic. As a rule, the onset of the attack is sudden and severe, and signs of collapse frequently appear in the course of forty-eight hours. Without attempting to give a minute description of the disease, I will say that I recognize it chiefly by the presence of symptoms of acute peritonitis, starting from the right iliac fossa, not accompanied with a hard, circumscribed swelling, such as we expect to find in perityphlitis. As some one has pithily remarked, there is in these cases "tumefaction, but no tumor"; and, in forming an opinion, I depend upon the absence of a tumor in the cæcal region as the strongest point in diagnosis. Of course, the rectum should be explored in every doubtful case, because a retroperitoneal abscess sometimes forms within the true pelvis. It is proper also to bear in mind that in rare instances a perityphlitic swelling may be inaccessible to the touch, as it sometimes is when it lies near the kidney, or on the psoas magnus muscle. But, when the diagnosis of perforative peritonitis is established, an operation, such as I performed on the patient now exhibited, is clearly indicated. Nor can it be done too early, because life is generally lost through procrastination. It must be undertaken before the septic infection has spread throughout the peritonæum. I think that success in my case was due to a fortunate combination of circumstances. The patient was seen early by a gentleman who appreciated the necessity of obtaining surgical advice without delay; the appendix was perforated in only one place, and was not gangrenous; and the operation was satisfactorily and expeditiously completed, without much handling or exposure of the intestine. But I fail to see anything in the case which ought to make us doubt that many like examples of recovery will soon be reported. I have witnessed many deaths from this disease, because its nature was not recognized soon enough to render it probable that the operation would be attended with any benefit. But, if surgical aid could be made available in time, many lives would surely be preserved.

The method of operation which I adopted seems to me deserving of recommendation. The vertical incision over the cæcum I believe to be the best, because it affords the easiest access to the parts presumed to be diseased. When the abdomen is opened in the median line, the cæcum and appendix are not so readily got at, and it has even happened during operations thus conducted that existing perforations of the appendix have been entirely overlooked, thus permitting the sufferer to die unrelieved. An oblique incision, running just above and parallel to Poupart's ligament, is, even when extended upward, highly objectionable in these cases. Such an incision will enable the operator to explore the iliac fossa and the back of the cæcum, and, when the appendix is situated in a retroperitoneal abscess cavity, to remove it, if necessary. But it affords only a scanty and imperfect access to the abdominal cavity, which, when opened at all, should be exposed by an incision that will facilitate the subsequent important steps of the operation. It is therefore very desirable that the surgeon should decide beforehand whether laparotomy is likely to be required, and not start on a voyage of discovery likely to end in disaster.

Hot water was used by me to clean out the peritoneal cavity, and disinfection was afterward undertaken with a moderate quantity of a strong solution of mercuric bichloride, 1 to 1,000. A small part only of the wound was closed with sutures, used to prevent the intestine from protruding; the remainder was lightly dusted with iodoform and stuffed with iodoform gauze. These details of practice are, perhaps, important.

Laparotomy, performed in the manner described, may be said to be the ideal method of exposing and dealing with the appendix; and, if subsequent experience should demonstrate the procedure to be free from danger, it may prove to be the best plan to do this operation early in all cases of disease here located. But, with our present limited knowledge, it would be presumptuous for me to express a definite opinion on this interesting point.

The fourth class of cases I have met with are characterized by their obscurity, the symptoms being indefinite and deceptive. The disease may come on slowly and insidiously, or the onset may be marked by a chill, vomiting and sharp pain. But the acute symptoms, when they occur, may subside, and the improvement which follows allays apprehension. The pain may be only moderate in degree, and may not radiate from the cæcal region. The latter may not be very tender, and there is no tumor. The temperature may remain normal, and the pulse may be only slightly accelerated. The bowels may act naturally, but are generally constipated. For a while the symptoms are obscure, and the diagnosis is difficult. But the improvement is of short duration. After a few days the patient's condition becomes serious and excites alarm. Comfort has been obtained,

perhaps, by the use of opium, but gradually increasing abdominal tenderness and distension make us suspect general peritonitis. Stercoraceous vomiting occasionally occurs, suggesting the possible existence of mechanical intestinal obstruction. At the end of a week or ten days the heart's action begins to fail rapidly, hiccough, cold sweating, and perhaps delirium set in, and the patient sinks into a state of fatal collapse.

When, in such cases, an opportunity is afforded of examining the body after death, the mischief is seen to have originated in the vermiform appendix, which is usually perforated in one or more places, and which is frequently more or less completely gangrenous. Adhesions often exist, but they have not proved conservative, and the morbid process has evidently been one of slowly advancing septic peritonitis, which usually affects, by the time death arrives, the entire serous membrane. No large, circumscribed abscess is present, but pus and often fæcal matter are found between the intestinal coils, which, particularly in the vicinity of the cæcum and appendix, are glued together, as if nature had made an unsuccessful attempt to prevent the spread of septic contagion.

Cases of this kind are very unsatisfactory, inasmuch as we can not avoid feeling that life has perhaps been unnecessarily sacrificed. Had an accurate diagnosis been made at the start, the offending appendix might have been sutured or removed, and general peritonitis thereby prevented. It is in this class of cases, as well as in cases of acute perforative peritonitis, that early operation is desirable, if not imperative. But laparotomy is the only operation that holds out any prospect of a radical cure, and I should recommend it to be tried at a very early period in cases which belong to this last variety. Weir has proposed the use of the aspirating needle as a means of diagnosis in this form of disease, and his proposal is, I think, a good one.

Finally, it may be proper at this time to state emphatically that all the diseases to which I have referred are surgical cases from their beginning, and that surgeons alone are competent to decide whether operations are expedient, and to perform them, when necessary, at the right time and in the right manner. A man who devotes his attention to internal medicine alone is generally ignorant of the resources of surgery, and is apt to put off sending for a surgeon until drugs have failed to cure. Then, when a consultation is held, the disease may already have done its fatal work. Opium is a remedy of unquestionable value, but it often serves only to comfort the patient, and to lull all parties concerned into a false security. In the course of my practice I have seen many an unfortunate human being dosed to death, when his life might have been saved by prompt and skillful surgical aid.

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**Ocular Symptoms of Epilepsy.**—"The examination of a thousand cases of epilepsy by Dr. Gowers revealed but one morbid condition of frequent occurrence in the ocular fundus," says the "Lancet," "and that was an unnatural equality of the size of the arteries and veins of the retina. Dr. Charles Oliver, of Philadelphia, has frequently observed a reduction of the visual fields for form and color, a granular condition of the chorioid in the macular region, a dirty red-gray degeneration of the optic nerve, and a thickening of the fibrous tissue of the retina."

# INTESTINAL OBSTRUCTION: ITS PATHOLOGY AND SYMPTOMS.*

By LEWIS A. STIMSON, M. D.

The obscurity which usually envelops the cause of intestinal obstruction, the difficulties that oppose its relief, and the great mortality attending it, have long made it one of the gloomiest chapters in medical history. Its varied pathology has long been well understood, for its many victims afforded abundant opportunities to observe the manifold causes that underlie it, but the timely recognition of those causes during life has been rare, and the treatment has seldom amounted to more than the administration of purgatives and enemata on the bare chance that the cases might be of a kind that could thereby be removed, and, that failing, the alleviation of suffering and the procurement of euthanasia.

But with the great extension that has of late been given to operative methods by the reduction of the dangers that were heretofore involved in them has come the hope of success to be obtained in these cases of obstruction by a more active and a better-directed interference, and the attention of the profession is earnestly turned to the solution of the problems that lie in the way of the proper and fruitful use of the measures we are prepared to employ, and of a wise choice from among them.

Of these problems, the one whose importance dominates that of all others at the present time is the diagnosis of the existence, the nature, and the cause of the obstruction—not merely the diagnosis of comparatively unimportant details, but, on the contrary, the differential diagnosis of fundamental conditions requiring methods of treatment so radically different that some would lie entirely within the province of the surgeon, others within that of the physician. To the solution of this problem, so far as its solution is practicable, our first and most earnest efforts should be directed, and we may then confidently anticipate that our accumulated therapeutical experience, by its more precise adaptation to the individual need and its freedom from the additions and divergences now imposed by diagnostic doubts, will promptly furnish the means for a wise choice among the many operative and medicinal measures that are now offered us.

The subject allotted me for the opening of this discussion is so large and the time so limited that it will be practicable only to review the broader characteristics and features of the various forms of obstruction, and very briefly to indicate their bearing upon the diagnosis and treatment.

The selection of this subject for discussion at this time and place needs no other justification than the facts to which I have just alluded and the additional one that intestinal obstruction claims hundreds of victims annually from our community. According to Treves, "over two thousand individuals die every year in England alone from various forms of obstruction of the bowels, exclusive of hernia." Leichtenstern, who collated the mortuary records of England and

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* Read, in opening the discussion on "Intestinal Obstruction," before the Medical Society of the State of New York, February 8, 1888.

Geneva, and the statistics of the General Hospital of Vienna, the St. Petersburg Hospital, and the Pathological Institute of Prague, estimates that, excluding external hernias and malignant neoplasms, one death of every three hundred to five hundred was due to intestinal obstruction. His statistics of details and those of other writers have been in the main collected from reported cases, and consequently can not be trusted to give the exact, or perhaps even an approximately exact, indication of the relative frequency of the different forms, for, as is well known, instances of the rarer forms are most likely to be published, and statistics made up from this source always contain an undue proportion of such cases. Nevertheless, they furnish certain indications in respect of relative frequency at different periods of life and in the two sexes which are of value and to which I shall refer in a moment.

The various causes of organic intestinal obstruction, exclusive of congenital defects and of external hernia and of cancer of the rectum which, because of the ease with which they can usually be recognized, do not come into question in the doubtful cases with which we are now concerned, may be roughly grouped as strangulation of the intestine by natural or abnormal bands or in accidental openings in the mesentery or omentum, internal hernias, the various forms of volvulus or twisting or knotting of the intestine, accidental sharp changes of direction by which the intestine is bent upon itself, intussusception, compression by tumors or viscera, organic changes (cancer) in the wall of the intestine by which its lumen is narrowed, obstruction by gallstones, enteroliths, or foreign bodies, or by accumulation of fæces dependent upon or productive of paralysis of the corresponding segment; and together with these must be considered that very important and common group of cases of functional obstruction dependent upon some inflammatory process, either a local or general peritonitis, or of the wall of the bowel itself. With this classification must be associated the important clinical division into acute and chronic cases, or those in which the symptoms appear abruptly with little or no warning and rapidly reach their height, and those in which the acute symptoms are long preceded by less marked ones of pain and constipation.

A full description of the pathology of the different forms is not suitable to the occasion or necessary for our present purpose; it will be sufficient for the purposes of the discussion briefly to mention their essential characteristic features.

In the first group, strangulation of a loop of intestine by natural or abnormal bands or in openings in the mesentery or omentum, the loop is strangulated by constriction of its base, and the constricting band may be either an abnormal cord formed by the elongation of an adhesion that has formed between two peritoneal surfaces during an antecedent local peritonitis, or it may be the appendix vermiformis or that diverticulum known as Meckel's and sometimes found at the lower end of the ileum, or the associated cord formed by the obliterated omphalo-mesenteric vessels, the free end of which has become attached to the abdominal wall or to one of the viscera, and under which the intestine has become engaged; or it may be a portion of the omentum that has become attached at its free border and has been rolled and matted into a cord. The condition is essentially identical with external hernia in its mechanical conditions, and also, therefore, in its rational symptoms and in the principles of its treatment.

In all of these cases, except those in which the constricting cord is the diverticulum or its associated vessels or the ligamentum terminale, there must have been an antecedent local or general peritonitis, the history of which is usually recognizable, since it is that either of a pelvic peritonitis in a female, a typhlitis or perityphlitis, a strangulated external hernia, or that following laparotomy. The diverticular strangulations are very rare, and, with very few exceptions, occur only between the ages of ten and thirty years.

In strangulation by the walls of an opening in the mesentery or omentum similar mechanical conditions and needs exist, but the history of an antecedent peritonitis is lacking. The variety is infrequent. The opening in the mesentery is usually at the part corresponding to the lower end of the ileum, sometimes in that of the jejunum or that of the colon. The opening is thought usually to be congenital, but a few cases have been reported in which it appears to have been produced by external violence, or perhaps by the breaking down of a degenerated mesenteric gland. With these may also be grouped the rare cases of strangulation through slits in other parts, as the suspensory ligament of the liver or an appendix epiploica, or rents in the parietal peritonæum, the uterus, or bladder.

Internal hernias, strictly speaking, are those in which the hernial protrusion lies entirely within the abdominal or the thoracic cavity, or between the parietal peritonæum and the outer part of the abdominal wall; but, practically, some small incomplete hernias of the natural orifices give rise to no recognizable external tumor. Among the different varieties, all of which are infrequent, may be mentioned diaphragmatic hernia, hernia through the foramen of Winslow, anterior and posterior retroperitoneal hernias, and the various ones found in abnormal pouches of and near the mesocæcum, the mesentery of the sigmoid flexure, the upper end of the jejunum, and even under the iliac fascia. Time will not permit more than the mention of these varieties and of the identity between some of the anterior retroperitoneal hernias (sometimes called preperitoneal) and the condition resulting from the reduction *en bloc*—that is, still included in its sac—of an inguinal hernia; the intestine lies in a pouch of peritonæum placed between the parietal peritonæum and the anterior wall of the abdomen or the iliac fossa, the orifice of the pouch being near the internal inguinal ring. Of the diaphragmatic hernias it must be said that some are congenital, others acquired; and that in the former, which are by far the more common (212 to 28), the parietal peritonæum and pleura are continuous with each other through an opening in the diaphragm due to a defect of development, and that consequently there is no true hernial sac. The diagnosis has been rarely made.

Under the term *volvulus* are included only those cases in which a loop of intestine, free of all adhesions, is twisted upon itself or is strangulated at its base by another loop which encircles it. The form most frequently met with,

two thirds of all cases of volvulus, is simple twisting of the sigmoid flexure; and in the form in which two loops take part, the sigmoid flexure is usually one of them. The condition is of infrequent occurrence, between 4 and 5 per cent. of collected cases, and volvulus of the sigmoid flexure is rarely encountered under the age of forty years. In volvulus of the sigmoid flexure the upper end of the loop usually passes in front of the lower one at the point where the latter is continuous with the rectum, and if only a half-turn is made (180°), the constriction may involve only the lower end. This was the condition in the only case I have seen, and the flexure, as is usual, was greatly distended, to a diameter of more than four inches. It has been observed in autopsies that the twist has a marked tendency to recur when air is forced into the loop from the upper segment of the bowel, and it may therefore be doubted whether the simple liberation of the loop by untwisting it after laparotomy would effect a stable cure; possibly the establishment of an artificial anus in the loin would be necessary.

Sharp changes in the direction of the intestine, by which the wall becomes kinked and the lumen obliterated, are the result of adhesions; since the performance of laparotomy has become so common, the instances of obstruction due to this cause have multiplied.

In *intussusception* or invagination a segment of the bowel becomes turned into the one below it, and this engaged portion, the intussusceptum, is forced along by the peristaltic action of the portion within which it lies, and in this progress the upper part of the latter is also rolled in, *pari passu*. In about half of the cases the process begins at the ileo-cæcal junction, and the head of the intussusceptum, recognizable by the ileo-cæcal valve and the orifice of the appendix vermiformis, may appear at the anus. It is the most frequent of all the causes of obstruction, and is estimated by Treves to constitute three eighths of all cases. Half of all its cases occur, according to Leichtenstern, during the first ten years of life, and half of these, one fourth of all, during the first year. It differs markedly from the forms previously mentioned by being capable of spontaneous relief or of relief by injection, and in presenting a chronic as well as an acute variety. The hyperacute cases, those in which death follows within the first twenty-four hours, are very rare, less than 1 per cent.; the chronic, those in which the condition has persisted for a month or more, constitute 18 per cent.; the acute and the subacute, 48 and 34 per cent., respectively (Treves). In fully half of the acute and subacute cases a characteristic tumor can be felt in the abdomen, and in the great majority of these cases the symptoms are such that a diagnosis can be readily made; the great difficulty is in the recognition of the chronic cases. At the beginning the constipation is often incomplete, vomiting infrequent, pain moderate, and the abdomen soft and not distended or tender. As soon as the occlusion becomes complete, bloody mucus is discharged in the stools, and the signs of peritonitis appear. The mortality of all cases is 70 per cent., the highest rates being in acute cases in young children and in the chronic cases; of 59 of the latter collected by Raffinesque, 51 ended fatally. Of 249 fatal cases collected by Leichtenstern in which the ages were noted, 100 were in children less than one year old, and 48 in children from one to ten years old.

Obstruction of the bowel by the *pressure of a tumor or displaced viscus* may be acute or chronic, and the predominance of the former in reported cases is doubtless due to the fact that the latter, being less striking and important, are not usually reported. The occlusion is effected by compression of the bowel between the wall of the abdomen (usually the pelvis) and the compressing body, the latter being most commonly a tumor, as a fibroid of the uterus or an ovarian cyst. Among the less frequent causes are abscesses, tubal pregnancy, displaced spleen or kidney, hydatid cysts, and even a vesical calculus. Of 165 cases collected by Leichtenstern, the rectum was compressed in 60 per cent., the sigmoid flexure and descending colon in 12 per cent., the lower part of the ileum in 10 per cent., and the duodenum in 7 per cent. The compression of the ileum and of the sigmoid flexure in most cases appears to have taken place in the true pelvis. The frequency of compression of the duodenum, compared with that of the jejunum, which escapes entirely, and that of the upper and middle parts of the ileum, 4 per cent., is to be explained by its immobility, a condition which also characterizes the rectum. In the acute cases the occlusion appears usually to have been produced suddenly by a change in the position of the tumor, and sometimes by a change in the direction of the intestine, or by the lodging of hard fæces in a part of the canal already narrowed by the pressure.

Concerning occlusion by gallstones, it need only be said that fatal obstruction is very rare and has occurred only in the small intestine, and most frequently at the lower part of the ileum, and that the occlusion may or may not be preceded by one or more attacks of hepatic colic. When a gallstone of large size has entered the intestine, either through the dilated ductus communis or by ulceration and perforation, it commonly is evacuated, and a number of cases are on record in which larger stones have been thus passed than others that have caused fatal occlusion. A number of patients also have recovered by spontaneous evacuation of the stone after symptoms of acute obstruction have appeared and have lasted, even with stercoraceous vomiting, for several days.

Occlusion by intestinal stones, enteroliths, is still more rare; Leichtenstern's 1,500 cases include only 20 of this kind. The "stones" may be hard, heavy bodies, composed of phosphate of lime or of triple phosphates that have formed slowly within the intestine, or they may be much lighter, porous bodies that have formed by the matting together of undigested vegetable fibers. Acute occlusion appears always to have been preceded by symptoms of partial obstruction, except in one or two cases in which the stone seems to have formed within a diverticle and to have been suddenly dislodged.

The reduction of the caliber of the intestine by an organic change in its wall, cicatricial or cancerous, rarely gives rise to complete occlusion, and, when it does so, the occurrence is preceded for a longer or shorter time by symptoms of partial obstruction, which, with the history of the case, may make the diagnosis reasonably clear. The

affections of the mucosa, which by cicatrization may lead to stenosis, are dysentery, catarrhal, tubercular, and syphilitic ulcerations; other lesions, acting in the same manner, are constriction of the intestine at the point where it has been compressed by the neck of a hernial sac, and traumatism by external violence. Both cicatricial and cancerous strictures are more frequent in the large than in the small intestine, and cicatricial stricture of the colon is, according to Treves's statistics, more than five times as frequent in women as in men. When the stricture occupies the small intestine, and even the first part of the colon, where the contents are liquid, the symptoms of obstruction do not appear so early as when it is in the lower part of the colon, where the fæces are more solid; in both cases there is constant dull pain referred to the seat of the stricture. In one of my own cases this pain was the only symptom that preceded the fatal total occlusion, although the stricture was in the transverse colon and was so close that it was finally occluded by the lodging of an apple-pit. The recorded cases of obstruction following the reduction of a hernia are but few, and the period that elapsed between the reduction and the occlusion varied from a few weeks to several years. In two cases, quoted by Treves, of stricture following a traumatism, the symptoms of obstruction appeared after intervals of three and four months respectively.

In obstruction by accumulation of fæces the essential pathological condition is a disability of the muscular tissue of the bowel, which may amount to complete paralysis. The affection is one which, by its symptoms, cause, and nature, belongs to the physician rather than to the surgeon, and never gives rise to that stormy train of symptoms, those diagnostic doubts, and that urgent need of active interference which are so common in the other forms.

Among the pathological conditions common to all, and bearing especially upon the diagnosis and treatment, are local or general peritonitis originating at the point of occlusion, marked distension of the upper segment of the bowel, and contraction, emptiness, of the lower one.

One other condition of sharp onset and rapid, urgent course, which is accompanied by constipation, vomiting, and other symptoms that are prominent in acute obstruction, must be mentioned in connection with these forms of occlusion because of the necessity of taking it into account in the differential diagnosis. It is that of acute local or general peritonitis; and in children, in whom idiopathic peritonitis, or at least peritonitis without recognizable cause, is not uncommon, the difficulties of the diagnosis may occasion the most harassing doubt.

Time will not permit the consideration of the associated pathological conditions and of the changes that ensue upon the occlusion; we must turn at once to the symptoms to which they and the occlusion and its cause give rise, confining our attention to the cases in which the occlusion is acute.

*Pain* is always present, and usually appears very early; at first, when slight, it is commonly referred to the umbilical region, is intermittent and colicky, and not increased by pressure, but later it may become constant, with exacerbations and remissions, and there may be in addition local tenderness at the seat of the obstruction. Treves says he has found very few exceptions to the rule that the pain is constant when the occlusion is complete, and intermittent when it is incomplete. It is usually tolerable, but may be very severe. It is in great part due to the peristaltic action of the segment of the bowel above the obstruction by which its contents are forced along, and the bowel unduly stretched and perhaps bruised against a constricting band. It is therefore habitually increased by taking food, by enemata, and even by exploration of the rectum, and is relieved by washing out the stomach. As peritonitis supervenes, its diffused pain is added to that which preceded.

*Vomiting* may appear early or late; when early, it is excited by the trauma of the strangulation, is a symptom of shock; its later appearance and continuance seem also to be due to the irritation at the occluded point, and to be in a measure dependent upon the continued peristaltic action, for it is commonly checked by measures which diminish the latter, such as opium and the washing out of the stomach. Its appearance is earliest, its character most copious, in acute strangulation, as in internal hernia or knotting of the small intestine; in intussusception it may be early or late; in volvulus of the sigmoid flexure it is late or absent. It becomes feculent, brown in color, offensive in odor, more or less promptly; the feculent character is not a proof that the matter vomited has come from the large intestine; it can be acquired by the prolonged sojourn of the food in the small intestine, and probably then represents a late stage of pancreatic digestion.

*Constipation* is almost always complete, if not from the very beginning, yet at least after one or two movements have emptied the lower bowel; but in two forms, intussusception and stricture of the large intestine, there is usually much tenesmus with evacuations of blood or bloody mucus, and in the former there may be diarrhœa. The tenesmus of intussusception seems to depend upon the presence of the intussusceptum in the colon, and especially in its lower part, and the diagnosis which is suggested by this symptom may be confirmed by the recognition through the abdominal wall of the sausage-like tumor formed by the invaginated bowel, or by its appearance in the rectum. Complete constipation, without even the evacuation of the contents of the lower segment, is the rule when the injury done to the intestine is severe, and it is then the result of reflex action excited by the traumatism, and not of the occlusion.

*Distension of the abdomen* is not a symptom of the onset except in those cases in which the complete occlusion has been preceded by partial obstruction which has led to an accumulation of fæces in the upper segment of the bowel; but it appears without much delay, except in the infrequent cases in which the obstruction is situated high up in the small intestine; it is late in intussusception and strangulation, early and marked in volvulus and stricture of the large intestine. The occurrence of peritonitis is, as usual, promptly followed by meteorism and rigidity of the abdominal wall.

*The temperature* is usually subnormal in strangulation, even after peritonitis has set in, and may be subnormal also in intussusception. Apparently, this is due to the shock occasioned by the violence done to the intestine—a shock

which may amount to collapse, especially in the very young and very old, or when a large portion of the intestine is strangulated. It is normal in the other forms until peritonitis raises it.

Variations in the *amount of urine* have been thought to have some diagnostic value, diminution of the amount pointing to obstruction high up, but later observations have failed to confirm the opinion except in chronic and incomplete occlusions. In the acute forms, anuria or marked oliguria is the result either of shock (through lowering of the arterial pressure) or of the withdrawal of water by profuse vomiting, and in the latter case is associated with great thirst.

The tendency of all the causes of acute obstruction is to be permanent, and of their consequences to become aggravated, and in only very few cases can it be justly claimed that relief has been obtained by other measures than mechanical removal of the obstacle or the opening of the intestine above the occluded point. It is alleged that under the quieting influence of opium or of washing out of the stomach a volvulus may untwist, an internal hernia slip back, or a loop caught under a band free itself, but the cases advanced in support of the claim are very rare, and the diagnosis, of course, is not always beyond question. As a similar spontaneous relief is occasionally seen in external hernia, it can not be asserted that the occurrence is impossible, but it may well be doubted if it can happen after the acute symptoms are fully developed, and therefore it should not be counted among the possibilities, much less made the basis of treatment, in any fully developed case. From this statement three forms of occlusion may be in part excepted: intussusception, a stricture that has suddenly become occluded, and occlusion by fæcal accumulation. Not only is it believed that many of the colics of infants are attacks of intussusception that undergo spontaneous relief, but even in adults a few such cases have been observed in which the evidence may properly be accepted as sufficient. So, too, in a stricture that has become occluded, the passage is sometimes reopened by the forcing or softening of the plug or by a shift in the position of the intestine by which an associated kink has been diminished; and a fæcal accumulation may be relieved by the softening action of the catarrhal discharge set up by the irritation. Obstructing gallstones and enteroliths also may be spontaneously passed, but such cases are so extremely rare that the knowledge of their possibility is more likely to mislead than to be of service.

While this possibility of spontaneous relief or of relief by non-operative methods may only increase the doubts and difficulties of the attending physician in some cases by forcing him to choose between radically different methods of treatment without possessing the knowledge necessary to guide his choice and with the consciousness that an error in it may prove fatal, yet the associated fact that in all other cases it is sufficient simply to make the diagnosis of mechanical occlusion, without regard to the special form, is an important and valuable compensation. The details of this diagnosis will be considered by others. It belongs to my part of the subject only to call attention to the fact that the study of the causes of acute obstruction shows that all cases, after a short preliminary period of observation and expectation, may be grouped in two main classes: The first, and much the larger one, those in which relief can not be obtained except by active operative interference; and, second, those in which there is a possibility that it may be obtained by other means. Fortunately, too, in the second class the diagnosis can frequently be made with certainty. In intussusception and in stricture of the large intestine two symptoms are usually present which are found in no other form of obstruction—namely, tenesmus and the evacuation of blood or bloody mucus; and in the former, intussusception, it is also possible in the majority of cases to recognize a characteristic, sausage-like tumor by palpation through the abdominal wall, or perhaps to touch the end of the intussusceptum in the rectum. It is a great gain to be able to say that while the exact nature of the obstruction is unknown, yet it is certainly, or with great probability, of a kind that can not be relieved except by laparotomy.

Unfortunately, however, the question is not concerned solely with the discrimination of forms of obstruction; it concerns also—and this perhaps is the most difficult part of it and the part which has given rise to most of the uncertainty and hesitation in treatment—it concerns also, I repeat, the discrimination between actual occlusion and the functional occlusion or constipation which is so commonly seen in some acute abdominal affections. How can we learn surely to distinguish between the symptoms created by an acute occlusion and those similar ones, constipation, pain, shock, vomiting, meteorism, arising from external violence, acute typhlitis, perforative peritonitis from any of its varied causes, or the idiopathic peritonitis, if such there be, or the simple flatulent colic of children? Doubtless in some cases a careful study of the history and symptoms of the case will guide the physician to a correct diagnosis, but in many the doubt must remain notwithstanding careful and repeated examinations. The experience of such cases is common to us all. How often it has happened! The attending physician, fully alive to the dangers and alarmed by the severity of the symptoms, but unable to draw a positive diagnosis from them, calls a consultation. The patient is again examined, the history is retold, and the physicians retire to consult, but again no firm ground can be felt. Others are called in, but the multitude of counsel only adds to the uncertainty, for no two perhaps will give the same weight to any symptom, and the guess of each has so uncertain a basis that he is loath even to utter it. Each has known of similar cases that have got well, and none of them can say that the one before them is one of occlusion—one that certainly requires operation. Under such circumstances is it strange that they take refuge in expectation, for of two ills it is by common consent the less that a patient should die by the natural progress of his disease than that he should be killed by an attempt to cure him.

Concerning the frequency of these cases which closely simulate acute occlusion and the mortality which attends them I have been able to obtain no statistics, and yet there is, I think, good reason to believe that the recoveries in such cases in which the diagnosis has been in doubt are mainly responsible for the doubt, the hesitation, and the delay in the presence of actual occlusions that have been followed

by so many unavailing regrets and have reaped so many victims. And I venture in closing to suggest that the collective observation of this society and its constituencies would, if directed for a year or two to this matter, yield results of the greatest value.

## STRAMONIUM POISONING.

By W. F. CONNERS, M. D.,
OIL CITY, PA.

So little is written on poisoning by stramonium that the following case may not be devoid of interest to the medical profession:

On the evening of October 17th I was requested to see a mother and her six-year-old son, who were acting in a strange manner. I hastened to the house, and on arrival learned that about two hours before they had both partaken of some sage tea (as the mother supposed) for a cold. The husband and father said he went down town in the evening, leaving his wife sitting by the stove sewing and his son playing on the floor, and when he returned, after an absence of two hours, he discovered both wife and child staggering around the room, unable to sit or stand. Taking hold of his wife, whose mind was clear, he learned that she had taken, as she said, some sage tea, which at first made her head ache, and then she got so dizzy that she could do nothing but turn round. It seemed to her that she was trying to stand while the room seemed to spin around at a rapid rate.

Spreading a large quilt on the floor, he placed wife and child on it, and there they were when I arrived. They were apparently trying to walk around each other on their hands and knees, the head of each being forcibly inclined to the right, with a disposition to *manége* if left alone, showing the cerebellum in the vicinity of the peduncle to be particularly affected by the drug.

I left them on the floor while I instituted a search for the sage (?), and found a one-ounce package of stramonium herb, plainly marked, with three drachms missing, which I afterward learned was the amount the mother had used in a cup and a half of water, which was allowed to steep about ten or fifteen minutes before she strained it through a cloth, and, after adding some sugar, she gave the boy half a teacupful, drinking a full teacup of the decoction herself—*i. e.*, she had then taken the tea made from two drachms of the dried herb, while the boy had taken that of one drachm. Having now learned what the nature of the poison was, I examined the patients more closely. The pupils were dilated to the fullest extent; the eyeballs were suffused and devoid of expression; conjunctiva congested; the face flushed; the head oscillating from side to side when the patient was held, with a disposition to turn the head forcibly to the right; the mother muttering incoherently, in which the names of Georgie (her boy), sage, and George (her husband's name) were heard, while the boy would, at intervals of a few moments, utter a low, whimpering scream. I at once injected half a grain of morphine into the mother's arm, and a quarter of a grain into that of the son, and repeated it every half hour until four doses had been taken, supplementing the same with whisky and strong coffee without milk or sugar. Previous to giving the morphine I gave the mother a large dose of pulverized ipecac, followed by what tepid water she could be induced to take, without causing emesis. The boy fought us so that we could not give him any. After the second injection the vertigo was much less, and now a new train of symptoms set in in the mother and son. The former, who usually spent much time sewing, held her thumb and forefinger of the left hand up to a level with the eye, and with the right pointed to it, as one threading a needle; then, after a while, she grasped her dress with her left hand, and with the right went through the motions of sewing, stopping frequently to thread the needle as before. The son now would let no one touch him, and, if allowed to lie on the quilt, would remain quite still, while any effort to move or place the clothing over him excited resistance. The pulse at first in the mother ranged between 90 and 100, and was thready; in the boy, between 120 and 130, and lacked volume, which began to return on the administration of the morphine and whisky. After the fourth dose of morphine had been given, they both dropped into a quiet sleep, which lasted several hours. During all the time the mother would answer intelligently when spoken to, but would at once relapse into her confused state. I left them at 2.30 A. M., returning at 8 A. M., to find the mother suffering from an intense occipital pain, which lasted several days. The boy, who had several copious passages during my absence, was feeling quite well, though the pupils were still unusually dilated, and his face flushed. The mother was troubled with obstinate constipation, which required the free use of cathartics to overcome.

## Correspondence.

### LETTER FROM PARIS.

*The Diagnosis and Treatment of the Dyspepsias.—Boric Acid.*

PARIS, *February 8, 1888.*

THE most important communication made for a long time to the Academy of Medicine was one which Professor Germain Sée made a few weeks ago. I had the good luck to be present at some of his clinics at the Hôtel Dieu, where he gave the practical results of what he told the academy. It is almost certain that we must change almost all our notions in regard to stomach complaints, because the exact results of the new system of examination of the gastric juice will alter the uncertain diagnosis made by percussion, palpation, etc. Some few months ago a Dr. Günzburg, of Frankfort, spoke of a new reagent by means of which it was possible to detect hydrochloric acid in the gastric juice and not interfere with any other acid that might be present. This was phloroglucinevanilline. Nothing, however, was done in regard to the matter until Professor Sée took it up. It having been stated that cancer of the stomach showed a constant absence of hydrochloric acid as a sure sign, Dr. Sée feared that it would be like the famous sure sign of Romelaere, of Brussels, who maintained that cancer of the stomach was readily diagnosticated from an entire absence of urea in the urine. This sign amounts to nothing, for all patients who are in a state of inanition present the same condition as to the urea or the reverse, like the Austrian professor that Professor Sée likes to tell about, who ate four pounds of meat a day, and found eighty grammes of urea in his urine. This sign being worthless, Dr. Sée took to searching for the quantity of hydrochloric acid to be found in the stomach, with the result of making quite a discovery, for he found that there was an entire absence of this important acid in many serious maladies. For instance, in phthisis there seems to be constantly an absence of it in the stomach. The same is true in many cases of Bright's disease. The substance used is of a yellow-brown color, and the reaction is obtained by a single drop of it, which

in the presence of hydrochloric acid gives a bright-red color and deposits crystals of a reddish matter. The other acids—such as lactic or acetic—have no action. The chlorides also have no influence in changing the color. If, then, such an exact reagent has been found, we shall soon see if Van der Velden and the others who suppose cancer to present invariably an absence of hydrochloric acid are correct or not. In another group of cases of dyspepsia seen in many maladies there is also a want of acid. On the other hand, there are digestive troubles that are caused by a supersecretion of acid; for instance, in girls with chlorosis, who are cured so easily with large doses of alkalies. According to Professor Sée, dyspepsia is simply a *chemical* normal reaction that has failed, and the want of acid is the reason of it. The stomach, not performing its work as a chemical laboratory in a proper manner, simply compresses the food and passes it on to the intestine, allowing the albuminates to escape before they have been peptonized, owing to the fact that hydrochloric acid is absent. A second cause may also be present. It is more than likely, says Dr. Sée, that the state of the blood in uræmic, tubercular, and other patients is such that it does not furnish a normal gastric juice. Still, diabetic, albuminuric, and cardiac patients do not complain of the stomach not working well, and in the hospitals this part of their trouble is not even thought of by the physician, who prescribes for quite a different matter, while this may underlie all the patient's trouble. It is true that from time to time such patients complain of some indigestion, but little heed is given to it, and, as the intestine keeps up the stomach's work for a long time, these patients do not see that their nutrition is gravely compromised until it is too late. I can not now take up space enough to give more of the details of this interesting matter, but I propose to follow the experiments now being made daily at the Hôtel Dieu by Professor Germain Sée and his *chéf de clinique*, Dr. Durand-Fardel, and report hereafter. The method used is as follows: They give a patient two boiled eggs only in the morning, fasting, with a little water, and two hours afterward they withdraw with the stomach-pump (Dr. Potain's siphon is used) only a few cubic centimetres of the stomach secretion, and the reagent is tried at once. But I must hasten on to the therapeutical results given by Professor Sée. It must not be thought, he says, that the stomach is acid when patients complain of heartburn, or those well-known sensations of pyrosis, because in these cases the gastric juice may be neutral, or *but very slightly acid.* The only way is to make the test by sounding the stomach and using the reagent, as the administration of acid without doing so may cause most serious troubles. Again, even when there is no acid found, as in cancer cases, it does not mean that acid is indicated, for in such cases *everything is wanting*—all the functions of the stomach, not only the chemical one, but also the motor, and the formation of the gastric juice itself; so it is useless if not dangerous to give acid. The real domain of the acid treatment is in dyspepsias with very little acid, or where the organic acids predominate, and a gastritis of this class, or a dilatation of the stomach, where there is often an *overproduction* of organic acid. Hydrochloric acid in a solution of from three to five per cent. is used, from eight to ten drops being given in a large amount of water, and repeated two or three times in the course of the digestion, and even at the end of digestion. In regard to the alkalies, when needed, Professor Sée recommends soda to neutralize an excess of acid, and he finds that as much as 75 or 90 grains of sodium bicarbonate are generally needed, and this is to be repeated during the three hours of digestion, and continued for several days. Evacuants are to be used in cases of atony of the intestines and stomach; first of all, the well-known *lavage*, or washing out. But, if it is the intestine that is at fault, as in what Dr. Sée calls the *pseudo-dyspepsias*, then it is to laxatives and purgatives we must look. Why is it that these last have always enjoyed a good reputation in dyspepsias? Simply because the intestine often provokes the phenomenon of a "pseudo-dyspepsia of the stomach," but its seat is really in the intestine itself. In regard to the alimentary regimen in stomach troubles, Professor Sée passes them in review. Milk treatment, he says, is employed in all sorts of cases, and the stomach goes on dilating more than ever, and the poor patient, unless he is given at least four quarts daily, goes on getting thin, and, while he has no more pain or flatulence, inanition goes on. Care must be taken in regard to this, and Dr. Sée thinks that the only exact indication for milk in stomach complaints is when there is an ulcer. Patients with other complaints should have a mixed diet. Another favorite regimen is to give light, tender meats, and forbid vegetables and fats. Here, again, the patient runs the risk of inanition, and it is only to be thought of in those cases of dyspepsia where mucus is in too great quantity. In cases where hydrochloric acid is wanting, it is often dangerous to deprive the patient of such foods, as pastes, like macaroni and even dried peas and beans, may be allowed if they are carefully peeled and made into a mash. Potatoes may be used if well cooked under the ashes. On the other hand, in the acid states, meat is to be given on all occasions, and fish of all kinds can be added. In conclusion, M. Germain Sée recommends giving up alcohol and drinking tea, which is no doubt good for French people, *who never use it.*

Dr. Gaucher gives some interesting experiments he has made to test the toxic power of boric acid. It is important to know this, owing to the large use made of this substance as an antiseptic. After a number of tests on animals it was found that it would require as much as 75 grammes (more than two ounces) of boric acid, given for ten days, to poison a man. As this enormous amount is never used, only a feeble proportion of it being needed, it may be stated that boric acid is not poisonous in medicinal doses. This being so, and as it is not caustic or irritant, and is besides without taste or smell, there seems no reason why it should not be employed whenever an antiseptic is needed. Dr. Gaucher found that he had only to use a pomade of three parts of boric acid to thirty of glycerole of starch in place of the highly scented oil of cade, to get better effects in impetigo and other skin diseases. Again, in cases of phthisis where there was a fœtid expectoration, doses of seven or eight grains of boric acid were used, with the result of not only destroying the fœtid smell, but also of diminishing the expectoration and causing it to become more fluid in its nature. As this drug is eliminated by the urine, it has also been given internally in cystitis, in fifteen-grain doses, with considerable benefit. Surgeons have given it in injections, some using borate of soda. Boric acid is not astringent, as borax is; so it should be preferred. Its use in fœtid catarrhs and in other forms of catarrh is indicated locally, but its internal use is the point that is insisted upon at present, when it is now made certain that its poisonous properties have been much exaggerated.

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**Apothecaries' Latin.**—"A Berlin contemporary informs its readers," says the "British and Colonial Druggist," "that the famous surgeon, Dr. Esmarch, is the leader of an attack upon 'Apothecaries' Latin,' and he is supported in this campaign by several of the most eminent physicians and medical professors in Germany. He asks why a foreign tongue should still be employed by physicians in writing their prescriptions, when a general expulsion of foreign terms and phrases, and the substitution of their German equivalents, has become the order of the day. A pharmaceutical lexicon is being prepared for the use of doctors and chemists, so as to assist them in prescribing and making up prescriptions in the tongue understood by the people."

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## ACUTE HEART DISEASE IN THE YOUNG.

In the treatment of children one can not bear too intently in mind the fact that in the young acute diseases of the heart are not infrequently overlooked because few if any subjective symptoms are presented. The same remark applies with equal force to rheumatism—one of the fruitful sources of heart disease—at that period of life. Many a child is treated for "gastric fever" which, if thoroughly examined, would be found to have swollen joints and other evidences of acute rheumatism—of course, without the intense pain observed in the adult. It is this absence of pain that proves the stumbling-block, for the physician, unless he happens to be one who sees a great deal of children's diseases, is apt to associate the febrile symptoms with almost any other diseased condition than articular rheumatism, because in the adult agonizing pain stands out as so prominent a feature in that affection.

In a clinical lecture recently published in the "Revue générale de clinique et de thérapeutique," by M. Jules Simon, that well-known teacher treats of acute cardiac diseases of rheumatic origin in children. Pericarditis and endocarditis, he remarks, are not at all uncommon during an attack of articular rheumatism in infantile life. The acute pericarditis of childhood does not manifest itself by anxiety, orthopnœa, and painful palpitation, as in adult life, and tenderness on pressure is not so common; but, on the other hand, the physical signs are more pronounced, owing to the thinness of the chest wall. A friction sound, fremitus, and tumultuous action of the heart are prominent features. If effusion occurs, the heart sounds will become feeble and distant, and the situation of their maximum intensity will be changed. The pericarditis is often complicated with endocarditis, and then, in addition to the physical signs already mentioned, a soft blowing murmur will be heard with the first sound. As there may be no disturbance of the circulation or respiration, there will be no congestions, œdemas, or dropsies, as in older subjects. When acute endocarditis occurs alone, it displays the same absence of functional manifestations and the same accentuation of the physical signs. The author draws attention to the much more favorable prognosis of these conditions in the very young than in the old and the middle-aged; the endocarditis may undergo complete cure, the murmur disappearing and the hypertrophy even being compensated for by development of the chest and other parts of the body. A fatal termination is extremely rare.

In the treatment, Simon recommends, in very robust children, the application of leeches over the precordial region; and, in others, dry-cupping or frictions with a liniment containing chloroform, hyoscyamus, and conium. When all tenderness on pressure has disappeared, he warmly advises vesication, which is to be carried out by daily applications of small blisters; the blistered part is to be poulticed and afterward dusted with boric acid. Internally, he gives squill and *Convallaria majalis*, but, if there is painful palpitation, he also gives bromide of potassium for three or four days. The diet should consist of milk and bouillons so long as there is any fever. The affection requires about two months of continuous care to lead to convalescence.

A lecture by M. Villard, on diseases of the heart at different ages, published in the same number of the journal mentioned, is interesting in connection with Simon's. Villard also calls attention to the insidious character of cardiac diseases in early life, and to the absence of subjective symptoms. Rheumatism, he thinks, is comparatively rare in infancy, but there are other sources of heart disease—the eruptive fevers, chorea, and whooping-cough. Endocarditis has been observed even in fœtal life, and an interesting feature of it is that it affects the right side of the heart by preference. This has been explained by the greater strain that the right heart has to bear in the fœtus; but it has also been maintained that the disease is due to micro-organisms entering the fœtal circulation from the mother's blood and naturally being carried first to the right cavities of the heart.

Villard's views on the prognosis and treatment coincide in the main with Simon's, and both authors' remarks teach an important lesson; in all cases of eruptive fevers, chorea, whooping-cough, or rheumatism in children, auscultation of the heart should be practiced from day to day, and the physician should be constantly on the lookout for cardiac lesions. Although their immediate significance is not very serious, their early detection and timely and proper treatment lead to their perfect cure—a result that does not always happen when they are left to nature, as witness the many cases of cardiac disease in adolescents that can be traced back to the first years of life.

## *MINOR PARAGRAPHS.*

### THE SKIN AND CANCER HOSPITAL.

The "Fifth Annual Report" of the New York Skin and Cancer Hospital, recently issued, gives evidence of the continued usefulness of that institution. During the past year a country branch was opened at Fordham, as we informed our readers at the time, and that feature of the hospital will unquestionably prove a great public benefit. The fact that the institution is without an endowment gives it a decided title to be made one of the principal channels through which the gifts of the benevolent may be made to reach the poor who need the benefits of such a hospital.

### THE PHYSICIANS' MUTUAL AID ASSOCIATION.

We are glad to learn, by the "Nineteenth Annual Report" of the New York Physicians' Mutual Aid Association, of the continued prosperity and increasing usefulness of the organization. In a few months it will be twenty years since the association was organized. At the date of the report, November 10, 1887, its members numbered 471. The membership has in-

creased steadily in numbers, but, as the retiring president, Dr. George A. Peters, remarked at the last annual meeting, it is still far behind what it should be. The association's field now is the whole State of New York, and every eligible member of the profession ought to join it; those who are not secure against want should join for prudential reasons, and others as an act of kindness to their less favored brethren. The affairs of the association have always been well managed, and there is every reason to believe that it will continue to deserve the confidence of the profession.

## THE MICHIGAN LABORATORY OF HYGIENE.

Some months ago we expressed our confidence in the usefulness of the laboratory of hygiene which the Michigan State Board of Health was about to establish. In this feeling we are confirmed by the account given in the "First Quarterly Report" of the investigations that have already been carried on. They comprise an inquiry into the ætiology of typhoid fever, with special reference to an outbreak in the village of Iron Mountain, and a further examination into the subject of cheese poisoning, both by the director of the laboratory, Dr. Victor C. Vaughan; also an "Exposure of the Stenocarpine Fraud," by Mr. F. G. Novy. According to this gentleman's analysis, "gleditschine" ("stenocarpine") solution contains 6 per cent. of cocaine hydrochloride, 0·50 per cent. of atropine sulphate, and about 0·33 per cent. of salicylic acid. It is to be hoped that the Michigan Legislature will soon see the propriety of endowing the laboratory with more adequate funds.

## RURAL SANITATION.

We are glad to learn that a sanitarian so competent and so highly respected as Dr. Ezra M. Hunt, of the New Jersey State Board of Health, has issued a circular calling popular attention to the dangers attendant upon insanitary arrangements among the agricultural population, who, as he justly remarks, too often take it for granted that the mere fact of its being situated in the country is a sufficient guarantee of the healthfulness of a home.

## LACERATION OF THE CERVIX UTERI.

Dr. Emil Noeggerath, formerly of New York, now of Wiesbaden, has contributed to the "Berliner klinische Wochenschrift" an article giving the results of his inquiries into the pathogenetic effects of lacerations of the cervix uteri. According to a summary published in the "Lancet," Dr. Noeggerath sums up his conclusions as follows: "1. Women with lacerations are more prone to conceive than those without; they also are less liable to miscarry. 2. The position of the uterus is not affected by lacerations. 3. The axis of the uterus is not elongated in consequence of lacerations. 4. Erosions and ulcerations are as common in one class as in the other, and disease of the cervical tissues is not more common in lacerated than in unlacerated cervices. 5. Lacerations have no influence in producing uterine disease, either as regards frequency or intensity. 6. Eversion of the lips is never the direct result of a laceration. The restoration of the shape of the cervix can have no influence on the uterus."

Some of these conclusions are startling, and we have little doubt that they are all erroneous. If the first of them is correct, it is difficult to conceive why the Almighty did not send every woman into the world with a split cervix. Although the present tendency here in America is toward moderation in recommending the operation of hystero-trachelorrhaphy, we shall be surprised if some of those who justly appreciate its value do not undertake before long to show the fallacy of Dr. Noeggerath's reasoning. It is true, however, that the necessity of such a vindication is not very apparent, especially as Dr. Noeggerath's propositions do not seem to have carried conviction to those present at the meeting at which his paper was read, if we may judge by the reports of the discussion in the German journals.

## A HANDY CURE FOR HICCOUGH.

There may be some occult connection between hiccough and the auditory apparatus. Not long ago we published an account of somebody's method of stopping hiccough by applying a drop of water to the external ear. Now Dr. Dresch, of Foix, in France, has written a letter to the editor of the "Bulletin général de thérapeutique," in which he describes another method, almost as simple, also relating to the ear. Dr. Dresch states that the procedure was not original with him, but that he can not remember how it was made known to him. The method is as follows: The sufferer should close his external auditory canals with his fingers, exerting a certain degree of pressure; at the same time he is to drink a few sips of any liquid whatever, the glass or cup being held to his lips by another person. The effect is said to be immediate.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 21, 1888:

| DISEASES. | Week ending Feb. 14. | | Week ending Feb. 21. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 14 | 2 | 8 | 5 |
| Scarlet fever | 160 | 21 | 160 | 27 |
| Cerebro-spinal meningitis | 2 | 2 | 4 | 4 |
| Measles | 64 | 10 | 55 | 10 |
| Diphtheria | 187 | 54 | 135 | 34 |
| Small-pox | 7 | 0 | 2 | 1 |

**Dr. Sands's Case of Laparotomy.**—As we go to press, Dr. Sands informs us that a letter has just been received from the patient (a boy of eleven years) whose case is reported in this issue, stating that the wound is entirely healed.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 5 to February 18, 1888:*

Janeway, John H., Major and Surgeon, and Hopkins, William E., Captain and Assistant Surgeon. Detailed as members of the Army Retiring Board in San Francisco, Cal., convened by S. O. 168, A. G. O., July 22, 1886. S. O. 28, A. G. O., February 4, 1888.

Jarvis, Nathan S., First Lieutenant and Assistant Surgeon. Ordered from Fort Lewis, Colorado, to Fort Leavenworth, Kansas. S. O. 30, A. G. O., February 7, 1888.

Arthur, William H., Captain and Assistant Surgeon. Leave of absence extended two months. S. O. 35, A. G. O., February 13, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy during the week ending February 18, 1888:*

Olcott, F. W., Assistant Surgeon. Detached from the Minnesota and ordered to the Atlanta.

Heyl, T. C., Surgeon. Ordered to the Receiving-ship St. Louis.

Martin, H. M., Surgeon. Detached from the St. Louis and ordered to the Swatara.

Webster, Charles F., Assistant Surgeon. Ordered to the Receiving ship Vermont.

Field, James G., Assistant Surgeon. Detached from the Vermont and ordered to the Swatara.

Whiting, Robert, Passed Assistant Surgeon. Detached from the Iroquois and ordered to the Coast Survey.

Tracy, Elmer C., Assistant Surgeon. Resigned, to take effect immediately.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending February 18, 1888:*

Wasdin, Eugene, Passed Assistant Surgeon. Relieved from duty at Marine-Hospital, Chicago; ordered to Marine-Hospital, Mobile, Ala. February 16, 1888.

Norman, Seaton, Assistant Surgeon. Relieved from duty at Marine-Hospital, New York, to assume charge of the service at Evansville, Ind. February 6, 1888.

**Society Meetings for the Coming Week:**

Tuesday, *February 28th:* Boston Society of Medical Sciences (private).

Wednesday, *February 29th:* Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *March 1st:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *March 2d:* Practitioners' Society of New York (private).

Saturday, *March 3d:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

OBITUARY NOTES.

**James Craig, M. D.,** of Jersey City, died on Friday, the 10th inst., in the fifty-fifth year of his age. The deceased was a native of Scotland and a graduate of the Medical Department of the University of the City of New York, of the class of 1861. Dr. Craig was a practitioner of marked acumen and good judgment, also a man of originality of ideas, as was exemplified by the few articles of his that we have published, all of which were of an eminently practical character.

# Letters to the Editor.

## SULPHICHTHYOLATE OF AMMONIUM IN THE TREATMENT OF PELVIC INFLAMMATIONS.

163 Clinton Street, Brooklyn, *February 20, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: Permit me to call the attention of your readers to this use for a drug that is now attracting such general attention. I had been using the remedy for burns for several years, and determined lately to test its efficiency on inflammatory masses in the pelvis. The results have been more than encouraging—they have been astonishing. The first case for which I used it was one of left pyosalpinx. Of the diagnosis I am positive, having had the case under careful observation for more than a year. The patient had been pronounced by me well, when, to my disgust, the inflammatory symptoms returned with the left-sided hard mass and purulent discharge. She was confined to her bed and suffered very much from the pain. I saturated a pledget of cotton with a solution of ichthyol of about one per cent., and placed it against the mass, and the next day the patient was able to attend to her household duties.

I have now used the sulphichthyolate of ammonium in seven cases of intractable pelvic inflammation, and with all obtained relief; in four with particularly happy results. From this experience I believe we have an agent that will prove of the greatest benefit in those most troublesome cases for the gynæcologist.

A. H. Buckmaster.

# Proceedings of Societies.

## NEW YORK SURGICAL SOCIETY.

*Meeting of January 25, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**Case of Arterio-venous Aneurysm of the Left Common Carotid and Internal Jugular; Recurrent Pulsation after Ligature of the Common Carotid.**—The President presented a patient upon whom he had operated four years ago last October for the cure of arterio-venous aneurysm resulting from a stab-wound of the neck. The case had been reported in full in the "American Journal of the Medical Sciences" for April, 1884. A communication between the vessels still persisted, and the bruit, which returned slightly a few days after the operation, was now as loud as ever. It could be heard nearly as high as the ear and as low as the clavicle, and was arrested by pressure below the angle of the jaw.

In reply to a question by Dr. H. B. Sands, the reporter stated that the small, deep veins, probably the middle thyreoid, encountered in the operation were distended, but that there was no sac between the artery and vein, and no appreciable dilatation of the internal or external jugular vein.

Dr. J. A. Wyeth asked regarding the location of the aneurysm with reference to the point of bifurcation of the common carotid.

The President replied that it was situated about half an inch below that point.

Dr. Sands called attention to the fact that the bruit was arrested by pressure above the clavicle.

The President thought it was to be accounted for by arrest of the flow in the internal jugular.

**Radical Cure of Hernia.**—Dr. C. McBurney presented a patient with the following history: H. T., aged thirty-two, was admitted into St. Luke's Hospital on February 1, 1887. He had a large left inguinal reducible hernia of three years' standing. The operation was performed on February 7th. The sac was found to be congenital and empty. The canal was split up as far as the internal ring, the sac was tied off at that point, and the wound was treated as in the cases reported in a recent paper by the speaker. (See the "New York Medical Journal" for January 21, 1888, page 57.) On April 4th the wound was entirely healed, and the patient was discharged on May 4th without a truss. The speaker referred to the paper which he had read at a meeting of the society on December 28th, entitled "The Radical Cure of Hernia, with Especial Reference to the Open Treatment of the Operation Wound," and explained that the present patient was No. XI of the series, whom he had been unable to trace up to that time.

In reply to questions by Dr. Wyeth, the reporter said that he had divided the anterior wall of the canal from the external to the internal ring. All of the tissues on one side of the wound were sewed together, and then all of those on the other side, so that the canal necessarily became filled by cicatricial tissue.

Dr. Sands asked if the patient had been engaged in hard work since the operation, in order that the permanency of the cure might be tested.

Dr. McBurney replied in the affirmative, and added that the patient had been especially told not to wear a truss, as the pressure made by a truss was apt to cause thinning of the cicatrix.

**Outward Dislocation of the Knee; Recovery, with Perfect Use of the Limb.**—Dr. W. T. Bull showed a patient who had received a severe blow on the inner side of the knee while wrestling, causing outward dislocation of the tibia. It was reduced under ether by flexing and bringing the tibia forward. After reduction it was found that the internal lateral ligament had been torn. The patient was treated for six weeks at the Chambers Street Hospital, and when discharged he had a stiff joint, but now (three years and a half after the accident) its function was perfect, and the muscular development of the leg was normal. It was interesting to note such a good result after this somewhat rare lesion. (The case was reported by Dr. Jessup in the "New York Medical Journal" for January 3, 1885, page 12.)

Dr. McBurney asked if the patient had been at work since the accident.

Dr. Bull replied that he had probably resumed his duties as an engineer soon after he left the hospital.

Dr. McBurney suggested that after such an injury flexion and extension alone might occur without the actual repair being complete. If a real test of the strength of an injured joint was made, it might be found that it was still weak. Patients with dislocation of the shoulder might recover and after several months have a fresh dislocation, showing that the normal condition of the joint had not yet been fully restored. He said that if the lateral ligament was torn away together with the periosteum, firm union might result.

Dr. Bull said that it had been impossible to ascertain exactly. He said that the case was of peculiar interest as regarded the question of prognosis in cases of rupture of the internal lateral ligament. He would expect that the joint would always be weak, and that there would be some lateral motion. He always treated cases of rupture of the lateral ligaments with apparatus for at least six weeks, since for union of the torn ligament as much time was required as for union of bone.

**Two Cases of Exsection of the Astragalus for Caries; Recovery with Good Motion.**—Dr. Wyeth showed a patient upon whom he had operated two years and a half before, removing the astragalus, the lower end of the tibia and fibula, and a portion of the os calcis. Fixation of the bones was obtained by means of a long steel drill, which extended up into the tibia. In this case the disease affected the astragalus, the articular surfaces of the tibia and fibula, and the calcaneo-astragaloid articulation, but was probably not tuberculous. The patient made a good recovery, and was able to walk perfectly well.

The second case was that of a patient (a young man) upon whom he had operated a year before for tubercular osteitis of the astragalus. In this case the posterior planes of the scaphoid and cuboid bones were removed and, as in the preceding case, the upper surface of the os calcis was chiseled off. The patient had not been allowed to walk very much, and the recovery was perfect.

In reply to a question by Dr. Sands, the reporter stated that the disease had begun in the astragalus in both instances; in the last case the astragalo-scaphoid articulation was involved.

Dr. R. Abbe asked if it was easy to remove the astragalus entire.

Dr. Wyeth replied that he had removed it piecemeal with a common chisel, as by this method the operation could be easily done through a small incision.

Dr. McBurney asked if the disease was so extensive as to justify the removal of so much bone.

Dr. Wyeth replied in the affirmative.

**Division of the Brachial Plexus; Suture of the Divided Ends.**—Dr. Sands presented a patient with the following history: John S., aged twenty-one, single, a painter by occupation, accidentally stabbed himself above the middle of the left clavicle on November 29, 1887. Profuse bleeding followed, but it was readily checked. Immediately after the injury many of the muscles of the left arm became paralyzed. Some hours later the patient began to experience burning pain in the first three fingers of the corresponding hand. He was admitted into the Roosevelt Hospital on December 17th. There was a cicatrix an inch and a half long on the left side of the neck, extending along the outer margin of the sterno-mastoid muscle; the artery pulsated beneath it. There was loss of reaction to the faradaic current, and the galvanic showed An C C > K C C, the affected muscles being the deltoid, biceps, coraco-brachialis, and supinator longus. There was loss of faradaic reaction in the infraspinatus, pectoralis major, and extensor carpi radialis longior, but no change in the galvanic. Sensation seemed to be diminished over the skin-area supplied by the musculo-spiral and circumflex nerves. On December 24th the brachial plexus was exposed by making a V-shaped incision, one branch of which extended along the outer edge of the sterno-mastoid, the other along the upper border of the clavicle. The clavicle was then sawed through, and the plexus was reached after long and tedious dissection. The external jugular vein was accidentally divided, and a small amount of air entered it, but no harm resulted. The large vessels were felt, but were not seen. It was found that the external bundle of nerves, which appeared to be derived from the fifth and sixth cords, had been divided just above the clavicle; at the point of division the bundle had divided into three parts, and two of the lower ends had retracted below the clavicle, where they were included in cicatricial tissue. The divided ends were freshened and brought into apposition by means of four catgut sutures, which were passed directly through the nerve-substance. The sawn clavicle was then wired, and the arm was secured across the chest with a plaster-of-Paris bandage, the head being also fixed. On January 1st the plaster splint was removed. On the 7th the patient had some pain in the fingers; the wound had healed, with the exception of a small sinus. On the 10th the wire was removed from the clavicle. On the 18th the patient had had no pain for some time; his forearm was kept in a sling, galvanism being applied daily. A careful examination of the affected muscles showed that the natural reaction was returning; there was no response to the faradaic current, while the galvanic showed K C C > An C C. The patient could use his arm no better than before, but would doubtless improve. The reporter stated, in conclusion, that Schede had practiced division of the clavicle in removing cancerous glands from the neck. It caused no mutilation, and gave much additional room. Dr. Markoe had reported a similar case, in which a child had suffered injury of the fifth and sixth nerves at a point higher up in the neck. In reporting this case before the society, Dr. Markoe had referred to the great difficulty attending the dissection. His patient had improved, but not until after some time had elapsed.

Dr. Abbe referred to a case that he had reported two months before, in which he resected an inch and a quarter of the musculo-spiral nerve and sutured the ends with silk. There was no improvement at the end of six weeks.

Dr. Sands said that this was too soon to expect improvement.

In reply to a question by Dr. Wyeth, Dr. Sands said that he preferred to use catgut in suturing nerves, because it did not act as a foreign body within the nerve.

Dr. Wyeth said that when there was much tension he preferred to use silk.

Dr. Abbe remarked that the nerve-sheath was strong, and could sustain a good deal of tension.

Dr. Wyeth cited the case of a patient, whom he had seen in consultation, who had had paralysis resulting from the pressure of a callus after fracture. After removal of the callus, the function of the limb had been restored.

Dr. McBurney did not think that silk sutures would hold any better than catgut.

Dr. Wyeth had found that catgut was apt to become softened, so that the knot slipped, especially when even slight tension was made on it, and therefore, when accurate coaptation was demanded, he gave preference to iron-dyed silk sutures.

**Acute Meningitis following Otitis Media Purulenta.**—Dr. Abbe exhibited a portion of a temporal bone, and narrated the following history: Two weeks before, the patient (a boy of seven years) had suppurative otitis media, with a temperature of 103·5° F. on the third day. There were œdema and tenderness over the mastoid process. On the fourth day pus was discharged from the ear and the temperature fell to normal, the œdema disappearing. Thirty-six hours later the discharge ceased, the fever returned, and the patient became delirious, so that a cerebral complication was suspected. At the end of a week the patient had a mild typhoidal delirium at night, his sight failed, and there was slight ptosis on the side of the recent ear trouble; choked disc was marked. The pupils were evenly dilated and responded to light. There was hyperæsthesia of the left arm and leg, with tender spots over the body. The mind remained clear until the end of the twelfth day. As the symptoms seemed to point to abscess, an exploration was advised, but the family would not consent. The autopsy revealed purulent meningitis of the base of the cerebrum and the lower surface of the cerebellum; there was no evidence that the pus had extended from the ear, there being none within the middle ear, although the tympanum was perforated. The internal auditory canal showed streaks of pus following the course of the nerve.

Dr. Sands thought that the history of the case furnished a clew to the diagnosis. Purulent meningitis most often followed suppuration of the middle ear.

Dr. J. D. Rushmore asked if there was double choked disc.

Dr. Abbe replied that he had only been able to make it out clearly in the eye of the affected side.

## OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Meeting of February 2, 1888.*

The President, Dr. Thomas M. Drysdale, in the Chair;
Dr. J. M. Baldy, Secretary.

**Non-papillary Intraligamentous Cysts.**—Dr. B. F. Baer showed a specimen and gave the history of the case. The tumor in the right broad ligament had been enucleated entire, but only the lining membrane had been removed from the left ligament.

Sessile tumors, the speaker remarked, whether cystic or solid, were always more or less dreaded by operators, because of the greater difficulty and danger attending their removal, and also because, in the case of sessile cysts, the result as to the permanent relief of the patient was less certain than where the tumor had a pedicle. Clinically and pathologically, therefore, these cases were of great interest and importance. Pain and hæmorrhage were the important subjective symptoms. The former was usually present, sometimes in great severity; the latter was at times alarming, in the quantity of blood lost, and in the frequency of its recurrence. This was not surprising, considering the close relation which these tumors sustained to the uterus and to the other pelvic organs and tissues. The wedging and pressure which resulted from the growth of the tumor in a limited space produced great congestion of the blood-vessels from stasis. The uterus became enlarged and softened in consequence, and metrorrhagia followed; but the hæmorrhage was conservative to a certain degree, in relieving the distended vessels, probably averting rupture of a vein in the broad ligament or in the tumor. The pain which resulted from the tension and stretching of the nerves involved was also relieved or modified by the depletion attending a free hæmorrhage from the womb. But the flow, once started, did not always remain within the conservative line; it sometimes became uncontrollable and resulted in acute and serious anæmia. According to Doran, sessile cysts which arose from the hilum of the ovary or from the Wolffian relics in the broad ligament were usually papillomatous; but that non-papillomatous sessile cysts infiltrating the broad ligament were not infrequently met with was shown by a statement quoted from that author. Further, the ordinary pedunculated multilocular cyst of the ovary sometimes contained papillomatous growths, the result, possibly, of stray Wolffian relics. The speaker had presented at least one such specimen to the society, and had seen others. On the other hand, the multilocular ovarian cyst without papillomatous material had been found, in rare instances, to have invaded the hilum and the broad ligament in its growth.

The case now reported was that of Mrs. X., who had been sent to the speaker by Dr. O. H. Adams, and had entered his private hospital in April, 1887. She was thirty-two years of age, and had had three children, the last two (twins) eight years before. Following her last labor she had puerperal mania, which led to her confinement in an insane asylum for four months. Four years ago she began to have attacks of sharp pain in the right ovarian region, radiating to the groin and down the anterior portion of the thigh. The pain was intermittent in character and cramp-like, lasting hours at a time, and was usually followed by a purulent, fœtid discharge from the vagina, which afforded her great relief. At other times the attack ended with a profuse metrorrhagia, which left her pale and weak, but free from pain. About two years before coming under the speaker's care she first noticed a lump in the right groin, which gradually increased in size. Some time after she noticed a similar growth above the left groin. She was considerably emaciated, and looked very ill. Examination revealed a tumor as large as a child's head in the right iliac region, and a smaller one in the left ovarian region. The tumors seemed to be fixed in the pelvis, and to have a broad base of attachment. They were immovable below, but mobile above and semi-fluctuating. Vaginal examination showed them to be so deeply attached in the pelvis and so intimately related to the uterus that he was unable to complete the diagnosis without anæsthesia. The patient was therefore placed in bed and ether administered, when it was found that the uterus was elevated by the tumor on the right side, with which it was connected. There was evident fluctuation, though the tumor was thick-walled and very firm, almost hard. The lower

surface occupied the position of the broad ligament at the side of the uterus. The same condition existed on the left side, but to a lesser degree. He diagnosticated sessile cystic disease of both ovaries or broad ligaments, and advised an immediate operation. On April 13th he operated with the assistance of Dr. Daniel Longaker. When the tumors were exposed they were found to be so closely connected with the womb that they seemed to be one mass with that organ, which rested like a wedge between them. The Fallopian tubes extended outward over the upper surface of the tumors, while the broad ligaments and the greatly distended veins of the pampiniform plexuses were expanded so as to apparently envelop them, the whole presenting a dark, purple appearance which was not at all reassuring. After separating some slight adhesions on the posterior aspect of the larger tumor and rolling it forward, the nacreous surface common to the multilocular ovarian cyst was exposed to view. Selecting a spot on this free surface, because it was less vascular, he plunged a trocar into it, when about two pints of a tarry-looking fluid drained away. A more thorough investigation, which the diminished size of the tumor now made practicable, showed it to be adherent to the cæcum also. Before beginning the enucleation, he passed a long blunt needle armed with a double ligature through the expanded broad ligament at its least vascular portion, between the uterus and the tumor and as far below the Fallopian tube as could be done with safety. One side of the ligature was then drawn up and tied close to the uterus, including within its grasp the tube and vessels. Thus insured against hæmorrhage from that source, he cut through as far as the ligation extended and continued the enucleation down to the base of the tumor, and then outward, finally separating it from the head of the colon. There was some bleeding from the numerous veins which were broken, but this was readily controlled with catch forceps and ligatures. Attention was now given to the tumor on the left side. This was found to be deeply imbedded in the pelvis and firmly fixed to the uterus, the Fallopian tube, the descending colon, and the rectum. The upper surface was covered with a network of distended veins, some of them as large as a quill. Enucleation of this tumor seemed too hazardous, and hysterectomy was out of the question, for to do the latter the tumor must first be dissected from the colon and the pelvic floor, which was not practicable. He determined, therefore, to remove the contents of the cyst by aspiration and then to shell out the lining membrane, or, failing in this, to insert a drainage-tube into it. But, while he was endeavoring to find a portion for puncture, his finger passed into the tumor low down on the posterior border of the broad ligament. Instantly the parts were flooded with a tar-like, semi-fluid substance similar to that which had been removed from the cyst on the right side. This was removed as quickly as possible by sponging. He then passed his finger through the opening which he had thus accidentally made, and, after a careful and gentle dissection, succeeded in removing the entire secreting surface of the cyst. Blood was now flowing from the small valvular opening in the broad ligament, but, as it was apparently venous, he hoped to check it by compressing the now flaccid folds of the broad ligament. For this purpose several large sponges were inserted and external pressure was made upon them while the abdominal sutures were being placed. The sponges were then removed. There was still a slight flow of blood, but, as it was doubtless only a venous oozing, he concluded to close the wound and trust to pressure and the drainage-tube. The patient was placed in bed and the tube carefully watched. During the next two or three hours several teaspoonfuls of quite bloody serum passed through it; after forty-eight hours the tube was removed. The patient made a slow but good recovery, and went home six weeks after the operation. She was entirely relieved of her former sufferings, and her weight and strength were regained.

**Splenectomy.**—Dr. William Goodell reported the case of Mrs. R., forty years old, who had had malarial fever in early life, but after her marriage, eighteen years ago, went to live in a healthy country town, and had had no return of the disease. She had two children. At the birth of the younger one, seven years ago, she had serious flooding and was confined to bed for six months from excessive prostration. Since that time she had never been well, being weak and miserable. Her monthly periods were always free and generally painful. Last March she had a very severe attack of what her physicians called malarial fever, and her life was threatened by repeated attacks of hæmatemesis and hæmoptysis. A sore tumor was now discovered, which was pronounced to be a uterine fibroid, and she was sent to the speaker. He found the womb pushed low down and retroverted by a solid tumor, which started from the region of the right ovary and ran diagonally toward the splenic region. It entered the pelvis so low as to cause bulging of the anterior wall of the vagina. The womb seemed to be independent of the tumor, for the former could be moved about freely with the sound. Yet, when the tumor was pushed upward, it conveyed motion to the womb, drawing it also upward. The patient was never free from pain in the tumor, and her complexion was markedly cachectic. The diagnosis was made of sarcoma, either of the right ovary or of the omentum. At the operation a very long incision was needed, reaching not quite up to the ensiform cartilage. The tumor was of a dark-purple color and was attached in every direction by very long, tortuous, and wholly denuded vessels, which looked like the largest earth-worms and were of analogous length. Most of the vessels came from the omentum, which had disappeared, apparently by being incorporated with the tumor and by having its connective tissue and fat removed by absorption, leaving the blood-vessels bare. These vessels were either single or else grouped in large bundles, and had all to be ligated. By them the tumor had evidently been nourished, for what looked like a pedicle was slender, long, and twisted. It was lost in such a mass of livid veins that the speaker did not dare to follow it up to its source. He was so uncertain of the diagnosis that he sent the specimen to Dr. Formad, who pronounced it a leukæmic spleen. It weighed not quite six pounds. The woman did well for four days; then symptoms of embolism set in, the sputa became streaked with blood, and she died on the sixth day. So far as he could learn from the literature on the subject, his case made the eighteenth in which a leukæmic spleen had been removed, and all the patients had died save one.

Dr. R. P. Harris said that the case of recovery after the removal of a leukæmic spleen had occurred under Dr. Franzolini, of Italy. The proportion of leucocytes was small, which probably accounted for the recovery. The diagnosis had been made before the operation.

Dr. Parish had a few years ago seen a case of the late Dr. Wallace's in which a diagnosis of fibroid of the uterus had been made. A tumor the size of the two fists was found near the side of the uterus. The patient developed peritonitis and was tapped by the assistant physician. Some dark fluid was withdrawn. Death took place a few months after, the peritonitis having been cured. At the autopsy the spleen was found adherent to the uterus and to the pelvic brim.

Dr. Goodell called attention to the hæmoptysis and hæmatemesis in his case, which were the usual symptoms of a leukæmic spleen; but he had not been informed of them until after the operation, and therefore had not had that clew to a diagnosis.

*(To be concluded.)*

## ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

*Fourth Meeting, held in New York, January 18, 1888.*

The President, Dr. William H. Baker, of Boston, in the Chair.

**The Use of the Vaginal Tampon in the Treatment of certain Effects following Pelvic Inflammations.**—Dr. Thomas Addis Emmet read a paper on this subject (see page 169).

Dr. Bache McE. Emmet would make a distinction between the active tampon and the passive, so to speak. In general, he had observed nothing but benefit from the use of cotton pledgets, elevating the uterus, making pressure on the lymphatics and blood-vessels, and supporting displaced organs in whatever position he might have placed them, but he realized how much harm might come from the active tampon, from injudicious pushing and stretching of fibrinous bands within the pelvis. He thought that as much injury might be produced by the forcible manual overstretching of adherent bands and fibers in replacing, for instance, the uterus from a state of retroversion to that of the normal anteversion, as by the use of the Simpson or Peaslee sound for the same purpose. This implied degree of force was not of necessity brought to bear in using the tampon for *progressive* pressure; yet, as the immediate results were proportionate to the violence applied, one might be led to make too free use of one's power, and so to frustrate one's plan of progress, by creating an activity of resistance in parts which before had been indolent and inert. To consider how far this mode of treatment might prove serviceable, it was essential, in the first place, to define accurately those inflammations which might properly be subjected to it, and, in the second place, to make sure of the correctness of the diagnosis in each individual case at the time of applying the treatment. He had never made use of the tampon in the treatment of actual pelvic inflammation, but only to do away with its remains and to overcome its effects. In the acute inflammation the element of rest must enter so largely into the consideration of the case that this treatment was practically contra-indicated. Were it practicable to apply such a method at the very inception of a lymphangeitis, and so bring pressure to bear that effusion could scarcely find its place, undoubtedly good might be accomplished; but that was not the case as a rule. Such inflammations were rarely seen in that very early stage, and, even if they were, the use of hot water was a still better means. From the force with which it could be applied, it might be considered to exert actual pressure, besides which it supplied the astringent effect in the most simple and efficient way, which could only be approached with the tampon by the aid of medicated pledgets. There were many chronic cases in which such a mode of treatment would seem inapplicable also, in which, as a matter of fact, almost all treatment was inapplicable or uncalled for. If physicians recognized such cases accurately at the outset, and applied treatment only in such of them as called for it, they would spare themselves an infinite amount of useless labor and the patients much suffering and expense. There were many cases in which, for one reason or another, some exudation was found in the pelvis, either in a mass or in shreds, which had displaced or was binding down the uterus or one of the annexa. This condition was often entirely harmless and quiescent, and one would be greatly at fault to attack it and thus inaugurate a period of treatment which might never come to a satisfactory end. Even where it was recognized that the old effused material was at the bottom of a positive harm, that it had impaired the usefulness of an ovary or distorted and bound down a Fallopian tube, it was not always judicious to proceed by any active stretching or tearing of these adhesions to restore the parts to their normal position or freedom, although the majority of the cases would call for just this treatment. The cases in which he would specially advise against this forcible mode of treatment were those in which there was reason to believe there was either a marked tendency to acute pelvic inflammation, which might aggravate the existing condition; a fullness of the hæmorrhoidal vessels, as indicated by puffiness or throbbing, from which it might be deduced that the effused material was also well supplied with blood, in which case there would be reason to fear rupturing the vessels, and so producing hæmatoma or hæmatocele; and, lastly, those in which there was pyosalpinx, and rupture of the cyst with its evil consequences was to be feared. But the benefits to be derived from gentle, gradual pressure and displacement, he believed, far outweighed the possible harm. It was not to be doubted that by this persistent passive pushing and crowding, combined with the counter-irritant treatment, the dislocated and crippled organs of the pelvis might be fully restored and made useful. The evidences of dysmenorrhœa overcome, of locomotion improved, of an active life restored, were too many to justify withholding from this plan of treatment the full measure of credit. The influence upon the distended blood-vessels attending displacements of every variety consequent upon pelvic inflammation, the soothing effect upon the nerves within the pelvis induced by relief of this congestion, and the improved well-being of the woman, with, at the same time, the normal reposition of the organs, amply attested the value of the practice, and he felt certain that similar results could not be produced by the use of hot water and counter-irritation alone.

Dr. Henry C. Coe said that the subject of pelvic inflammation was one that had interested him ever since he began to study gynæcology, not only because of the complicated anatomical questions involved, but by reason of its important bearing on every gynæcological manipulation and operation. The careful specialist never examined a patient without asking himself whether an inflammatory complication existed which might not only explain the symptoms, but also modify the results of an operation. The speaker had expressed his views on the subject of chronic pelvic inflammation in a paper read before the association at its first meeting, and more recently had considered the use of the tampon in the treatment of the adhesions resulting from such inflammation. Our ideas regarding the treatment of pelvic inflammation must naturally be modified by our views of its essential nature. Any system of therapeusis based merely on tradition, for which we could offer no sound pathological reason (valid to ourselves, at least), we could not defend with any degree of enthusiasm. Many of us used the tampon in treating pelvic inflammation as a matter of routine, without expecting any special results. This skepticism doubtless prevented us from giving it a fair trial in a given case, and led us to attribute its good effects to other treatment. The speaker acknowledged that this was the tendency with himself. It seemed to him desirable to exclude from the discussion the use of the tampon as a mechanical force applied for the purpose of stretching old adhesions, the result of former inflammation. He did not regard such adhesions as "pelvic inflammation" proper any more than the firm bands which resulted from pleurisy could be termed an active inflammatory process. He would limit the subject to the use of the tampon as an antiphlogistic. It was commonly stated that, in cases of venous congestion accompanying descent of the uterus below its normal plane, by elevating the organ by means of tampons we supported or diminished the tension on the dilated and elongated veins, and thus relieved the congestion. The same theory was applicable

to venous engorgement attending pelvic inflammation. In fact, Dr. Hardon ("Virginia Med. Monthly," May, 1887) believed that most of the indurations at the bases of the broad ligaments formerly known as "cellulitis" were simply dilated veins, which ceased to be felt with the examining finger as soon as the uterus was elevated by means of tampons. The speaker was convinced that there was much truth in this idea. Did we relieve pelvic congestion by elevating the uterus with tampons? The evidence was entirely clinical, since observations on the living subject were impossible, except at the operating-table, where the conditions were unfavorable to experiments. Within a week he had performed autopsies in two companion cases of endometritis and peritonitis following operations upon the cervix. The pelvic veins were in a state of intense engorgement, especially the plexuses within the broad ligaments. The uterus in each case was small (2¾ inches in depth) and retroverted, but had descended little, if any, below its normal plane in the pelvis. Careful bimanual palpation of the broad ligaments was practiced before and after the abdomen was opened, but no resistance could be felt at any point. The uterus was raised to the highest possible point by pressure made through the vagina. The broad ligament and its contained veins were elevated to only a slight extent, certainly not sufficient to change the direction of the veins or to materially relieve the congestion in the living subject. It seemed to him a mistake to speak of these dilated veins as if they were actually drawn out of their normal relations in cases of uterine displacement. The vessels in the broad ligaments, if displaced at all, were displaced *en masse*, together with the ligaments and their other contents, their relative relations not being disturbed. But there is another alleged virtue possessed by the tampon in addition to the mechanical support offered to the dilated pelvic vessels; we may call this the alterative. It depended upon the supposed power possessed by glycerin, or boro-glyceride, to cause softening or absorption of the products of pelvic inflammation. He must confess that he had under observation cases in which he had waited for months for a tangible manifestation of this resolvent action. The whole theory of the action of glycerin tampons seemed to him to rest on a false conception of the anatomy of the parts—*i. e.*, that the circulation in the vast system of venous plexuses lying deep within the pelvis could be materially modified by a local application which must act through the thick vaginal roof and layers of connective tissue and peritonæum, each of which had its own system of blood-vessels. Enthusiastic believers in the virtue of medicated tampons might satisfy themselves that under their use inflammatory masses were dispersed, but could they be sure that these effects (if they really occurred) were not due rather to the routine use of hot water? In order to settle this point, a certain number of cases should be selected, some being treated with iodine applications alone, others with medicated tampons, and a third series with hot-water injections. Then let the results be compared. There was urgent need of collective investigation in this society. The plan adopted in the French Academy of Medicine of referring disputed questions to a committee would be an admirable one to adopt. It seemed to him that this was the true way to correct errors and bring out the real value of a given theory. With regard to the technique of tamponing, in order to accomplish the desired result the tampon must remain in contact with the cervix and vaginal roof for a considerable period. Did it do so? Possibly, if the patient remained in bed, but he was sure that in many of the cases treated at offices and clinics the patient did not walk a block after treatment without displacing the tampon. The natural contractility of the vagina in nulliparæ and the laxness of its walls in multiparæ tended to favor dislodgment of the cotton from its position against the fornix. He had frequently inserted a large, firm tampon with great care, and the patient had informed him at her next visit that it had "come down" before she reached home. One could satisfy himself of this by causing a patient to walk about a little after being tamponed, and then examining her again. Of course, if a large, firm tampon was inserted, as in cases of hæmorrhage, this might be prevented, but here we applied another principle. The speaker did not wish to be understood as pronouncing the vaginal tampon an entirely useless agent in the treatment of pelvic inflammation. He always used it—so did every gynæcologist, with greater or less thoroughness and conscientiousness, according to his faith. He would like to be convinced, but found it rather difficult to entirely reconcile facts and theories.

## Book Notices.

*The Intestinal Diseases of Infancy and Childhood.* Physiology, Hygiene, Pathology, and Therapeutics. By A. Jacobi, M. D., President of the New York Academy of Medicine, etc. Detroit: George S. Davis, 1887. Pp. xv–301. [Physicians' Leisure Library, No. 5, 1887. Price, 25 cents.]

Before proceeding to what we have to say of this particular book, we will venture to express our sense of the obligation under which the profession rests to the publisher for having brought out the handy series of volumes of which it forms one, and our appreciation of the judicious selection of authors made by him.

To most of our readers we need say nothing of Dr. Jacobi's attainments as a physician, of his enormous experience in pædiatrics, or of his excellence as a teacher; it is known everywhere that, as concerns all these matters, he is excelled by none of our American writers. As to the importance of the intestinal diseases of children, that subject, too, is thoroughly appreciated by every family practitioner. We wish we could add that all physicians recognized the immense superiority of correct methods of preventing those diseases over the prescription-monger's plan of subduing them. To inculcate this superiority, to force it home upon the reader's reason, is the great end which the author has had in view evidently in the preparation of this work; and we can not admit the possibility of its failing to accomplish that purpose. The book will be read very widely, and we are convinced that it will be the means of saving many lives. It must not be inferred from the prominence we have given to that aspect of the work which relates to prophylaxis that it is a mere disquisition on that topic; it is a condensed systematic treatise on the digestive diseases of children, their pathology, ætiology, diagnosis, prognosis, and treatment. As such we heartily commend it to our readers.

*Insanity:* Its Classification, Diagnosis, and Treatment. A Manual for Students and Practitioners of Medicine. By E. C. Spitzka, M. D., President of the New York Neurological Society, etc. New York: E. B. Treat, 1887. Pp. 17 to 423. [Price, $2.75.]

As many of our readers are aware, the author of this work has given much study to the anatomy of the central nervous system, and the book reveals his predilection for that field. But he is not carried away by an extravagant estimate of its importance. "Let him" [the reader], he says, "bear in mind that the majority of the symptoms of insanity are merely excesses or deficiencies or perversions of functions—excesses, deficiencies, and perversions whose very existence implies that their organic

basis must be *anatomically* intact. He will then recognize the futility of searching for coarse formative changes in such subtle affections as most of the simple primary psychoses are." This is exceedingly sound talk, in which every broad minded alienist will bear the author out. It is a wholesome protest against the rough, ultra materialistic conceptions of mental pathology that have dominated alienists of the "imitative" type for a long time.

The chapters on monomania and paretic dementia are particularly full and satisfactory, and the discussion entailed furnishes entertaining reading for those who are fond of psychological analysis. Our general impression of the book is that it constitutes a solid mark of the author's industry, intelligence, and sincerity of purpose, and that it can not fail to prove instructive to all who read it.

*An Index of Materia Medica*, with Prescription-writing, including Practical Exercises. By Charles H. May, M. D., Instructor in Ophthalmology, New York Polyclinic, and Charles F. Mason, M. D., Assistant Surgeon, U. S. Army. New York: William Wood & Co., 1887. Pp. vi 267.

This little book is a good one of its kind, and fully bears out its title of "Index." In the matter of doses—always one of importance in a work of the sort—any errors it may contain are on the side of safety.

## BOOKS AND PAMPHLETS RECEIVED.

Synopsis of the Second Hundred Cases of Urethral Stricture treated by Electrolysis. By Robert Newman, M. D., of New York. [Reprinted from the "Journal of the American Medical Association."]

Report on the Mortality and Vital Statistics of the United States as returned at the Tenth Census (June 1, 1880). By John S. Billings, Surgeon, U. S. Army. Part II, with Plates and Diagrams. Washington: Government Printing-Office. Pp. clviii–803.

Chemical Analysis of Healthy and Diseased Urine, Qualitative and Quantitative. By T. C. Van Nüys, Professor of Chemistry, Indiana University. With Thirty-nine Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. x–17 to 187. [Price, $2.]

The Treatment of Intermittent Fever. By Robert C. Kennen, A. M., M. D. [Reprinted from the "American Practitioner and News."]

The Refraction of the Eye. A Manual for Students. By Gustavus Hartridge, F. R. C. S., Consulting Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, etc. With Ninety-six Illustrations. Third Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xv–240. [Price, $2.]

Transactions of the College of Physicians of Philadelphia. Third Series. Volume the Ninth. Philadelphia: Printed for the College, and for sale by P. Blakiston, Son, & Co., 1887. Pp. cdlxxiii–203.

The Three Ethical Codes: The Code of Ethics of the American Medical Association, its Constitution and By-laws. The Code of Ethics of the American Institute of Homœopathy. The Code of Ethics of the National Eclectic Medical Society. Detroit: The Illustrated Medical Journal Company, 1888. [Price, 50 cents.]

Nineteenth Annual Report and By-laws of the New York Physicians' Mutual Aid Association.

College of Physicians and Surgeons in the City of New York; Medical Department of Columbia College. Addresses at the Inauguration of the New College Building, September 29, 1887; and of the Sloane Maternity Hospital and the Vanderbilt Clinic, December 29, 1887.

Ueber Dammschutz und primäre Operation des Dammrisses. Von Dr. C. A. von Ramdohr. [Aus der "New Yorker medizinische Presse."]

The Significance and Localization of Pain in Pelvic Diseases. By Henry C. Coe, M. D. [Reprinted from "Gaillard's Medical Journal."]

The Use of the Curette for the Relief of Hæmorrhage due to Uterine Fibroids. By Henry C. Coe, M. D. [Reprinted from the "Medical Record."]

# Reports on the Progress of Medicine.

## OPHTHALMOLOGY.

BY CHARLES STEDMAN BULL, M. D.

**A Case of Complete Self-enucleation of Both Eyeballs.**—Fulton ("Amer. Jour. of Ophth.," July, 1887) reports a case of extreme rarity occurring in a man, aged thirty-eight, who, while on a prolonged debauch, inflicted the following injury upon himself: Both eyeballs were torn from their sockets, and were hanging loose in the conjunctival sac. The cornea of each eye had begun to slough. The lids were contracted behind the eyeballs. The conjunctiva was swollen, thickened, and infiltrated. The patient had simultaneously thrust both thumbs into the external canthi of both eyes and had gouged out the eyeballs. The recti muscles were all torn loose, and the optic nerves seemed to have been snapped off close to the commissure.

**An Operation for the Relief of Trichiasis.**—Jacobson ("Ctrlbl. f. prakt. Aug.," July, 1887) describes still another operation for the cure of trichiasis. He first makes an intermarginal incision like that employed in the Jaesche-Arlt operation. He then excises a piece of skin (thin flap), usually from the temporal end of the intermarginal incision, either vertically upward or downward from the skin of the face, or in an obtuse angle from the skin of the temple, or from the skin of the lid. When the skin has been dissected free for about 4 mm. from the point, a fine curved needle armed with a silk suture is introduced from the skin surface, and the point is then dissected free or divided. The flap is then carefully inserted in the intermarginal incision by means of the suture, and its point is stitched into the nasal angle. The same needle fastens the upper margin of the flap at three points toward the points of exit of the cilia, while a larger needle fastens the lower margin of the flap at three points toward the free margin of the cartilage. The wound in the skin is then closed and an iodoform dressing applied. Borated lint, gutta-percha paper, absorbent cotton saturated with boric-acid solution, and a double bandage are applied over both eyes, and the bandage is not removed for three days. The dressings are then removed from the sound eye, but the operated eye is kept closed for six days longer.

**Disease of the Roots of the Hairs in Blepharitis Ciliaris; the Causation and Mode of Cure.**—Roeder ("Kl. Mon. f. Aug.," July, 1887) has been investigating the subject of disease of the hair-bulbs in various parts of the body, especially in blepharitis ciliaris, and finds that in the latter class of cases it is intimately connected with disease of the lacrymal passages. He has found that as long as there is no purulent secretion from the lacrymal sac, the cilia remain healthy, but that with the appearance of blennorrhœa of the sac, blepharitis also makes its appearance. So constant is this connection that the existence of stenosis of the lacrymal duct and blennorrhœa of the sac may be inferred from the presence of blepharitis ciliaris. If in simple stenosis of the duct the tears collect on and between the lashes, the fat excreted from the sebaceous glands of the hair-bulbs prevents the entrance of these tears into the hair-follicles. But if pus cells are mingled with the tears, a fatty emulsion is formed which readily neutralizes the resistance of the fat of the sebaceous glands, and enters the hair-follicles. The hairs swell up, and the inner hair-follicle becomes filled with pus cells; the entrance into the follicle becomes closed. The pus within subsequently makes its way out by ulceration, and forms thick crusts between the lashes. The latter, together with the inner sheath, are cast off, and a young hair is developed. The suppuration causes cicatricial contraction of the entire follicle. The sebaceous glands become gradually obliterated as well as their channels of exit, and the hair-bulbs become dry and hard. In view of all these facts, it is indispensable to a perfect cure that the disease of the lacrymal sac and duct should first be permanently cured.

**New Method of Operation in Squint.**—Motais ("Rev. gén. d'ophthal.," June 20, 1887) recommends the following procedure: The conjunctiva is first to be incised and very extensively dissected free from the underlying tissue. The tendon and capsule are then to be seized with toothed forceps and opened near the median portion by a cut with the scissors. The points of the scissors are first introduced between

the upper border, then beneath the lower border of the tendon, and the latter thus entirely divided. If a still greater recession of the tendon is desired, he introduces one blade of the scissors between the sclerotic and the capsule, and the other between the capsule and the conjunctiva, and separates the capsule from its anterior attachments throughout the necessary extent. The posterior flap of the capsule is drawn backward with the tendon.

**Peritomy by Cauterization.**—Vacher (*ibid.*) speaks very highly of peritomy by the cautery not only in diseases of the cornea and sclera, but also in some of the deeper affections of the eye. It is a circular cauterization without loss of substance, resulting in a groove in the conjunctiva and subconjunctival tissue, and superficial layers of the sclera, which modifies the intra-ocular circulation and the pain by complete division of the blood-vessels, lymphatics, and nerves. Vacher employs the galvano-cautery, using a very fine platinum wire. The results are diminution of pain, hypotonus, and profound revulsion which is preferable to the ordinary conjunctival abrasion. The operation is of easy execution and entirely without danger. Its action is prompt and energetic. It never causes flattening of the cornea, and never leaves a deforming scar. It is very useful in iritis and episcleritis.

**The Pupil Symptoms met with after Injuries to the Head.**—J. Hutchinson, Jr. ("Ophth. Rev.," May and June, 1887), continues his remarks upon this subject. He refers to the grave importance of non-sensitive and dilated pupils as a symptom of compression of the brain after head injuries. During the first onset of middle meningeal hæmorrhage the pupils may still react to light. While double dilatation may be a symptom materially affecting the prognosis, fixed mydriasis on one side only may, with strong probability, be taken to indicate that the hæmorrhage is occurring on the same side as that on which the pupil is affected. When a meningeal hæmorrhage detaches the dura mater, it undoubtedly extends downward toward the base as well as upward. But, owing partly to the numerous foramina in the floor of the middle fossa to which the dura mater is firmly attached, the clot finds increasing difficulty in forcing up that membrane, and cases in which the blood has actually reached the neighborhood of the cavernous sinus are very rare. Hence the pressure on the third nerve must be exerted indirectly through the crus cerebri and a considerable part of the cortex. But the pupil symptom is found to occur before hemiplegia of the opposite side develops, sometimes coinciding with convulsive movements of the arms and legs and rigidity of the opposite side. These symptoms, with dilatation of the pupil, would be at first explained by irritation of the ascending frontal and superior frontal convolutions. Beck's case, reported by Jacobson, seems to show that one-sided mydriasis is not due to pressure on the third nerve, but is probably to be ascribed to pressure on some cerebral center. Compression mydriasis sometimes exceeds that due to complete paralysis of the third nerve due to other causes. Pressure on the trunk of the third nerve will not explain the numerous cases in which double mydriasis is present. Nor will irritation of the superior frontal convolution account for the others in which unilateral mydriasis is present, since the dilatation should be symmetrical and associated with other symptoms. Probably pressure transmitted to the corpora quadrigemina must be taken as the explanation. This will explain why the mydriasis is found chiefly, but not solely, on the same side as the hæmorrhage.

*The Lesions of the Cervical Sympathetic.*—Three ocular symptoms are to be referred to paralytic lesion of the cervical sympathetic: 1. Inability of the pupil to dilate in a dim light, although it will still respond to atropia. 2. Diminution in the vertical measurement of the palpebral fissure. 3. Slight recession of the globe.

Hutchinson summarizes the chief points in his paper as follows: 1. In most cases of concussion, for a variable time, depending on the severity of the injury, the state of the pupil resembles that met with in ordinary anæsthesia—*i. e.*, slowness in responding to light, without marked myosis or mydriasis. 2. In a small proportion of cases of concussion, temporary mydriasis (on one or both sides) is met with. 3. When inflammatory reaction follows severe bruising of the brain, myosis is the rule. 4. In compression of the brain from meningeal hæmorrhage, mydriasis on the side of the lesion is met with in at least half the cases, double mydriasis occurring next in order of frequency, myosis being very rare. The pupil-symptom here is probably dependent on pressure of the corpora quadrigemina rather than on the trunk of the third nerve. 5. In cases of injury to the cervical sympathetic, active myosis does not occur, but the pupil on the side affected will not dilate in dull illumination.

**The Crescent or Conus of the Optic Papilla and Astigmatic Contraction.**—Martin ("Ann. d'ocul.," March–April, 1887) begins with the following proposition: The papillary crescent, in the great majority of cases and perhaps in all, is situated at the extremity of a partial contraction of the ciliary muscle, and this contraction is the cause of its appearance and development. The reality of these astigmatic contractions is proved, and it is entirely physiological to admit that this duty devolves upon the radiating fibers, those directed in the meridians of the eye. In an eye possessing this deformity the retina and chorioid undergo a pulling and stretching, which are apt to rupture at the external margin of the optic nerve the deep chorioidal trusses which aid in the formation of the lamina cribrosa, and thus enlarge little by little the chorioidal ring. A similar result is sometimes produced by a pulling of the meridional fibers. Martin concludes that all eyes which possess a crescent are astigmatic, and that the direction of this lesion is always found in a plane parallel to one of the principal meridians, and most frequently in that which presents the lowest refraction.

**Treatment of Serpiginous Ulcer of the Cornea.**—Dehenne ("Rec. d'ophthal.," April, 1887) gives the following *résumé* of the methods to be employed in treating serpiginous ulcer of the cornea: 1. Incise both lacrymal puncta and canaliculi, and irrigate the lacrymal passages freely with an antiseptic solution. 2. Carefully wash out the conjunctival *cul-de-sac* with an antiseptic solution (sublimate, 1 to 2,000). 3. Cauterize the entire surfrce of the ulceration by means of the thermo-cautery. 4. If there is pus in the anterior chamber, perforate the cornea with the thermo-cautery and evacuate it. 5. Instill into the eye four times a day five or six drops of a neutral solution of eserine sulphate (1 to 2,000).

**The Determination of the Degree of Ametropia by Retinoskiascopy.**—Zieminski ("Rec. d'ophthal.," May, 1887), in a somewhat lengthy paper on this subject, draws the following practical conclusions: 1. Retinoskiascopy is the name given to that method of objective optometry devised by Cuignet, and to which he gave the name of keratoscopy, and consists briefly in observation of the retinal shadows. 2. The importance of retinoskiascopy is incontestable in numerous cases where other methods of objective optometry do not give sufficiently exact results. 3. The most exact method of determining the degree of ametropia by retinoskiascopy is that advocated by Parent, and consists in the employment of correcting lenses placed in front of the eye of the patient. To render it of practical advantage, we must be enabled to determine approximately by means of the rotation of a mirror the degree of ametropia by simple observation of the phenomena of retinoskiascopy, and only make use of certain correcting lenses for stating precisely the degree of the anomaly. In emmetropia and feeble ametropia the reflection of the illuminated part of the pupil is very bright; the shadow is very faint but well defined; the limit between the illuminated part and the part in shadow of the pupil appears as the segment or arc of a large circle; this limit is almost rectilinear in emmetropia and weak myopia. The part of the pupillary plane in shadow is comparatively much greater in extent than the light part. In moderate degrees of ametropia the reflection of the illuminated part of the pupil is less intense; the shadow is distinct and in the form of a crescent; the difference in extent of the two is not very great. In high degrees of ametropia a large part of the pupil is but slightly illuminated and ill defined; the shadow is very dark and in the shape of a narrow crescent, and during the movements of the mirror this shadow moves slowly across the pupil. 4. To determine the existence of astigmatism, the mirror must be rotated around its vertical or horizontal axis. If the shadow moves obliquely across the pupillary plane, an astigmatism with oblique principal meridians is present. If, on the contrary, the shadow moves horizontally or vertically, the mirror must be rotated round an oblique axis. 5. The plane mirrior is preferable to the concave mirror. 6. Retinoskiascopy may generally be employed without the use of mydriatics.

**A New Operation for Distichiasis or Entropium, with the Record of a Few Cases.**—W. F. Smith ("Arch. of Ophthal.," xvi, 2) has observed that all the operations for narrowing the external surface of the

lid, or for excising a portion of the tarsus, or even for transplanting the ciliary margin, are liable to failure in that they do not correct the abnormal direction or curve of the lashes. These considerations suggested the idea of transplanting a narrow strip of cuticle, without pedicle, in such a manner as to supply to some extent the tissue lost by atrophy at the inner margin of the lid, and in this way lift the lashes away from the globe. The lid is to be split in the usual manner for the operation by Arlt's method, at a uniform depth of 4 mm. It must extend nearly the whole length of the lid, so as to exclude all the troublesome lashes. The plane of the incision is such that while it follows the inner margin of the lid almost within the conjunctiva, its bottom is about midway between conjunctiva and cuticle, the direction being upward and outward nearly at a tangent to the cornea. Two parallel incisions are then made in the skin above the margin of the lid, about 1·5 mm. apart. The cut in the respective ends of the strip of skin made it exactly as long as the slit in the edge of the lid previously made. Before separating the strip of skin from the underlying tissue, a curved needle, armed with finest silk, is passed through the end of the strip from without inward. After drawing the thread partially through, the needle is passed from the bottom of the slit in the edge of the lid, bringing it out through the skin near the canthus. This is done at both ends of the strip. By drawing the threads loosely, the loops of the thread, including the ends of the strip, may be used in the place of forceps, and the strip readily separated from the underlying tissue with a sharp knife, working from extremities toward the center. Having control of the strip by means of the threads, it is easily lifted over the lashes and adjusted within the slit without allowing it to come in contact with any other part. By simply uniting the threads the strip of skin is drawn accurately into the desired position, and one suture passed through its center fastens it snugly in the groove. The operation is completed by stitching together the narrow slit left in the surface of the lid. The stitches are removed on the third day.

**Double Glaucoma Simplex in a Child Eleven Years of Age.**—Randolph (*ibid.*) reports a rare case of this nature occurring in a young mulatto girl. Her vision has gradually failed for more than a year. During the past eighteen months she had on several occasions complained of pain in the temples and head. She had had no temporary obscurations of vision, nor had she ever noticed the rainbow-colored rings around a flame. No clew found in the family history. Right eye, $V = \frac{6}{36}$; left eye, $V = \frac{9}{60}$. Marked *plus* tension in both eyes. Pupils large and sluggish. Narrowing of the field of vision in both eyes on the nasal side, more especially in the left eye. Media clear. Glaucomatous excavations in both optic discs. Vessels crowded over to nasal side of papilla and disappeared with a sharp bend beneath edge of excavation. Veins tortuous and engorged. Arteries narrow and at points on edge of discs distinctly pulsating.

**Syphiloma of the Sella Turcica causing Engorged Papilla, and ending in Complete Recovery.**—Reuling (*ibid.*) reports the case of a gentleman, aged forty-six, with complete ptosis of left upper lid, protrusion of both eyes, paresis or paralysis of all the ocular muscles of both eyes, with exception of external recti. Both pupils dilated *ad maximum*, facial expression staring, gait staggering, speech heavy, and frequently disconnected. Media transparent, conjunctiva hyperæmic and chemotic. Vision in each eye amounted to one seventh. Central scotoma in each field of vision. Pronounced neuro-retinitis; both optic discs globular and greatly enlarged. Discs and retinæ dotted with numerous hæmorrhages. No albumin or casts in the urine. Treatment consisted in removing two ounces of blood from each temple, and systematic inunction of mercurial ointment in half-drachm doses into arms and legs, with internal administration of potassium iodide in ten-grain doses three times a day. An improved condition began within twelve hours. He was discharged on the sixth day, with normal motility of both eyes almost entirely restored. The treatment was continued for two months with short intermissions, and at the end of the third month vision was normal and the patient apparently entirely well.

**Disturbances of Vision after Employment of the Galvano-cautery in the Nose.**—Ziem ("Ctrlbl. f. prakt. Aug.," May, 1887) calls attention to the occasional occurrence of visual disturbance after using the galvano-cautery in the nose, and reports three cases. In the first case, after cauterization anteriorly and posteriorly of the turbinated bones, the patient complained of defective vision in the right eye, and an examination showed $V = \frac{2}{3}$, distinct venous pulsation on right disc, and a narrowing of the field of vision. In the second case, a woman with chronic swelling of the mucous membrane lining the entire nose and a small angeioma at the internal canthus of the left eye, the application of the galvano-cautery to the swollen mucous membrane of the nose caused a fainting spell and collapse of the angeioma, and shortly afterward a failure of vision in the left eye. An examination showed marked venous hyperæmia of the left optic disc. In the third case, a young woman with great swelling of the nasal mucous membrane over the turbinated bones and chronic blepharo-adenitis, the galvano-cautery was applied to the turbinated bones very freely, and almost immediately the patient complained of a sense of fullness and pressure in the left eye, and complained of a dimness of vision. An examination showed a pronounced venous pulsation in the left optic disc.

**Visual Disturbances in Diabetes Mellitus; Are they Phenomena of Consumption?**—Rolland ("Rec. d'ophthal.," June, 1887) does not believe that amblyopia and cataract are always ultimate complications of diabetes mellitus and signs of bad augury. The number of diabetics who never have any trouble with their vision is, he thinks, extremely small, but many diabetics never reach the stage of so-called consumption. Diabetes mellitus has not the monopoly of the consumptive cachexia, and the various forms of diabetes—"azoturic," "hydruric," "phosphaturic"—all tend to produce general deterioration of the individual, or what Rolland calls "consumption" of tissue. In the "hydruric" diabetes the vision is never affected. In the "azoturic" form there has been noticed a diminution of visual acuity without visible ophthalmoscopic alteration, though Galezowski reports one case of this kind with retinal hæmorrhages. The proof that the visual disturbance precedes not the so-called consumption, but also the main symptoms of diabetes mellitus, is found in the considerable number of patients in whom the oculist first has reason to suspect the existence of a previously unrecognized diabetes.

**A Case of Partial Trichiasis relieved by Stellwag's Method of reversing and replanting the Ciliary Border.**—Hotz ("Amer. Jour. of Ophthal.," May, 1887) reports a case of this kind in a man, aged thirty-one, in whom the lower lid of the right eye had been operated upon a year before by means of transverse ligatures. The final result of this operation was that the lateral portions of the lid border were everted, but the central portion was not affected, and here the cilia still brushed over the cornea. Hotz did his operation on February 17th, under strictly antiseptic precautions. The lid border was split with a lance knife as far as the cilia were inverted; from each end of this incision a vertical cut, 4 or 5 mm. long, was made from the lid border downward, and the lower ends of these incisions were united by a transverse incision. Thus a rectangular flap, 6 mm. long by 4 or 5 mm. wide, was mapped out, with the upper edge containing all the inverted cilia. This flap was completely detached and packed between cloth, which was constantly sprinkled with a warm sublimate solution. After the bleeding had ceased and the wound was carefully cleansed of all coagulated blood, the flap was placed back upon it with the eyelashes turned downward, and the originally lower edge of the flap joined to the lid border. When the flap was nicely adjusted the lids were closed and irrigated with sublimate. A piece of aseptic tin-foil coated with vaseline was placed on the lids and a binocular bandage applied. This dressing was not disturbed for three days. The result was good, though the lashes subsequently dropped out, all but two.

## Miscellany.

**The Medical Society of the State of New York and the Treatment of the Insane.**—The committee to whom was committed that portion of the president's opening address relating to the treatment of the insane would respectfully report:

1. That until comparatively recent times the insane were considered and treated as criminals and confined in dungeons or prisons.

2. Their subsequent retention in poor-houses was but a remnant and mitigation of the old system.

3. The treatment of the insane has improved with the progress of civilization.

4. Therefore special hospitals were supplied for them and their welfare was intrusted to scientific and humane experts.

5. To return to anything like the old system of treating the insane in poor-houses or relegating them to the custody of county officials would be a grave mistake.

As early as 1855, at a meeting of the county superintendents of the poor, held at Utica, the following among other resolutions was passed:

"*Resolved*, That no insane person should be treated, or in any way taken care of, in any county poor- or alms-house or other receptacle provided for and in which paupers are maintained and supported." (Fifty-fifth Annual Report, State Asylum at Utica.)

6. For the proper classification and treatment of the insane more means are required than for the patients of general or even other special hospitals. Institutions for the insane therefore demand medical experts as superintendents, nurses trained in the general care of the sick and then in the special care of the insane, schools for the physical and intellectual training of the insane, for the practice of out-door and in-door industries, and many other appliances.

7. The Medical Society of the State of New York expresses, therefore, its objections to any plan or law which in any way looks to the return of the insane to the county poor-houses as being unscientific and inhumane, and expresses its conviction that those institutions, like the State asylums, which have boards of managers accountable to the State government and also to the public, are best adapted for the care of the insane poor of the State.

All of which is respectfully submitted.

[Signed.] A. Jacobi,
C. R. Agnew.

Adopted, February 9, 1888.—*Resolved*, That the foregoing report on the treatment of the insane be sent to the Committee on Legislation of the Medical Society of the State of New York, with instructions to use it in its discretion, in the legislature and elsewhere, to further the objects in view.

In the discussion which followed, the subjoined was read as illustrating the progress which is being made in the scientific nursing of the insane, a kind of progress not likely to reach the insane if shut up in poor-houses:

*Extract from a Letter of Dr. Joseph M. Cleveland, Medical Superintendent, Hudson River State Hospital, Poughkeepsie, to Amasa J. Parker, Jr., President of the Board of Managers of said Hospital, dated Feb ruary 5, 1888:*

"Next month (March) we graduate four young women from our Nurses' Training-School. All four before coming here had graduated from a general hospital training-school. They will have been with us one year in March. They have been very thoroughly instructed in mental nursing by lectures, class instructions, quizzes, and clinical teaching. They are bright, intelligent, and full of ambition to become thoroughly equipped in all that pertains to a high order of nursing."

**American Medical Association.**—The permanent secretary, Dr. William B. Atkinson, has issued the following notice:

Philadelphia, 1400 Pine Street, S. W. cor. Broad.

The thirty-ninth annual session will be held in Cincinnati, Ohio, on Tuesday, Wednesday, Thursday, and Friday, May 8, 9, 10, and 11, commencing on Tuesday, at 11 A. M.

"The delegates shall receive their appointment from permanently organized State medical societies, and such county and district medical societies *as are recognized by representation in their respective State societies*, and from the Medical Department of the Army and Navy, and the Marine-Hospital Service of the United States.

"Each State, county, and district medical society entitled to representation shall have the privilege of sending to the association one delegate for every ten of its regular resident members, and one for every additional fraction of more than half that number: *Provided*, however, that the number of delegates for any particular State, territory, county, city, or town shall not exceed the ratio of one in ten of the resident physicians who may have signed the code of ethics of the association."

Secretaries of medical societies, as above designated, are earnestly requested to forward, *at once*, lists of their delegates.

Also, that the permanent secretary may be enabled to erase from the roll the names of those who have forfeited their membership, the secretaries *are, by special resolution*, requested to send to him annually a corrected list of the membership of their respective societies.

*Sections.*—"The chairman of each section shall prepare an address on the recent advancements in the branches belonging to his section, including such suggestions in regard to improvements in methods of work, and present, on the first day of its annual meeting, the same to the section over which he presides. The reading of such address not to occupy more than forty minutes. . . ."—*By-laws.*

*Practice of Medicine, Materia Medica, and Physiology.*—Dr. ———, chairman; Dr. N. S. Davis, Jr., 65 Randolph Street, Chicago, Ill., secretary.

*Obstetrics and Diseases of Women and Children.*—Dr. Eli Van De Warker, 45 Montgomery Street, Syracuse, N. Y., chairman; Dr. E. W. Cushing, 1 Hotel Pelham, Boston, Mass., secretary.

*Surgery and Anatomy.*—Dr. Donald McLean, 72 Lafayette Avenue, Detroit, Mich., chairman; Dr. B. A. Watson, 124 York Street, Jersey City, N. J., secretary.

*State Medicine.*—Dr. H. B. Baker, Lansing, Mich., chairman; Dr. S. T. Armstrong, United States Marine-Hospital Service, secretary.

*Ophthalmology, Otology, and Laryngology.*—Dr. F. C. Hotz, 181 Clark Street, Chicago, Ill., chairman; Dr. E. Jackson, 215 South Seventeenth Street, Philadelphia, Pa., secretary.

*Diseases of Children.*—Dr. F. E. Waxham, 3449 Indiana Avenue, Chicago, Ill., chairman; Dr. W. B. Lawrence, Batesville, Ark., secretary.

*Oral and Dental Surgery.*—Dr. J. Taft, Cincinnati, Ohio, chairman; Dr. E. S. Talbot, 125 State Street, Chicago, Ill., secretary.

*Medical Jurisprudence.*—Dr. E. M. Reid, 243 North Fremont Street, Baltimore, Md., chairman; Dr. C. B. Bell, Suffolk. Mass., secretary.

*Dermatology and Syphilography.*—Dr. L. D. Bulkley, 4 East Thirty-seventh Street, New York, chairman; Dr. S. F. Dunlap, Danville, Ky., secretary.

A member desiring to read a paper before a section should forward the paper, or its *title* and *length* (not to exceed twenty minutes in reading), to the chairman of the Committee of Arrangements at least one month before the meeting.—*By-laws.*

*Committee of Arrangements.*—W. W. Dawson, Cincinnati, Ohio, chairman.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending February 17th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending January 28th corresponded to an annual rate of 22·5 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 14·3, and the highest in Manchester, viz., 31·9 in a thousand. Small-pox caused 37 deaths in Sheffield, 1 in Bristol, and 1 in Leeds.

During the year 1887, 530,577 deaths were registered, corresponding to an annual death-rate of 18·8 in a thousand of the estimated population. The deaths from all causes included small-pox, 505; diphtheria, 4,339; fever (typhus, enteric, simple, and ill-defined), 5,653; scarlet fever, 7,719; whooping-cough, 10,661; measles, 16,297; diarrhœa, 19,502.

*London.*—One thousand eight hundred and sixteen deaths were registered during the week ending January 28th, including 16 from measles; scarlet fever, 29; diphtheria, 29; whooping-cough, 168; enteric fever, 13; and diarrhœa and dysentery, 11. Diseases of the respiratory organs caused 534 deaths; different forms of violence, 59; and 3 suicides were registered. The deaths from all causes corre-

sponded to an annual rate of 22·4 in a thousand. In greater London 2,298 deaths were registered, corresponding to an annual rate of 21·7 in a thousand of the population. In the "outer ring" 15 deaths from diphtheria and 14 from whooping cough were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending January 28th in the sixteen principal town districts of Ireland was 30·9 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 14·8, and the highest in Cork, viz., 47·4 in a thousand. In Dublin 224 deaths were registered, including 2 from measles; whooping cough, 8; diphtheria, 6; scarlet fever, 10; typhus, 1; enteric fever, 2; diarrhœa, 3; and erysipelas, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending January 28th corresponded to an annual rate of 22·4 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12·8, and the highest in Perth, viz., 25·6 in a thousand. The aggregate number of deaths registered from all causes was 567, including 10 from measles; diphtheria, 9; scarlet fever, 7; whooping cough, 22; fever, 8; and diarrhœa, 13.

*Callao.*—The following is a copy of a dispatch received from the United States consul, under date of January 14, 1888:

The last cable message from Dr. Matto, the medical representative of Peru now in Chili, is to the effect that cholera is decreasing both at Santiago and Valparaiso, and its course is still proceeding to the southward. From the 15th of December to the 1st instant there were 1,288 cases of cholera in the Valparaiso hospitals, of which 644, or exactly 50 per cent., terminated fatally. Dr. Puga-Bonne, the Chilian delegate to the Sanitary Congress at Lima, has arrived, and the deliberations of that body, under the presidency of Dr. Rosas, one of the Peruvian representatives, are being continued. As yet regulations to govern the proceedings have alone been considered. The health of this port and of Lima is satisfactory.

*Cayenne.*—The United States consul, in his dispatch dated January 16, 1888, states that "yellow fever was declared here on the 9th January, instant, by the board of health, and that foul bills of health are now issued."

*Santiago de Cuba.*—The sanitary inspector reports for the week ending February 4, 1888, that "the sanitary condition of the town has been excellent. No contagious diseases have been reported. Small-pox has completely disappeared from the country, where it was causing some ravages. Yellow fever still exists at the military hospital among the newly arrived recruits, 3 cases and 5 deaths having been reported.

*Havana.*—Two deaths from yellow fever and 57 from small-pox are reported for the week ending February 4, 1888.

### Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | January 28. | 2,240,945 | 1,153 | .. | .... | 12 | .... | 23 | 6 | 47 |
| Glasgow | January 28. | 545,678 | 234 | .. | .... | .... | .... | 5 | 1 | 4 |
| Warsaw | January 21. | 439,174 | 188 | .. | .... | 6 | .... | .... | 2 | .... |
| Calcutta | December 17. | 433,219 | 229 | 20 | .... | .... | .... | .... | .... | .... |
| Calcutta | December 24. | 433,219 | 257 | 16 | .... | .... | .... | .... | .... | .... |
| Calcutta | December 31. | 433,219 | 244 | 17 | .... | .... | .... | .... | .... | .... |
| Amsterdam | January 28. | 389,916 | 183 | .. | .. | .... | .... | 2 | .... | 2 |
| Copenhagen | January 24. | 300,000 | 146 | .. | .... | .... | .... | .... | 1 | 10 |
| Munich | January 24. | 275,000 | 142 | .. | .... | .... | .... | 2 | .... | 5 |
| Edinburgh | January 28. | 258,629 | 113 | .. | .... | .... | .... | 1 | .... | 2 |
| Palermo | January 29. | 250,000 | 164 | .. | .... | .... | .... | .... | 2 | 4 |
| Belfast | January 28. | 224,422 | 129 | .. | .... | .... | .... | 2 | 1 | 2 |
| Geneva | January 28. | 179,390 | 141 | .. | .... | 9 | .... | .... | .... | 1 |
| Leipsic | January 28. | 170,000 | 73 | .. | .... | .... | .... | 1 | 2 | 4 |
| Trieste | January 21. | 154,500 | 112 | .. | .... | 9 | .... | 1 | 2 | 5 |
| Toronto | February 11. | 130,000 | 37 | .. | .... | .... | .... | .. | .... | 4 |
| Havre | January 28. | 112,074 | 69 | .. | .... | 3 | .... | .... | .... | 1 |
| Barmen | January 28. | 109,000 | 48 | .. | .... | .... | 1 | .... | .... | 2 |
| Reims | January 21. | 97,903 | 53 | .. | .... | 1 | .... | .... | .... | 7 |
| Mayence | January 21. | 65,701 | 42 | .. | .... | .... | .... | .... | 1 | 1 |
| Gibraltar | January 22. | 23,631 | 11 | .. | .... | .... | .... | .... | 1 | 1 |

### United States.

*Port Townsend.*—The medical officer in charge of the Marine-Hospital Service reports, under date of the 5th instant, that the schooner Courser, from San Francisco with a case of small-pox on board, has been placed in quarantine by the local board of health.

## ANSWERS TO CORRESPONDENTS.

*No. 149.*—By "first phalanx" we understand a proximal phalanx—one that articulates with a metacarpal or metatarsal bone.

*No. 150.*—As given in the United States Pharmacopœia of 1880, the formula for the compound licorice powder (pulvis glycyrrhizæ compositus) is as follows:

| | | |
|---|---|---|
| Senna, in No. 60 powder | 18 | parts; |
| Glycyrrhiza, in No. 60 powder | 16 | " |
| Fennel, in No. 60 powder | 8 | " |
| Washed sulphur | 8 | " |
| Sugar, in fine powder | 50 | " |

The ingredients are directed to be rubbed together until they are thoroughly mixed.

*No. 151.*—Connect the first zinc with one of the binding-posts, the first carbon with the second zinc, the second carbon with the third zinc, and so on, and the last carbon with the other binding-post.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

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## Original Communications.

# ACUTE BRIGHT'S DISEASE IN CHILDREN.*

BY A. JACOBI, M. D.,

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MOST cases of acute nephritis exhibit no striking symptoms. Thus it is that so many are overlooked. The temperature is often but little elevated, but appears to be less so than it actually is. Many practitioners are in the habit of using the thermometer only when there is a perceptible warmth to the touch. This is a mistake, for the incipient anasarca renders the skin cooler than it would be under ordinary circumstances. The condition of the subcutaneous tissue renders the axillary temperature also lower; thus reliance can be placed only on the temperature when it is taken often and in the cavities, mainly the rectum.

It is dropsy which as a rule is the first symptom that draws attention to the kidneys. The eyelids are swollen, the face is bloated. When the child is kept in bed the first pitting is noticed in the lumbar and gluteal regions. Then complete anasarca will follow; ascites (dullness in proper places, fluctuation), hydrothorax (dullness, suppressed respiration, change of level of fluid by changed position, dyspnœa, absence of pleuritis, etc.), hydropericardium (excessive dyspnœa, heart-beat quick, feeble, irregular, distant, triangular dullness over a large surface), pulmonary œdema (moist rhonchi over the lower lobes, mostly bilateral, but little dullness, ascending, dyspnœa increasing, expectoration of froth in large quantities, etc.), and œdema glottidis (symptoms of croup, with œdema tangible about the aryepiglottic folds, etc.), meningeal and cerebral œdema, one of the forms of uræmia.

The other two forms of what is comprised under the head of uræmia are, secondly, the direct poisoning by the retention of urea in the blood, and, thirdly, reflex irritation, from the same cause, of the vaso-motor centers with spastic contraction of arteries and increase of blood-pressure. The latter is at the same time a cause of cerebral disorder and of cardiac hypertrophy.

The nervous disorders of uræmia may show themselves in different ways. Uræmic diarrhœa belongs here as well as nausea and vomiting. There are, besides, dizziness, dim vision, amblyopia, deafness, headaches, sopor, delirium, convulsions. Some of these symptoms are very sudden and surprising.

It is but a month ago that I saw a case of undoubted Bright's disease without brain symptoms of any kind with Dr. F. Huber.

The boy was quite intelligent, six years old, and answered slowly but correctly. He had become suddenly and totally blind. The absence of any other brain symptoms induced us to suspect local extravasation. As no other hæmorrhages have made their appearance anywhere, and the boy got better of his blindness while his kidneys improved, I believe we were mistaken, and his blindness was uræmic.

The urine is scanty in the beginning, rarely of low, usually of high specific gravity, 1·020 to 1·030 and more, bloody, smoke-colored, or suppressed.* It contains albumin, but little, "only a trace," in the beginning, gradually more. There are cases of nephritis without any albumin, though it may not be a case of shrinking kidneys. Such a case I saw with the late Dr. Charles A. Budd twenty years ago. The urine was scanty but light, and contained no albumin, and but a trace of urea; thus it was more a transudation than a secretion.

Transient albuminuria, on which Dr. F. P. Kinnicut published an able essay in the "Archives of Medicine," February, 1882, has, according to him, the following causes:

1. "Temporary presence of imperfectly oxidized matter in the circulation." This takes place in dyspepsia from any cause, and in fever, which, besides, gives rise to the destruction of blood-cells and to a diminution of blood-pressure and of the velocity of circulation.

2. "Vaso-motor disturbance in the kidneys, either general or local." That occurs in changes of innervation, lesions of various parts of the brain resulting in arterial spasm, in cerebral meningitis, in delirium tremens, in poisoning with morphine, strychnine, or ether, and in an epileptic seizure.

Albuminuria, however, though it is often the first symptom of acute Bright's disease, is not Bright's disease. It may appear and reappear without any permanent tissue changes in the kidneys.

3. "Transient dilatation of blood-vessels and retardation of blood-current in the glomerular vessels, with a consequent possible alteration in the functions of the glomerular epithelium."

I should add—

4. Congenital (or acquired) feebleness of the structure of the blood-vessel walls.

5. Permanent retardation of circulation from congenital smallness of blood-vessels, such as is the frequent cause of obstinate or life-long chlorosis, and, as I believe I can prove, sometimes of pernicious anæmia. In these cases the albuminuria is apt to return frequently.

In the acute nephritis of childhood the kidney is enlarged through an increase mostly of the cortical substance. This increase depends mainly on fibrinous exudations in the convoluted uriniferous tubules, and effusion into the interstitial tissue. At the same time there are proliferation of the epithelium of the tubes and Bowman's capsules and an accumulation of round cells and red blood-corpuscles in the tubes, and, in bad cases, also in the interstitial tissue. These are the changes which, more or less developed, take place in every form of acute nephritis, no matter whether the individual cases, according to their various causes and accompanying clinical symptoms, are defined as catarrhal, hæmorrhagic, interstitial, or septic inflammations. There are many authors, however, who maintain that, in accord-

* Read, as part of a general discussion on acute Bright's disease, before the Medical Society of the State of New York, February 7, 1888.

* The sediment of the urine contains salts, epithelia, and casts. The casts are hyaline at first, covered with adhering cells and blood-corpuscles. Both casts and cells will afterward become granular.

ance with the fact that the floating poison strikes the glomeruli first, the primary affection takes place in them, and descends from them into the tubules. On section, the surfaces are of a dark red color, interrupted only by grayish spots corresponding with the accumulations of fibrin in the glomeruli; a bloody serum oozes out. There are punctated extravasations, the tissue is fragile, the pyramids and vessels are injected, and also of a deep-red color.

The body exhibits also dropsical effusions, almost always in the subcutaneous tissue, sometimes in the peritoneal, pericardial, and pleural cavities. The pleural effusion is sometimes complicated with fibrinous pleuritis.

Thus it is observed that no circumscribed definition of any of the forms of acute nephritis can be furnished. The inflammatory process is not limited to a particular tissue or locality. Even medicinal poisoning exhibits all sorts of changes and grades at the same time. The process affects the epithelia of every part, from the capsule to the glomeruli; also the stroma, which is infiltrated with lymph-cells, and may develop to the final stage of shrinking. Thus it becomes evident that the various attempts at eliminating the term "Bright's disease" from our nomenclature have thus far remained abortive.

There is one cause of acute nephritis—resulting from an originally chronic disorder—very common in the last decades of life, which is not observed in the infant and child, viz.: *atheromatous degeneration* of the smallest arteries of the kidney. All the other sources of nephritis are more or less common to all ages, with this exception, that the majority of cases under observation are the results of poisons of an infectious character. The frequency of *eruptive and infectious diseases* in infancy and childhood—mainly *scarlatina, diphtheria,* also to a certain extent *measles, rubella, and varicella*—explains the liability to renal disorder satisfactorily. The influences of the floating poisons are graduated by their nature, intensity, and amount, by the rapidity or slowness of their admission into the circulation, by the velocity of elimination, and, finally, by the independence and vigor in the cell life of the patient. Thus, in order to furnish a single instance, it is explained why it happens that nephritis is so much rarer and milder in the infant typhoid fever, with its slow development and moderate heat, than in scarlatina, with its shorter incubation, dangerous onset, high fever, and inflamed surface.

There are several influences which produce acute nephritis in adults but are uncommon in the young. *Syphilis* gives rise to chronic nephritis rather than the acute form, even in adults. *Malaria* is known to result sometimes in intermittent albuminuria, with blood and kidney elements in the urine, but I have not met with a case in practice among children. *Alcoholism* is, as a rule, a privilege of advanced age. *Acute articular rheumatism* predisposes to acute nephritis less in children than in adults, because most attacks, though they are frequent in infants and children, are with them of a milder type. Even rheumatic endocarditis, though of frequent occurrence, is less imminently dangerous in children, either by itself or through a consecutive acute nephritis.

Still, I have under observation at present a baby a year old that has suffered from articular rheumatism, thus far without endocarditis, these four or five weeks. A slight œdema of the left eyelid led to the examination of the kidneys. I must add, however, that the baby was affected with *intestinal catarrh* for several months last summer, and it is possible that the kidneys have been affected since.

Of *chronic rheumatism* as a cause of nephritis I know of no instance. I have seen acute nephritis after an attack of *quinsy sore throat,* with and without rheumatic complication, but have not been able to convince myself that the former must necessarily be the consequence of the latter. But I have noticed several cases of nephritis growing out of *purpura rheumatica,* and one this very week, in a boy of four years, who developed nephritis with purpura (hæmaturia, cutaneous hæmorrhages, and epistaxis).

In *acute pneumonia,* albuminuria is frequent; nephritis not so much so in children as in adults, in whom the latter is frequently the cause of death. Even in them many of the cases existed unknown when the pneumonia started, and was diagnosticated during the course of the disease or at the autopsy. It is possible to explain the occurrence of nephritis during pneumonia in two ways—either by the disturbed circulation and high temperature, or perhaps by the simultaneous effect of the cause of infectious pneumonia—pneumococcus, or ptomaine, or what not—on the lungs and kidneys. Still, not only croupous pneumonia, but also *broncho-pneumonia* and *bronchial catarrh* are either coordinate and simultaneous with nephritis or sometimes precede it.

*Heart diseases* other than rheumatic will also give rise to nephritis by retardation of the circulation, and occasionally by embolism.

A number of *medicinal substances* are known, when applied to the surface, to produce nephritis—such as tar, turpentine, petroleum, styrax, iodine, cantharides, balsam of Peru, naphthol, and carbolic acid. The internal administration of carbolic and salicylic acids, pyrogallic acid, cantharides, mineral acids, oxalic acid perhaps, also lead, arsenic, phosphorus, and mercury has been known to have the same effect; also the subcutaneous application of manganese and iron. One of the most dangerous articles in this respect is *potassium chlorate.* My first warning in 1860 was not noticed much. Nine years ago I read a paper before this society on the same subject. Since that time the attention of the medical profession all over the world has been wide awake, and cases of poisoning have been reported. I supposed at that time that the acute nephritis following the administration of the drug was its direct result, and but a year ago Professor Stockvis, of Amsterdam, tried, in an elaborate series of experiments, to sustain my opinion. But it is probable that the nephritis is only the final outcome of the methæmoglobinuria resulting from the influence of the poison on the blood, in the manner which was illustrated a few years ago by Dr. George B. Fowler before this society.

A sudden *exposure to a cold temperature* is certainly a cause, and not an uncommon one, of acute nephritis in children. A fall into water, or through the ice, or exposure to a rain-storm, and a drive in an open sleigh, I have seen repeatedly followed by an attack of acute nephritis. This is

a dangerous form, and many of those thus attacked die in from three to five days, with more or less complete suppression of urine; total suppression I have seen once to last even more than five days. This suppression of urine is often relieved a short time before death, thus arousing false hopes. In the same way I have seen hæmaturia and hæmoglobinuria returning after every exposure for years. What, now, is the cause of the acute inflammation? Is it the sudden contraction of the cutaneous vessels alone, and the consecutive congestion of internal organs? Is it the suppression of the elimination of effete material, which acts as an irritant upon the viscera? This much is sure, that, by covering the body of a shaved animal with varnish and thus reducing the temperature, the internal organs become the victims of a high degree of congestion. Lassar experimented on animals that had been affected with nephritis. When, after recovery or during convalescence, he plunged the animal into ice-cold water, a renewed attack of the nephritis was the result. Besides, there was congestion of the liver, lungs, heart, and neuroglia.

Nephritis is also produced by *combustion* of a larger or smaller part of the surface. Of this form I have seen many cases. Sometimes there is hæmoglobinuria only, through the destruction of blood-cells. This alone may give rise to nephritis. In these cases blood-cells and casts are found in the urine, sometimes hæmoglobin only. Post mortem, there are hæmorrhages in the capsule and tubules, and a granular mass in the tubules, without a radical change in the glomeruli or endothelia.

In the very young infant nephritis is by no means uncommon. It is met with in many cases of *tetanus* of the newly born and in *sepsis*. One of the main organs affected in acute fatty degeneration of the newly born, as first described by Buhl, which consists in a parenchymatous inflammation of most of the organs, is the kidney. The latter shows hæmorrhages in the tissue, swelling of the cortical substance, a dark color in recent, a yellow hue in older, cases, and fatty degeneration of the convoluted uriniferous tubules, which are sometimes completely obstructed.

In the *epidemic hæmoglobinuria* with icterus and cyanosis, described by Winckel in 1879, the condition of the kidneys was such that nephritis would have been observed but for the short duration of the disease (from nine to thirty-two hours). The cortical substance was larger and brownish, and contained a great number of punctated hæmorrhages; the pyramids either were of a uniform dark-red hue or showed fine blackish stripes, which converged in the direction of the papillæ. The discoloration was found to depend upon the presence of granular hæmoglobin in the straight uriniferous tubes; no normal red blood-cells were met with.

Nephritis complicates and is complicated with *erysipelas*, *pyæmia*, *pleurisy*, *pneumonia*, and *meningitis*. Parenchymatous nephritis is sometimes connected with *myocarditis*, and its occurrence must be suspected, when the slightest symptoms point to it, in thoroughly *rhachitical* infants, in whom that affection makes its appearance in the very first months of life. Soon after birth, merely in consequence of the abrupt changes taking place in the general circulation, an almost physiological albuminuria is observed. This must not be mistaken, however, for a form of nephritis which is apt to be quite serious—viz.: that which is the result of a *traumatic lesion* of the pyramids, and sometimes even the pelvis. Such a lesion is the occasional result of the presence and elimination of the *uric-acid infarcts* which, to a greater or less extent, are noticeable in the kidneys of every baby between the second day and the end of the third or the beginning of the fourth week. I have seen such cases, and also those which were initiated with a slight hæmorrhage from the kidney. In later months *chronic exanthems* of every kind, extensive eczema in particular, are the causes or complications of nephritis. It is also a frequent accompaniment of acute intestinal catarrh, "cholera infantum." Marshall Hall's hydrencephaloid is, in its worst forms, either intracranial thrombosis in the smallest veins or nephritis. In many cases of *chronic diarrhœa*, also, the autopsy reveals parenchymatous nephritis.

At that early age dropsy is not uncommon. But more frequent are several cerebral symptoms of such a degree that the differential diagnosis from typhoid fever and meningitis has often been missed. The fontanelles are depressed; convulsions and other symptoms of uræm a e quite common.

Without the examination of the urine the diagnosis can not be made. The covering of the penis with a condom may secure a specimen, but no time must be lost in obtaining it. The introduction of a silver probe into the urethra may suffice to produce micturition when the bladder contains urine in fair quantity, which then can easily be caught in a cup. If none will come, or if there is too little in the bladder, the catheter has to be used. I use an elastic one in most cases, Nos. 3 to 6 French, usually Nélaton, but rarely a metal instrument. Its introduction is almost always quite easy. A duplicature of the mucous membrane, such as Englisch has met with, or a congenital hypertrophy of the prostate, or an irregular course of the canal, is very rare indeed. A spasm of the urethra or uncommon restlessness on the part of the patient may require a few inhalations of chloroform, but, as a rule, there is no period of life in which the use of a catheter is less beset with difficulties than early infancy. Only be sure that the instrument is aseptic. Not three weeks ago did I see a vigorous man die of sepsis ten days after a single introduction of a bougie of doubtful cleanliness.

In *typhoid* and in many other infectious fevers with high grades of temperature there is a pretty universal parenchymatous degeneration. The blood is dark, coagulates less readily, and becomes thick and viscid. The muscles undergo a fatty or waxy degeneration, and rupture with great facility, most of all the rectus abdominis; the heart becomes soft, gray, or brown, fatty, pigmentous, and waxy. The walls of the blood-vessels contain fat and pigment, and the nuclei of the capillaries become subdivided and disintegrated. Thus hæmorrhages and secondary inflammatory processes are quite frequent, mostly in the brain and in the kidneys, without any such preparatory disposition as is created by syphilis or tuberculosis.

In the typhoid fever of the young, nephritis is not so common as in adults, because the average cases are less

severe. When it does occur it is apt to be mild, and both albumin and kidney elements are apt to disappear within a week or two. Albuminuria alone, it is true, is more frequent in the first week, while the high temperature may last in abruptly developed cases, and will give rise to no inconvenience. Rosenstein professes to have observed it mainly in the cases treated with *salicylate of sodium*. Still there are very serious cases, mainly hæmorrhagic, with protracted and high fever, which render the differential diagnosis quite difficult. It is true that a very high temperature is not often seen in acute nephritis, but sometimes it is. On the other hand, typhoid fever of the young (and with us of the old also) runs its full course often without a high temperature. Thus the latter alone does not facilitate the differential diagnosis between the two. Nor, in cases which terminate fatally, are the results of the post-mortem examination very conclusive, for the anatomical changes in the kidneys are not always very marked, though the urine contained during life plenty of blood and renal elements, and the complications were quite serious. These are pneumonia, inflammation of the serous membranes, mainly the pleura and pericardium, and uræmia. Some of the cases are glomerulo-nephritis, as mostly in scarlatina. The results are sometimes fatal, but mostly favorable as to complete recovery, for I do not remember more than a single case in which this typhoid acute nephritis terminated in the chronic variety.

In *scarlatina*, albuminuria may appear in the very first days, during the high temperatures of the first stage. It may be complicated with the presence of hyaline and blood cylinders. These may remain though albumin disappears from the urine. Nephritis, as a rule, begins about the ninth or tenth day or later, and rarely after the twenty-third I have seen it making its appearance on the thirty-eighth day, in a girl of five years who had scarlatina twice in the period of a year and a half. In her first attack nephritis commenced, after desquamation was nearly completed, on the thirty-fifth day; in the second, on the thirty-eighth. She had been well of the first more than a year, being under close observation all the time, when the second appeared. She has been well these seven years.

Most cases get well in some weeks. Some take several months, or even a year. Not a few cases become chronic and may terminate after a long time. The longest duration in my recollection of this secondary chronic state, which finally terminated fatally with uræmic convulsions, was eleven years. During this chronic condition there may be many exacerbations in the shape of a true acute nephritis, with blood and blood casts, epithelial casts, granular casts, and granular cells in the urine.

The usual form of scarlatinous nephritis begins in the glomeruli, which are changed in both their epithelia and walls, and filled with coagulated fibrin. They show a gray ish discoloration, and are thick and impermeable to such an extent as to give rise to obstruction and uræmia at a very early stage. This early uræmia may soon terminate fatally, while that occurring in a later stage is apt to run a more favorable course. Still, the glomerulous form is by no means the only nephritis of scarlatina. Not infrequently is the interstitial tissue infiltrated with round cells, while the epithelia are but little altered. In these cases the kidney is flaccid, large, and hæmorrhagic. Also the blood-vessels are changed; round cells conglomerate around them, and their adventitia undergoes hyaline degeneration.

Much has been said of the frequent occurrence of nephritis in *diphtheria*. It is true that albuminuria is frequent, and it is explained by the presence of irritating material floating in the circulation, perhaps also by the elevated temperature, and certainly by the impediment to the circulation resulting from the rapidly increasing debility of the heart. This albuminuria occurs at an earlier period of the disease than it does in scarlatina—frequently on the second or third day. To look, however, upon its presence at that early time as a pathognomonic symptom is incorrect. In it the admixture of blood is not so frequent as in scarlatina.

Albumin may make its appearance, though generally in the first week, in the later periods of diphtheria also. What, however, we call diphtheria is often the name for a series of attacks. It may appear with or without fever, with increasing severity or rapid improvement. Indeed, I have reported cases of albuminuria in diphtheria—in my treatise and otherwise—in which a copious elimination of albumin was immediately followed by a rapid improvement in all the symptoms. Albuminuria may reappear, and this is the result of either a relapse or a new attack of the disease, or depends on the transmutation and elimination of diphtheritic infiltrations previously deposited, mostly in glands. When it appears, however, on the very first day of the disease, it illustrates beautifully to what extent the homogeneous substances of the body may be affected at the same time, for in these cases it is the epithelium of the throat and that of the kidneys which undergo morbid changes at the same instant.

Meanwhile the kidneys may be perfectly normal; sometimes, however, slight hæmorrhages take place under the capsule, and also in the tissue of the organs. Still, every form of nephritis has been observed, with rapid obstruction of the tubules by swelling endothelium, rapid yellow fatty degeneration, and speedy fatal termination. Now and then the process begins either in the cells or in the uriniferous tubules, or in both contemporaneously. In most cases it displays its power in the round cells, their vitality or destructibility deciding the fate of both kidney and life. Characteristic bacteria have not been found by the best observers; even those who have noticed them at all admit that they have often failed. In his very latest publication —"The Pathogenesis of Epidemic Diphtheria in its Histological Aspects," 1887—Oertel, who has alleged diphtheria to be the result of micro-organisms these twenty years, admits that he can not find any in the nephritis of diphtheria. Most observers express themselves very reservedly on this point, and the best answer it negatively.

The anatomical appearances and the symptoms do not vary from those of scarlatinous nephritis. Only the very worst forms of diphtheritic nephritis are apt to destroy life in a few days, while the majority terminate favorably, even more so than nephritis in scarlet fever. Thus it is that dropsy of the subcutaneous tissue and the cavities is but rare. At all events, the attempts of Schotten ("The

General Diphtheritic Infection," 1885) to prove an essential difference between the nephritis of the two diseases are very strained indeed when he tries to explain the more favorable course of nephritis in diphtheria by the assertion that "surely but one kidney is affected," because (?) in diphtheria it is "uncommon that bilateral organs are stricken simultaneously," and that "most commonly the nose, tonsils, and ocular and flexor muscles are affected on one side only." All of this is not in accordance with the nature of the disease and its localizations.

(*To be continued.*)

## HYPERPHORIA.

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I wish to state in the beginning of this paper that the matter herein contained has been written in no polemic spirit. It seems that Dr. George T. Stevens was the first to describe the condition known as "hyperphoria," and to him much credit is due for the work he has done and the renewed interest which he has awakened in the study of the ocular muscles.

"Hyperphoria is that condition in which, with the ability to maintain binocular vision, there is a tending of one visual line above its fellow." "This term does not imply that the line to which it is referred is too high, but that it is higher than the other, without indicating which may be at fault."

Hyperphoria is determined in the following manner: "First of all, a prism of sufficiently high grade to produce diplopia is placed with its base toward the nose before one of the eyes. The two images of the object then seen are homonymous—that is, the right image is seen with the right eye, the left with the left eye. If the two images are seen in exactly the same horizontal plane, no deviating tendency in this direction is manifest. If one of the images rises higher than the other, there is absence of equilibrium in this respect, and the condition is the one called hyperphoria. If in the test the left image of the object is seen higher than the other, it indicates that the visual line of that eye tends below that of its fellow, and that the visual line of the right eye has, in fact, a tendency to rise above the left visual line. This is *right hyperphoria*, and the state in which the right image is seen above the plane of the other is known as *left hyperphoria*.

"If, as in the first instance, the left image is higher than the other, we determine the degree of right hyperphoria by finding the grade of prism which, placed with its base down before the right eye, or with its base up before the left, will bring the two images exactly to the same horizontal plane, and the result is recorded accordingly. Thus, if a prism of 2° base down before the right eye corrects the deviation from the horizontal plane, we write right hyperphoria, 2°."

Under "Treatment of Hyperphoria" Dr. Stevens says: "The best treatment for hyperphoria is tenotomy of the muscle which forces the eye out of its proper direction.

"It is not always easy or even possible to determine to which muscle we are to attribute the vicious tendency.

"The superior rectus of one eye may be short, causing too great tension upward, or the inferior rectus of the opposite eye may be at fault, tending to draw the eye downward. . . .

"With all these elements of uncertainty the highest skill of the surgeon may be demanded in forming a correct conclusion. . . .

"In the majority of cases, however, in which the hyperphoria does not exceed three degrees, it is proper to relax either the superior rectus of the eye of which the deviating tendency is upward, or the inferior rectus of the other. In general, it will be found best to select the superior rectus. If more than three or four degrees of deviating tendency is found, it is better to correct a part upon the superior rectus of one eye, and what remains of the defect upon the inferior rectus of the other eye some days later."

In reading the definition of hyperphoria, let it be borne in mind that a *tending* of one visual line above its fellow is mentioned. The fact that binocular vision is attained and retained excludes the possibility of one visual line *lying* above its fellow. The condition of difference in plane between the two visual lines must then be only an artificial one, which is manifested by the causation, artificially, of homonymous diplopia.

It is stated that the adjective hyperphoric applied to one visual line does not indicate that it is at fault, but that it simply tends above its fellow. Now, the normal lines should lie in the same plane, and the proper plane of each eye is that plane which is coursed by a straight line from the macula lutea to the object looked at.

The "Graefe test" has been employed by all, since the time of its distinguished originator, to detect insufficiencies in the lateral straight muscles. It is thoroughly reasonable to suppose, when horizontal diplopia is caused artificially, that any insufficiency in the vertical straight muscles will become evident.

Strabismus sursumvergens and strabismus deorsumvergens have been recognized and treated long since; these conditions are only exaggerations of insufficiency in one of the vertical straight muscles. Why, then, may not a latent insufficiency or overtension in one of these muscles exist, as is known to be the case in the lateral straight muscles? And if it exists, why may it also not cause symptoms of asthenopia?

If it causes symptoms of asthenopia, the correction of the condition ought to relieve these symptoms.

In the preceding citations we have seen that, horizontal diplopia having been caused, if the two images are seen in exactly the same horizontal plane, no hyperphoria exists; if, however, one image rises higher than the other, there is "absence of equilibrium" of the vertical muscles—hyperphoria. When the left image is higher than the right, there is right hyperphoria. When the right image is higher than left, there is left hyperphoria.

To cite a case, if the left image stands higher than the right, one of two conditions is possible: either the left visual line tends lower than it should while the right is

normal, or the right visual line tends higher than it should while the left is normal.

It has been stated that a "prism with its base down before one eye is equivalent in its action to a prism with its base up before the other." Inferentially, then, any prism that represents the power of the superior rectus of the right eye represents the power of the inferior rectus of the left eye; hence also the value of the superior rectus of the left eye, reckoned in prisms, is the value of the inferior rectus of the right eye.

From the standpoint of antagonism, one would infer that the opponent of the superior rectus of one eye was the inferior rectus of the other eye, and *vice versa.*

It seems to me that the antagonist of the superior rectus of one eye is the inferior rectus of the same eye. When the eyes are directed to distance and at an object in the same plan , with themselves, the tension with which the superior rectus of each eye pulls should just equal that with which the inferior rectus of the same eye pulls. Equal tension would then be established, so far as the vertical straight muscles are concerned. It is stated also that "we can not make accurate determinations of both right and left sursumduction, if the test for one follows without interval after the other." It seems to me possible to make the determination of right and left *sursumduction* and *deorsumduction;* this is the point at issue, and this has furnished the *casus scribendi.*

As prisms of various strengths have been accepted as the expression of power for the ocular muscles, we will use them in the following. In the cases cited below, whenever there was hyperopia with good distant vision the error was corrected. Myopia was corrected in all cases. The distance of the patient from the object was fifteen feet.

The method of procedure is as follows: The patient being seated erect in an armless chair, with the head held as nearly as possible in the horizontal plane, homonymous diplopia is caused by placing a strong prism, with its base inward, over either the left or right eye. When the two images are seen in the same horizontal plane, equal tension of the vertical muscles is supposed to exist; the power of the separate vertical muscles of each eye is then determined, commencing with the *right eye.* Beginning with prism No. 1, the base is placed over the insertion of the inferior rectus; if one image still is seen, prism No. 2 is placed in the same position. The strongest prism that is overcome with its base in this direction indicates the power of the superior rectus—*sursumduction.*

The strongest prism that can be overcome with the base placed upward indicates the power of the inferior rectus—*deorsumduction.* The same procedure is employed immediately over the left eye.

1. Homonymous diplopia having been caused, the images were found to stand in the same horizontal plane. Testing the power of each vertical muscle separately, I found:

*Right Eye.*—Power of superior rectus, 2°; power of inferior rectus, 2°.

*Left Eye.*—Power of superior rectus, 2°; power of inferior rectus, 2°.

2. The images were shown to be in the same horizontal plane when homonymous diplopia was caused. The power of the vertical muscles was as follows:

*Right Eye.*—Power of superior rectus, 1°; power of inferior rectus, 1°.

*Left Eye.*—Power of superior rectus, 1°; power of inferior rectus, 1°.

3. Examination for hyperphoria discovered the fact that the *left* image stood *higher* than the *right.*

*Right Eye.*—Power of superior rectus, 3°; power of inferior rectus, 2°.

*Left Eye.*—Power of superior rectus, 2°; power of inferior retus, 2°.

As stated by Dr. Stevens, when the left image stands higher than the right there is *right hyperphoria.* It will be seen above that the vertical muscles of the left eye are in a state of equal tension. This eye is, then, the standard from whose plane the other deviates. It will be seen that the power of the superior rectus of the right eye is 3°. This gives an upward tending to this eye, and the adjective *hyperphoric* applied to the right eye is in this case eminently correct. As the right eye is inclined upward by the over-power of the superior rectus, the image of the object falls upon the retina above the macula lutea, and hence is projected to a plane lower than that of the image of the left eye. It was stated that the left image stood higher than the right. It might also be stated conversely that the right stood lower than the left. In the "Treatment of Hyperphoria" it has been stated that, in this condition, that muscle should be tenotomized which forces the eye out of its proper direction; that in right hyperphoria, as in the above-cited instance, one may tenotomize the superior rectus of the right eye or the inferior rectus of the left; that the superior rectus is, as a rule, preferable. To tenotomize the inferior rectus of the left eye in the above-mentioned case, according to the demonstrations of this paper, would be unreasonable, for then equal tension in each eye would be disestablished, and, assuming that 1° is taken from the muscle by the tenotomy, there would remain the following valuations:

*Right Eye.*—Power of superior rectus, 3°; power of inferior rectus, 2°.

*Left Eye.*—Power of superior rectus, 2°; power of inferior rectus, 1°.

Apparently the evil would not be remedied by such a procedure. A tenotomy of the superior rectus of the right eye would be the correct procedure in this case, and, assuming that exactly 1° was removed from its power, there would then exist equal tension in each eye.

4. Examination for hyperphoria revealed the fact that the left image stood higher than the right. The following valuations were found:

*Right Eye.*—Power of superior rectus, 1°; power of inferior rectus, 1°.

*Left Eye.*—Power of superior rectus, 1°; power of inferior rectus, 2°.

The left image stood higher than the right; according to the teachings extant, the diagnosis of *right hyperphoria* should be made.

It will be seen that there is equal tension of the muscles of the right eye; the left eye is here at fault, and the

guilty muscle is the inferior rectus. By its overtension it pulls the anterior pole of the eye downward, and consequently the posterior pole is rotated upward; the image, falling below the macula lutea in this eye, is projected higher than the image of the right eye.

Shall the diagnosis of *right hyperphoria* be made in this case? The diagnosis should be *left hypophoria*. According to the present teachings, it would be best to tenotomize the superior rectus of the right eye, for it was found that the left image stood higher. But the fact that the left image stands higher is not due to the tending of the right eye upward, but to the tending of the left eye downward. Clearly there could be only one reasonable operative procedure, and that would be tenotomy of the inferior rectus of the left eye.

If a suppositional power of 1° could be taken away from the inferior rectus of the left eye, equal tension of the muscles of each eye would be established.

That the facies of a person will at times give some idea of the existing refractive condition of the eyes is well recognized. A flat face is said to indicate the probability of hypermetropia; a prominent face, the probability of myopia; asymmetry of the face, the probability of astigmatism.

Recently, in making examinations for hyperphoria, I have observed that the eyes are frequently situated in different horizontal planes in the skull. After my attention was awakened, I observed numerous cases in which the difference was most striking, and have come to wonder how I could have failed to remark it before. If any one has called attention to this fact before, in connection with insufficiency or supersufficiency of the vertical straight muscles, I am not aware of it.

Now, if the eyes are situated in different horizontal planes, and equal tension of the vertical muscles of each eye exists, it is evident that the same image can not be formed on the macula of each eye. If, for instance, the right eye is situated higher in the head than the left, an image which is formed on the macula of the left eye will be formed *below* the macula of the right eye, equal tension of the vertical muscles being supposed. The right macula under such circumstances should be rotated downward in order to catch the image; this can be done by an overtension on the part of the superior rectus of the right eye. Such overtension can not be regarded in the light of guilt, but rather as an honest effort on the part of the superior rectus to furnish its master with single binocular vision. I select two cases of this condition of affairs.

5. The right eye was situated higher in the skull than the left. Horizontal homonymous diplopia having been caused, the left image was found to be the higher.

*Right Eye.*—Power of superior rectus, 2°; power of inferior rectus, 2°.

*Left Eye.*—Power of superior rectus, 2°; power of inferior rectus, 3°.

The right eye must be accepted as the standard; an image that falls on its macula must fall *above* the macula of the left eye, were it not for the inferior rectus of the latter, that pulls the eye downward and carries the macula upward to meet the image at the trysting-place. In this way single binocular vision is attained by an overtension on the part of the inferior rectus of the left eye. An operation upon either the superior rectus of the right eye or the inferior rectus of the left would be quite out of the question. This patient had been examined by two other gentlemen, and the diagnosis of *right hyperphoria* had been made by each; one suggested clipping the tendon of the superior rectus of the right eye.

Although the patient had a considerable refractive error (*H*), he had no symptom of asthenopia save a little heaviness of the eyes at night when reading.

6. The left eye was situated in a higher plane than the right. Homonymous diplopia having been caused, the right image was found to be the higher.

*Right Eye.*—Power of superior rectus, −1° (= less than 1°); power of inferior rectus, 1°.

*Left Eye.*—Power of superior rectus, 1°; power of inferior rectus, 1°.

A prism of 1° with its base placed upward over the right eye was overcome. Prism 2° could not be overcome. Prism 1°, with its base down over the same eye could not be overcome; value of superior rectus less than 1°.

The left eye must be taken as the standard; this eye lay higher in the skull than the right. An image that falls upon the macula of the left eye will fall above the macula of the right. The superior rectus of the right eye, appreciating the condition of affairs, gracefully yields, thereby permitting its opponent to pull the eye downward and throw the macula upward till single binocular vision is attained.

This patient evinced refractive errors in both eyes and complained of asthenopia on reading at night. The errors were corrected and relief was given. I have in my record-book twenty-three cases in which I have made the examination for "hyperphoria." The position of the images has been explained in all save three. In one of these I found equal tension in the muscles of each eye, but one image stood higher than the other. This may be accounted for by an unintentional twisting of the displacing prism. In the two others there seemed to be irregular clonic contraction of the vertical muscles, as was attested by different valuations obtained on several occasions.

A difference in the height of the eyes has been observed in five cases. I had not commenced to observe this peculiarity till I had made fourteen examinations for "hyperphoria." Of the above-mentioned five cases, three have been marked by compensatory overtension on the part of one of the vertical muscles. The two others are anomalous.

I cite one of the latter:

7. The left eye lies in a higher plane than the right. The left image is found to be higher than the right.

*Right Eye.*—Power of superior rectus, 2°; power of inferior rectus, 1°.

*Left Eye.*—Power of superior rectus, 2°; power of inferior rectus, 2°.

We must accept the left as the standard eye. As the left eye lies higher than the right, an image that falls upon its macula ought to fall *above* the macula of the right eye. We should expect the inferior rectus of the right eye to show the greater power, but it does not. The compensation

for the difference in height of the eyes is not shown in this case.

Of the five cases in which there was a difference in the height of the eyes, the left eye lay higher than the right in four instances.

Although *every* case of hyperphoria examined by me has not been satisfactorily explained by the method of examination herein suggested, nevertheless it seems to me that a sufficient number have been explained to warrant the statement of results. Anomalies in the action of the ocular muscles are not infrequent, and under the circumstances we must look to such conditions for the explanation of some results.

1. There is a condition in which the eyes lie in the same horizontal plane, the tension of the vertical muscles of each eye is equal, and the visual lines lie in the same plane.

For the want of a better term I would call this condition *isophoria* (ἴσος, equal; φόρος, a tending).

2. There is a condition in which the eyes lie in the same horizontal plane, the tension of the vertical muscles of one eye is equal, and that of the same muscles of the other eye is unequal. Under such circumstances the visual line of one eye tends to deviate from that of the other, which is the standard; if the deviation is downward, the condition may be called *vicious hypophoria* of that eye; if the deviation is upward, the condition may be known as *vicious hyperphoria* of that eye.

3. There is a condition in which one eye is situated higher in the skull than the other; there must be a compensatory overtension of one vertical muscle in such cases, in order to accomplish single binocular vision. Such overtension should not be considered as *vicious*, but rather as *compensatory*.

The terms *compensatory hyperphoria* and *compensatory hypophoria* may then be applied to any appropriate case that comes under the latter condition.

It has not been my purpose to discuss the merits of the treatment of "hyperphoria"; I have never operated for it, nor should I till I had excluded all other means of treatment, for it must require consummate judgment to know just how much to loosen the grasp of the vertical muscles, ordinarily so much weaker than the lateral ones.

I was led to think on this subject particularly on account of the uncertainty which surrounded the detection of the over-tense muscle.

If the conclusions arrived at have the color of *ex cathedra* statements, I would say they are not intended as such, but have been made as apparent conclusions from the protases. I sincerely hope that the method of examination may be employed by others, in order to test the correctness of the hypothesis.

*Justitiæ causa*, I wish to state that the idea of getting the values of the vertical muscles separately was suggested to me by Dr. N. J. Hepburn, of this city, in the course of a conversation concerning the apparent inexpediency of operating for a condition caused by the overtension of a muscle which could not be pointed out with accuracy.

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# THE VALUE OF "ALEXANDER'S OPERATION" IN CASES OF COMPLETE PROCIDENTIA OF THE WOMB.*

By CHARLES CARROLL LEE, M. D.,
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I presume that no member of my audience at all interested in gynæcology is unaware of the fact that "Alexander's operation" means the procedure of shortening the round ligaments of the uterus; and that this "consists in cutting down upon the external abdominal ring on either side, catching up the fibers of the round ligament there discovered, pulling out as much of them as suffices to draw the displaced uterus up behind the pubic arch, and then stitching the shortened ligaments to the pillars of the abdominal ring." (Dr. W. Reid, in Ninth International Medical Congress.)

Since Dr. Alexander, of Liverpool, first performed this operation on December 14, 1881, and since he and Dr. Adams, of Glasgow, more fully described it in 1882, six years have elapsed. During this time, in spite of much hostile criticism, it has steadily grown in favor; and now it may fairly be termed an acknowledged resource in many cases of otherwise intractable displacement of the womb. But the displacement to which it has been confined is *retroversion*, or retroversion with prolapse; and I am not aware that Dr. Alexander or his followers, with perhaps a single exception in this country, have thought it applicable to cases of *complete procidentia*. At least, I can find no assertion to that effect in his published writings; and in a very able paper upon this general subject by Dr. Doléris, of Paris, read before the last meeting of the American Gynæcological Society, the author inferred from numerous cases quoted from his practice that, although the round ligaments were most useful for simply anteverting the uterus, they were useless for support. As this paper was read in French and has not yet been published,† I may possibly have misunderstood him; but this was my inference.

In the "Australian Medical Journal" of October 15, 1886, Dr. William Gardner, of Melbourne, details a large number of cases, among which was one "of extreme prolapsus"—probably complete procidentia—which, however, was not successful. From the author's comments I infer that he also shares the views attributed to Dr. Doléris.

In performing about a score of operations for shortening the round ligaments I have found reasons for dissenting absolutely from this conclusion, as I think the following cases will show. In each of them all the ordinary devices for curing the procidentia had been resorted to without success; all the patients had worn pessaries for months or years, and had had operations of posterior colporrhaphy or for laceration of the perinæum. In two of them an extensive laceration of the cervix, which, as Dr. Emmet has demonstrated, is often the precursor and one of the main factors of procidentia, had been carefully repaired. The

* Read before the Medical Society of the State of New York, February 7, 1888.

† Since published in full in the last volume of the "Trans. of the Am. Gyn. Society."

choice of method in a new attempt at cure seemed therefore to lie between Le Fort's operation, which was admissible only in one who had passed the menopause, and some effective adjunct to or substitute for a new perineorrhaphy. Believing this could be accomplished by Alexander's operation, I did it in each case, in addition to posterior colporrhaphy, as follows:

Case I.—M. V., aged thirty two, married twelve years, multipara, was admitted to my service in the New York Woman's Hospital, May 7, 1886. She had been sick ten years. She began to menstruate at fourteen; since then menstruation had been normal. Her first labor was very difficult and protracted, her fourth labor was instrumental, and after this her physician said she was "somewhat torn"; there had been no operation for repair. During her fifth (and last) full pregnancy—before which two early miscarriages had occurred—the womb gradually prolapsed until, about the eighth month, it was completely procident, and her last child was born with the cervix "and about four inches of the womb" projecting from the vulva. Since then it has never entirely returned to the vagina.

When she was admitted to the hospital there was still complete procidentia, with marked laceration of the cervix and perinæum, relaxation of the vaginal walls, and much dragging pelvic pain, which was greater on the left side. Both ovaries were prolapsed. Her general health was otherwise good. After a week's preliminary treatment, Dr. B. F. Dawson, then one of my assistant surgeons, at my request, closed the cervix and perinæum, and, as I thought, in the most effective manner. Good union was obtained, and in four weeks the patient was discharged apparently cured, but wearing a well-fitting pessary as a precaution. This hope, however, proved fallacious. The posterior wall again gave way; the uterus gradually prolapsed, forcing out the pessary; and in six months the procidentia was as complete as before. In this condition I sent the patient, much discouraged, again into the Woman's Hospital, where she was readmitted October 6, 1886. The womb was still much enlarged—four inches deep when *in situ*, six and a half apparently when prolapsed. The proctocele had returned. For a week astringent tampons were carefully employed, the patient's constipation was gradually overcome, and on October 14th I performed Alexander's operation in the presence of Professor Winckel, of Munich, and others. The round ligament was easily found on the left side; with much difficulty on the right, where also it seemed much shorter. This was carefully drawn out two inches and a half, and the left four inches, while the uterus was elevated on a sound: the ligaments were carefully stitched with fine carbolized silk to the columns of the abdominal ring and *to the periosteum of the spine of the os pubis*, which I think an important additional safeguard; a bone drainage tube was inserted on each side, and the wound closed antiseptically with catgut.

The uterus was now firmly moored behind the arch of the pubes, and considerable traction, by a tenaculum inserted into the posterior lip, failed to dislodge it in the least. As a precaution, however, a retroversion pessary was adjusted, to be worn until the wound should have quite healed. On the following day there was much pain, for which a hypodermic injection of morphine was needed. On the third day menstruation unexpectedly appeared, but in no way complicated the situation. By the end of the fourth day the left wound had healed by first intention, and the drainage-tube was quite absorbed; on the right side the union was slower and by granulation, and was not complete until the eleventh day. The pessary was now removed, but the patient was still kept in bed; the womb remained in perfect position, exactly behind the pubic arch; and the vagina, which had been slightly irritated by the large pessary, was prepared for a fresh perineorrhaphy. On November 1st, two weeks after the Alexander's operation, this was done with cocaine injections along the perinæum and posterior vaginal wall. Ether was avoided for fear of the subsequent vomiting, and the perinæum was firmly closed with catgut sutures above and silver wire below.

*November 19th.*—The sutures were removed from the perinæum, which had firmly healed.

*29th.*—The uterus was still unmoved, but quite large and hypertrophied. A large pessary was now reapplied, and the patient allowed to sit up and walk.

*December 6th.*—A smaller pessary was substituted, and the patient discharged cured. The womb was still close behind the pubic arch; the perinæum and posterior vaginal wall were normal; but, as an additional precaution, the pessary was directed to be worn for three months. At the end of this time it was removed, and then and since, up to the present, there has been no return of the displacement.

Case II. *Private Case.*—E. H., aged forty-eight, multipara, has been sick since her last labor, six years ago. For three years the uterus has completely protruded, and the vaginal walls are now extremely relaxed and redundant. Two years ago she had trachelorrhaphy and perineorrhaphy performed; the former of these succeeded, but the latter quite failed. Her uterus is four inches deep, quite movable, and easily replaced, and she suffers constant discomfort. On June 20, 1886, Alexander's operation was performed. The ligaments were easily found and shortened four inches and a half, and secured, as in the former case, to the periosteum of the pubic spine, and a retroversion pessary applied. The wounds were closed antiseptically, with bone drainage-tubes; they healed in ten days, both slightly granulating.

*July 2d.*—Posterior colporrhaphy was performed with silver sutures and cocaine injections, and a smaller pessary was substituted.

The patient remained in bed a month from the date of the second operation; the perineal sutures were removed on the twelfth day, when union was found fairly good throughout, two of the upper sutures cutting loose. In one more week the perinæum was quite healed. Astringent injections of boric acid were now employed twice daily, and with their use the vaginal walls were much constricted. Slight cystocele only remained when the patient stood erect, and in two months this had nearly disappeared. A year after the operation she was again carefully examined in the recumbent and standing positions, and was still quite well.

Case III.—M. E., aged forty-one, widow, multipara, was admitted to the Woman's Hospital, March 5, 1887. She had been sick three years; had laceration of the cervix and perinæum, large cystocele and proctocele, and complete procidentia. The latter was complicated and increased by the superincumbent pressure of a large subperitoneal fibroid. She had much pelvic pain, dysuria, "bearing down" or dragging discomfort in standing, and, when the uterus protruded, pain in walking and sitting. She was pale, her appetite was poor, and her general nutrition was below par. She had worn pessaries of various kinds, and a year before had had some operation done (probably perineorrhaphy) in St. Luke's Hospital, which seemed not to have succeeded. The depth of the uterine cavity was now five inches and a half. After a few days' preparation a preliminary operation to close the lacerated cervix was done on March 10th. The cystocele was not touched, as it was hoped that, by diminishing the uterine bulk and pressure, that would recede spontaneously.

In this we were disappointed, for the large uterine fibroid greatly interfered with the usual process of involution. On March 20th union in the cervix was complete, and the sutures

were removed; the cystocele was unaffected, and the procidentia, of course, as before. I now decided to perform Alexander's operation and close the perinæum securely at the same time, and on March 24th this was done. The round ligaments on both sides were easily found, and were unusually large and strong, possibly from the greater development of all the uterine tissues caused by the stimulation of the fibroid. They were drawn out fully four inches and firmly sewed with fine carbolized silk to the columns of the ring and the periosteum of the pubic spine. The wound was closed, as usual, with catgut sutures over a bone drainage-tube, dusted with iodoform, and covered with iodoform gauze and a figure-of-eight bandage.

To save the patient a subsequent operation, both anterior and posterior colporrhaphy were now performed at my desire by Dr. Horace T. Hanks, who found it necessary to insert an unusual number of sutures in the relaxed posterior wall. At the termination of this long operation the patient seemed much exhausted, and continued rather feeble for some days.

On April 4th the perineal sutures were removed, as much sloughing had occurred. On April 7th there was much suppurative discharge from the perinæum, where some deep sinuses were discovered; the patient showed great failure of strength. At this time, and for ten days later, she gradually developed all the symptoms of septicæmia; she was drowsy, stupid, at times delirious, but always with a low, muttering delirium, with feeble pulse, and a temperature varying between 99° and 102° F., but always above the normal.

From this alarming condition she slowly reacted and the perineal wound as slowly granulated; those in the groins from the first did better, and on the fourteenth day after the operation union there was found complete. During all these ominous complications the uterus remained firmly *in situ* behind and above the pubic arch, nor was even the unusual weight of the fibroma sufficient to dislodge it.

Finally, on April 24th, a month after the operation, as the patient was still much impaired in her general health and very troublesome, she was discharged, improved, but not cured. I have lost sight of her since.

In this case it is obvious that I attempted too much at one sitting, or else that I miscalculated the patient's strength. As a rule, my judgment is opposed to double or multiple operations, although, from example, or the force of habit, or to save my patient's time and the annoyance of two anæsthetizings, I often perform them. In this I know I differ from some of my friends whose intelligence I highly regard—Dr. Polk, who is here present, Dr. Doléris, whom I have lately quoted and whose rule is the opposite, Dr. James B. Hunter, my colleague at the Woman's Hospital, and others. I simply state my own opinion, and I am convinced that if, in the case last detailed, I had done Alexander's operation first and the perineorrhaphy later, with a suitable interval between them, the result would have been as gratifying as in the two former. As it is, it can scarcely be thought a failure, and under exceptionally discouraging circumstances it contributes, with the preceding cases, to demonstrate that by Alexander's operation we may often hope to cure the most extreme conditions of *procidentia uteri* which have resisted all other measures.

Since the foregoing was written I have found in the Boston "Annals of Gynæcology" for December, 1887, an excellent paper by Dr. J. H. Kellogg, of Michigan, upon the indications of Alexander's operation, in which two cases of complete procidentia are narrated as so treated—one successful, one a failure; and also in the same journal a briefer hospital report by Dr. F. L. Burt, of Boston, of two more cases similarly treated, and both cured.

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# URETHRAL CARUNCLE:

## ITS ÆTIOLOGY AND PROGRESS.*

By JOHN G. PERRY, M. D.

Under this term are classified *all* excrescences that present themselves at the mouth of the female urethra; and, owing to this, great confusion has arisen among different writers on the subject on account of the different appearances which they present, the variety of symptoms produced, and the embarrassment attending their treatment.

It has likewise received the names of "irritable urethral caruncle," "vascular tumor," and "irritable vascular excrescence," each chosen to represent the conditions attending the individual cases presented to the writer. Pepper, in his "System of Medicine," says: "It is the most common neoplasm known." Thomas (T. G.), in his work, says of irritable urethral caruncle: "Of the ætiology of this affection (edition of 1881) nothing is known." These remarks have given origin to the paper I now present. I give it in the light in which I have studied it, and hope to convey a little of the satisfaction I have derived from it.

It can not be a *very* common affection, I fancy, for in all my hospital experience (in the Woman's and Charity Hospitals) I met with it but once to notice; in my twenty or more years of membership in the Obstetrical Society I have never heard the subject discussed; and, in reviewing the text-books on diseases of women, I find its explanation vague and unsatisfactory.

To those who are familiar with the growths they appear either as of a somewhat elongated figure, a scarlet or bluish-red color, a spongy texture, the surface smooth, marked with shallow indentations, and covered with epithelium, or as a single round tumor or a cluster, bleeding readily and very irritable; or, again, in another form as a conglomerate of mucous membrane, cysts, and vascular tumors, with new formations crowded together and climbing upward toward the clitoris. This is the most formidable, and may attain any size, but each and all are products only, and the result of a process.

Chronic inflammation of the urethra with proliferation of the underlying connective tissue has done the work in some part or the whole of the urethral canal.

Thomas has attempted to differentiate between irritable urethral caruncle, urethral venous angeioma, and prolapsus urethræ, but they all have a common origin, and assume their various characters only through the conditions attending the age, temperament, and causes giving rise to the original inflammation. A specific cause will give rise to specific characteristics. An anæmic urethra stretched and bruised by frequent labors and soaked with vaginal discharges will give rise to one form, while an unstretched,

* Read before the Alumni Association of the Woman's Hospital in the State of New York at its fourth meeting.

firm urethra, irritated by long retentions of lithiated urine, will present another.

Let me illustrate:

During a summer visit to Boston I was asked to go to a neighboring city to see a lady who wished to consult me. She was a pluripara, exceedingly depressed, her nervous condition amounting almost to melancholia, but for the previous week or more had suffered annoying symptoms from the bladder, such as tenesmus with frequent and painful micturition, weight, and inability to stand. These symptoms had persisted night and day and no relief had been found. The urine being clear and without sediment, I asked permission to make a vaginal examination. I can not describe the feeling of the urethra from the vaginal orifice better than to say it felt as if an India-rubber tube was lying within its canal, not very but somewhat tender under pressure. A probe passed readily and with little pain. Nothing presented at the orifice. I pronounced it a cellular inflammation, and expressed the belief that, if relief by treatment was not speedily given, an irritable caruncle would result, to all of which the doctor in attendance agreed. About ten days subsequently the patient arrived in New York and sent word asking me to call upon her. The physician had not strictly complied with the agreement to give treatment every second day, owing to a large and scattered practice. The patient's sufferings had increased, and to the former symptoms had been added that of inability to bear the contact of her clothing or of the bed-clothes. At the orifice of the urethra I found a little red vascular tumor. The meatus was swollen, bulbous, shining, and irritable, while the urethra had shortened quite half an inch.

In ten days from the time I began treatment the vascular tumor had disappeared, but sleep without medication was restored in two. I simply put out the *fire*.

This case was typical of the origin and development of the irritable vascular excrescence. The patient, though a pluripara, had all her tissues firm and intact, but the temperament was viciously nervous, and was provoked by hydræmia.

Let me contrast this with a case that developed caruncle with prolapse of urethral mucous membrane.

Mrs. L., from Albany, also a pluripara, fifty years of age, had never complained of the bladder or urethra till some days before consulting me. She was driving with her husband, and a wheel rolled from the wagon and dropped them to the ground. She was obliged to walk to her home, some three miles distant, and, before reaching the house, was seized with an urgent desire to relieve the bladder. This desire increased, and, when she was able to get relief, micturition was attended with pain and tenesmus.

The physician was called, who made an examination, but found nothing to account for the symptoms, and treated her for shock. Not securing relief, she came to this city and consulted me. I found the uterus in the first stage of prolapse, the vaginal walls relaxed, the urethra very much shortened, the meatus swollen, red, and tender, and exposing a mass of mucous membrane, cysts, and vascular polypi.

Here is an instance of relaxed anæmic tissue swarming with bacteria and *Trichomanes vaginalis*, where old chronic urethritis had existed from time to time, and the redundant cellular elements were suddenly ignited.

With such cases it is not uncommon to find caruncles of large dimensions existing without giving rise to any noticeable symptoms.

Now let us search the authorities and see what ground there is for regarding these products as the result of a pre-existing cellular inflammation or hyperplasia.

George T. Gream and H. B. Norman, who wrote as early as 1852 and at great length, touched only upon the vascular tumors of the orifice and their destruction, without examining their relation to the deeper structures. Burns and Sir Charles Clark, writing a little later, say: "Little has been made out in relation to their intimate structure."

Lee says "they are entirely made up of vessels and connective cellular tissue."

Boivin and Dugès call them cellulo-vascular.

Mr. Queckett, who examined a specimen microscopically, says: "They exhibit the same structure as ordinary cuticle on their outermost layer, but beneath the cut surface the cells of deeper structures, but more condensed and firmly adhering."

Richet, who does not describe the intimate structure, confines himself to the remark that "mere excision will not remove the contraction and hypertrophy of the urethra."

Scanzoni believes they result from chronic urethritis.

Wedl, who has given the subject the most attention and written the most graphic description of these bodies in his work on "Pathological Histology," says he regards them as papillary new formations of connective tissue.

The most interesting point found in his examination of one was the distribution of the blood-vessels, which could be distinctly traced in transverse sections—interesting because, as Wagner says, new formation of blood-vessels occurs with new formation of other tissues, especially connective.

Why, now, if these bodies of new-formed tissue are made, should they present themselves so prominently at the orifice?

Let us look at the anatomy of the female urethra. In the first place, it is divided, anatomically, into three sections, the first commencing behind the symphysis pubis, to which it is suspended by the apparatus which supports the neck of the bladder. Its next division is directly beneath the inferior pubic ligament, and is connected to it by condensed cellular membrane. The third portion passes between the origins of the crura clitoridis and terminates at the meatus.

Here we have three divisions, and all suspended *from above*. It is invested with a muscular apparatus; thus Santorius describes transverse and circular fibers, the latter being situated deepest, the former passing over the canal. So also are seen vertical fibers arising from the back of the symphysis pubis, and analogous to Wilson's muscles in the male. Guthrie has also described a muscle arising from the rami of the pubes, splitting into an upper and lower part, and thus completely surrounding the tube. If the urethra is laid open, its mucous membrane is seen thrown into longitudinal folds with valliculæ or depressions between them. Some of the plicæ are larger than the rest; there is usually one large fold along the posterior wall and one on either side. Besides these there are other folds

which, when the urethra is closed, dovetail into corresponding depressions, so that, with suspension from above, with muscular fibers running in such directions as to force the contents of the tube onward and forward, these rugæ or folds of the mucous membrane, loosened at their base by new formations, must be crowded onward and forward toward the outlet also, where there is least resistance.

If the matrices of the vessels are first involved, and are pushed upward, where they can increase and divide, stimulated below and fed with new material, of course they will present themselves first, and thus we have presented to us the flotsam and jetsam of a wreck beneath. For every new formation of vessel there is a fiber of nerve to become exposed and rendered sensitive.

## AN ANALYSIS OF ONE THOUSAND CASES OF HERNIA OCCURRING IN PRIVATE PRACTICE, AND THE RESULTS OF MECHANICAL TREATMENT.*

By W. B. DE GARMO, M. D.,
INSTRUCTOR IN THE TREATMENT OF HERNIA AT THE NEW YORK POLYCLINIC.

I wish to present to this society a brief analysis of one thousand cases of hernia attended in private practice under particularly favorable opportunities for observation and study.

The patients have, as a rule, been of the better class, who were able to present themselves as often as necessary for attention and inspection. A large proportion of them have been under observation for from five to ten years, and others even a longer time. The treatment of the cases here reported has been exclusively mechanical, and any of the patients that have submitted to operations for radical cure did so before coming under the care of the speaker.

The thousand patients consisted of 839 males and 161 females, presenting 1,185 reducible and 18 irreducible hernias. The youngest of these patients was two weeks old and the oldest eighty-five years of age. One hundred and sixteen children under five years of age were attended, while in the second ten years of life—*i. e.*, from ten to twenty years of age—only half that number are recorded.

The largest number were between thirty and forty years of age. Out of the 1,203 hernias, 1,169 were of the inguinal variety, 745 being single and 212 double; 100 were incomplete protrusions, entering the upper part of the canal but not passing through the external abdominal ring; 630 were complete, passing through the external abdominal ring and ranging in size from that of a hickory-nut to that of one's fist; 414 hernias had by neglect become scrotal, some of them of enormous proportions.

Direct inguinal hernia was met with only twenty-five times. This classification does not include those hernias which become direct by the dragging down of the internal ring until it is approximate to and immediately back of the external ring, but refers exclusively to hernias which were originally direct.

Femoral hernia was observed in 63 instances, one third of the cases being in the male; one man and three women had inguinal and femoral hernia occurring on the same side. One boy seven years of age was under care for femoral hernia, and the author of this paper has found no previously recorded case occurring in so young a male. Forty-seven cases of umbilical hernia, occurring mostly in very fat women, and six cases of ventral hernia will be found in the table (shown at the meeting).

Ventral hernias following laparotomy have of late years been very frequently met with, but are not reported in this paper.

Among the cases tabulated were found 18 irreducible hernias; 11 of these were scrotal, 3 femoral, and 4 of the umbilical variety. Ten of these were subjected to systematic attempts at reduction, proving successful in seven, and reported before the New York Academy of Medicine, December 15, 1887. (See the "New York Medical Journal" for January 21, 1888, page 68.) In 257 instances it was found that hernia had existed less than one year, in 333 between one and five years, in 510 from five to twenty years. Strangulated hernia had previously occurred in 29 patients. In 12 of these cases reduction had been accomplished by means of anæsthesia and taxis; in 17 these means had failed and an operation had been resorted to.

It is desired that special note should be made of the fact that less than one half of these patients were relieved by taxis as a strong point in favor of early operative interference.

I have no means of ascertaining the death-rate resulting from delay and lack of operation in cases of this character, but I am confident that nearly all operating surgeons will agree to the statement that it is unnecessarily large, and that at the present time the operation for the relief of strangulated hernia is comparatively free from danger; certainly forty-eight or even twenty-four hours' delay subjects the patient to a far greater risk than the operation during the first twelve hours does.

Of the 1,000 patients, 39 had previously failed in obtaining cures by radical operations to which they had submitted. It seems rather a remarkable fact that there were only 11 cases in which the hernia had recurred after once having been cured by mechanical means; 6 recurred within from one to five years after leaving off support; 7 returned after from five to twenty years. This fact leads to the belief that the tendency of hernia to recurrence in the same subject after supposed cure is not so strong as is generally believed. This erroneous opinion can, it would seem, be easily accounted for. All previous statistics bearing upon the recurrence of hernia, so far as known to the speaker, have related to its surgical treatment exclusively. Those operated upon have had extreme cases, and therefore been very liable to a recurrence. Under our present antiseptic surgery the mortality risk is reduced to the minimum. Operations are being done in ordinary cases of hernia, and as a result we shall see a smaller percentage of recurrence.

In 18 cases hydrocele of the tunica vaginalis was found as a complication of existing hernia; 11 cases were complicated by hydrocele of the cord, and in some instances it

* Read before the Medical Society of the State of New York, February 7, 1888.

made the diagnosis very difficult. Congenital hydrocele was found in 15 cases, and usually added materially to the difficulties of treatment, as the fluid returned to the abdomen in the recumbent position, and again appeared in the scrotum when the patient was standing. It was found that this fluid usually disappeared within the first six weeks without special treatment. Retained and partially developed testicles were met with in 22 cases. In three of these patients the testicle was so high in the inguinal canal that it was necessary to return it to the abdominal cavity with the hernia. In one where the testicle was adherent a concave pad was applied. The remainder were treated by adjusting a very small truss-pad over the internal ring, so that protrusion of the bowel into the canal was prevented and the testicle was allowed to descend gradually into the scrotum.

Varicocele has been so commonly met with that ordinarily no note has been made of it. In fifteen cases, however, it was of such an extreme character as to make the diagnosis difficult, or the treatment troublesome. Curling has advised that a truss be worn by those suffering from varicocele, but the speaker has never seen a varicocele improved by truss-wearing.

Varicose lymphatic vessels have formed a most perplexing complication in five cases. Cyst of the round ligament was found in four cases, and an ovary in the inguinal canal was found in seven females. Small fatty tumors—lipomata—were met with in three cases, a tubercular testicle was found in one, and a cancerous testicle in one.

Abdominal dropsy has been a complication of hernia in seven cases, and has in one or two made the abandonment of mechanical treatment necessary. A small accumulation of fluid in the abdominal cavity will soon manifest itself in the hernial sac; its retention can not be accomplished by any truss, and the patient naturally feels that the hernia is protruding and should be held.

The occupation of the patient and the supposed cause of the hernia have usually been recorded, but do not enter into the table shown, as very little valuable information has been obtained therefrom. A common cause in infancy is constipation; tight bandaging is another. Five cases seemed, beyond question, to have been caused by phimosis, and were rapidly cured after circumcision.

The question of inheritance has been pretty closely followed, but with no very definite result. In some families the tendency is unquestionable, and when such predisposition exists a permanent cure by any means is considered impossible.

In classifying the results of treatment, five headings have been adopted. Under the head of cured, none have been numbered that have not been more than six months without any form of support; many of them have been several years.

By the second heading—improved—is meant that there has been marked improvement in the case, that the patient is wearing a lighter truss than was at first necessary to control his hernia, and that he is in every respect comfortable and free from danger.

Under hernias retained are included all those cases which have, although under control, shown no signs of improvement. Some of these patients, who have all been instructed to use the utmost caution, have not seen their hernias for months, but as soon as they remove the truss in the upright position a protrusion will occur. With this explanation the classification will, it is thought, be understood.

Out of the entire number of hernias, 1,203, a little over one quarter (or 336) have been cured, and, as shown by the table, 463 were improved, 312 were retained, 5 were abandoned as unmanageable, and in 87 the result was unknown.

The study of the foregoing cases leads to the following conclusions:

1. That by early mechanical treatment a large percentage of hernias occurring under middle age can be cured.

2. That, while there is no intent to underrate the value of surgical measures in suitable cases, it is believed that the greatest relief to the greatest number can be afforded by the more careful and scientific mechanical treatment of hernia.

3. This end can only be attained by the personal attention of the practitioner, instead of allowing such cases to go into the hands of unprofessional and incompetent persons.

56 West Thirty-sixth Street.

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**Burial Reform.**—All who have seriously considered the disadvantages attending our present methods of interment will regard with satisfaction the efforts of the Church of England Burial Reform Association. We need only now select three of the specific reforms which the society has set itself to accomplish in order to illustrate the orthodoxy of its views on this important problem in sanitation. These are (1) timely instead of delayed burial, (2) the use of readily perishable coffins, and (3) selection of a soil appropriate to the purpose of burial. The first of these desirable changes, we fear, has hitherto been somewhat overshadowed by the prominence in discussion assigned to the two latter. It is, nevertheless, itself an important matter, and particularly so, for obvious reasons, in cases of death from infectious disease. Thanks to the normal coolness of our climate, its claims to public notice have hitherto been less regarded than they well might have been. It is never too late for improvement, however, and we shall feel obliged to the association if its efforts to encourage the early burial of the dead are instrumental in altering common usage in this particular. The pressing necessity for a general disuse of the solid wooden coffin, still so common, in favor of a light case, which will hardly impede the carrying out of the sanitary injunction, "earth to earth," we have insisted on in many former issues. On this point the society need fear no scientific opposition, but only the dead weight of ignorant custom. The question of soil is a somewhat large one, connected as it is with those of the inclination of land, the course of streams, relative position of dwellings, and other matters which are or ought to be considered in laying out ground for purposes of burial. The space at our disposal will not allow us to discuss it at length. We need only now refer to permeability, moderate dryness, and a general slope sufficient to insure the gradual subsidence of water due to rainfall, as qualities necessarily associated with a suitable soil. We publish in another column an abstract of a paper on "Burial Reform" read by Mr. Lowndes at Liverpool, in which the urgent need of changes in the present method of burial is strongly enforced.—*Lancet.*

**Auditory Allochiria.**—"Allochiria, first described by Obermeister in 1882, consists," says the "Lancet," "in the perception of a sensation in the opposite side of the body to that on which the excitation was made. Tabes dorsalis and other spinal diseases afford the most frequent examples of it. M. Gellé has observed in a young person affected with chronic hyperplastic otitis and auditory hyperæsthesia of the left side, but not presenting any sign of paralysis, hysteria, or tabes, an auditory allochiria, consisting in the fact that the patient heard on the left side a piping sound produced in the right carotid artery under the influence of the least effort or of the slightest emotion!"

THE
NEW YORK MEDICAL JOURNAL,
*A Weekly Review of Medicine.*
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NEW YORK, SATURDAY, MARCH 3, 1888.

## THE LOOMIS LABORATORY.

Each of the four large medical schools of New York and Brooklyn is now provided with ample laboratory facilities, not only for mere undergraduate teaching, but for purposes of research as well. It is but a short time since such a state of things seemed utterly impossible of attainment within at least a quarter of a century. But the unexpected—we might almost say the unhoped for—has happened. Mr. Andrew Carnegie, as our readers are aware, furnished the Bellevue Hospital Medical College with the laboratory that bears his name, and that has already been the scene of work of enough practical advantage to the people of New York to have made it a paying investment for them had it been established and maintained at the public expense; the generosity of the Vanderbilts has enabled the College of Physicians and Surgeons to provide improved quarters for the laboratory of its Alumni Association and give it increased efficiency; Dr. Hoagland has equipped the Long Island College with the excellent laboratory known by his name; and an anonymous friend of science and humanity has now the gratification of knowing that his liberality has resulted in the construction and equipment of a like institution for the Medical Department of the University of the City of New York, called, in honor of one of its most renowned professors, the Loomis Laboratory.

In the main, these facts are already well known to our readers, but it is well to recall them in their chronological order, for it serves to emphasize the gratifying statement that, whereas in the early part of the present decade not a medical school in this community possessed the means of giving anything like adequate laboratory instruction to its pupils, to say nothing of facilities for experimental investigation, all the four great schools that we have mentioned are now abundantly supplied in both respects. It is true that, as regards each of the institutions, an endowment fund is still needed to prevent the cost of maintaining the laboratory from seriously impairing the resources of the college. There is reason to expect, however, that this need will not long go unprovided for; indeed, we learn that, in the case of the Loomis Laboratory, the anonymous founder has practically promised such further funds as may be necessary for the purpose. We are convinced that by carrying out this intention he will contribute immeasurably to the advance of medical knowledge in this community, and not here alone, but in every part of the continent whence students come to New York to pursue the study of medicine. Such an advance carries with it not only a gain in the alleviation of physical suffering, the avoidance of preventable sorrow, and the prolongation of the average expectation of life by broadening the field of application of sound hygiene and therapeutics, but also immense advantages to commerce by multiplying and simplifying our means of eluding epidemic visitations of disease. Not even gifts to the hospitals are so far-reaching in their usefulness; to deepen a single channel of beneficence is indeed commendable, but to give fresh vigor to the springs that pour forth the current is to go to the bottom of things. This is what is in some measure accomplished with every increase of the teaching and investigating capacities in medicine.

As is briefly mentioned elsewhere in this issue, the Loomis Laboratory was opened for the inspection of the profession last Monday evening, and many of its members availed themselves of the opportunity to examine the newest of the four institutions to which we have referred. Their general impression was that the building, which is said to have cost somewhat over $100,000, was suitably situated, adjoining the other buildings of the college and communicating with them; and that it had an air of solidity and good workmanship in its construction, and gave every evidence of its adaptation to its proper uses. It is described as being thirty-five feet wide, ninety feet long, and five stories high. The floors are of waterproof cement throughout, the wood-work is of cherry, and the walls are in soapstone finish of a pleasing tint. The first floor is devoted to the laboratory of materia medica and to that of physics. The latter communicates with the lower lecture-room of the main college building, and is well supplied with apparatus. On the second floor are the chemical and toxicological laboratories, including a large general room with tables properly provided with gas-jets, water-cocks, and ventilating hoods, capable of accommodating sixty students; a balance room; a special laboratory for investigation in cases of poisoning; and a laboratory of research containing the newest and most useful appliances. The front half of the third floor is devoted to the physiological laboratory communicating with the amphitheatre of the main college building, in which the physiological lectures and demonstrations are given. This laboratory is well adapted to its purpose, but it was to be noticed that the necessary apparatus was not so complete as it ought to be. This is owing, we are informed, to the fact that the college has sustained the loss of a portion of its outfit in this department—a loss that we trust will soon be made good. The southern half of the same floor is occupied by the laboratory of histology, with accommodations for thirty students, including a microscope for each one, together with all other necessary appliances and suitable histological material. The fourth floor is devoted to pathology, one half of it being arranged for undergraduates and the other for advanced workers. On the fifth floor are the laboratory of bacteriology, a pathological museum, apartments for microphotography, and several separate rooms for special investigations. It is gratifying to note in connection with the several departments of the laboratory that the preparations have not been governed simply by the purpose of affording improved means of teaching undergraduates, but have corresponded to an evident and most praiseworthy intention of providing proper facilities for advanced investigators. On this feature especially

and on the general excellence of the building, we most heartily congratulate the faculty of the college.

## MINOR PARAGRAPHS.

### THE ANTHROPOLOGICAL SOCIETY OF WASHINGTON.

A new quarterly journal, the "American Anthropologist," forms the continuation of the society's "Transactions." The change is most commendable, for the new journal ought to stimulate increased interest among us in a study that has many bearings upon medicine. The first number, for January, 1888, is a handsome octavo of ninety-six pages, containing four elaborate articles, among which is one of particular interest to anatomists, "Anthropological Notes on the Human Hand," by Dr. Frank Baker.

### THE PART PLAYED BY THE BILE IN DIGESTION.

The question of the part played by the bile in digestion, to say nothing of the question of whether that secretion has anything to do directly with the digestive process, is one that has never been satisfactorily cleared up. According to the "Lancet's" Paris correspondent, M. Dastre lately read a paper on the subject before the Academy of Sciences, founding what he said largely on observations made with the aid of cholecysto-intestinal fistulæ. He concluded that, while such observations taught that the bile alone was powerless to effect the digestion and complete absorption of fats, experience taught that the pancreatic juice alone was equally powerless. Their mixture was necessary; the bile, as well as the pancreatic juice, played a part in the digestion of fatty substances, the former appearing to be more particularly charged with their absorption, and the latter with their division.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending February 28, 1888:

| DISEASES. | Week ending Feb. 21. | | Week ending Feb. 28. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 8 | 5 | 7 | 3 |
| Scarlet fever | 160 | 27 | 155 | 28 |
| Cerebro-spinal meningitis | 4 | 4 | 7 | 4 |
| Measles | 55 | 10 | 62 | 2 |
| Diphtheria | 135 | 34 | 111 | 43 |
| Small-pox | 2 | 1 | 3 | 0 |

**The Health of New York City.**—The following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department during the four weeks ending Tuesday, February 28th: Typhoid fever, 38 cases and 11 deaths; scarlet fever, 638 cases and 102 deaths; cerebro-spinal meningitis, 14 cases and 11 deaths; measles, 229 cases and 29 deaths; diphtheria, 625 cases and 169 deaths; small-pox, 23 cases and 2 deaths.

**The late Professor Flint.**—The tablet erected to the memory of the late Austin Flint, M. D., LL. D., by the Alumni Association of the Bellevue Hospital Medical College, will be formally unveiled at the Carnegie Laboratory, No. 328 East Twenty-sixth Street, on Saturday evening, the 10th inst., at 8.30 o'clock. The presentation address will be delivered by Dr. Leroy M. Yale. The profession in general is invited to be present.

**The Boston City Hospital.**—A new wing, containing wards for the treatment of contagious diseases, has been completed at an expense of about $60,000. Its sanitary and other necessary conditions for this class of cases are said to be as nearly perfect as can be devised.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending February 25, 1888:*

Williams, L. L., Passed Assistant Surgeon. Promoted, and appointed Passed Assistant Surgeon from February 10, 1888. February 23, 1888.

Cobb, J. O., Assistant Surgeon. Appointed an Assistant Surgeon, February 21, 1888. Assigned to duty at Marine Hospital, Chicago, Ill. February 25, 1888.

Stoner, J. B., Assistant Surgeon. Appointed an Assistant Surgeon, February 21, 1888. Assigned to duty at Marine Hospital, New York, N. Y. February 23, 1888.

Condict, A. W., Assistant Surgeon. Appointed an Assistant Surgeon, February 21, 1888. Assigned to duty at Marine Hospital, Chicago, Ill. February 23, 1888.

**Society Meetings for the Coming Week:**

Monday, *March 5th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association (annual); Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *March 6th:* New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg Medical Association; Hudson, N. J., County Medical Society (Jersey City); Essex, Mass., South District Medical Society (Salem); Androscoggin, Me., County Medical Association (Lewiston).

Wednesday, *March 7th:* Harlem Medical Association of the City of New York; Society of the Alumni of Bellevue Hospital; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *March 8th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *March 9th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *March 10th:* Obstetrical Society of Boston (private).

## Letters to the Editor.

### PREMATURE RUPTURE OF THE AMNION.

Fort Worth, Texas, *February 10, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In answer to Dr. A. L. Browne's inquiry about "Premature Rupture of the Amnion," I saw a case of this kind recently, in a well-nourished, active, intelligent lady, the mother of several children. Great quantities of the amniotic fluid had been discharged, the abdomen was in a flaccid, reduced condition, the os was spongy, and there was much vernix caseosa in it and in the vagina. There was pain in the head, with uterine

pains. I gave her three eighths of a grain of morphine subcutaneously, and ordered thirty five drops of tincture of hamamelis and five grains of gallic acid, in an ounce of water, every hour, enjoining rest. I fully expected premature delivery, but she grew quiet and the flow ceased under the use of a dessertspoonful every hour of a mixture of half an ounce of tincture of hamamelis, two drachms each of aromatic sulphuric acid and gallic acid, and three ounces and a half of distilled water. At about the two hundred and seventieth day I was called and, after a tedious labor, delivered her of an ill-nourished child with double talipes, which lived only an hour. I believe the child's feeble condition was from want of the nutrition usually afforded by the liquor amnii, and, if I had another such case, should use the same treatment, with antipyrine, that Dr. Browne used, as I have found it to greatly quiet uterine pains.

A. P. Brown.

# Proceedings of Societies.

## NEW YORK NEUROLOGICAL SOCIETY.

*Meeting of February 8, 1888.*

The President, Dr. C. L. Dana, in the Chair.

**Rectangular Prisms in a Single Frame.**—Dr. J. B. Emerson presented a pile of rectangular prisms consisting of Nos. 2, 4, 6, 8, 10, 12, 14, and 16, which were fixed, and two additional prisms, Nos. 1 and 16, which were movable. By subtracting, Nos. 3, 5, 7, etc., were obtained, and by adding, Nos. 18, 20, 22, etc. The apparatus was used in the same way as ordinary prisms, the advantage alleged being increased facility in rapidly changing one prism for another. The muscles could be tested in a quarter of the usual time.

Mr. Birdsall asked what the price of the instrument was.

Dr. Emerson replied that Meyrowitz Brothers furnished it for $16. Dr. Norris's rectangular prisms cost $18; the ordinary set, $12.

The President asked whether the instrument would indicate fractions of a degree, referring to the fact that Dr. Stevens reported errors in fractions.

Dr. Emerson replied that he had never tried to test fractions, but that the subtraction of a ½ or ¼ prism would enable this to be done.

Dr. Leszynsky considered the arrangement very ingenious. The principle of subtraction and addition was that of the ophthalmoscope. But he thought that testing with prisms was unreliable. By means of the prisms it was possible to create the appearance of a condition which did not exist.

**Golgi's Method of Staining.**—Dr. Van Giesen presented specimens stained by Golgi's method. Blocks, 1 to 2 c. c. in dimensions, were subjected to the action of a two-per-cent. solution of bichromate of potassium or Müller's fluid. The time required for hardening varied with the temperature. A constant temperature of from 20° to 25° C. (68° to 77° F.) was preferred. In the summer, hardening was completed in from fifteen to fifty days. In winter from five to fifteen weeks was required. In changing the bichromate solution its concentration was increased up to five per cent. After hardening, the specimen was placed in a solution of nitrate of silver, 0·75 per cent. on an average. Where the hardening was incomplete, a one-per-cent. solution might be required. Where it was more complete, a 0·50-per-cent. solution might be sufficient. A precipitate of chromate of silver required that this solution should be frequently changed. The specimen was kept in this solution for from twenty-four to thirty hours. It was then washed in water, imbedded, washed in alcohol, and cleared with creasote and oil of turpentine. The same result could be obtained by immersion in a corrosive-sublimate solution of the strength of one per cent., but months were required by this method. The speaker thought it also less certain than the one described. Both methods had been modified by Pall, of Vienna. The modification required the immersion of the silver or sublimate sections in a one-per-cent. solution of sodium sulphide, which produced a more complete precipitation in the finer processes.

The object of the method was the staining of ganglion cells and processes, the matrix being left clear. There was sometimes a tendency for the silver to precipitate in the circumcellular spaces and in the channels around the processes so as to make them appear thicker than they ought to be. It was, however, the only method which had stained the ganglion cell. The speaker had been successful with specimens taken from the cortex. In those from the cerebellum and the spinal cord he had been less successful. It was essential that the specimen should not over-harden. It was necessary every day or two to sacrifice a piece and try it in the silver solution to determine whether the hardening was sufficient.

The President also presented specimens stained by Golgi's method. He had not thus far been so successful as Dr. Van Giesen, but in a few specimens he had got staining which showed one interesting peculiarity of the method—viz., that at times it stained cells of one class; at other times, those of another. In his sections the connective-tissue cells only had been stained, but these were shown in a striking manner. Obersteiner had stated that by the sublimate method only about one tenth of the cells were stained. The speaker thought that Golgi's method was a truly epoch-making one, comparable to that of Weigert for the nerve cells; but naturally great care would be required in drawing conclusions from what was seen. He presented Marchi's monograph on the structure of the optic thalamus and corpus striatum, in which it was shown that the cells of the former ganglion were of the motor type, and those of the latter of the sensory.

Dr. Sachs asked whether any facts had been demonstrated by Golgi's method which had not been shown by others.

Dr. Van Giesen replied that there was no other method which would stain the ganglion cell. Golgi's method had shown the axis-cylinder as a branch of the nerve cell. It had shown also that the protoplasmic processes did not inosculate.

Dr. Birdsall dissented from this inference. We had no means of knowing that even by this method the whole of the process was stained. By Golgi's method we could trace the process farther than by the other methods, but we could not say that finer subdivisions did not exist which the precipitate failed to indicate.

**Neurasthenia and Lithæmia.**—Dr. A. D. Rockwell read a paper on this subject. (See page 180.)

Dr. Birdsall remarked that the term neurasthenia had been used to cover a variety of nervous disorders not due to organic disease. The term lithæmia also was commonly used in a vague and incorrect manner. He thought it impossible to make a division between the clinical features of the two conditions. There were many intermediate cases which would upset any classification. All were probably but parts of a vast group of nerve disturbances based upon faulty conditions of nutrition. Absence and rest had a direct effect upon digestion. The results of treatment presented no ground for the conclusions named. Heredity was a marked factor.

Dr. Sachs stated that for a long time he had been skeptical as to a true set of lithæmic symptoms, but that he had found them in private practice, and had followed up a number of cases.

He agreed with the previous speaker in regarding neurasthenia as but a nervous disturbance of which lithæmia might be an ætiological factor. Lithæmia had been, in his experience, almost limited to women of the wealthy class leading an inactive life. The nervous symptoms were proportioned to the amount of uric acid in the urine. With increased exercise or prolonged massage the uric acid disappeared and the patient improved. Referring to the question of heredity, he considered cases with hereditary lithæmic tendencies as gouty; and when they were neurasthenic he classed them as cases of neurasthenia upon a gouty basis.

In regard to the treatment, he agreed with the reader of the paper. For lithæmia he used cholagogue cathartics, physical exercise, and massage.

Dr. Birdsall explained that he had referred to the inheritance of neurasthenia, not of the lithæmic symptoms.

Dr. Leszynsky had met with cases which merited the name of lithæmic neurasthenia. He recalled a case in which nervous symptoms had alternated with gouty manifestations. He had watched this case for two months, during which time no diagnosis but that of neurasthenia could be made. At the end of that period a true gouty attack had developed. While the gout lasted the nervous symptoms were absent; but these returned when the gout disappeared. But little satisfaction was obtained from examining the urine in these cases; it was impossible to separate two classes by its indications. Concentration was common in neurasthenia and in other states. The speaker added that the late Dr. McBride had been accustomed to say that all neurasthenia was caused either by lithæmia or by muscular anomalies.

Dr. Emerson had seen neurasthenia cured by the correction of errors of refraction and muscular anomalies.

The President favored the classification of neurasthenic symptoms into further clinical groups, the subdivisions to be based upon the ætiology, the symptomatology, and the chief seat of the disorder. Ætiologically, there were the hereditary and the acquired forms. Among the acquired were to be placed the lithæmic, etc. Symptomatologically, there were the irritative and the depressed forms. Anatomically, there were the cerebral, gastric, sexual, and others. In classification, here as in insanity the various factors above indicated would for the present have to be used.

Dr. Rockwell explained that he had not represented neurasthenia and lithæmia as separate types of disease. He had not said that there was a distinct dividing-line between them. He admitted the lithæmic origin of neurasthenia in some cases. There was, however, a distinct difference in the behavior of certain cases toward food. In the purely nervous case an abundance of albuminous food was indicated, while in lithæmia the quantity of such food was to be curtailed. Notwithstanding the existence of intermediate cases, there were others which were distinct and required different treatment.

The President asked whether Dr. Rockwell limited albuminous food in lithæmia.

Dr. Rockwell replied that he did. He had indeed cured himself of excessive irritability accompanied by lithæmia by dispensing with meat and living mainly on a farinaceous diet.

The President referred to the fact that Dr. Draper had, in the Practitioners' Society, about two years ago, recommended a purely nitrogenous diet in these cases. He had used the same in his own practice, but latterly with some doubt.

Dr. Birdsall stated that he too had followed Dr. Draper's rule. In defective digestion sugars and starches were many times at the bottom of the trouble. Fats, too, were often the offending agent. It was not even known that uric acid was the poison in these cases.

Dr. Sachs preferred to employ non-nitrogenous rather than albuminous food.

The President was himself skeptical as to the value of albuminous food in lithæmia. It must be remembered, however, that there were cases in which apparently only nitrogenous food could be digested.

## ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

(*Continued from page 219.*)

**The Use of the Vaginal Tampon in the Treatment of certain Effects following Pelvic Inflammations.**—In the further discussion on Dr. Thomas Addis Emmet's paper with this title (see page 169), Dr. Charles Carroll Lee, of New York, said that he had not heard the reading of Dr. Emmet's paper. From the beginning of his professional career in this branch of medicine he had followed the views of Dr. Emmet so far as he had understood them, and he should never cease to be grateful for those teachings; but as physicians grew older it seemed quite natural that they should form opinions of their own, right or wrong, which differed a little from those of their teachers. So, if his impression of the tenor of Dr. Emmet's paper was correct—that all cases of pelvic or circumuterine adhesions were amenable to treatment by tamponing the vagina—he should have to respectfully dissent from that conclusion. Moderate and recent pelvic adhesions, which were not very dense, not only might be benefited, but, in his judgment, were curable, so far as the patient's sufferings were concerned, by tamponing the vagina. But there was a small minority of cases, sufficiently severe to cause the patient much pain, in which the most persistent and intelligent tamponing failed to give any relief. In this class of cases one could feel, not only through the rectum but also through the vagina, dense pelvic adhesions, true bands behind the uterus which connected that organ with the circumuterine tissues. As an example, he related the case of a lady who was treated by him, aided by Dr. Hanks and Dr. Swasey, by persistent, thorough tamponing of the vagina, continued for seven months, at first in the knee-chest posture. At the end of the seven months the patient was as uncomfortable as at the beginning, although her trouble was due solely to pelvic adhesions. At the end of that period he etherized her, introduced the greater portion of the hand into the rectum, and attempted to break up the adhesions, but did not succeed, and the patient remained as uncomfortable as before. Finally, he performed laparotomy, and tore up the adhesive bands between the uterus, ovaries, and pelvic tissues. To guard against the formation of new adhesions, the uterus was supported on a flat drainage-tube. No new adhesions formed, and the patient got well. He related this case only as an example of a minority class. He had always used Dr. Emmet's method of tamponing the vagina with one modification—viz., he used denser material than ordinary cotton batting. To cotton used in the ordinary way he had found the same objections which Dr. Emmet had found to cotton with glycerin. He had come to use iodoformized gauze wrung out of water, from which he got better prolonged pressure of an elastic nature, which the patient could bear, than from any other material. He had learned through Dr. Emmet of the value of a pessary described by him and made in London, and had found no other pessary, certainly none of the ordinary retroversion pessaries, which gave anything like as much comfort. But the patient had to be taught how to use it, and to introduce it every morning. The vaginal secretions caused the pessary to undergo rapid decomposition, and to induce irritation unless it was removed every night.

He believed that the large majority of cases of pelvic adhesions, if recent and uncomplicated, especially uncomplicated with the results of peritonitis or perimetritis, were remediable to such a degree by tamponing that it was our duty in such cases always to tampon. But there was a minority of cases in which careful observation would convince the judicious surgeon of the necessity of opening the abdomen, under antiseptic precautions, to break up the adhesive bands in order to give the patient relief.

Dr. Emmet explained that the breaking up of adhesions, as mentioned in his paper, was only incidental: the principal object of the paper was to present a means of destroying or getting rid of the large venous diverticula which usually formed in the folds of the broad ligament. It was necessary to overcome that condition, and, if adhesions were broken up during the treatment by pressure, it was only incidental.

Dr. James B. Hunter, of New York, had expected, when asked to participate in the discussion, to hear different views expressed by Dr. Emmet, to which he should have to take exception, but since hearing the paper he had become a positive pole, not a negative one. He entirely agreed with the author. The treatment corresponded entirely with that which he had employed for years.

The President (Dr. William H. Baker, of Boston) explained that the subject of the paper and that for discussion had been broadened, and that those invited to take part in the discussion would not now be expected to take affirmative and negative sides, but would discuss the subject as a whole.

Dr. Hunter thought the tampon served two or three different purposes. First, its action was mechanical, therefore we should be careful in the selection of material. Absorbent cotton evidently was not suitable, because it soon became hard, like wood. He had come to use chiefly fine non-absorbent jeweler's cotton, or prepared wool, which when well prepared was not absorbent and still was fairly free from grease. It was more elastic than cotton and retained its elastic quality longer. The medicament applied with the cotton was not of much importance except as it tended to keep it aseptic. After trying different agents he had come to regard powdered borax as the best. He did not use vaseline nor glycerin. He agreed with Dr. Emmet regarding the pathology, and as to the effect of supporting the uterus at its proper height in the pelvis. He thought the same explanation which he had given of the benefit derived from the tampon would also apply to the benefit derived from massage, which was now so commonly used in Germany. He used hot-water injections daily, sometimes twice a day, continuing them through menstruation, as they did more than anything else to relieve dysmenorrhœa. The injections were made by means of a thin rubber bag with two outlets, which permitted the constant flow of water, with little labor on the part of the patient using it.

Dr. Bache McE. Emmet, of New York, said that the cases cited by those who had discussed the subject reminded him of some similar ones. He referred to one in which there was excessive fullness of the blood-vessels after prolonged prolapsus of the vaginal walls, accompanied by excessive sensitiveness of all the parts. The parts could not of themselves resume their normal situation and thus relieve the engorged condition of the blood-vessels. Regarding the application of the tampon in cases of chronic inflammation which called for it, he did not believe it was essential during menstruation, nor that it was necessary to substitute a pessary. While using cotton pledgets to overcome excessive fullness of the vessels, he had at the same time observed benefit from the use of fluid extract of hamamelis. As it was useful in the treatment of the distended state of the veins in hæmorrhoids, so also had he found it serviceable in the distension of the veins in the class of cases under discussion. Its application was more direct than when it was used for varicose veins of the lower extremities, and it would seem that the benefit derived should be greater.

Dr. Howard Kelly, of Philadelphia, presented a small tenaculum convenient for the introduction of the tampon used in the class of cases under discussion.

Dr. Moseley had been using the tampon for a long time, but never so intelligently, nor with such great satisfaction, as since he had received a letter from Dr. Emmet concerning a patient of his whom Dr. Emmet had kindly examined. The question of circumuterine adhesions had been raised, and he expressed the opinion that something could be done in many such cases by the judicious and persistent use of the tampon. In these cases there was a tendency of the parts, on replacement, to immediately return to their abnormal position, and he had found by clinical experience that the use of the tampon and of counter-irritation would place the patient in a condition in which she could wear a pessary with comfort. In some cases which he had in mind the pessary had now been worn some months, and he thought it could soon be discarded. Dr. Hunter had spoken of a method, which he had also adopted—that of dusting the posterior fornix with boric acid, and also dusting the upper portion of the tampon with the same material. He began tamponing with the patient in the knee-chest position. In spite of Dr. Coe's opinion to the contrary, he had found that the tampon would retain its position in many cases. He did not allow the parts to return to their former position, and to prevent their doing so he removed the tampon in the knee-chest posture, carefully disinfected the vagina with bichloride solution, and replaced the tampon. He had had the same trouble that others had mentioned regarding the best material to use, and had finally settled upon carded cotton, which could be obtained at cotton mills. The strips were of the width of four fingers, of indefinite length; the cotton was fine and the fibers were long. Regarding the use of hot water during menstruation, he thought there was one form of dysmenorrhœa in which this plan could be adopted with good results, namely, that in which the pelvic vessels were markedly congested while the flow was slight.

Dr. A. Palmer Dudley, of New York, spoke upon the subject of Dr. Emmet's paper and upon that of his own (to be published hereafter, together with the report of what he said in the discussion).

Dr. T. A. Emmet added that it was twenty years or more since he had first recognized the part taken by dilated veins in the causation of certain symptoms. Perhaps he had been the first person to recognize it. His object now in writing the paper had been to suggest a method by which those dilated veins could be obliterated. He had not heard Dr. Dudley's paper, nor had he known that he was to write upon this subject, yet it would seem they had arrived at the same point, although they might have traveled somewhat different paths.

(*To be continued.*)

## OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Meeting of February 2, 1888.*

(*Concluded from page 217.*)

**A Multilocular Dermoid Cyst.**—Dr. William Goodell showed two dermoid cysts which he had on that day removed from a girl sixteen years old. The largest one contained daughter cysts, or at least round bodies resembling them; yet he had always before found that all dermoid cysts which he had removed were single-chambered and did not contain smaller cysts.

**A Gravid Uterus.**—Dr. Hamill exhibited a uterus removed from a woman in the last month of pregnancy, about twenty-four hours after death. The outer surface was studded in many places with syphilitic nodes. The woman had contracted syphilis early in her married life, and manifested other marked symptoms of the disease. There was also a small cyst of the broad ligament. The specimen presented quite decidedly the contraction ring, or ring of Bandl. The speaker gave both designations advisedly, inasmuch as it was not definitely determined whether this ring represented the internal os, as Bandl maintained, or whether it marked the boundary between the upper and lower uterine segments, as Schroeder believed. According to the investigations of MacDonald, Müller, Sänger, and Lusk, this condition did not always exist. In three autopsies made by Lusk he had failed to find any trace of Bandl's ring. Schroeder, in a frozen specimen, had found this ring very distinct, but maintained that it was the dividing-line between the upper and lower uterine segments. Bandl held the contraction ring of Schroeder to be the true internal os, and consequently one would expect to find below this ring cervical mucous membrane, whereas the portion between Bandl's and Müller's rings was covered by decidua. Bandl explained this by his three hypotheses: 1. The deciduous membrane was crowded down into the cervix by the weight of the presenting part. 2. In primiparæ the advancing head stripped off the mucous membrane, which was replaced by decidua. 3. The cervical mucous membrane was transformed into decidual membrane during pregnancy. Another interesting feature that the specimen showed was that condition pointed out by Leopold and Lusk as seen in their Cæsarean sections—viz., the delicate filamentous bands running from the chorion to the deciduæ, which were the atrophied villi of the chorion. The attachment of the placenta was to the posterior wall of the uterus.

Dr. Hirst had seen the frozen section made by Schroeder in 1884, and it was most interesting, showing distinctly the so-called ring of Bandl. The speaker did not believe in any one of Bandl's three hypotheses to account for decidual membrane in a place where, according to Bandl's theory, cervical mucous membrane should be found. The extraordinary diversity in the explanations advanced by Bandl showed plainly enough the insufficient ground upon which his theory rested.

Dr. M. Price firmly believed in hunting for anatomical facts upon the living subject. He had looked for Bandl's ring and had never been able to find that it existed. He was fond of turning in cases of malpresentation, and had had his hand in the uterus many times. He had had it so compressed that it was useless for some moments, and the compression had always been uniform and from all directions. He had yet to find any constriction in the region of the so-called Bandl's ring alone. He had in several cases observed hour-glass contractions, but this was due to continued pressure on one side of the uterus and consequent loss of contractility of that portion. He did not believe that hour-glass contraction ever occurred in uncomplicated labor.

Dr. Parish remarked that in a Cæsarean section performed by Dr. Foster, of Maine, the operator had observed a circular contraction. This went to prove that such a thing could occur. In two cases of Cæsarean section performed by himself no such contraction had existed, and likewise there was no such circular contraction in a third case of Cæsarean operation performed by Dr. Allis and himself.

Dr. Githens stated that in discussions before the society in October, 1879, in December, 1879, and in October, 1880, upon the subject of "Hour-glass Contractions of the Uterus," Dr. Albert H. Smith, Dr. R. T. Curtin, and Dr. W. H. Parish had reported instances of prolonged and forcible contraction of a ring of muscular fiber in the uterus, above the internal os, the lower and upper segments of the uterus remaining flaccid. In Dr. Curtin's case Cæsarean section was being performed. The uterus had not been emptied of its contents, and the ring of contraction was seen as well as felt. In the other cases a placenta or a twin fœtus was retained in the upper segment of the uterus. Might not this ring of muscular fibers, so contracting, be identical with that described by Bandl? In the case reported by A. H. Smith the condition lasted for two hours and was relieved by hot-water intra-uterine injection. Dr. Smith had reported the point of contraction as being at the internal os, but, as he was opposed to the idea of there being any such thing as a contracting ring at a higher point, we must make some allowance and consider that it occupied a position near that described by Bandl as the location of the contraction band.

Dr. R. Stewart had seen a case in which, after the child was removed, the patient began to show signs of internal hæmorrhage. The uterus was examined and found to be much distended. An attempt was made to pass the hand in, but it was done only with difficulty, as there was a powerful contraction in the lower segment. The body was found distended, very flaccid, and filled with blood. He thought that this case proved that a contraction could occur in the lower segment.

Dr. Hirst quite agreed with Dr. Price in thinking that these cases always arose from pressure. He had seen good examples of Schroeder's contraction ring in which the ring marked the dividing line between the upper and lower segments of the uterus, and was not at all due, as might be inferred from some of the preceding remarks, to contraction of the circular muscular fibers, but was merely the sharply defined boundary between the upper, thicker, and more muscular portion of the uterus and the lower, thinner, more fibrous portion above the true internal os.

Dr. Hamill observed that the patient had formerly suffered from Graves's disease, but had no active symptoms at the time of her death. She had died of heart failure.

**A Four Weeks' Ovum** was shown by Dr. Hamill, both on account of its rarity and to elicit the members' views on the after-treatment of abortion. The specimen was entire, with the deciduæ. As a rule, the decidua vera was not thrown off entire with the ovum. A German author was quoted as having said, from a personal experience with more than one hundred and fifty cases of abortion in the service of the Charité, of Berlin, that the retention of portions of the decidua vera was not the exception, but the rule; and Tarnier as saying that ordinarily the uterine decidua remained adherent to the uterus. Whether it was safer to leave this in the uterus and allow nature to throw it off, or to remove it at once, was the particular point that the speaker would like to hear discussed. For his own part, he felt sure that it should be removed immediately. As to the manner of its removal he would say nothing.

Dr. Hirst said that, when the decidua vera was retained, as was the rule in early abortions, one of two things happened: the mass either putrefied and thus became a source of septic infection, or it became greatly thickened and remained as a foreign body, exciting frequent hæmorrhage or constant leucorrhœa. He always cleaned away any *débris* left in the uterus after abortion.

Dr. Goodell agreed fully with Dr. Hirst as to the propriety of removing the retained fragments of the placenta or the membranes; but he had a word to say about the manner of their removal. He deemed the much-vaunted curette, whether sharp or blunt, a very inferior instrument, especially whenever the fragments had been retained for several weeks. Not only did the curette bruise and injure the unimplicated portion of the

womb, but it tended to glide over the fragment, merely scraping its surface. Sometimes, indeed, it would hook up one end of the fragment, and, after causing a great and needless flow of blood, would slip off. So often had he been disappointed with it—nay, even alarmed by the great loss of blood—that he now used either a small fenestrated polypus forceps, when the os was dilated enough to admit it, or a slender-handled catch-forceps. With these instruments the fragment was invariably seized and removed by a twisting movement, while the womb itself sustained no injury whatever. It was in fact safer to use these instruments in the womb than to catch a stone in the bladder with the lithotrite.

Dr. Parish had seen a number of mistakes made with the curette. He had been called to a case and found a woman who had been bleeding for four or five months. Her former attendant had curetted and pronounced the womb empty. The speaker and his colleague dilated the cervix and removed a body as large as his two fingers. In another case the uterus was curetted by the attending physician and pronounced empty. Within twenty-four hours the patient aborted. These cases well illustrated how one might be deceived as to whether the uterus was empty when relying on the curette. In his own practice, after three months, if there was retention he introduced his finger and extracted everything. He thought, with Dr. Goodell, that something more reliable than the curette must be used to enable one to say that the uterus was empty after abortions, in doubtful cases.

Dr. Longaker did not interfere before the third month at all, unless the patient had decided signs of retention, such as hæmorrhage, patulous os, etc.; otherwise it was, as a rule, safe to conclude that everything had come away. During the third, fourth, and fifth months retention was very frequent. He thought it surprising what a small portion of placenta would give serious trouble; even small shreds would keep up a very serious hæmorrhage. He always removed anything which had been retained, using the finger, and very frequently anæsthetizing the patient.

Dr. R. Stewart asked the members of the society in what proportion of cases they had to interfere. He had never used the curette for this purpose, and had never failed to remove placental and decidual remnants with forceps of proper size. The hæmorrhage generally ceased in from twelve to fifteen hours; if it did not, he investigated and usually found some *débris* left behind. But he was convinced that, if there had been no improper interference at the time of the abortion, such cases were exceedingly rare. He agreed with Dr. Longaker as to the amount of trouble kept up by small pieces of membrane, etc.

**Fœtal Rhachitis.**—Dr. Hamill also presented a fœtus showing rhachitis. The specimen presented a number of anomalies; probably the rarest one was the condition of intra-uterine rhachitis. The marked rhachitic condition of both femora was to be noted. Fifty-three cases had been collected by Schorlau and Graefe. This condition of the bones in rhachitis might be simulated by the arrest of bony development in cases of fœtal cretinism occasionally met with in Europe. The absence of three fingers and the corresponding metacarpal bones would, following the classification of Geoffroy-St.-Hilaire, place this among the hemiteratic class and in the subdivision of that class known as anomalies by numerical diminution. This form of monstrosity was not met with very frequently. The absence of the fibulæ rendered the specimen still rarer.

**Intestinal Obstruction.**—Dr. J. Price exhibited a piece of large intestine which had been removed that day by Dr. Charles B. Penrose. The patient, a woman, had not had a movement of the bowels for twenty-eight days, and there was enormous distension. The constriction was easily found, on the right side of the uterus and posteriorly. The intestine was punctured, and a gallon or more of fæces removed. The gut was then resected, a piece twelve inches long being removed. The two ends of the gut were then united in half their circumference, and the other half was stitched to the abdominal opening, making an artificial anus. Dr. Agnew had seen the patient, and had recommended immediate operation. The woman was a patient of Dr. Bernardy's. She was now doing well. The speaker believed that Mr. Tait had first advised the preliminary puncture to relieve the distension in conditions that could not be dealt with by resection. He had some letters from Dr. McMurtry, of Danville, Ky., who had been called to see a physician, twenty-six years old. On opening the abdomen, he found two perforating ulcers of the cæcum with local peritonitis. He had trimmed the edges of the ulcers, and closed them with Lembert sutures; irrigation and drainage were used. On the fourth day the pulse was 92, the temperature was 99° F., and the patient had a completo evacuation of the bowels.

**A Fibroid Tumor of the Uterus with Tubal and Ovarian Disease.**—Dr. Price also exhibited a fibroid tumor which had been bound down in the pelvis. The right Fallopian tube contained blood, and the ovary was bound down by adhesions. The tube and ovary of that side were tied off, but the left tube and ovary were so imbedded in a mass of large venous sinuses that it would have been dangerous to interfere with the ovary. The tube was removed. A clamp was passed around the tumor, which had been lifted out of the abdomen, and the mass was removed. The clamp came off on the seventeenth day, the temperature was never above 100°, nor the pulse above 65. In connection with this case, the speaker remarked that tubal and ovarian trouble complicating fibroids was very common. Dr. Keith had found the tubes diseased in about all his first thirty-eight cases of hysterectomy. In nine cases he had attempted to remove them, but had failed, and finished by hysterectomy. It was surprising to find Dr. Keith condemning the operation, and the speaker thought that his statistics explained the matter. His mortality in private practice was less than four per cent. and in public practice more than fifteen per cent.

Dr. Price further exhibited the drainage-tubes used by Dr. Bantock, of London, as well as a tube for continuous irrigation which Dr. C. B. Penrose had given him. He also showed Tait's modification of Kœberle's wire clamp, and the delta metal wires now used by Dr. Bantock.

Dr. Hirst exhibited the incubator and the apparatus for *gavage* in use at the Maternity Hospital.

**An Instrument for Measuring the Obliquity of the Pelvis,** a simplification of Verrier's instrument, a picture of which could be seen in Witkowski's "History of Obstetrics," was shown by Dr. Hirst, who related the history of a difficult breech extraction, the difficulty being solely owing to an abnormal inclination of the pelvis. The plane of the superior strait was almost vertical as the woman stood erect.

**Pneumonia of Prenatal Origin.**—Dr. Hirst showed also a specimen from a case which contrasted well with the case of prenatal pneumonia exhibited at a former meeting. The pneumonia in this case was caused by the inspiration of blood, liquor amnii, and mucus during labor, which was a very tedious one. The pneumonic consolidation could be found in spots of about the size of a chestnut throughout both lungs. The child had a temperature of 103° directly after birth, and died on the third day.

**A Double Monstrosity** was also shown by Dr. Hirst. Two immature fœtuses, of about the third month, were intimately joined by a complete fusion of the anterior abdominal walls. There appeared to be no bony junction whatever. Both fœtuses

were male. There was a common umbilical cord given off from a flap of skin stretched between the most dependent portion of the abdomens.

**Inflammatory Tubal Disease.**—Dr. B. F. Baer presented specimens of inflammatory tubal trouble. The first case was that of a woman, twenty-four years old, who had had severe hæmorrhages for two years past, and was reduced to an almost bloodless condition. She was treated for three months in a hospital by the usual methods, with no relief. The operation proved the diagnosis. Both ovaries were removed. The fimbriated extremities of the tubes were lost in the ovaries. She made a good recovery, and he thought the cure permanent. The second case was that of a woman twenty-nine years old. She was confined to bed with a pelvic peritonitis and a bad hæmorrhage. She had had recurrent attacks of this kind, and had almost lost her life thereby. A tampon controlled the hæmorrhage for a time, but when it was removed the bleeding returned. During the operation he was compelled to catch the ovaries with a small forceps in order to tear them away from their adhesions. The left ovary contained a small fibroid, which had been the seat of much pain between the menstrual periods. There was no pus in the tubes. He had never seen pus in the tubes in any of his cases. They were simply thickened and adherent. He did not think that pus was ever contained primarily in the tubes.

Dr. Deaver then showed some tubes that had contained pus. In the first one, on rectal examination, a tumor could be felt, but he was uncertain whether it was in the rectal wall or in the abdominal cavity. By vaginal examination he discovered a prolapsed ovary. He found at the operation that the right ovary was displaced, and adherent to the pelvic floor. The left ovary was adherent to the rectum. The patient had been discharging purulent matter from the rectum. She was undoubtedly syphilitic, which, he thought, accounted for the discharge, which still kept up. She had been a sufferer for two years or more, and had been treated by several physicians for stricture of the rectum. After the passage of bougies, pus and blood would ooze from the rectum, and finally the bougies caused so much pain that they had to be dispensed with. The second case was that of a young woman. She had been seen by an eminent physician, and he had pronounced the trouble an old cellulitis which had not yet undergone resolution. She had recently had another attack, and the pain was decidedly that of suppuration. Vaginal examination revealed a mass which fluctuated very slightly. On opening the abdomen, the right ovary was found to contain a good-sized cyst; the tube contained pus, and there was, besides, a blood-cyst. On the left side there was a cyst of the broad ligament, together with an enlarged tube containing pus. Both cyst and tube were ruptured in the removal. Two drainage-tubes were inserted. The temperature reached 101°. The stitches were not yet out. The drainage-tubes were removed in fifty-two hours. They had been kept dry and clean with a cotton rope. There was no discharge after their removal. One point the speaker wished to make was, that pelvic surgery was very delicate work; there was great danger from the proximity of the great vessels and the ureters, as well as the bowels. There was great danger of tearing the bowels in separating adhesions.

Dr. Parish gave the history of a case in which there was evidence that pus had formed primarily in the Fallopian tube, although he thought that this was not usually the case. Commonly the infection began in the uterus and extended to the tube, which then had both ends sealed and thus formed a pus-sac. Abscess of the ovary, he thought, was usually secondary to suppuration in the tube.

Dr. J. Price said that the statement had been made at the last meeting that pelvic surgery in purulent cases was child's play in comparison to surgery of broad-ligament cysts. He would himself reverse that statement. In regard to Dr. Baer's not finding pus in the tubes, he would say that Dr. Gross had reported a case where a pint or more of pus was found in a tube. Pus did beyond doubt exist in the tubes. He had had a number of cases in which the pus had flowed out through the uterus while he was removing them. Dr. Deaver's cases were exceedingly interesting on account of the mixed character of the lesions, suppurating tubes and small ovarian and broad-ligament cysts co-existing. The cyst which had collapsed in the tapping in Dr. Parish's case he believed was one of the broad ligament, just such cases as Keith tapped and said never returned. Dr. Deaver's patient treated for stricture had had no stricture except that caused by pressure of the diseased appendages and inflammatory bands constricting the bowel. The cases Dr. Baer had reported were cases of caseous degeneration, and in such cases the tubes did not often contain pus. If Dr. Baer continued to do pelvic surgery he would soon come across some pure purulent cases, and would probably find them sufficiently charged with pure pus to deluge the peritoneal cavity.

Dr. Baer did not believe that pus existed in the tubes primarily, but that it always started in the pelvic connective tissue and had been formerly called pelvic abscess, which term seemed now to have died out. The tubes exhibited by Dr. Deaver did not now contain pus. He was still of the opinion that the surgery of broad-ligament cysts was much more difficult than the removal of purulent tubes.

Dr. Deaver said that the tubes which he had exhibited had most unmistakably contained laudable pus, but that it had been discharged in the handling. He did not see how pus in the broad ligament could get into the uterus without ulcerating through either the uterus or the tube. His was undoubtedly an abscess of the tube pure and simple. As to the comparative difficulty of the surgery of broad-ligament cysts and that of purulent tubes, he considered that of the tubes the most difficult. In the broad ligament cysts one had almost all the anatomical points defined, and there was, as a rule, no inflammatory complication. In dealing with the Fallopian tubes, on the other hand, owing to their displacement and the adhesions bringing them to the pelvic floor, or perhaps their adhesion to the ureters, the vagina, the hæmorrhoidal plexus of veins, the intestines, and the bladder, one might encounter one of the most difficult cases in surgery.

## NEW YORK SURGICAL SOCIETY.

*Meeting of February 8, 1888.*

Dr. Charles K. Briddon in the Chair.

**Result of Mikulicz's Osteoplastic Operation.**—Dr. Charles McBurney presented a patient upon whom he had operated in March, 1887. The man had sustained a compound comminuted fracture of the os calcis, with extensive laceration of the tissues; he had been treated for a week before he came under the speaker's care, and the wound had already become infected. The os calcis and astragalus were removed and the cuboid and scaphoid and lower ends of the tibia and fibula were sawn off, the bones being then nailed together. Recovery was retarded by the formation of a bone abscess which it was necessary to scrape out. The patient complained at first of severe pain at the point of dorsal flexion of the toes, and wished to have his leg removed in consequence, but he was rapidly improving and could walk without difficulty. He was now wearing a high-laced boot having a sole that formed an inclined plane, and found it quite comfortable.

Dr. T. M. Markoe asked how much shortening there was.

Dr. McBurney said that the limb was really lengthened. It would have been better if he had removed about half an inch more from the bones of the leg.

**The Treatment of Perityphlitic Abscess.**—Dr. Henry B. Sands read a paper on this subject (see page 197). The patient was presented. The wound in the abdominal wall was not entirely healed, but there was no tendency to hernia.

Dr. R. Ames asked the author if he had often observed œdema of the abdominal wall in connection with such cases as the present.

Dr. Sands replied that it was unique in his experience. He attributed it to the intense degree of the inflammatory process. If an abscess was near the surface one might expect to meet with changes in the abdominal wall; in general, as the site of the abscess was approached, the adjacent tissues would be found to be more affected.

The Chairman asked if there was any peculiarity in the shape of the appendix vermiformis which might account for the condition that was found. Was not the patient liable to have the same trouble again, and would not the possibility of such future trouble have been prevented by removing the appendix entirely?

Dr. Sands said that in such a severe case as the one reported he disliked to do any more than was absolutely necessary. The cæcum was much thickened, and the wound caused by excising the entire appendix might not have done so well as when the perforation was simply closed. For the same reason, when operating for strangulated hernia, he sometimes let the omentum within the sac entirely alone, simply dividing the constriction. He thought that there was but a slight probability of any recurrence taking place in this case, as the adjacent coils of intestine had probably become firmly adherent.

Dr. W. T. Bull said that not only was Dr. Sands to be congratulated on the fortunate issue of his case, but the society had reason to feel proud that one of its members had had the first successful case of the kind. Other surgeons would undoubtedly be encouraged by his success to operate early and thus be enabled to save many lives. However, he did not think that Dr. Sands's success was to be attributed entirely to the observance of the principles which he had set forth in his paper. That gentleman had drawn a sharp distinction between perityphlitis and septic peritonitis; but the average surgeon was unable to make such an exact diagnosis. The speaker was in favor of early operation in this case because of the difficulty of diagnosis and the uncertain course of the disease. His experience had agreed with that of the author so far as regarded the absence of tumefaction and symptoms of general peritonitis indicating operative interference. In all the cases that had come under his observation there had been no distinct tumor, but tenderness on palpation and increased resistance. Pain, nausea and vomiting, a rapid pulse, and elevation of temperature were all apt to be present at the beginning of perityphlitic abscess. It was possible that in the case reported the patient's symptoms might have improved in the course of the next twenty-four or forty-eight hours. The speaker did not think it advisable to wait for several days in order that an abscess might become ripe; the sooner the surgeon could explore with a needle and by further operation limit the extension of the abscess, the better for the patient. He thought that the author had exaggerated the danger of needle-punctures in these cases. Moreover, the fact that Dr. Sands had seen several fatal cases of perityphlitis, and had had frequent opportunities to note this condition post mortem, only proved that there were many cases in which early operative interference might have saved the patient. The exploratory operation was no more dangerous than the incision for ligature of the external iliac artery. The speaker believed that even the much-abused "general practitioner" might be trusted to use the exploring needle with benefit to the patient. He acknowledged that, personally, he often felt at a loss in making a diagnosis in cases of iliac phlegmon; on general principles he approved of early exploration with the needle, followed by an operation if pus was found. At the same time he did not go to the other extreme and advocate opening the peritoneal cavity on the second day after the development of moderate localized pain, accompanied by a slightly accelerated pulse and some elevation of temperature; it was certainly better to puncture first.

Dr. Sands said that the anatomical distinction between perforative peritonitis and perityphlitic abscess was not merely a matter of *opinion*. There was a distinct difference between the two, which it was important to bear in mind. If the same incision was made in a case of perforative peritonitis as when one was about to tie the external iliac artery, no good would be accomplished; one must attack the diseased part directly. If the abscess was retroperitoneal, the surgeon ought, if possible, to avoid wounding the peritonæum. He could not agree to Dr. Bull's statement that there was need of such haste in resorting to operative interference during the first forty-eight hours unless a diagnosis of perforative peritonitis could be made, when the sooner the operation was performed the better. If there was a perforation of the appendix vermiformis extending into the peritoneal cavity, the oblique incision—such as was made to reach a perityphlitic abscess—would be improper, because the disease could not be reached satisfactorily. The absence of an indurated tumor was a very important point in the diagnosis. The speaker had seldom seen a case of perityphlitic abscess in which no tumor was discoverable; in fact, in nearly every case in which he had been called in consultation the physician had called him *because* he had discovered a tumor in the iliac region. He was sure that the boy he had presented this evening would have died in the course of a very few days if an operation had not been performed. Perforative peritonitis was characterized by rapid and acute symptoms, while in perityphlitis the symptoms were more chronic. He did not understand how one could safely explore common perityphlitic swellings early without wounding the intestine or peritonæum; if a No. 3 or 4 aspirating-needle was used within the first forty-eight hours, harm would certainly be done. He had often thought of puncturing early, but had refrained. The two conditions referred to were so distinct that there appeared to be no reason why all cases should be included under the same head and treated in the same manner. If any early operation was done, the retroperitoneal was the best; still, the peritonæum might be opened, hence this was a serious operation, and might terminate unfavorably. If laparotomy were perfectly safe, he would always perform it; but, so far as our present knowledge went, the danger from early interference was greater than that from delay. Dr. Bull's recommendation to use the exploring-needle early was, Dr. Sands thought, not judicious. While the procedure might be comparatively safe in the hands of a competent surgeon, a teacher of surgery ought to be careful about recommending a doubtful expedient.

Dr. Bull said he still believed that early operative interference had done the most good in these cases, and that delay had furnished the frequent opportunities for post-mortem observation which the author had enjoyed. He was sure that all the members of the society had met with cases in which they regretted that they had not operated early. He felt obliged to dissent from the "seventeen authorities" cited by the reader. It was well known that writers frequently copied one another's opinions, and that errors were thus handed down. For example, it had been taught for years in the text-books that only the anterior

surface of the cæcum was covered by peritonæum, until Treves showed that in one hundred dissections it was found to be wholly free in the cavity. The speaker thought that it was impossible to draw such a sharp line between extraperitoneal and intraperitoneal abscesses from a pathological standpoint. While it was true that the situation in which the pus was found varied, like the position of the appendix, this was no evidence that the pus was extraperitoneal, and in the operations he had done for these abscesses he had not been able to ascertain that the pus was without the peritoneal cavity.

Dr. SANDS said that it was important to make a distinction between an operation performed on the second day after the development of the symptoms and that done when the abscess was ripe. He could not recall a case in which a perityphlitic abscess had done harm within forty-eight hours; but it was different with perforative peritonitis. He would operate in perityphlitis at any time when it was necessary, but he insisted that early operations, as usually performed and advocated, were dangerous. Many of the authorities to whom he had alluded had presented not simply "opinions," but anatomical demonstration. These authorities stated clearly that abscesses were generally strictly retroperitoneal. Wynkoop had described the post-mortem appearances observed in the case of a person who had been successfully operated upon two years previously for perityphlitic abscess by Parke. The appendix had been perforated, and the abscess had evidently been extraperitoneal. Careful observers had always stated that it was an unusual circumstance for abscesses in the iliac region not to be extraperitoneal. Treves's discovery had nothing to do with the question under discussion. It was argued that, as the cæcum and appendix were completely covered with peritonæum, a perforation of their wall would therefore cause general peritonitis. But, when a perityphlitic abscess developed, such development was preceded, he contended, by the formation of adhesions which determined the passage of the fæcal matters into the loose retroperitoneal connective tissue; hence general peritonitis was less frequent. Everything, he believed, pointed to the fact that perityphlitic abscesses were extraperitoneal. If they were not, why did not the surgeon oftener see the peritonæum when opening them? The speaker had never seen it. If he had, he could not have mistaken it, as the appearance of the membrane was perfectly characteristic.

Dr. J. A. WYETH reported the following case, which seemed to bear upon the point under discussion: Two weeks ago the previous Monday he was called to see a girl, sixteen years of age, who had been perfectly well until Thursday. On the afternoon of the latter day she complained of slight pain in the right iliac region. She was seen by her physician, and the following morning was better, but at noon she rapidly grew worse, having severe pain in the umbilical region, accompanied by vomiting. Symptoms of intestinal obstruction developed, and on Saturday and Sunday the vomiting was stercoraceous. On Sunday she was seen by several physicians, and as a result of this consultation she received in the following twenty-four hours thirty grains of calomel, half a grain of elaterium, and ten drops of croton-oil. The speaker saw her on Monday afternoon, made a diagnosis of intestinal occlusion with probably double intussusception at the ileo-cæcal junction, and advised an immediate operation as offering the only hope. It was performed at 8 P. M., the abdomen being opened in the median line, as the intention was, owing to the desperate condition of the patient, to give prompt relief by making an artificial anus, with the view of performing a subsequent operation. The intestines were found to be intensely congested, as a result of the violent remedies used. An obstruction was found, apparently at the ileo-cæcal junction. The artificial anus was quickly established, but the patient died two hours after the operation. At the autopsy it was discovered that the obstruction was in the ileum, within a foot of the cæcum. There was a localized inflammation of the appendix and peritonæum, due to a grape-seed that had lodged in the appendix and had almost perforated its wall. To the inflamed surface of the appendix two points of the ileum (about eight inches apart when the gut was straightened out) were adherent, thus completely obstructing the intestinal canal. The causes of the disastrous termination were the great error of administering such severe doses of purgative medicines and the unnecessary delay in asking for operative interference.

Dr. F. LANGE asked Dr. Sands if he had ever opened a perityphlitic abscess through the rectum.

Dr. SANDS replied in the negative.

Dr. LANGE said he had done so in four cases which had been treated for and presented the clinical features of perityphlitis. In these cases, besides the usual induration in the region of the cæcum, a fluctuating swelling and protrusion could be felt in the region of Douglas's space. Two of these cases occurred in children of about ten and twelve years, two in male adults. In two cases the opening through the rectum was added to the usual external incision. Recovery took place in all of these cases as well as in a fifth case, where, on his advice, the operation was done in the same manner. He was under the impression that probably no small percentage of so-called perityphlitic abscesses were intraperitoneal. The fact that in his cases of opening through the rectum the discharge ceased very rapidly seemed to be in favor of this assumption, because abscesses in the loose retroperitoneal tissue would probably not heal so soon. He also remembered that in some of these cases the contents of the abscess-cavity were not quite homogeneous, but at intervals during the operation of a more sero-purulent character.

In operating for perityphlitis by the usual incision, it must necessarily be a difficult thing to decide whether one was working within the peritonæum or not, the anatomical distinction of the thinned walls of the abscess being hardly possible. With reference to the condition of the peritoneal layers as illustrated by one of Dr. Sands's drawings, he might be allowed to mention a case in which he had operated about ten days ago. By the usual incision the peritoneal cavity was opened, the peritonæum not being adherent. Below the parietal peritonæum not the opposite layer of the peritonæum was found, but omentum, which seemed to form the covering of the abscess. The peritonæum was carefully closed again and the abscess was opened more laterally. The patient was now making a good recovery.

He had assisted as consultant in a case where laparotomy was performed for peritonitis caused by perforation of the appendix by fæcal stones. In another case he had operated himself without being able to make out the seat of perforation. Both patients had purulent general peritonitis and died soon after the operation. Both these patients had come under his observation too late, and the operations were done under a very unfavorable prognosis.

The CHAIRMAN read the following history of a case of perityphlitis that had occurred in his service at the Presbyterian Hospital: H. D., aged eighteen, single, born in Ireland, by occupation a driver. He was admitted to the medical department on January 10, 1888. On admission he stated that he had been troubled with pain in the right iliac region for eleven days; at first he had vomiting, loss of appetite, and pain, but no chill or sweating. The bowels had moved daily. On admission, there were deep-seated induration, resistance, and pain on pressure in the right iliac fossa, but there was no fluctuation. The temperature was 101° F. He was transferred to the surgical department on January 26th, when it was found that his condition was not materially altered. An incision three inches long was made in

the right iliac region, an inch to the inner side of the anterior superior spine, and was continued downward and inward an inch above Poupart's ligament. The subserous connective tissue was found to be infiltrated with inflammatory products. A hypodermic needle, introduced in an upward direction, withdrew a very small quantity of pus; while the needle was *in situ* the abscess was opened by cutting along the needle. The cavity contained about an ounce of thick pus. No secondary pockets of pus could be found, and the gut was not seen.

*January 27th.*—Wound doing well. Until within the past three days the patient has had a dejection every other day; for three days he has been constipated. To-night he has vomited several times, the vomited material consisting of the gastric contents and mucus.

*28th.*—Between 1 and 6 A. M. the patient vomited three times, each time the vomited matter being fæcal. There is marked lancinating, colicky pain referred to the region of the umbilicus, with some abdominal tenderness, but no tympanites. Percussion of the abdomen gives negative results.

*29th.*—During the paroxysms of pain the intestines can be seen elevating the abdominal wall a little to the left of and immediately below the umbilicus. Temperature, 98° to 99°; pulse, 80 and full. A quarter of a grain of calomel was ordered every three hours, with a large enema. At 4.30 P. M. the patient was chloroformed and inverted. Water to the amount of seven pints and a half was injected into the rectum through a funnel. On resuming the dorsal decubitus the water returned clear. Abdominal massage was practiced for forty-five minutes, after which the patient received hypodermatically sulphate of morphine, gr. $\frac{1}{4}$, and sulphate of atropine, gr. $\frac{1}{150}$.

*30th.*—The patient vomited mucus last night, and to-day has had three liquid stools, the entire amount of fæcal matter evacuated being two ounces. He is free from pain.

*31st.*—To-day the patient passed a large scybalous fæcal mass measuring two inches and a half by an inch and a half, and pear-shaped.

*February 1st.*—He had a large normal movement to-day, and, as he has had no return of the pain, he is allowed regular diet.

In commenting upon this case the speaker said that he was not sure whether a loop of intestine had become attached to the edge of the incision, the adhesion being subsequently stretched or torn by the injection, or whether the obstruction was due to a fæcal accumulation. He agreed with Dr. Sands that there was danger in operating too early. He had seen two fatal cases of perityphlitic abscess; in the last he believed that the abscess had ruptured into the peritoneal cavity. He thought that there were two distinct varieties of abscess, the extra-peritoneal and the intra-peritoneal, each giving rise to characteristic symptoms.

Dr. S. Baruch, present by invitation, said that his experience in former cases of perforation had been unfortunate. He had had three others similar to the present one, all of which had terminated fatally. During his first fifteen years of practice he had never met with a case of perityphlitis; during the last eight years he had seen eleven.

The histories of the fatal cases of perforation were briefly as follows:

Case I occurred in 1881. The patient, a young man aged eighteen, when first seen at his office had tenderness in the right iliac region, the temperature being 101°. Morphine and poultices were ordered, and relieved the pain. He suddenly collapsed, and died on the third day of general peritonitis. Seen by Dr. Delafield.

Case II occurred in 1883. The patient was a boy aged eleven. He complained at first of pain over the right ilium. The next day there was tenderness over the iliac region. Pain was relieved by morphine. Seen by Dr. Loomis and Dr. Weber. An operation was advised by Dr. Weber, but it was too late. He died on the third day of general peritonitis.

Case III occurred in 1884. A boy, aged twelve, was seen in the morning, when a grave prognosis was given. The following day he suddenly became collapsed, and died within forty-eight hours.

The inference which he had drawn from his observation of these cases was that this affection should be regarded from the outset as a purely surgical one, and that prompt action alone would save the patient. The patient whose history had been read was seen at 8 A. M., when the diagnosis of localized peritonitis was made, from exquisite tenderness over the right iliac region, from his having vomited during the previous night, and from his decubitus. The temperature was 102·4°, the pulse 120. No food or medicines were ordered except morphine and hot poultices. At noon the temperature was 101°, and there was no pain or vomiting. The next morning the temperature was the same, but there was now decided dullness on percussion, and there was still much tenderness over the right iliac region with some tenderness over the left on pressure. The boy was lying with his knees drawn up, a sign which the speaker had noted in all his other cases and regarded as pathognomonic. Although the temperature was a degree lower than it had been on the previous morning, although there had been no vomiting since that time and no pain requiring the morphine which had been ordered, the other symptoms pointed to the fact that there was no change in the local peritonitis, and, bearing in mind his three fatal cases, he called Dr. Sands in consultation to discuss the advisability of prompt surgical action. The operation was performed thirty-two hours after he first saw the case. The speaker thought that the symptoms of perforative peritonitis were usually clear and distinct. They developed suddenly, the patients being more frequently young boys. Suddenness of the attack, pain and vomiting, exquisite tenderness in the iliac region, and the peculiar decubitus mentioned, were characteristic features. In every case of ordinary perityphlitis, except one with abscess, that he had seen the diagnosis had been more or less doubtful, for the patients had recovered. He had recently seen a case at the Manhattan Hospital in which the symptoms were clearly marked; between four and six ounces of pus were removed and the patient was doing well. In the case reported by Dr. Sands pus had formed within forty-eight hours from the first appearance of symptoms. Ordinary perityphlitis, on the contrary, progressed much more slowly than perforative peritonitis, and was not accompanied by such exquisite tenderness.

Dr. Sands thought that it was difficult to prove that an abscess was within the peritoneal cavity; it was true that during the exploration coils of intestine might be seen, but not the peritonæum itself. He was absolutely certain when he opened the abdomen of the boy who had been shown that he would *not* find a perityphlitic abscess. It was important for the practitioner in charge of such a case to be able to tell not only that pus was present, but where it was located, since it was dangerous to operate in every case indiscriminately.

Dr. Wyeth asked the speaker if he thought that simple exploratory puncture of the peritoneal cavity was a dangerous procedure.

Dr. Sands replied that he would be afraid in such cases lest the needle should become contaminated and infect the peritonæum. He strongly advocated an early operation, however, in perforative peritonitis; in fact, the surgeon could not operate too early. If the abscess was retroperitoneal we should, in case a very early operation was performed, make a lateral incision and lift up the peritonæum.

The Chairman said that the late Dr. Buck had reached retroperitoneal abscesses in this manner by making an incision parallel with Poupart's ligament and raising the peritonæum.

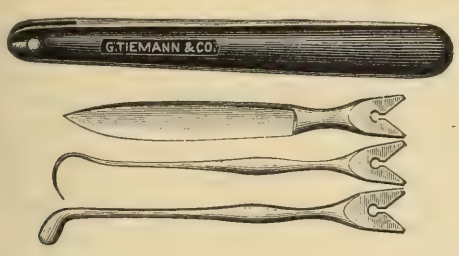
Dr. Sands replied that the cases which Dr. Briddon referred to were subfascial, and not perityphlitic abscesses.

## New Inventions, etc.

### AN ASEPTIC OBSTETRIC CASE.

By H. G. V. de Hart, M. D.,
PLEASANTVILLE, WESTCHESTER CO., N. Y.

For many years I have been convinced of the dangers to which the lying-in patient is exposed by reason of the too common and indiscriminate use of instruments, etc., taken from the ordinary pocket-case. To guard against sepsis I have usually reserved certain instruments for this class of patients, yet have not been altogether satisfied with my method. But I am enabled at this time, through the efficient co-operation of Messrs. George Tiemann & Co., 107 Park Row, N. Y., to present through your columns to the profession an "Aseptic Obstetric Case" containing everything needed in the "lying-in" room outside the long and short




forceps. Its contents are as follows: Silk, silver, copper, and iron wire (for sutures); 12 safety pins (two sizes); 6 plastic pins; 6 needles (assorted); 1 soft catheter; 1 silver probe; 1 caustic-holder; 1 thumb lancet; 1 umbilical clamp; 1 pair of straight scissors; 1 dressing forceps (open ring); 1 bull-dog forceps and needle-holder combined; 1 patent (B) handle (see cut); 1 tenaculum (see cut); 1 gum lancet (see cut); 1 scalpel (see cut); 12 3 ij bottles; 1 pocket for birth reports, etc. The above-mentioned are contained in a neat Russia leather case so shaped as to be conveniently carried in the coat-pocket. Its compactness, portability, and thorough "asepsis" possibilities render it a desirable case for the rural practitioner.

## Miscellany.

**The Cumulative Action of the Galvanic Current.**—At a recent meeting of the Section in Theory and Practice of Medicine of the New York Academy of Medicine, Dr. A. D. Rockwell read a paper on this subject. He used the term cumulative to express the increased efficiency of the galvanic current when it was applied along the course of a nerve without interruption. One well-known factor that went to make up this increase was the better conductibility of the tissues gradually taking place at the seat of the recomposition of the current, due to congestion of the skin and adjacent parts under the electrodes. That, however, this explanation of the increasing strength of the current when continuously passed through living tissue was but partial he had often demonstrated. On the application of a current from a given number of elements to the arm and forearm, seven milliampères were immediately registered. In two minutes there was an increase of one degree, in two minutes more an additional degree, and in eight minutes twelve milliampères were registered. That this increase of strength was not caused by improved conduction simply was evident from the fact that when vigorous friction was applied to the other arm, producing congestion as intense as that caused by the electricity, the application of an equal strength of current would not equally affect the galvanometer until after the lapse of several minutes. Another phenomenon was the increased strength observed upon a reversal of the direction of the current. It was difficult to analyze the molecular disturbances that evidently took place during the passage of the galvanic current, but without doubt this increase of strength was due to the electrolytic or polarizing action of the current, exciting a secondary current in the living body, similar to what was observed in the reservoir or secondary pile. The laws of electrotonus were of great value, but they did not account for the therapeutical activities of electricity so much as phenomena of a purely physiological or physico-chemical order.

It was in the treatment of paralysis in its various forms that these cumulative effects of electricity would seem to be of special value. In cases of hemiplegia where the irritability of the nerve was more or less impaired, the continuous passage of the current accomplished more for the patient than the attempts at frequent muscular contractions that were so popular. The difference in the treatment of hemiplegia with increased nerve irritability and hemiplegia with decreased nerve irritability was simply this: in the former it would be as inadmissible to allow interruptions of the current or a change in its direction as it would in certain cases of neuralgia; in the latter, on the contrary, a few interruptions could be made with good effect at the close of an uninterrupted *séance*, and a reversal of the current added to the efficacy of the treatment. In cases of infantile paralysis especially, great and irreparable damage had often been inflicted by the excessive stimulation of interrupted currents. The continuous passage of the current, on the other hand, while in a certain sense stimulating in its effects, combined influences that were sedative and tonic, and was alone equal to the task of resisting progressive degenerative changes in nerve and muscle. Cases were cited by Dr. Rockwell showing that undue stimulation was destructive rather than reconstructive. One case of infantile paralysis was given where interrupted currents had well-nigh extinguished every vestige of vitality in the paralyzed member. In a few groups of muscles slight contractions were obtainable, the reactions being chiefly those of degeneration. Persistent effort in the direction of improving nutrition by the cumulative action of the current had resulted in marked improvement and approximate recovery in a case regarded as hopeless.

In the treatment of neuralgias, hysteria, chorea, epilepsy, and exophthalmic goître, the principles concerning the cumulative action of the current were regarded by the speaker as also important. In all these conditions it was not stimulation but sedation that was desirable, and therefore interruptions of the current, and, as a rule, even large and rapid variations in its density, were to be avoided. Exophthalmic goître could, according to the author's experience, be treated with far greater success than was generally believed. He had himself reported fifteen cases, of which nine had been either approximately or completely cured. It seemed hardly necessary to say to any one cognizant of the peculiar characteristics of the disease that uninterrupted and unvarying currents were usually called for. There were, however, exceptions to this rule. Certain cases seemed to demand a stronger impression than could be produced by a constantly flowing galvanic current. They would act badly under interrupted currents, but by rapid and large variations in the closed circuit a modified stimulation was produced, which, in his own experience, had proved of invaluable service in several difficult cases.

**Bruzelius on Multiple Neuritis.**—An esteemed contributor has sent us the following abstract of a paper by Professor Bruzelius, published in a recent number of the "Nordiskt mediciniskt Arkiv":

This disease, though rare, is not so uncommon as is generally believed, inasmuch as it is often involved with other morbid conditions and referred to under various names, such as anterior acute poliomyelitis, peripheral paralysis of motion and sensation, acute progressive neuritis, and general parenchymatous neuritis. In a case related, which may be regarded as typical, not only were the extremities and trunk affected, but even the region of the cranial nerves. The patient, a laboring woman, seventeen years of age, after exposure to cold and wet,

while at hard work, became restless and nervous. Then the power of sensation was lost in both legs below the knees, and in three fingers on the ulnar side of each hand; and the power of motion was very imperfect. On the seventh day from the outset of the disease there was deep, dull pain in the legs, with inability to stand and formication; motion was lost in both arms, the left having been first affected. Afterward the head only, of the whole body, could be moved a little. The facies, tongue, pharynx, and ears were deranged in motion and sensation (paræsthesis and paresis). The special senses were perturbed and lessened in acuteness, and headache was present. The heart, kidneys, bladder, stomach, and bowels seemed normal in function, and the intelligence was not affected. There was a history of initial fever; on the fourteenth day the temperature was 41° C. (105·8° F.), with much sweating. By the eighteenth day improvement was perceptible, the headache and anæsthesia being less, but now hyperæsthesia began, so that "the clothes were unbearable." Sensation returned first in the left arm, then in the right; pain ceased, and motion was noticed in the feet. On the thirty-third day the temperature, hearing, taste, and smell were normal, though loss of function yet continued in the region of the distribution of the facial nerve. The arms seemed nearly normal as to motion. The interosseous and thenar muscles of the hands were notably atrophied. The two lower extremities were almost completely destitute of motion and sensation. There was anæsthesia of the skin of the trunk and limbs. The patellar and plantar reflexes were absent. Firm pressure on the muscles was painful, but especially so when made over the points of emergence of nerve trunks. The thoracic and abdominal viscera acted normally, except for the existence of a little mucus and albumin in the urine, which latter was not noticed ten days later. On the forty-sixth day urticaria was seen on the arms, but it had disappeared on the next day. On the forty-eighth day the patient felt numbness and formication in both legs. The day after, the feet were stiff. She was first able to stand on the fifty-fourth day. The plantar reflex returned on the fifty-seventh day, and the patellar on the ninetieth. The patient was discharged on the ninety-sixth day from the beginning of the disease, apparently well. We find a detailed result of electrical examinations of the nerves and muscles at different times, and the æsthesiometer was also used; both showed the gradual improvement. As to treatment, quinine and baths are mentioned, and electricity was applied during the last month. In this case, while disordered sensation in the body and limbs pointed toward the spinal cord, the peripheral character of the trouble in the head made a diagnosis of multiple neuritis probable.

In another case, which began with paræsthesia and paresis, the disease was recognized by pain and lameness in the extremities, notable derangement of sensation, muscular atrophy, and absence of the skin reflex. The bladder and rectum acted normally. Electrical examination showed the degenerative reaction, the muscles responding to the galvanic current, but not to the faradaic. It may be said that these are the chief symptoms of this affection.

Reports of many cases do not show a febrile inception, because, presumably, the early stages are passed before the patient is observed. In some instances the onset is acute, with high fever and numbness; in others, loss of motion is the chief symptom. The acute form has been thought to be a miasmatic infectious disease, the cases being considered as sporadic examples of beri-beri. Weakness in the legs is generally an early sign. Sometimes a certain nerve district alone is involved at first, or the attack may be wide-spread. Indications of abnormal sensation are less pronounced and less constant than those of motor disturbance, which is regarded as of importance in the differential diagnosis of acute anterior poliomyelitis. Paræsthesia usually precedes paralysis, as atrophy follows it. Spontaneous pains, varying from slight to severe, have been noted in most cases, suggesting acute articular rheumatism; yet the disease may run its course without them, as is shown by post-mortem examinations. Lowered sensibility is of greater diagnostic value than pain, but of less than diminished motion. Tenderness on pressure over muscles and nerves, with cognate atrophy, has been noticed by several observers. There may be hyperæsthesia of the skin. The reflexes are usually slight or absent, though instances, considered typical, have been reported in which those of the patella and skin were present. Data on the electric condition are meager and incomplete. Œdema and swelling of the joints are seldom seen, except in fatal cases. The disease is commonly limited to the extremities, parts essential to life not being often involved, and, when they are, only in sequence to those already mentioned. The causes seem to be cold, dampness, and overexertion (like those giving rise to beri-beri). May we not surmise that a certain temperament (the lymphatic, for example) is a predisposing condition of no little importance? Alcohol, if not originating this morbid state, seems to give it a peculiar impress, resulting in ataxic symptoms which make one think of tabes dorsalis. (Compare "Holsti's Views on Arterio-capillary Sclerosis," "N. Y. Med. Journal," Nov. 20, 1886.) Endarteritis might indirectly be a factor in the production of such lesions.

The prognosis is various. Death may occur in a few weeks from failure of the respiratory muscles, but this is rare. Usually in course of some months the symptoms disappear. Sometimes permanent paralysis of motion or sensation remains; and a fatal end, after long illness, may ensue from intercurrent disease, such as tuberculosis, nephritis, etc.

A study of the literature of the subject brings to light a lack of proper details in the examination and description of cases, with considerable doubt as to the diagnosis. Much new work is needed, both in clinical observation and in pathological anatomy, ere we shall have a satisfactory picture of multiple neuritis. The view held at present is analogous to that recently held concerning the significance of albumin in the urine, the causal relations of which seem now about to assume a scientific physiognomy.

**Cascara Sagrada (Rhamnus Purshiana).**—Recent investigation of the constituents of *Cascara sagrada* has led to the discovery of new principles and facts of great importance pharmaceutically and therapeutically. The chief objection to *Cascara sagrada* heretofore has been its inherent bitterness, but it seems that tasteless preparations of this drug, highly efficacious medicinally, are now to be had. These discoveries are considered a distinct advance in pharmaceutical attainment and in the therapeutics of chronic constipation, since this remedy can now be much more generally and persistently administered, and its well-known tonic laxative action obtained without the drawbacks which seemed formerly inseparable from its employment. The facts disclosed indicate the existence of principles and modes of action extending far beyond the subject indicated, and are well worth the close attention of the thoughtful and scientific physician. A valuable contribution to our knowledge of the chemical constitution of this drug, by Mr. H. F. Meier and Mr. J. Leroy Webber, appeared in the "American Journal of Pharmacy" for February, 1888, which not only makes it possible to obtain a true interpretation of the various clinical observations, but clears up apparent anomalies, and also indicates the reasons for observed effects which have lately been disputed, but now admit of no further question or misunderstanding. Among the discoveries of special interest to the physician referred to in the paper is the influence of a class of vegetable ferments and their recognition as the causes of various abnormal conditions—such as colic, vomiting, nausea, diarrhœa, and dysentery—which occasionally attend the administration of certain drugs. It appears that frangula bark, when fresh, contains such a ferment in excessive quantities, and is therefore unfit for use until the ferment has exhausted itself—the process usually occupying several years. It also appears that cascara contains some of this principle, and this fact will account for the occasional untoward effects of the drug which have been observed as consequent on the employment of a number of its preparations heretofore in the market. These effects are, therefore, not due, as has been supposed, to any idiosyncrasy on the part of the patient, or to the laxative or tonic constituents of the bark itself, but to a distinct objectionable principle which, once recognized, canbe rendered inoperative and harmless.

Messrs. Parke, Davis, & Co., of Detroit, have clearly recognized the principles involved, and by their application have formulated and adopted correct pharmaceutical processes and thus overcome all the difficulties heretofore existing. As a result of their investigations, they now offer to the medical profession a fluid extract, a solid extract, and also a con centration, all of which (designated as "formula of 1887") exhibit only the desirable laxative and tonic properties, and, being free from this fer-

ment, are incapable of producing griping, nausea, or any of the evil effects above mentioned. It appears that these ferments are distributed through a large number of vegetable substances, and are not confined to unripe fruits, but may also exist in the root, bark, leaf, or even vegetable extracts, of which we have illustrations in various juices, liquid or inspissated. Of this latter class aloes will serve for an example. A familiar illustration of an unaltered vegetable would be the cucumber, the green apple (familiar to the school-boy), and unripe fruit generally. In the case of the cucumber, experience has taught the means of removing this ferment by dialysis or osmosis. We sprinkle salt over it or surround it with a strong brine, which provokes an outward flow of the fluid containing the ferment, with the result that the ferment is to a large extent removed, and thus rendered incapable of producing the same conditions in the stomach for which it was intended in the plant—that is, the creation of vegetable acids from other material previously existing, in the same manner that pepsin, likewise an unorganized and soluble ferment, provokes the solution of fibrin and albumin, forming peptone, or as diastase is capable of effecting the transformation of starch into soluble glucose and dextrin, both new bodies. That these ferments all bear a direct quantitative proportion to the results accomplished has been practically recognized. We are promised a satisfactory indication of the sources of the acids formed in the plant which will enable us to corroborate the statements that identical processes go on in the stomach when the ferment is permitted to exert its action there. The physiological tests now being conducted at the laboratory of Messrs. Parke, Davis, & Co. with the different principles contained in the plant are expected to demonstrate finally not only the superiority of cascara to frangula, but also its comparative value as a laxative.

**The Seventh German Congress of Internal Medicine** will be held in Wiesbaden from the 9th to the 12th of April, inclusive, under the presidency of Dr. Leube, of Würzburg. The business committee consists of Dr. Nothnagel, Dr. Pagenstecher, Dr. Binz, and Dr. Curschmann, and Dr. Emil Pfeiffer, of Wiesbaden, is the permanent secretary. The programme is as follows: *April 9th.*—"Chronic Diseases of the Muscular Tissue of the Heart and their Treatment" (reporters, Dr. Oertel, of Munich, and Dr. Lichtheim, of Bern). *April 10th.*—"Alcohol as a Remedy" (reporters, Dr. Binz, of Bonn, and Dr. von Jaksch, of Gratz). *April 11th.*—"The Prevention and Treatment of Asiatic Cholera" (reporters, Dr. Cantani, of Naples, and Dr. August Pfeiffer, of Wiesbaden). In addition, the following-named papers are promised: "On Displacement of the Heart," by Dr. Rumpf, of Bonn; "Experimental Investigations of the Mechanism of the Respiratory Movements," by Dr. Unverricht, of Jena; a paper (subject not announced) by Dr. Liebreich, of Berlin; "On Combined Degeneration of the Spinal Cord," by Dr. Adamkiewicz, of Cracow; "Experimental Contributions to the Dietetic Treatment of Digestive Derangements," by Dr. Jaworski, of Cracow; another paper by the gentleman last mentioned (subject not announced); "The Treatment of Basedow's Disease," by Dr. Stiller of Budapest; "The Diagnosis of Renal Tumors," by the same author; "The Excretion and Elimination of Uric Acid," by Dr. Emil Pfeiffer, of Wiesbaden; "The Pathogeny of the Epileptic Seizure," by Dr. Binswanger, of Jena; and "On Cryptogenetic Septico-pyæmia," by Dr. Jürgensen, of Tübingen.

**The Society of the Alumni of Bellevue Hospital.**—A little more than a year ago an association of alumni of Bellevue Hospital was formed for the purpose of encouraging scientific medical work and social intercourse among its members. As several attempts of a similar nature had previously been made without success, it seemed best to the founders to limit the association at first to the recent internes of the hospital, and only those who had served since 1880 were then made eligible for membership. The society has been very successful thus far, and it has attained the objects for which it was founded to such an extent that it has been determined now to enlarge the scope of the association so as to include all who have at any time served the full term on the house staff. The meetings are held on the first Wednesday of each month, except July, August, and September. The membership has grown rapidly, and it is thought that it will include more than a hundred by the end of this year. We have published the proceedings of several of the meetings, and regarded them as among the best of the material that we could lay before our readers. At present the officers of the society are Dr. Hermann M. Biggs, president; Dr. Leroy W. Hubbard, vice-president; Dr. Fred W. Gwyer, secretary; and Dr. Robert J. Carlisle, treasurer.

It is proposed to issue in 1888 the second catalogue of the former and present internes of the hospital, including lists of the present and former members of the visiting and consulting staffs, the constitution of the different staffs, and such other information in regard to the hospital as may properly belong there. As no available record is to be obtained, the importance of the publication of such a catalogue will be appreciated. The work has been undertaken by the society, and the catalogue will be published under its supervision. It will be the aim of the committee in charge to make the work as complete as possible, and to publish it at an early date. The committee consists of Dr. Hermann M. Biggs, Dr. Fred W. Gwyer, Dr. Willis W. French, Dr. Samuel Alexander, and Dr. Reginald H. Sayre.

**The University of the City of New York.**—The Loomis Laboratory and the other buildings of the Medical Department, in East Twenty-sixth Street, were open for inspection last Monday evening.

**The "Memphis Medical Monthly"** is now the title of the excellent journal formerly known as the "Mississippi Valley Medical Monthly."

**The New York Clinical Society.**—At the recent annual meeting, officers for the ensuing year were chosen as follows: President, Dr. J. West Roosevelt; vice-president, Dr. George M. Tuttle; secretary, Dr. F. W. Murray.

**The Health of Boston.**—During the week ending Saturday, February 25th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 21 cases and 3 deaths; scarlet fever, 23 cases and 3 deaths; typhoid fever, 4 cases and 1 death; measles, 36 cases. There were also 31 deaths from consumption, 26 from pneumonia, 4 from whooping-cough, 18 from heart disease, 13 from bronchitis, and 1 from marasmus. The total number of deaths was 198, against 157 in the corresponding week last year.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality," there were 650 deaths during the month of January, including 1 from cholera morbus, 1 from cholera infantum, 20 from croup and diphtheria, 2 from dysentery, 1 from diarrhœa, 2 from erysipelas, 23 from typhoid fever, 11 from measles, 1 from pyæmia, 4 from syphilis, 1 from septicæmia, 3 from scarlet fever, and 27 from small-pox.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending February 24th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending February 4th corresponded to an annual rate of 21·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bradford, viz., 13·4, and the highest in Plymouth, viz., 32·2 in a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, and 1 in Leeds.

*London.*—One thousand eight hundred and ninety-four deaths were registered during the week, including 18 from measles; scarlet fever, 38; diphtheria, 29; whooping-cough, 177; enteric fever, 26; and diarrhœa and dysentery, 15. Diseases of the respiratory organs caused 516 deaths; different forms of violence, 55; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 23·1 in a thousand. In greater London 2,370 deaths were registered, corresponding to an annual rate of 22·4 in a thousand of the population. In the "outer ring" 10 deaths from diphtheria and 41 from whooping-cough were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending February 4th in the sixteen principal town districts of Ireland was 29·5 in a thousand of the population. The lowest rate was recorded in Londonderry, viz., 7·1, and

the highest in Cork, viz., 40·2 in a thousand. In Dublin 202 deaths were registered, including 2 from measles; whooping cough, 10; scarlet fever, 6; enteric fever, 4; diarrhœa, 1; and dysentery, 2.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,102,200, during the month of December, 1887, corresponded to an annual rate of 22·1 in a thousand. The lowest rate was recorded in Groningen, viz., 16·6, and the highest in Haarlem, viz., 24·8 in a thousand.

*Santiago de Cuba.*—The sanitary inspector reports for the week ending February 11th, 1 death from yellow fever at the military hospital, and that small-pox has broken out again at the village of Cristo, eight miles from that city.

*Havana.*—One death from yellow fever and 38 from small-pox are reported for the week ending February 11, 1888.

*Berlin.*—The United States minister, in his dispatch under date of January 30th, transmits copies and translations of two articles taken from Berlin newspapers containing reports, which have not been contradicted, of further alarming outbreaks of trichinosis in that country. The articles referred to are as follows:

*Gorlitz, January 23d.*—Trichinosis has continued to spread in the Saxon boundary region. The attacks of the disease are no longer confined to Ober-Cunewalde, but have also occurred in Oppach, Laivaldè, Beiersdorf, Lauba, Halbau, etc. The number of persons attacked is already over 100. Three cases have as yet resulted fatally. As regards the origin of the disease, it is said that a butcher of Ober-Cunewalde on Christmas eve made to his customers a present of smoked sausages, in the preparation of which, meat containing trichinæ had been used. In all the families which had received and eaten those sausages attacks of the disease occurred.

*From Saxony, January 26th* (own correspondence).—In view of the visitation of epidemics of the trichinosis with which several places in Saxony have of late been afflicted, the local authorities (Amtshauptmannschaft) at Plauen i. V. have recently issued a decree urgently recommending to the individual communities of the district the introduction of obligatory examination for trichinosis. In Ober-Cunewalde the persons attacked by the disease have attained to the number of about 170, and 9 deaths have hitherto occurred. At the village of Obersachsenfeld, near Schaufenberg, a new epidemic of trichinosis has broken out, resulting as yet in the occurrence of 20 cases of the disease. At Ober-Cunewalde a committee has been formed to aid the poor among the persons attacked.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | February 4. | 2.260,945 | 1,187 | .. | .... | 11 | .... | 25 | 7 | 51 |
| Glasgow | February 4. | 545,678 | 264 | .. | .... | .... | .... | 1 | 6 | 6 |
| Warsaw | February 28. | 439,174 | 215 | .. | .... | 7 | .... | .... | 4 | 3 |
| Rome | December 31. | 373,356 | 218 | .. | .... | 7 | .... | 2 | .... | 3 |
| Copenhagen | January 31. | 300,000 | 130 | .. | .... | .... | .... | 2 | 7 | 7 |
| Edinburgh | February 4. | 262,733 | 98 | .. | .... | .... | .... | .... | 1 | .... |
| Palermo | February 5. | 250,000 | 135 | .. | .... | .... | .... | .... | 3 | 4 |
| Bristol | January 28. | 226,510 | 117 | .. | .... | .... | .... | 1 | 1 | .... |
| Belfast | February 4. | 224,422 | 149 | .. | .... | .... | .... | 1 | .... | 1 |
| Genoa | February 4. | 179,353 | 135 | .. | .... | 6 | 2 | .... | .... | 4 |
| Trieste | January 28. | 154,500 | 123 | .. | .. | 4 | .... | 1 | 1 | 1 |
| Havre | February 4. | 112,074 | 90 | .. | .... | 6 | .... | 1 | .... | .... |
| Reims | January 28. | 97,903 | 61 | .. | .... | 1 | .... | 1 | .... | 5 |
| Reims | February 4. | 97,903 | 61 | .. | .... | .... | .... | 1 | .... | 4 |
| Merida | January 26. | 48,711 | 39 | .. | 1 | .... | .... | 1 | .... | .... |
| Cienfuegos | February 6. | 25,000 | 63 | .. | .... | 53 | .... | 1 | .... | .... |

United States.

*San Francisco—Small-pox.*—The secretary of the health department reports that from January 1st to 31st there were 224 cases and 27 deaths, and from February 1st to 14th there were 60 cases and 7 deaths from small-pox.

**The New York Academy of Medicine.**—At the next meeting of the Section in Neurology, Friday evening, March 9th, Dr. W. Oliver Moore will read a paper entitled "Ocular Symptoms in Diseases of the Spinal Cord," and Dr. Henry Ling Taylor will read on "The Hygiene of Reflex Action."

At the next meeting of the Section in Surgery, Monday evening March 12th, Dr. F. W. Murray will read a paper "On Aneurysm of the Internal Pudic Artery," Dr. A. J. McCosh will read one "On a Case of Nephrolithotomy," and Dr. G. L. Huntington will read one "On the Operative Treatment of Old Injuries of the Elbow Joint."

At the next meeting of the Section in Orthopædic Surgery, Friday evening, March 16th, Dr. S. Ketch will read a paper entitled "The Present Status of the Treatment of Rotary Lateral Curvature of the Spine."

## ANSWERS TO CORRESPONDENTS.

*No. 152.*—For a patient who was simply asthmatic, we think neither of the regions you mention could be said beforehand to be decidedly preferable to the other; different localities within very narrow limits often affect asthmatics in quite an opposite manner. For a patient with emphysema, we think the climate of southern California offers some advantages.

*No. 153.*—Try lactopeptine.

*No. 154.*—The report has not yet been published.

*No. 155.*—The lectures are free to all medical men. They are clinical in character.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# THE USE OF CAUSTICS IN THE NASAL CAVITIES.*

By F. H. BOSWORTH, M.D.,

PROFESSOR OF DISEASES OF THE THROAT IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE.

IT is a tradition as old as medicine that catarrhal disease of the nasal passages gives rise to an excessive discharge.

I have on several occasions warmly controverted this idea, and argued that, on the contrary, the secretions were diminished in what we call nasal catarrh.

Another tradition of almost equal antiquity concerning nasal disorders is that the secretions are acrid and irritating. On the contrary, I believe that no glandular structures in the body pour forth a blander or less irritating secretion than those located in these passages. Based on these incorrect views, the treatment has been, from time immemorial, to make applications of astringents and disinfectants, to control in the one case the excessive discharge, and in the other to correct the fœtor or acrid character of the secretions.

I think we all now recognize the inadequacy of these measures to control nasal disorders, and are compelled to acknowledge that their use was based on an entirely mistaken conception of the true pathology of the disease with which we had to deal.

These measures failing, therefore, we can easily understand how the use of caustics was resorted to, as offering an agent far more powerful in its action, and one from which results of some decided character might be anticipated; nor has this expectation been disappointed. The question, however, suggests itself immediately, On what theory or conception of the disease has the use of this agent been based? As far as I can appreciate the writings and practice of the past thirty years, the main idea has been that we have to do with a diseased membrane which has something the character of the efflorescent and unhealthy granulations which spring up on wounded surfaces, and which must be destroyed. This certainly is the suggestion if not the written assertion in much of our literature, and is also the popular impression. Here again, I think, is an entirely erroneous view, for, while caustic applications constitute one of our most valuable remedies, and their judicious use is attended by the best of results in dealing with nasal disorders, microscopic study of the nasal mucous membrane in disease fails to reveal any morbid structure which could be converted into healthy tissue by a destructive agent.

A healthy mucous membrane in the nose is composed of, first, a layer of epithelial cells; second, the mucosa proper, containing blood-vessels, mucous glands, and nerves, bound together by white fibrous and yellow elastic connective tissue; and, third, the submucous connective tissue, which over the turbinated bones contains a large plexus of veins, the cavernous bodies, falsely called erectile structures.

In catarrhal inflammation of this membrane the changes which occur are: In the first or epithelial layer, no changes as a rule; in the second layer or mucosa there is an increase in the connective-tissue structure, some dilatation of blood-vessels, more especially in the veins, but *no change in the glandular elements.* It is in the third layer that we find the prominent changes, and these consist briefly in a very marked dilatation of the veins which compose the cavernous bodies, or turbinated bodies as they are often called, and a notable increase in the elements of the intervenous connective tissue. The morbid condition is essentially one of chronic hyperæmia and hypertrophy.

The use of any destructive agent as such to control and remedy this condition would seem somewhat irrational. The indications do not point to destructive methods. This action of a caustic would result in the destruction of the epithelial layer, and possibly penetrate to the mucosa proper, but rarely would it reach the submucous tissue, which is mainly the seat of the morbid conditions which require remedying.

In order that I may make clear what I regard as the true action of caustic application, I shall be compelled to allude briefly to some questions on which I have already written more fully in regard to the physiology of the nasal mucous membrane, and the pathology of what is called nasal catarrh. In what I say to-day it must be understood that I refer to chronic inflammation with moist secretions, hypertrophic rhinitis, and not to the so-called dry catarrh or atrophic rhinitis, which in its later stages gives rise to a fœtor or ozæna. As regards the term nasal catarrh, I have been quoted as saying there is no such disease. This I believe really true; there is no definite disease which can be described by the term, but a large number which are comprised under it. If I were asked to define the term nasal catarrh, I think I could do no better than by the expression "something the matter with the nose."

The nasal mucous membrane secretes just sufficient mucus to lubricate its surface and no more. This is true of all mucous membranes in the body; this is their function, and the economy demands nothing more of them. There are, however, poured out on the surface of the nasal lining membrane in health from twelve to sixteen ounces daily of serum, whose source is in the venous sinuses of the cavernous bodies; moreover, this is the sole and only rational function which these large venous bodies can perform. The object of this large serous transudation is to moisten the air which passes into the lungs, thereby so far saturating it with watery vapor that it may not injure the lower air-passages by robbing them of the scant supply of moisture provided by their limited secreting apparatus. This normal serous secretion is not perceived or appreciated in health, being rapidly vaporized by the to-and-fro current of respired air.

Now, in a diseased condition of the nasal membrane, the venous sinuses being dilated and the intervenous tissue being notably thickened, it is easy to see how this quiet and constant transudation of serum is much interfered with. Moreover, the swollen membrane so far encroaches upon

* Read before the Medical Society of the State of New York, February 7, 1888.

the nasal passages that the free circulation of air is prevented. The result is that, while the serous exosmosis is diminished, even the smaller amount is not taken up by the air current, and therefore accumulates in the cavities. The mucous secretion becomes thicker and more viscid from the smaller amount of serum with which it is intermixed, and so makes its presence now felt as a source of annoyance and discomfort. I trust I make this point clear, as I regard it as of much importance. Sixteen ounces of serum, intermixed with a limited amount of healthy mucus, are secreted daily in the nose, and are absolutely unperceived while this organ is performing its proper function. Diminish the amount of serous exudation to six or eight ounces, and this, with an admixture of normal mucus, becomes viscid and tenacious, is not easily removed, and becomes a source of discomfort.

If I am correct in this view, and it is the result of many years of rather close observation, then it is easy to understand how neither astringent nor disinfectant applications are indicated or efficacious.

Caustics are, however, of much value, and their action is such as to directly control the essential morbid conditions which require remedy. A caustic simply coagulates the albumin of the superficial layer of the membrane, or converts the soft elastic tissue into a hard, dense, inelastic slough, at the same time undergoing contraction.

Before the use of cocaine this action was of undoubted, but limited, benefit. Since the introduction of cocaine, however, the value of these agents have been greatly enhanced. In cocaine we have a drug which completely expels the blood from the membrane, and so contracts it down firmly upon the bone beneath, preparing it in such a way that what was formerly accomplished by the caustic application may now be increased many fold. Our procedure then would be, in cauterizing the nasal membrane, to first apply cocaine until the part is exsanguinated and contracted fully, and then to delicately destroy by caustic the elasticity of a small area over its most prominent part, and, as it were, button the membrane down in such a manner that it can not swell again. We expel the blood from the part and dam it out, as it were. We thus control the hyperæmia, and allow the distended blood-vessels to regain tone, affording their relaxed walls a sufficient period of rest in which to regain contractile vigor.

The prime element in acute inflammatory changes is vaso-motor paresis. It is a reasonable view that, in chronic inflammation, the muscles which control the caliber of the vessels play a prominent part by their weak and relaxed condition. By controlling blood-supply to the inflamed part, another and important end is accomplished, in that we thereby modify to an extent the nutrition of the membrane, and so diminish, by a retrograde process, the hypertrophy which has taken place, due originally, I think, without question, to this increased blood-supply.

In this manner we directly attack the essential morbid condition, and, as we all know, secure creditable results in our work. A very important aid to us, however, in doing this is an intelligent comprehension of just what we want to do, for there is a very great difference in diffusing a caustic application over a large surface in order to destroy a supposed fungous growth in the nose, or deftly applying it on a contracted membrane with the idea that what is to be desired is to pin this tissue down in such a way that its plethoric circulation shall be controlled, and the exaggerated nutritive processes be set at rest.

In this manner, again, we avoid what has been something of a reproach to us—viz., that we need not ask of our patients that they come every day, or every other day, to our offices for treatment. It has been my practice to see my patients but once each week, and even then I at times have found the intervals too short.

I need not say that I have seen the efficacy of this method of caustic treatment verified many times, and that an examination at the end of a week, or even longer, has shown the hyperæmia still completely controlled, and the previously swollen membrane held firmly down by the little button of cauterized tissue.

On the other hand, I have many times seen the membrane swell to its original state very soon after the caustic has been used, owing to lack of nicety and care in its use. The result in controlling symptoms, of course, then proves a failure. As to the immediate results of a single successful application I could write much, were more time at my disposal, as of colds in the head permanently arrested, of a headache immediately relieved, or of bronchial attacks and winter coughs controlled, demonstrating the correctness of the views given above, as well as the quick sympathy between the nasal chambers and the air-passages below.

As regards the special caustic to be preferred, I have but a word to add. Chemical agents differ in no essential manner from the potential cautery. The one as well as the other possesses simply a certain amount of destructive potency. We hear now and then of the modern treatment of hay fever and asthma, as well as nasal diseases, by electricity. Of course, electricity has nothing to do with the matter; it is used to heat a small platinum wire in such a manner as to give it a certain amount of destructive potency, and to do this there is required an elaborate, expensive, and cumbrous apparatus. A few small crystals of chromic acid possess the same destructive power, are much more simply managed, and can be applied with far greater nicety, and the success of treatment often depends on this nicety of application. I much prefer this to any other caustic. Its local action is such as to render it, in my mind, far preferable to any other.

This preference I had for some time entertained, when my attention was called to the following views of Dr. Squibb, published in the "Ephemeris" for July, 1883, which so closely coincide with my own experience that I quote them at length:

"It is, perhaps, the most important and most valuable of all the erosive caustics, for one simple and characteristic reason—namely, that it is self-limiting in its action to a degree that no other destructive caustic is. It is an active oxidizing agent, and destroys the tissues to which it is applied by oxidation. Thus far its action is similar to other caustics—such as nitric acid, for example. But every molecule of chromic acid which destroys a molecule of organic tissue is itself destroyed and

rendered inert by being reduced to an insoluble and inert oxide of chromium, and this principle and degree of self-limitation is not obtained from any other caustic. Sulphuric acid is also a destructive caustic, but not in the same way or by the same reaction as chromic acid, and it is not self-limiting. Both the sulphuric acid itself and the products of decomposition by it are more continuously and injuriously irritant. It is, therefore, a more powerful caustic than chromic acid, and produces deeper, more prolonged, and more irritable sloughing. Hence it is that sulphuric acid is a painful caustic, while chromic acid is not. That is, both may produce severe pain, and possibly for a short time equally severe pain, but the self-limiting action of chromic acid carries its self-limiting effect to the pain also, so that both the action of destruction and pain also are comparatively soon over, and the vital processes go on to separate the slough at once, and with little secondary or after irritation."

It has been charged against the use of caustics that cicatrices are formed. I have never in a single instance seen such a result. Nor could this well be so when the acid is properly applied, as its action should be confined to the epithelial layer of the membrane, whereas cicatrization could only result from an injury to a tissue composed largely of connective tissue—viz., the mucosa, or the submucous layer. To one main question in this connection I will allude very briefly—viz., Does cauterization radically cure these disorders? Unquestionably I think it does, when hypertrophy and hyperæmia are the only morbid conditions to be treated. In those cases of moist "catarrh" which are the result of a deformity of the septum, or of glandular hypertrophy at the vault of the pharynx, other measures are demanded.

The use of a destructive agent to control an inflammatory process may seem somewhat paradoxical, yet in the present state of our therapeutical resources we possess no more efficient agent.

26 West Forty-sixth Street.

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# INTUBATION IN CHRONIC STENOSIS OF THE LARYNX,

*WITH A REPORT OF FIVE CASES.**

By JOSEPH O'DWYER, M.D.

Had intubation of the larynx proved a complete failure in the treatment of croup, I should still feel amply repaid for the time and expense consumed in developing it, for I believe that it offers the most rational and practical method yet devised for the dilatation of chronic stricture of the glottis.

I have records of five such cases treated by intubation, three of them by myself and two by other physicians.

Of the first case I will give only an abstract, as it has already been published in the "Medical Record" of June 5, 1886:

Case I.—This patient was a woman, forty years of age, who came under my treatment December 5, 1885. Twelve years previous to this time she had contracted syphilis, which manifested itself chiefly by ulcerations in the pharynx, and for the last two years had also involved the larynx, but without producing any serious interference with respiration until within two months. The immediate performance of tracheotomy had been recommended by a leading laryngologist a short time before I saw her. The soft palate was adherent to the posterior wall of the pharynx on both sides, and a small ulcer still existed on the left side. A cicatricial band encircled the left half of the larynx and crossed to the right over the posterior portion of the chink, leaving only a very small breathing space between it and the right cord. The epiglottis was also deformed on its posterior surface by cicatricial contraction.

On the date above given I attempted to insert the smallest tube I then had for adult cases, but failed after several attempts, and was obliged to fall back on the largest of the croup tubes, that intended for children from eight to twelve years of age, which I succeeded in passing by using a great deal of force. She could breathe through this small tube with perfect comfort in a state of rest, and with it obtained her first night's comfortable sleep in the recumbent posture in two months. Tubes of larger size were used in rapid succession as the smaller ones were coughed out, and she returned home at the end of eighteen days with ample breathing room in the larynx. During this time the tubes were inserted nine times and retained an aggregate of one hundred and seventy-three hours. She reported occasionally for observation, and while there was no return of the cicatricial band, which had disappeared apparently by ulceration, and there was ample breathing room in the chink of the glottis, there was a gradual return of the dyspnœa, due, undoubtedly, to subglottic obstruction. Almost from the beginning I was convinced that there was considerable thickening on the right side below the cords, from the fact that the lower extremity of the tube was deflected sharply to the patient's left as it passed below the rima, and also because the force required to overcome the resistance was greater than could be offered by the cicatricial tissue in the glottis.

After an interval of about two months and a half I was obliged to resort to dilatation again, and found it necessary to begin with the smallest tube and use almost as much force as on the first occasion, although there was very little recontraction in the glottis. This time the patient was under treatment twenty-seven days, as I used still larger tubes, which were inserted thirteen times and retained two hundred and four hours.

I was now thoroughly convinced that the only means of preventing a return of the stricture was continuing dilatation by the occasional introduction of a tube. I therefore began by using it once a week, leaving it in the larynx from twelve to twenty-four hours at a time and gradually increasing the interval until it amounted to six weeks, but I found that this was too long, and was obliged to reduce it to one month, and sometimes five weeks. I still continue to insert this hard-rubber tube, which is the largest I have used, once a month, and leave it in from two to three days.

It is now one year and nine months since I began the dilatation of this patient's larynx, and there is scarcely any doubt that it will be necessary to continue it during the rest of her life. I am therefore beginning to teach her to insert the tube herself, which I do not think will be very difficult, as she possesses an unusual amount of pluck.

If this patient omits her iodide, of which she was taking sixty grains daily when she came to me and which I increased to ninety, for any length of time, points of ulceration appear in the larynx and on the posterior wall of the pharynx. The metal tube always produced some ulceration where it exerted the most pressure, especially on the anterior surface of the arytenoids, but this has not occurred to any extent with the

* Read before the Section in Laryngology of the Ninth International Mecal Congress.

light vulcanite tube. I have used the latter several times in this case, and while the patient does not swallow nearly as well with it as with the metallic tube, she is convinced that it causes less irritation, and that expectoration of the tenacious mucus is much easier. Although swallowing of both solids and liquids was very imperfect, this patient found no difficulty in taking an ample supply of nourishment. Liquids were swallowed better while she was lying on the back.

Notwithstanding the free use of cocaine, very sharp pain was complained of just after the introduction of the tube, which usually required a hypodermic injection of morphine for its relief. Tolerance was soon established, and a repetition of the dose was seldom required unless the tube was allowed to remain in the larynx for about a week, when the pain would again become severe.

In order to render possible the introduction of the small tubes used in the early treatment of this case it was necessary to reduce the retaining swell to almost nothing, which rendered their rejection certain as soon as the stricture became somewhat relaxed. They were consequently often expelled in less than twelve hours.

To avoid the pain and irritation necessarily produced by the frequent forcing of a tube through the larynx, I would in another case, if reasonably certain that the stricture were confined to the chink of the glottis, produce sufficient divulsion under ether to admit a large or medium-sized tube that would be retained as long as desired—a week, a month, or longer, according to the pain and irritation excited. It would be a much more rapid and less painful method. In this case it would have accomplished nothing, as no amount of divulsion short of rupturing the cricoid cartilage could affect the subglottic stenosis.

I have here a set of ten laryngeal stricture-tubes made by Tiemann & Co., of New York. The retaining swell is left greater on the smaller sizes than it was on those used in the case just reported, because I believe the force required to pass the tubes was due in great measure to the fact that the subglottic thickening was confined principally to one side, which rendered the canal tortuous.

The larger of these tubes is constructed of hard rubber, the medium sizes of metal—brass, gold-plated—with vulcanite heads to diminish the weight, and the smaller of metal only. The heads of the latter are left comparatively small, so that they can also be used in acute stenosis of the larynx in the years immediately following puberty, for which no provision has been made in the set of croup instruments.

The largest of them, in which the transverse diameter of the head is seven eighths of an inch, can be used in any form of acute stenosis in the large adult male, and the medium sizes in the female and small adult male.

In the largest larynx that I have yet examined the antero-posterior diameter of the chink, which is the same as that of the trachea, measured only seven eighths of an inch, and the transverse five eighths.

The diameter of the subglottic division of the larynx varies from one eighth to three sixteenths of an inch less than that of the trachea.

Case II.—Louise M., aged thirty-five, married, was sent to me in April, 1886, by Dr. J. J. Reid from the throat wards of Charity Hospital, where she had remained since the performance of tracheotomy two years before. For seven months of this time she was under the care of the late Dr. Elsberg, and came to me with the diagnosis of incurable bilateral paralysis of the abductor muscles of the cords. Electricity and other methods of treatment had been tried in vain, and her case was regarded as hopeless so far as the functions of the larynx were concerned.

The history that I obtained as to the beginning of her ailment, and which I do not consider reliable, is as follows: During one of her periodical sprees with a number of boon companions, who were trying to make as much noise as possible by singing or screaming, in a desperate effort to outdo the rest she suddenly lost her voice. Her throat swelled and she soon began to suffer from dyspnœa, and was ordered to a hospital by a physician who was called to attend her. She had no recollection of reaching the hospital or of the tracheotomy that followed, and I could form no estimate of the time intervening between the first symptoms and the operation; she placed it at a few days.

The introduction of a laryngeal tube, with the vocal bands lying in apposition and their abductor muscles incurably paralyzed, I regarded as useless, and did not contemplate it for a moment. My intention was first to remove the vocal cords, or a portion of them, and make a cylindrical opening where before there was none, and then insert a tube until the healing process was accomplished.

When I came to investigate the case I found there was not the least power to whisper. She was obliged to communicate her thoughts altogether in writing. I already knew from my experience with intubation in children that with a very small volume of air passing through the larynx the ability to whisper distinctly is retained.

I found, further, that no air could be driven through the larynx by stopping the tracheal cannula and directing the patient to make a forced expiration, and was led to the only conclusion that could be drawn from these facts—viz., that the larynx was completely occluded, or that, if any opening existed, it was a mere pin-hole.

In the mirror the vocal cords could be seen closely approximated but normal in appearance. No adhesions were visible, and during all attempts at phonation or inspiration the arytenoids remained motionless. I now interpreted the case differently. This patient had undoubted symptoms of syphilis when I first saw her, which soon disappeared under the influence of the iodide. I believed that the first trouble was an acute laryngitis aggravated by the constitutional disease, and attended with marked swelling of the mucous membrane and submucous tissues, which brought the under surfaces of the vocal cords in contact. This would be still further increased by the cessation of all attempts at abduction by the admission of air through the tracheal cannula, and all that was required to seal the opposing surfaces was a little ulceration followed by healing.

This view of the case rendered the prognosis much more favorable. All that appeared to be necessary was to break up the adhesions and insert a tube to prevent reunion.

For this purpose I had her removed to the New York Foundling Asylum, and on April 29, 1886, assisted by Dr. Dillon Brown, the resident physician, Dr. J. J. Reid, Dr. W. K. Simpson. Dr. J. J. Griffiths, and Dr. F. S. Sellew, I placed her under ether, and attempted to pass a small tube through the larynx, but failed after using a great deal of force. I then enlarged the external opening, and realized for the first time that the cannula had been inserted, not, as I supposed, in the trachea, but in the crico-thyreoid space. No opening could be felt by passing the finger upward in the wound, nor could any be made out in the chink of the glottis, which was easily reached by pushing the larynx up on the outside at the same time that the

finger was inserted through the mouth. All the force that could be exerted in this manner made no impression on the adhesions. I therefore passed a uterine sound with proper curve, guided by the finger, and forced it down and out through the wound, working it backward and forward, then passed it in the same way from below upward, and again tried the finger in both directions, but failed as before. A pair of strong forceps was now introduced closed from below, opened widely, and withdrawn in this condition. This gave room to admit the tip of the index finger, and by using much force the adhesions suddenly gave way, allowing the finger to pass up into the pharynx.

I now inserted a tube two inches and a half in length, the longest I had at the time, but here encountered a difficulty which I had not anticipated. The lower end of the tube came out through the wound, and no means that I could devise would keep it in place. I was therefore obliged to reinsert the tracheal cannula until a tube three inches long could be made.

Nine days later it was necessary to etherize the patient again in order to break up the adhesions which had reformed before I could pass the long tube. While doing this an assistant drew forward the inferior angle of the wound with a blunt hook, and pressed the lower end of the tube backward as it passed the opening by means of a lead-pencil notched at the end to prevent it from slipping.

The increase of half an inch to the length of the tube removed the difficulty experienced with the shorter one. A cork was now placed in the external opening and retained by a tape passed through it and tied around the neck, which the patient could remove quickly if necessary.

To provide against the danger of the lower end of the tube still engaging in the wound and thus obstructing both openings, the string was left attached to it and was passed behind the ear.

The fact that this patient could again breathe through the natural passages and communicate her thoughts in a very distinct whisper did not surprise her nearly as much as the ability to expectorate through the mouth, which was a great source of pleasure and amusement to her.

The tube was coughed out on the second day, notwithstanding its weight of an ounce and three quarters. The patient choked immediately and was obliged to remove the cork and have the nurse reinsert the tracheal cannula. I replaced the tube in the larynx four hours later without difficulty, and a week later removed it to see if she could get any air at all through the larynx, but to all appearances not a particle entered, and the tracheal cannula again had to be used.

A laryngoscopic examination showed the vocal cords in the old position of close adduction. I was now forced to the conclusion that the original diagnosis of paralysis was correct, and that adhesion resulted from ulceration produced by the tracheal cannula, which subsequently healed under antisyphilitic treatment.

Ether was again administered May 20, 1886, for the purpose of removing a portion of the vocal cords, as originally intended. I enlarged the wound downward in order to make room to keep the cannula in position during the operation, and at the same time out of the way, and tamponed the trachea around it to prevent any blood gaining admission to the bronchi. The incision was then carried up to, but not interfering with, the thyreoid cartilage. On separating the edges of the wound with retractors I missed the cricoid cartilage, or at least the anterior part of it. From the first ring of the trachea to the thyreoid cartilage there was no support for the soft yielding tissues, and when the flaps were allowed to drop back into position the anterior and posterior walls approximated in the same manner as those of the œsophagus or vagina. I hesitated now about proceeding further with the operation, as I regarded the case as next to hopeless; but, believing that the cricoid cartilage might have been cut in the original operation, and only displaced by the cannula, which was of hard rubber and very large size, I decided to complete the operation by hooking a tenaculum into each cord, guided by the finger, and cutting on the outside of this with a blunt-pointed bistoury.

I found this much more difficult than I anticipated, for the cords, although not far above the external wound, were not visible. In doing this operation again, I would lay open the thyreoid cartilage, which would make it a very simple matter.

The wound was brought together with the exception of the opening for the tracheal cannula, in which a cork was placed as before, and the same tube was passed into the larynx. At the end of eight days I removed it and found that she could breathe for the first time through the larynx, with the external wound closed by adhesive plaster. A laryngoscopic examination showed that only a small portion of each cord had been removed, and from the seat of the incisions granulations were already springing which promised soon to supply the place of the tissue removed. I therefore reinserted the tube in the larynx one day and a half after its removal, during which time respiration was carried on comfortably through the natural passages.

More lateral pressure appeared to me to be the thing required to prevent the further growth of granulation tissue, and this could not be obtained with the ordinary oval tube, which was designed specially to avoid undue pressure on the vocal cords. I therefore had one made almost cylindrical in form and passed it into the larynx on June 15th, where I allowed it to remain until the 26th—eleven days. I then removed it, not because it was giving rise to pain or inconvenience in any way, but because my experience with the first case was against leaving the tube in the larynx continuously for much longer than a week. On laryngoscopic examination, more breathing room was found than at any previous time, but granulations were still present. During the following three days she continued to breathe comfortably through the larynx with moderate exercise, and could even ascend one flight of stairs without producing much dyspnœa.

On examining the external opening on June 29th, I noticed a marked sinking in of the tissues both above and below it, where the cartilaginous support was defective, and I anticipated some difficulty in replacing the tube. So great was the contraction in this short space of time that, on using a great deal of force, I failed to pass the tube beyond this point until a slight incision was made downward.

The almost certain recurrence of this difficulty, every time the tube was allowed to remain out for a few days, convinced me of the necessity of leaving it in for a much longer time.

I therefore sent her back to Charity Hospital with the tube in her larynx and told her to return in a month, when I would remove it, or sooner in case it gave rise to much pain or any interference with respiration occurred.

Dr. Reid, in whose service she was, reported from time to time that she was doing well, and at the end of the month reminded her that it was time to have the tube removed. She left the hospital, but did not report to me, and months passed without hearing anything from her. Knowing that she was much given to dissipation, I believed that in all probability she was dead; but she surprised me very much by coming to my office on May 3d last, looking and feeling remarkably well with the exception of a cold recently contracted, which gave rise to a good deal of cough. She was still wearing the tube, which had remained in the larynx ten months and four days.

Her reason for not returning sooner was that she felt com-

fortable and happy, and did not wish to run the risk of having to wear the outside tube again.

It required some force to remove the tube, which was black from coating of the sulphides and closely dotted over with coarse granules of calcareous matter. When these were scraped off the surface of the metal was left quite uneven, and the tube is consequently somewhat smaller now than it was originally. The thin gold plating had probably disappeared before the tube was in the larynx a month.

For a moment after removing it inspiration was seriously obstructed, and I was about to insert another tube, which I had ready, when the breathing became perfectly free. On using the mirror, I found that the obstruction was due to masses of granulation tissue growing from the sides of the larynx above the ventricular bands, which must have partially overlapped the head of the tube, and which were drawn together by the forced inspiration immediately following the removal of the tube. During quiet respiration this did not occur. A good view of the larynx could not be obtained, and if ulceration existed, which is more than probable, it was covered by the granulation tissue.

She complained for some days of a void in her throat, as if an important part of it were missing.

The granulations, which I believed at first would have to be removed in some manner, gradually decreased in size, and at the last examination, about July 1st, a better view of the larynx was obtained. A large cylindrical opening existed where the chink should be, and no trace of the vocal cords was visible. There was undoubted motion of the arytenoids during inspiration. In the seat of the external wound was a deep sulcus, extending down between the unapproximated edges of the cricoid cartilage. The cough was toneless, and the voice, as before, a distinct whisper.

I have not seen this patient since, but Dr. Reid informed me that she returned to Charity Hospital in the early part of last August, suffering from alcoholism, and left in about a week. He examined the larynx, and found the same condition as described above. The breathing was perfectly free.

Had I had the least suspicion that the larynx would tolerate a tube continuously for so long a time, I should not have interfered with the vocal cords, as the tube, if it did cause their destruction by ulceration, would, in all probability, have fixed them permanently in the abducted position. I felt that I was assuming a serious responsibility when I concluded to leave the tube in the larynx for even the space of one month.

These two cases afford a remarkable illustration of the difference in sensibility displayed by the larynx in different persons. One patient could not retain a gold-plated or finely polished vulcanite tube longer than a week at a time without its producing undue irritation, while the other practically wore a hollow file, and not a very fine one either, in her larynx for many months, and was happy in consequence.

I had previously noticed the same difference in children suffering from croup, and at first attributed it to the protection afforded to the living sensitive tissues by a greater or less deposit of pseudo-membrane, but was soon convinced that this was not the explanation.

Case III.—Mrs. L., aged forty, the mother of eight children, in the early part of December, 1886, began to suffer from hoarseness and a feeling as though something loose existed in the upper part of the windpipe, which she could not get rid of by coughing. She consulted Dr. J. W. Lyman, who found bronchitis and albuminuria, and these, together with the hoarseness, were believed to be due to cold. Later the voice was lost, and dyspnœa developed, which became so urgent on the night of January 14, 1887, that everything was made ready for tracheotomy, when it occurred to Dr. H. Griswold, who was called in consultation, that it would be a good case for intubation. When I saw her, at 9 P. M., there was very little cyanosis, but the breathing was very laborious, almost noiseless. She was unable to assume the recumbent posture. Dr. Griswold had made a satisfactory laryngoscopic examination, and found nothing abnormal in or above the chink except hyperæmia, but below the cords he could see what appeared to be œdematous folds of the mucous membrane crowding in toward the center, and more marked on the left side. The diagnosis was therefore subglottic œdema. But the fact that she was also suffering from bronchitis and albuminuria rendered it doubtful as to whether the dyspnœa was not, in part at least, pulmonary. On listening to the chest, no air could be heard entering the lower posterior portion of the lungs, and a very marked up-and-down movement of the larynx could be detected by placing the fingers over it. The latter symptom alone was sufficient to locate the obstruction in the glottis.

I first attempted to insert a tube two and a half inches long, but, owing to the short curve on the introducer, it was necessary to detach it before the lower end of the tube had passed through the obstruction, and, the probe point being thus lost, the tube caught on the swollen tissues and was arrested. A three-inch tube which extended below the stricture before the obturator was removed passed without difficulty, and with complete relief to the dyspnœa. There were present Dr. J. W. Lyman, Dr. H. Griswold, Dr. G. G. Van Schaick, and Dr. Adolph Rupp.

On inquiring more closely into the history of this patient, it was found that she had contracted syphilis from her husband some years before, and since that time had had several miscarriages.

After the tube was inserted she refused to swallow anything either in the solid or fluid form, and was fed at first by the rectum, and later by the stomach-tube. The iodide was given mixed with the food in small doses, as the stomach would not tolerate large ones, and mercury by inunction.

The tube was removed in five days, but had to be replaced in twenty minutes, owing to the rapid return of the dyspnœa. It was again removed two days later, while Dr. George M. Lefferts, who was called in consultation, made a careful laryngoscopic examination, and reinserted in half an hour. Dr. Lefferts's diagnosis was subglottic laryngitis. It was removed for the third time on January 24th, ten days after first insertion. This time it was left out twenty-one hours, when the dyspnœa became so urgent that I was obliged to replace it, and Dr. Griswold removed it on February 4th, twenty-one days from first insertion. It produced no ulceration nor pain, but caused excessive coughing, which had to be moderated at night by opiates. A very large amount of tenacious mucus was secreted, which required considerable coughing to remove.

*March 14th*, or about six weeks after the tube was last removed, I was hastily summoned in the night by the husband, who said that his wife would in all probability be dead before I reached her. I found her deeply cyanosed and much worse than at any previous time. I was obliged to make three attempts before I succeeded in placing the tube in the larynx, and they had to be made very rapidly, as cutting off the small amount of air that was entering the lungs for even a short time would have produced *asphyxia*. I was without assistance on

this occasion, and had heard nothing from the case for some time, but when I met Dr. Lyman the next day I learned that there was a new development. Her left arytenoid was very much swollen and ankylosed, and on its anterior surface and involving a considerable part of the posterior region of the larynx was a growth which overlapped the chink of the glottis. This explained the difficulty experienced in passing the tube, and also, in part at least, the dyspnœa. Another physician who examined this patient's larynx a short time previously regarded it as a perichondritis. The history of the case, the appearance and location of the *tumor*, and the absence of any swelling or tenderness on the outside, were, I think, sufficient to exclude this and to leave very little doubt that it was a *gumma*, which had developed while the patient was said to be taking large doses of the iodide and bichloride. The tube was removed in a week, and immediately replaced by a larger one of hard rubber, which was prepared in the following manner: Those portions of it which would come in contact with the diseased surfaces in the larynx were coated with gelatin, liquefied by heating, and dusted over while still moist with dry powdered alum, and as one layer dried another was applied until a sufficient thickness was obtained. Gelatin swells considerably as it absorbs moisture, and the dilating power of the tube thus treated can be temporarily increased to any extent with or without the astringent or other applications. This can be prolonged by covering the gelatin with a layer of collodion, which prevents the too rapid absorption of moisture.

This tube was removed for the last time on March 28th, having been in the larynx seven days. It gave rise to considerable pain and irritation, which were attributed principally to the alum. I have not seen this patient since, but have recently been informed that there is still some dyspnœa on exertion and very little voice, both probably due to remaining subglottic thickening, but I have no knowledge of the recent laryngoscopic appearances.

This patient, who was firmly convinced that she could not swallow anything during the first period of treatment, subsequently learned how to swallow a sufficient quantity of both liquid and solid nourishment and large doses of the iodide without much difficulty. But she could not swallow nearly so well with the hard rubber as with the heavy metal tube; the latter, as she expressed it, sank lower down than the light tube. She could not distinguish any difference in the weight, although one weighed an ounce and three quarters and the other only one hundred grains, nor any difference in the ability to expectorate, and the caliber of the hard-rubber tube was almost double that of the other. It will be remembered that the first patient expressed a decided preference for the light tube, which was the same one used in both cases, and principally because she expectorated better through it. Although my experience is yet very limited, I have some reason to believe that while deglutition will be more difficult with the hard-rubber tube, which necessarily stands higher in the larynx on account of its lightness, secretions will be more easily expelled, as they do not appear to adhere so firmly as to the metallic tube.

Case IV.—This patient was treated by Dr. J. J. Reid in his wards at Charity Hospital and briefly reported by him in the "Philadelphia Medical and Surgical Reporter" of May 14, 1887.

J. K., aged twenty-two years, entered hospital May 1, 1886. He stated that four years previously he had contracted a severe cold, accompanied by hoarseness, which had continued more or less ever since. He sought relief at various dispensaries, but, steadily growing worse, finally entered the hospital. At this time there were considerable emaciation, hoarseness, cough, and dyspnœa at night. He gave no direct history of syphilis, but there was necrosis of the hyoid bone, part of which had escaped by the mouth, leaving a discharging sinus on the inside. Ulceration existed around the base of the epiglottis and involving the left side of the larynx to the arytenoids, both of which were much swollen and partially ankylosed, as there was very little motion of the vocal cords. Notwithstanding the free use of the iodide, the dyspnœa increased, especially at night, until the question of surgical interference had to be considered. I saw the patient with Dr. Reid and advised against intubation, as I believed the tube would aggravate the existing ulceration. Dr. Reid thought differently and inserted a small tube on September 20, 1886, which was coughed out in twenty-one hours. Strange as it may seem, it did not give rise to much irritation, or at least the patient made no complaint. He was able to take nourishment well and slept comfortably without opiates, except a dose immediately after the insertion of the tube. The same day a larger tube was introduced, and expelled in twenty-four hours. A still larger one was then used, and retained only half an hour. As the dyspnœa was now much relieved, no tube was used for a week, when, on September 29th, a much larger size was introduced and retained for eighteen days, and then rejected while the patient was sitting up. There was a slight return of the dyspnœa on December 15, 1886, and the same tube was inserted for only twenty-four hours. He left the hospital soon after to resume work as a cigar-maker. He was seen the following June, six months after the final removal of the tube, and was then working at his trade and had had no return of the dyspnœa.

Case V.—This case was operated on by Dr. Dillon Brown, assisted by Dr. W. H. Wilmer and Dr. Howard Lilienthal. There were also present Dr. H. E. Sanderson, Dr. H. S. Stark, Dr. G. C. Rich, Dr. E. F. Walsh, and Dr. C. E. Giddings.

The patient was a German, aged thirty-nine years, who for some time had been subject to *severe* attacks of laryngitis accompanied by dyspnœa. On laryngoscopic examination, a subglottic neoplasm was discovered, for the removal of which a high tracheotomy was performed on December 24, 1886. The growth was found to be very vascular, and, on scraping it out with a curette, a piece of a lucifer match, three quarters of an inch long, was discovered imbedded in its center. The cannula was replaced for three days, then removed, and the wound allowed to heal. As it did so the dyspnœa increased until, on January 18, 1887, while the patient was almost asphyxiated and pulseless, Dr. A. G. Gerster reopened the trachea and inserted the cannula. Nine days later, when the patient had regained sufficient strength, Dr. Gerster laid open the thyreoid cartilage to seek and remove if possible the cause of the obstruction.

The notes furnished me merely state that the cannula was reinserted, but give no further particulars of the operation.

He continued to wear the cannula until March 25, 1887, when Dr. Brown inserted a tube in the larynx, under the influence of ether. Two previous attempts had been made without ether and failed, owing to the same difficulty that I experienced in my second case—viz., the lower end of the tube engaging in the external opening. He was of a very nervous, irritable temperament, and the tube gave rise to excessive irritation, which called for the frequent use of opiates.

Notwithstanding the fact that he was very sensitive in regard to his personal appearance and very anxious to get rid of

the tracheal cannula, he frequently begged to have the tube removed from the larynx. The irritation was not so great after the first day or two, but it is safe to say that toleration was never established in this case.

The tube was removed in a week and there was no return of the dyspnœa, but as the one used was very small it was considered safer to produce further dilatation by a larger tube. This was introduced April 26th, but immediately rejected, and no further attempt was made and none was necessary. The patient was last seen August 12th, in good health and free from dyspnœa, and had a good voice. He wore the tracheal cannula three months, and was cured by wearing a tube in the larynx one week.

As yet I am unable to speak from my own experience in regard to the prognosis in chronic stenosis of the larynx. Permanent cures have been reported, particularly by Schroetter, of Vienna, but I have no knowledge as to the length of time, after final treatment, when such cases are reported as permanently cured, and this is the important point. I might report my second case now, more than four months after the removal of the tube, as cured, but I believe it would be premature to do so even at the end of a year.

No one would call a stricture of the urethra that required ten or more years for its development as permanently cured because it had not returned in one year after thorough dilatation or cutting.

The contraction of cicatricial tissue may be very slow, and as it requires only a small portion of the normal lumen of the air-passages for free respiration, a considerable degree of contraction must exist before manifesting itself in the form of dyspnœa.

Cicatricial tissue produced by the healing of deep tertiary ulcers, if situated in the subglottic division of the larynx, such as was present in my first case, will in all probability require occasional stretching throughout life. If, on the contrary, it is confined to the chink of the glottis, the prognosis will be better, as here we have the inspiratory abduction of the vocal cords twenty times a minute, which must antagonize to some extent the tendency to recontraction.

We know that cicatricial tissue in other parts of the body finally loses the power to contract by persistent and long-continued stretching, and if the first case reported could tolerate the tube continuously for several months instead of a week, the outlook would be better.

The third case was not, properly speaking, one of chronic stenosis, but a specific inflammatory infiltration which required only constitutional treatment for its cure, the temporary use of the tube being necessary to tide over the immediate danger of asphyxia, although it no doubt also hastened absorption by its pressure.

If constitutional treatment be neglected in a case of this kind, deep ulceration will follow, and the development of cicatricial stenosis is then only a question of time.

Syphilitic lesions of the larynx, in my experience, do not yield as readily to specific treatment as the manifestations of this disease in other parts, and therefore more perseverence is necessary.

In Dr. Reid's case, although of long standing, the ulceration was apparently confined to the supraglottic region and not very deep. The occasional use of mercury and the iodide extending over a long period would probably in this case insure a permanent cure. Without this it will be very likely to recur.

In Dr. Brown's case there was no cicatricial tissue, but simply inflammatory thickening produced by the presence of a foreign body. The removal of this still left more or less thickening, and, what was probably more important, partial ankylosis of the arytenoids from want of use. All that is necessary to effect a cure in such a case is to produce sufficient dilatation to admit air through the larynx, and thus excite contraction of the abductor muscles, or, in other words, to set the machinery in motion.

Thus far I have dealt almost exclusively with facts. In the concluding part of my paper, which treats of stricture of the trachea, I find it necessary to fall back on theories, as I have not yet treated a case of this kind. These theories are not visionary, but, on the contrary, are strongly supported, if not demonstrated, by the foregoing facts.

The oval laryngeal tubes are not suitable for stricture of the trachea, which retains the cylindrical form, and requires tubes to correspond. I had one of this kind made for an old lady, aged sixty-eight years, who was suffering from stricture of the trachea caused by a process from a large bronchocele surrounding it. I saw this patient with Dr. Edmund J. Palmer at the suggestion of Dr. Henry B. Sands, with a view to practicing intubation. The tumor was very large, especially in front, covering the whole of the trachea and the greatest part of the larynx. Tracheotomy did not offer much hope, as, in order to get into the trachea below the obstruction, a large mass of vascular tissue would have to be cut through, and none of the ordinary tracheal cannulas would be long enough to reach it. To open into the larynx above, where there was less of the growth, would still leave the stricture below. Dr. Sands, who was first called to consider the advisability of opening the trachea, did not give much encouragement, and would operate only in case of impending asphyxia.

Before I could procure the tube which I intended to use, the patient insisted on returning to her old home in the western part of the State, where she subsequently died.

That portion of the tumor which surrounded the trachea, by also pressing on the œsophagus, interfered very much with deglutition. Solids could scarcely be swallowed at all, and, even had we succeeded in relieving the dyspnœa, death from inanition was only a question of time, as it would have been impossible to pass a stomach-tube.

The difficulty of intubating in such a case would result from the small size of the stricture. I am as fully convinced as if I had tried it that it would have been impossible to pass a tube as large as the one I have shown without previous divulsion under ether. This I intended doing with the smallest of Schroetter's long vulcanite tubes.

Many years ago I heard the late Professor F. H. Hamilton relate his experience with an almost identical case. His patient was a clergyman far advanced in years, who for the greater part of his life had suffered from a large goître. When death by strangulation was only a question

of a little time, Dr. Hamilton performed tracheotomy, but the insertion of the cannula gave no relief, and the patient died soon afterward. The autopsy showed that the trachea at the seat of the stricture was reduced to the size of a crow-quill. I have no recollection of further particulars, but the tube must have been inserted above the obstruction, and was, of course, many times too large to pass through, even if it had been long enough.

There is scarcely any doubt that, of all strictures, that of the trachea is the most unfavorable as regards permanent cure. It can unquestionably be dilated if not situated too near the bifurcation, but the power of the contracting tissue, whether on the inside or outside, which is sufficient to overcome the resistance offered by the almost bony rings of the adult trachea, will not be destroyed by temporary dilatation.

My second case of chronic stenosis of the larynx, who retained a tube in the larynx continuously for over ten months without its becoming obstructed, suggested another plan of treating stricture of the trachea. It consists of first accomplishing sufficient dilatation with tubes, such as I have already shown, of different sizes, and then passing a tube of proper length and having a shoulder just large enough or small enough to pass completely through the larynx and rest on the upper surface of the stricture. It would also have a retaining swell near the lower extremity to prevent it from being driven upward by coughing.

If the stricture be situated too low down to be reached through the larynx it would be necessary to lay open the trachea at the seat of obstruction and insert a tube of hour-glass shape, such as I have here, and close the wound over it.

I do not entertain the slightest doubt that such a tube can be worn for a life-time without danger of obstruction from secretions, because the expulsive power of the cough would not be impaired as it necessarily is when the tube occupies the larynx and prevents approximation of the vocal cords. Neither would there be anything to fear from excessive irritation, as the mucous membrane of the trachea is infinitely less sensitive than that of the larynx.

As it stands at present, without actual demonstration, I know of no impediment to the permanent wearing of a tube in the trachea save the deposit of calcareous matter, to which I have already alluded, and this was probably caused by electrical currents excited by the copper and zinc alloy of which the tube was composed. I have noticed a slight amount of this deposit on the gold-plated brass tubes when retained for only one week, but not the least trace of it on the vulcanite tube when worn for the same time.

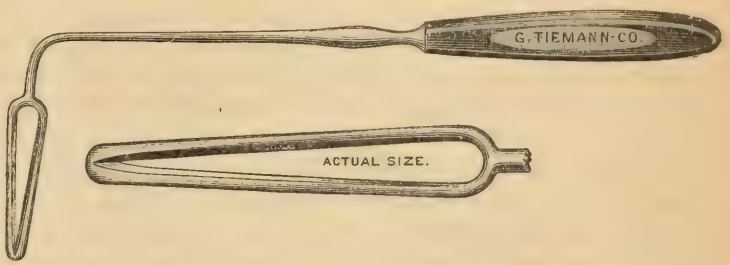
To avoid this objectionable feature, therefore, and at the same time insure durability, it will be necessary to have such tubes constructed of hard rubber burned on a frame-work of metal, or cast in pure gold.

A tube passed into a stricture in the trachea through the larynx can also be removed through the same channel by making the curved part of the extractor long enough.

I am not aware that any attempt has ever been made to exsect the strictured portion of the trachea, but it is quite probable that the great elasticity of this tube, which is necessary to permit of that elongation that takes place during the act of swallowing, would admit of the removal of at least half an inch without anything more than temporary interference with deglutition.

A child's trachea suspended with a slight weight attached gains three quarters of an inch in length, and the adult trachea, being much longer, should increase in proportion.

I have also devised a snare for the removal of laryngeal growths, particularly when situated in the subglottic region, where it is difficult to reach them with forceps in adults and impossible in children. For growths attached to the lateral aspects of the larynx the snare is passed far enough down




to give room for the neoplasm to slip between the blades when it is pressed firmly against the side of the larynx and withdrawn. If the seat of attachment is unknown, both sides, and then the anterior and posterior portions of the glottis, can be curetted in succession.

This instrument will not seize any of the normal tissues when applied laterally, but in removing it, when used antero-posteriorly, it is necessary to protect the epiglottis and uvula with the finger. Two sizes of this snare are necessary, that shown in the cut being suitable for children. In young subjects it is guided into the larynx in the same manner as in practicing intubation. In adults it can be inserted with greater facility by the aid of the mirror.

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## MERCURIAL FUMIGATIONS
### IN LARYNGEAL DIPHTHERIA OR DIPHTHERITIC CROUP.

By J. CORBIN, M. D., Brooklyn,
late surgeon, U. S. Navy.

In Volume VI, No. 6, August, 1881, of the "Proceedings of the Medical Society of the County of Kings," is printed a paper that I read before that society on the use of calomel in a particular form of diphtheria.

It is not denied, when the diphtheritic membrane extends from the fauces to the larynx, that we have a very serious complication to contend with, and one that is almost universally fatal. The mode of death is particularly distressing, as the patient usually dies from slow suffocation. As a last resort, the surgeon is called to perform tracheotomy, with little hope beyond that of affording the sufferer a more easy method of death. It is true that one occasionally recovers, but the percentage is very small. More recently, to afford a chance for recovery, intubation

has been adopted. A physician of this city recently informed me that he had performed the operation in forty-five cases, and that five had resulted favorably. In an article recently published in this Journal I notice that the proportion was about thirty per cent., a remarkably good result in such a class of cases.

In the month of November, 1874, I was called to a child, three years of age, with diphtheria, in a family where an elder brother had just died of the same disease. There was nothing severe in this case or calculated to excite alarm until the fifth day of the disease, when occurred a hoarse and stridulous cough and complete loss of voice. I resolved to abandon the usual methods of treatment, expecting the usual fatal termination. A tent was constructed over a crib, under which the child was placed. By means of an alcohol lamp there was volatilized a drachm of the black oxide of mercury every two hours, the child being kept under the tent for the space of twenty minutes. I had the satisfaction of seeing this child recover. On the third day there was expectorated a piece of membrane nearly four inches in length. The aphonia lasted exactly twenty-one days.

Such is the brief history of the first case of diphtheria treated by mercurial fumigations. Frequent opportunities have presented themselves of using this treatment since, but it seemed that the recovery of this patient was simply an accident.

On the 25th of April, 1881, I was called to attend two children in one family, aged five and three years. Both cases seemed to be very mild, but on the third day of the disease there was aphonia, etc. I now determined to use the fumigations. Two fumigations had been given to the older child when the stenosis seemed so threatening that tracheotomy was performed, and it was almost resolved to perform the same operation on the younger child, but persistence in the fumigations rendered that step unnecessary, and both children recovered. The fumigations in the older child had already somewhat loosened the membrane, and I believe that the operation was uncalled for, but inexperience in the treatment led to my assent.

I used in these cases the mild chloride. In the fourth case I attended I volatilized nine drachms before the disease yielded. This was a child eight years of age, and the case was particularly obstinate. I have seen cases yield with the use of four drachms, and in one case I used one thousand grains in twenty-four hours. This was in one of my own children, and to-day she is well and in the enjoyment of perfect health. There have been no unpleasant effects produced in any case—no salivation or diarrhœa. This diphtheritic membrane is of low organization, and soon sloughs if the vital force upon which its formation depends can be destroyed. This I believe the volatilized calomel does, by being taken directly into the circulation, through the medium of the lungs. In no other way can it be introduced in sufficient quantities to control the disease.

To show the efficacy of the above-described plan of treatment, I here introduce the testimony of the following well-known physicians, who have sent me a record of their experience:

My dear Doctor: After the discussion and publication of your valuable paper on mercurial fumigations in the treatment of diphtheria, I adopted your method. I remember four cases, all of which were typically laryngeal and violent. Three of the cases recovered, and one was fatal. In all of these cases elaborate preparations for doing tracheotomy were made, but in none was it necessary to operate. The fatal case did not die from laryngeal obstruction, and the others are alive and well to-day. I had some misgivings in one case, for the father, who was compelled to breathe the fumes, became salivated, and it seemed inevitable that I should have mercurial toxæmia to combat in the child, but such was not the case. I found the children somewhat refractory at first, but it was usual for all to submit to the process without trouble, and in some the relief was so marked that they would call for it. I am reminded that your experience and publication were before the developments of modern bacteriology. At this time we can readily appreciate the reason for your splendid results. I will add that I have fully adopted the mercurial-fumigation method in all my laryngeal cases, and that I have not been obliged to resort to tracheotomy since. Before this I could not escape a single year without two or three operations, and in all my cases recovery was the exception. Still, if obstruction should continue after a thorough and persistent fumigation, there is nothing in the process which unfavorably prejudices the case for a tracheotomy. Where obstruction persists after thorough fumigation, it must inevitably occur low down, perhaps in the trachea, or in the bronchial tubes. Here the more ready entrance for the fumes of mercury through the tracheotomy-tube might arrest the diphtheritic process before the vital forces are fully spent. I am fully convinced that there is a fatal antagonism between mercury and the diphtheritic germ. More than this, my experience would seem to warrant the conclusion that the constitutional infection of diphtheria seems to beget a tolerance of the drug, wholly displaced by health. Calomel, judiciously used, is a great agent, but nowhere more beneficent than in the combat against diphtheria. Yours truly,

Herbert F. Williams.

450 Classon Avenue.

My dear Doctor: In reply to your note, regret to say I did not keep detailed record of cases, but gladly give you what data I have:

Annie H., aged four years, was taken with diphtheria November 4, 1884. Loss of voice on the 7th. During night of 8th had croupy cough. On the 9th decided dyspnœa. Ordered 3 ss. hydrarg. chlor. mite burned under canopy every two hours. After second fumigation there was decided relief, but found it necessary to repeat it five or six times every twenty-four hours for five days, when respiration was normal.

This was a very tedious case, but finally recovered.

Sadie S., aged five years. First saw her December 7, 1884. Found patches on both tonsils. The next day there was decided aphonia, but no trouble with respiration until the 10th, when there was decided dyspnœa. Ordered 3 j hydrarg. chlor. mit. burned under canopy every two hours till relieved. Second fumigation produced free expectoration and decided relief to respiration. Continued treatment three or four times per day for three days, when there was no obstruction to respiration. Child recovered.

Cliffie R., aged eight years. This was the most persistent case I ever managed.

Was called to see him during the night of January 24, 1887. Could only say he had an inflamed throat and high temperature; no membrane in sight. In the morning found slight patches on both tonsils and soft palate. The case appeared to do well until the 27th, when there was loss of voice.

On the 28th there was decided dyspnœa.

Ordered fumigations, 3j hydrarg. chlor. mit., every two hours.

Did not get free expectoration or much relief to breathing until after third fumigation.

Found it necessary to continue treatment every two hours for most three days; then three or four times per day for a week, making in all almost ten days that it was necessary to use the mercurial bath.

In this case I had the assistance of a skilled nurse, and am satisfied directions were faithfully carried out. The convalescence was slow but perfect, though he did not recover his voice for many weeks. Each of these cases was given gr. $\frac{1}{60}$ hydrarg. chlor. corros. every two hours from my first visit to time of commencing fumigations. They also had stimulants and antipyretics. They were strongly marked cases of laryngeal diphtheria, and without the aid of the fumigation I should have earnestly urged tracheotomy.

Yours, W. F. Crutchley.

645 Kosciusko Street.

Dr. N. Tittemore, of this city, gives me a verbal report of seven cases which he has treated, six of which resulted favorably and one fatally. In the fatal case the treatment was only followed twenty hours, when it was abandoned by the family, and the child died. The youngest child was only eight months old, and this recovered.

I have treated up to the present time sixteen cases, and of that number three ended fatally—two of albuminuria two weeks after apparent recovery, and one from blood-poisoning. This was in a child fourteen years of age. The disease invaded the posterior nares, the cervical glands became swollen to a very large size, the pulse very weak and rapid, and finally diarrhœa set in, which ended the case. The stenosis was relieved, however, by the fumigations. We have here a record of thirty cases, twenty-five ending in recovery and five proving fatal, a mortality of about 16 per cent., an exceedingly favorable showing even if the five deaths had resulted from a failure of the method of treatment.

It is to be understood that this treatment is not a substitute for tracheotomy or intubation. It should be adopted as soon as the attending physician is satisfied that the larynx is invaded, and, since these symptoms are so evident and unmistakable, there can be no reasonable excuse for delay.

A few words as to details: I insist, when possible, that the patient be in a room where the sunlight has free entrance, that the temperature of the room shall not be lower than seventy-five degrees, and that the air shall be kept moist by the evaporation of water. During the time of the fumigations the patient receives no medicine whatever. At the beginning and end of a fumigation, milk-punch or wine is given. This I insist upon. A child's crib with barrel-hoops across the top, secured, and over these spread a flannel blanket, makes a suitable canopy or tent. In the case of a child eight or ten years of age I volatilize from forty grains to a drachm of the mild chloride. I keep the child under the canopy twenty minutes, when the blanket is removed. This is repeated every two or three hours during the first day. After this period I expect to find the cough loosened, giving directions to prolong the intervals of the fumigations, and at once to resort to them if the cough tightens. I have had cases where they had to be continued for over a week, but not more than two or three each day. The aphonia may not disappear for a week or two, but this need excite no alarm. Let the patient receive the most thorough alimentation. The fumes are not offensive and as a rule the child makes no resistance after the first fumigation. Generally the patient falls into a refreshing sleep, and sometimes he will point to the lamp, indicating that a fumigation is desired. The lamp had better be powerful enough to volatilize a drachm of calomel in one minute. The lamp I have constructed does this. By this means the air of the tent is not raised to too high a temperature for respiration.

## Correspondence.

### LETTER FROM VIENNA.

*Sarcoma of the Trachea.—Excision of the Pylorus.—Nebulous Vision.—The Treatment of Syphilis with Injections of Calomel.—The Treatment of Tape-worm.—The late Professor von Langer.—The late Professor Wertheim.—An Increase in the Number of Privat-Docenten.—The Vacant Chair of Anatomy.*

Vienna, *January 26, 1888.*

At a recent meeting of the Imperial Royal Society of Physicians of Vienna, Docent Dr. Zemann, Professor Kundrat's assistant, showed an interesting specimen of sarcoma of the trachea from a patient on whom Professor von Schrötter had operated in 1867, and in whom a relapse had occurred ten years afterward, for which he was again operated upon. Since that time he had complained of continued disturbances of respiration. On the 25th of October, 1887, he was again admitted into the hospital, and died there twenty-four hours afterward, with symptoms of bronchorrhœa. At the post-mortem examination, a broad, nodular tumor was found in the upper part of the trachea, which, on microscopical examination, proved to be a sarcoma. The case was interesting from the rarity of sarcoma of that region compared with fibroma. Professor von Schrötter took the opportunity of communicating some interesting features of the case during the patient's life. When he first saw the man, in 1867, he could not imagine how a person with such an excessive narrowing of the trachea could remain alive. The tumor was of enormous size, and filled the whole lumen of the trachea; it moved on inspiration and expiration, and its pedicle was behind and to the right. Only a very minute space was left for the passage of air, but nevertheless the man was able to perform somewhat difficult bodily labor. After local anæsthetization with chloroform and morphine, the tumor was removed with an instrument particularly prepared for the purpose; that is, the greater part of it was removed and the rest disappeared after the injection of a few drops of a solution of sesquichloride of iron, so that no trace of it could be detected. Two years later the patient returned with a relapse. The tumor was now as large as at first, and it was removed in the same way. In 1879 he was again admitted into the clinic, the growth having assumed a considerable size, but without being accompanied by the great disturbances of respiration previously observed. This was probably because the tumor had become more movable. It was highly vascular, so that during life it was larger than the specimen shown. The speaker alluded to another case of tracheal sarcoma in a girl.

Dr. Salzer, Professor Billroth's first assistant, recently showed before the same society two patients on whom Billroth had performed resection of the pylorus. One of them, a woman, had been admitted for a tumor of the abdomen which she had

first noticed some months before, and she complained also of abdominal pain and of frequent vomiting. Having ascertained that there was a tumor extending from the symphysis pubis to the pit of the stomach, Professor Billroth performed laparotomy. The operation was difficult, owing to extensive and deep-seated adhesions, and during its progress the tumor was found to be adherent to the stomach, a great part of the wall of which had to be removed with the tumor, and resection of the pylorus was done at the same time. The tumor was a sarcoma originating from the muscular coat of the stomach. In the second case, resection of the pylorus had been performed successfully for carcinoma. It was necessary to remove also a part of the pancreas and portions of the gastro-colic ligament. In this instance the operator deviated from the common procedure, and stitched the pylorus to the greater curvature of the stomach.

Professor Fuchs has had an opportunity of observing an interesting case of nebulous vision (*Nebelsehen*) at his clinic in the general hospital. The patient had suffered seven years before from attacks of misty vision in the right eye, which disappeared and returned again after four years. He again improved, but afterward he complained of the same disturbances, which caused him great annoyance. Examination showed that the trouble was due to an increase of intra-ocular pressure, caused by two small tumors of the iris. Should they continue to grow, they would have to be looked upon as sarcomata. Another patient shown by Professor Fuchs stated that he had sustained an injury of the right eye by lime, and a small red point was subsequently observed on the cornea, where a little tumor afterward developed, situated partly on the cornea and partly on the sclera. In this case melanotic sarcoma was diagnosticated. The interesting features of the case were that pigmentations of the other iris were present also, that they were darker than those of the affected eye, and that the pupils were contracted. The patient could not say that there had not been congenital pigmentations of the right eye which might have given origin to the sarcoma.

At the last meeting of the society, Professor Neumann read a valuable paper on the treatment of syphilis with injections of calomel. On account of recent successes with the method, he had lately tried it again in thirty-six patients, using the following formula:

| | | |
|---|---|---|
| Calomel, Common salt, | each | 1 part; |
| Distilled water | | 10 parts. |

The injections were made in the region of the buttocks and in that of the trochanters. His experience was that many more injections were required to cause a disappearance of the manifestations than had been stated by many writers. The acute exanthemata disappeared more readily than the later lesions. The speaker discussed also the preventive treatment of syphilis, and remarked that, when he had begun with antisyphilitic treatment (mercury by inunction or iodide of potassium internally) immediately, he had succeeded in postponing the appearance of the exanthemata for weeks and months. When the calomel injections were used for this purpose, the secondary manifestations supervened after ten weeks instead of eight; this did not speak much in favor of the intense effect of the calomel. The speaker's statements were illustrated by patients and microscopical specimens.

Dr. K. Bettelheim, of Vienna, recommends the treatment of tape-worm with keratinized pills made according to the following formula:

| | | |
|---|---|---|
| Ethereal extract of male fern, Extract of pomegranate, | each | 150 grains; |
| Powdered jalap | | 45 " |

Mix and divide into seventy pills, to be keratinized.

In the case of adults he gives from fifteen to twenty pills on the fasting day, the day before that of the cure; and on the latter day he gives the rest of them. Exclusive of the day of fasting, when laxatives must be taken, the cure takes from seven to nine hours. When a laxative is required on the day of cure also, he orders an enema of *aqua laxativa viennensis*. Since he has used the keratinized pills he has observed vomiting during the treatment only once, and in that case the coating was imperfect; and it is only exceptionally that he has found the pills to be undigested.

Hofrath Charles von Langer, ordinary professor of anatomy in the Vienna faculty, died on the eighth of last month. He was born in German Bohemia in 1819. In 1844 he took his medical degree at Prague, and afterward became an assistant to Professor Hyrtl in Vienna, occupying that post until 1852. He then filled the chair of zoology at Budapest until 1874, when he was called to the Vienna chair made vacant by the resignation of Professor Hyrtl. Besides his attainments as a teacher, his literary merits were great. Among his noteworthy writings were those on the comparative anatomy of the blood-vessels, the joints, the growth of the hair, the anatomy and physiology of the skin, the mammary glands, etc. His text-book of descriptive and topographical anatomy has been much appreciated, having already reached a third edition. His writings on the cranial measurements of the great composers, Van Beethoven and Schubert, should also be mentioned. Among his distinctions was that of having been knighted by the Emperor.

Dr. Gustavus Wertheim, extraordinary professor of dermatology and syphilography and chief physician to the Rudolf-Spital, died on the 8th inst., at the age of sixty-six. He was a pupil of Hebra's, and wrote many valuable essays on diseases of the skin and syphilis.

The number of *Privat-Docenten* has been considerably increased recently.

A committee consisting of Professor Kundrat, the dean of the faculty, together with Professor Toldt, Professor Brücke, Professor Albert, Professor Billroth, and Professor Meynert, has been appointed to submit propositions relative to the election of an ordinary professor for the vacant second chair of anatomy.

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**Hysterical Religion.**—"Of course," says the "Lancet," "nothing disrespectful to the idea of a truly religious sentiment must be inferred from our use of the phrase *hysterical religion*. What we mean to designate by that term is religious fanaticism essentially emotional in its nature, and probably also in its origin. 'Jumping,' 'shaking,' and the like are distinctly morbid disturbances brought about by abandonment of the controlling will and judgment to the sensory impulses or the passions. Weak minds are supposed to be more prone than those which are normally robust to make this surrender of self-control, but, as a matter of fact, it may be, and doubtless is, not infrequently made by the strongest of intellectual organisms under the influence of such strong 'feeling' as may readily be produced by overtaxing the higher cerebral centers. The wondrously complex mental apparatus is easily thrown out of working order, and it is not in the least surprising to find the more delicately organized and sensitive machinery of mind work so disabled. It follows upon this consideration that the subjects of 'hysterical' disturbance in connection with religious thought and emotion are rather to be pitied than blamed for their vagaries. Nor are we prepared to say that, however much the existence of distinctly hysterical religions may be regretted, they ought to be put down by law At the same time it is clearly in the interests of public health and sanity that they should be adequately controlled, and we can not help thinking that the young girls who hop in 'glory holes' ought to be placed under some kind of supervision, if only that they may not be allowed to fall victims to the men 'full of devils' who are *not* turned out of the places of 'worship' where these decidedly undesirable orgies are held."

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## POISONOUS ANILINE DYES.

In the "Lyon médical" for January 15th there is a paper, by Dr. Carry, on the toxic effects of certain aniline dyes on those who handle tissues colored with them. His remarks are based upon five cases seen by him within two months. All but one of the patients were women, and they had been at work from a month to three months reeling yellow cotton which, during the operation of the machine, gave off clouds of irritating dust, causing frequent attacks of coughing. The symptoms in these five cases were similar enough to suggest a common cause, and were briefly these: progressive loss of appetite, soon followed by frequent vomiting of food, and then of glairy mucus and bile, when fasting and in the morning; colicky pains in the umbilical and hypogastric regions, not severe, but frequent, weakening by their persistence and accompanied by constipation; tongue of a dirty yellow and the border of the gums marked with a slaty blue line, also noticed in the worst cases on the inner surface of the cheeks and lips (in one case with ulceration of the gums); an almost constant, dull, heavy, supra-orbital and temporal headache, not severe but persistent, more marked in the morning, sometimes disappearing in the evening to return on waking; fugitive neuralgic pains in the epigastric and lumbar regions; marked analgesia of the skin of the hands and forearms, especially the right, which are brought more frequently in contact with the thread; no paralysis of the extensors and no dorsal swelling of the wrist. The patients were very anæmic and their faces a little puffy. The lower limbs especially were feeble, so that some of them were confined to the bed. Insomnia was habitual, and the debility and emaciation were progressive. There was no fever, and the pulse, though weak, was not accelerated. The cases were rebellious to treatment. After two months of abstinence from work, and the use of evacuants, the cephalalgia and insomnia had disappeared, the vomiting had ceased, and the appetite had been partially restored, but the patients were still far from well.

It is not surprising that Dr. Carry at first believed his patients to be suffering from lead poisoning, although the absence of "wrist-drop" was significant. Analyses of samples of the cotton by Professor Pouchot proved, however, that they contained not a trace of lead, but were colored with aniline dyes, with a salt of antimony as a mordant. Three samples were tested, one of which was found to be dyed with Martin's yellow, a dinitro-*a*-naphthalate of sodium $\left(C_6H_5\begin{cases}NO_2\\NO_2\\Na\end{cases}\right)$; a second with the yellow known commercially as Poirier N, analogous to the preceding; and a third with the amidoazobenzoldisulphonate of sodium $\left(C_6H_4\begin{cases}Na\\N=N\end{cases}C_6H_3\begin{cases}NH_2\\SO_3H\end{cases}\right)$. The first and second gave off dust and produced toxic symptoms, while the third seemed to be harmless. Martin's yellow is thus shown to be a dangerous dye, and yet it is said to have been used for the past ten years to color articles of food. Dr. Carry says that it is put into butter, and who knows but it is used in wines? In fact, the third dye mentioned above, it is expressly stated, is very commonly used in coloring wines, although M. Lépine found that in quantities of from two to four grammes (half a drachm to a drachm) a day it caused non-diarrhœal colic in man.

The dangers connected with the use of such dyes in the preparation of textile fabrics might be mitigated if not abolished, so far as employees are concerned, by the use of respirators or the introduction of downward-exhaust ventilation in the shops. But what shall be said about the risk to those who wear the manufactured stuffs? These dyes are perhaps the most brilliant and splendid ever discovered, and, unluckily, the most hurtful ones are much the cheapest. It would seem to be the duty of public officials, however, to put a stop to the use of the poisonous ones.

## THE PATHOGENY OF SUDDEN DEATH.

Dr. Key-Aberg, of Stockholm, contributes to the "Nordiskt medicinskt Arkiv" an investigation of the causes of sudden death, as this term is understood in forensic medicine and the Episcopal Litany, rather than from a strictly physiological or pathological point of view, and draws attention to the predominant importance of chronic endarteritis (Virchow's endarteritis chronica deformans) as a predisposing condition. From an analysis of 852 autopsies in cases of "natural" sudden death in persons over fourteen years of age, the author concludes that in 74·5 per cent. of all such cases chronic endarteritis leads to the fatal result by "paralysis of the heart, rupture of the heart, rupture of aneurysm of the aorta or of one of its extracranial branches, rupture of the aorta itself (including dissecting aneurysm), or intracranial hæmorrhage." As regards the relative frequency of these different terminations, cardiac paralysis is found in seventy-one per cent., cardiac rupture in two and four tenths per cent., aneurysmal rupture in eight and seven tenths per cent., and intracranial hæmorrhage in fifteen and three tenths per cent.; the mortality, especially from cardiac paralysis and aneurysmal rupture, being much greater in males than in females, and occurring at an earlier age. Neither social position nor occupation appears to exert any appreciable ætiological influence; but, as might be expected, the colder seasons of the year produce the greater number of deaths from chronic endarteritis. Particular stress is laid on sclerotic alteration of the coronary arteries as a cause of sudden cardiac paralysis, death being exclusively assignable to such degeneration in twenty-two out of thirty-three carefully studied autopsies. In thirteen of these instances

minute microscopical examinations revealed results at variance with the opinion commonly entertained as to the frequency of fatty degeneration. In four of them there was absolutely no fatty change nor necrotic softening; of two cases of myomalacia, one alone presented some fatty degeneration in the immediate vicinity of the softened region; in two examples isolated trabeculæ and a single papillary muscle in the left ventricle showed coarsely granular fatty transformation; in three, finely granular metamorphosis was observed in the walls of the right ventricle, away from the trabeculæ and between the layers of interstitial fat, with but slight similar involvement of the left ventricle; in only two of the series was there a more extensive invasion of fatty degeneration, and, while in one of these the entire heart was involved, in the other the change corresponded with the distribution of the left coronary artery. Another surprising statement, in view of the somewhat dogmatic diagnoses of neurologists, is that, out of 635 cases, there was but one of embolism of the cerebral arteries.

Of the influence of atheromatous disease of the arteries in the causation of aneurysm and in shutting off proper nutrition from the tissues supplied by them pathologists have been long aware. The principal points of interest in Key-Aberg's observations are the demonstration that (as Gueneau de Mussy almost alone upheld) it is of frequent occurrence in comparatively early life, and the inference that it is limited to single parts of the arterial system oftener than is usually imagined.

## *MINOR PARAGRAPHS.*

### FREE TRADE IN ARTICLES FOR THE SICK.

The Georgia State Medical Society's petition asking Congress to place drugs, medical and surgical apparatus, and every article used in the diagnosis and treatment of disease on the free list has been sent to a number of medical societies with a view to their taking action recommending the legislation asked for. Our two large New York societies, the Academy of Medicine and the Medical Society of the County of New York, have passed resolutions in consonance with the petition. It is not to be doubted that the petition originated in a genuine desire to assist the sick and to facilitate physicians' acquisition of the necessary outfit, but it is to be doubted if Congress will take the action asked for, and it is certain that one unworthy argument has been used in this community in favor of the measure—namely, that it would give the profession a check on the manufacturing pharmacists and the instrument-makers—in other words, compel them to lower their prices. If this argument has been used among physicians in New York—and it has been—it is not impossible that it may find its way to Congressional ears. It is needless to say that a Congressman who allowed such a motive to influence his action on the question would be contributing to a piece of class legislation wholly uncalled for. Moreover, the medical profession is not yet a set of mendicants, and we do not think it is ground down by the greed of manufacturers. We have nothing to say in opposition to the petition itself, but we trust that the argument we have mentioned will not again be used to secure its indorsement.

### THE WARNINGS OF HEART DISEASE IN CHILDREN.

We lately spoke of the insidious origin of cardiac disease in the young, and gave a summary of some recently published views of its causation. That the primary disease to which it owes its rise is often overlooked when a little more care might lead to its detection is probably the conviction of every experienced physician. In an article entitled "Certain Foods in Relation to Treatment," which appears in the January number of the "Brooklyn Medical Journal," Dr. John A. McCorkle puts the matter very pithily. It is not an infrequent occurrence, he remarks, for a child to be taken sick with fever, together perhaps with nausea, vomiting, and pain, which latter the child refers to the stomach. A hasty diagnosis is made of fever and pain due to gastric irritation, and it is fortunate if the treatment is of the expectant variety. The fever continues somewhat longer than the diagnosis would warrant, but after a time the child makes a fair recovery, and the sickness is soon forgotten. But, after the lapse of one, two, or three years, the doctor is called to the child again, and, having occasion to examine the chest, is surprised to find a cardiac murmur and wonders when the child had rheumatism.

### A MEDICAL BURGLAR.

A humiliating account is given in the newspapers of the participation of a medical practitioner in the work of assaulting and robbing a miser living in the State of Maine. The practitioner in question seems to have taken an active part in planning the dastardly enterprise, which included the employment of professional burglars, and even to have prostituted his knowledge as a physician to its successful consummation, for he is said to have precipitated the attack at a time when he knew that the victim, who was his own patient, was sick and too feeble to make any serious resistance. If it is dishonorable in a physician to reveal a patient's secrets, surely it is inexpressibly detestable for him to make use of them in furtherance of felony.

### THE LARYNGOLOGICAL SECTION OF THE ACADEMY OF MEDICINE.

The meeting of the Academy of Medicine's Section in Laryngology and Rhinology which was held on the evening of February 28th was one of exceeding interest and value. The programme, which we published before the date of the meeting, was well carried out, and the discussions were remarkably satisfactory, especially the one which followed the reading of the papers by Dr. Hooper and Dr. Blake, of Boston, relating to a subject of great importance. It was a graceful act on the part of our Boston visitors to contribute to the proceedings, and it is no more than just to recognize the wisdom of the chairman and the secretary of the section, Dr. Douglas and Dr. Vanderpoel, in arranging so satisfactory a programme. The section is one from which a great deal of good work may confidently be looked for.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 6, 1888:

| DISEASES. | Week ending Feb. 28. | | Week ending Mar. 6. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 7 | 3 | 8 | 4 |
| Scarlet fever | 155 | 28 | 151 | 24 |
| Cerebro-spinal meningitis | 7 | 4 | 8 | 5 |
| Measles | 62 | 2 | 65 | 2 |
| Diphtheria | 111 | 43 | 149 | 36 |
| Small-pox | 3 | 0 | 14 | 0 |

**The Medical Department of the University of the City of New York** held its forty-seventh annual commencement exercises on Tuesday evening of this week, at the Metropolitan Opera House. Diplomas were awarded to a hundred and sixty-three gentlemen. The hospital appointments were given to Dr. T. J. Dunn, Dr. S. J. White, and Dr. W. M. McArtney, and other prizes to Dr. W. G. Frey, Dr. L. R. Scudder, Dr. E. L. Fisk, Dr. K. L. De Sombre, Dr. E. J. Richardson, and Dr. E. P. Clark. Dr. Warren B. Chapin was the valedictorian.

**The New York Hospital.**—Dr. Lewis A. Stimson has been appointed one of the surgeons to the hospital.

**The Gari Prize of the Royal Academy of Medicine and Surgery of Barcelona,** for the best essay on the "Pathogenesis of Gonorrhœa," is to be awarded next year, according to the "Lancet." The prize amounts to about $300. The essays should treat of the clinical forms of the disease, especially of prolonged and repeated cases; complications and sequelæ; and preventive and curative treatment; and should be accompanied with illustrative specimens. They may be written in Spanish, French, or Italian, and must be unsigned but accompanied with a motto and a sealed envelope containing the author's name. They must be sent in to the Academy (Baños Nuevos, No. 9, Barcelona) before June 30, 1889.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from February 19 to March 3, 1888:*

Vollum, Edward P., Lieutenant-Colonel and Surgeon. Granted leave of absence for four months, with permission to go beyond sea, and to apply for an extension of two months. S. O. 41, A. G. O., February 20, 1888.

Gardner, E. F., Captain and Assistant Surgeon. Granted leave of absence for one month and twenty-one days. S. O. 41, A. G. O., February 20, 1888.

*Appointment.*

Shillock, Paul, to be Assistant Surgeon, with the rank of First Lieutenant. January 31, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 3, 1888:*

Heyl, T. C., Surgeon. Orders to the Receiving-ship St. Louis revoked.

White, C. H., Surgeon. Present duty continued to October 1, 1888.

Streets, T. H., Surgeon. Ordered to the Receiving-ship St. Louis.

Drennan, M. C., Surgeon. Ordered to the Receiving-ship Vermont.

Brush, G. R., Surgeon. Detached from the Receiving-ship Vermont and ordered to the Pensacola.

Means, V. C. B., Passed Assistant Surgeon. Detached from Naval Hospital, New York, and ordered to the Pensacola.

Hoehling, A. A., Medical Inspector. Detached from the Pensacola and to wait orders.

Harmon, G. E. H., Passed Assistant Surgeon. Detached from the Pensacola and to wait orders.

Edgar, J. M., Passed Assistant Surgeon. Detached from the Pensacola and to wait orders.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending March 3, 1888:*

Stoner, G. W., Surgeon. Detailed as chairman of board for physical examination of officers and candidates, Revenue-Marine Service. February 28, 1888.

Urquhart, F. M., Passed Assistant Surgeon. Detailed as recorder of board for physical examination of officers and candidates, Revenue-Marine Service. February 28, 1888.

Kalloch, P. C., Passed Assistant Surgeon. Relieved from duty at Pittsburgh, Pa.; ordered to Marine Hospital, San Francisco, Cal. March 2, 1888.

Carrington, P. M., Passed Assistant Surgeon. Relieved from duty at Marine Hospital, San Francisco, Cal.; ordered to assume charge of service at Pittsburgh, Pa. March 2, 1888.

Kinyoun, J. J., Assistant Surgeon. Granted leave of absence for twenty days. February 28, 1888.

**Society Meetings for the Coming Week:**

Monday, *March 12th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *March 13th:* New York Medical Union (private); Medical Societies of the Counties of Chemung) quarterly—Elmira), Rensselaer, and Ulster (quarterly), N. Y.; Newark, N. J., and Trenton, N. J. (private), Medical Associations.

Wednesday, *March 14th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

Thursday, *March 15th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *March 16th:* Chicago Gynæcological Society.

Saturday, *March 17th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

## OBITUARY NOTES.

**Lewis W. Oakley, M. D.,** of Elizabeth, N. J., died on Sunday, the 4th inst., at the age of sixty-one. He was a native of Kinderhook, N. Y., and was graduated from the College of Physicians and Surgeons, New York, in 1852. During the civil war he entered the army as surgeon of the first New Jersey brigade (familiarly known as the Kearney brigade), and was subsequently appointed to be a division surgeon in the Army of the Potomac. His death was due to apoplexy. Dr. Oakley will be remembered as having contributed materially to the prosperity and judicious management of the Alumni Association of the College of Physicians and Surgeons.

**Thomas Delano Swift, M. D.,** died at his house in East Twenty-ninth Street, on Saturday, the 3d inst., in the thirty-fifth year of his age. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1879, and a member of the Pathological Society.

**Jetson Willard Bentley, M. D.,** of Providence, R. I., died, after a long and tedious illness, on the 6th inst. He was born in Sandgate, Vt., fifty years ago, and graduated at the Medical Department of the University of the City of New York. He was a surgeon in the army during the war. For the last thirteen years he had practiced his profession in Providence. He was a genial and kind-hearted man and a skillful physician.

**Edwin N. Chapman, M. D.**, of Brooklyn, died on Friday, the 2d inst., in the seventieth year of his age. The deceased was a graduate of the Jefferson Medical College, of Philadelphia, of the class of 1845. He was a member of the Medical Society of the County of Kings and of the New York Physicians' Mutual Aid Association.

# Letters to the Editor.

## A FOREIGN VISITOR'S FAREWELL TO AMERICA.

New York, *March 5, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: After many weeks of sojourn in your beautiful country and before my departure for my home in Karlsbad, allow me to make use of a little space in your valuable paper. Thirst for knowledge brought me here, and the greatest appreciation accompanies me home. The confusing picture which is usually impressed upon the mind of a European by various writers and lecturers on this subject has been entirely eradicated by personal observation. I have seen a great country blessed with every gift of nature, a great people gifted with all manner of human virtues, wealth, law and order, security, and protection in every particular, and all this without a soldier. The culture of two worlds I have found amalgamated, and a vivacious, creative, and industrious people making gigantic strides toward future greatness with no foreign war nor internal envy threatening to disturb the continued work of culture or to impede the mighty and rapid development of this young nation. The advantage of youth is undeniably possessed by this country. As is well known, to youth belongs the future. The commerce and industry of the New World throw those of the Old deep into the shade, while science and art must still be developed.

Medical science, to which naturally I have paid most attention, finds worthy institutions in almost every direction, above all, the great commercial center of New York, where knowledge is dispersed not only in hospitals, clinics, colleges, and laboratories, but even in private meetings, where physicians consult and opinions are exchanged in demonstrating facts pertaining to daily experiences. In the quiet but intellectually active city of Philadelphia; in the distinguished city of Washington, where the administrative genius of Dr. Billings is arranging the greatest medical library of the world and the most interesting pathological museum; in fertile Baltimore, with its extraordinary Johns Hopkins Hospital; in that phœnix-like and rapidly developing city of Chicago; in that small but intelligent and friendly Milwaukee, with its Dr. Senn, one of the great modern operators; as well as in the Athens of America, Boston, there are meritorious scientific and practical men, though there may be a lack here and there in system and, after our idea, in certain discipline. I shall not fail to write in detail of the learned American medical teachers and physicians of the United States. As soon as my time permits, I intend to write all the various facts of my experiences while here. For the present I only desire to express my thanks for the extraordinary hospitality I have enjoyed in so many instances. It is a physical impossibility for me to give thanks individually for each kindness shown me; in fact, words are too inadequate to worthily express my thanks. With the hope that in Karlsbad an opportunity may present itself to me that I may balance accounts of cordiality with my beloved American friends, I greet them all with a fond farewell.

A. Kállay,

*Resident Physician at Karlsbad, Member of the Medical Faculty of Vienna.*

## INSUFFICIENCY OF THE OCULAR MUSCLES.

9 West Thirty-fifth Street, *March 6, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In the last issue of the "New York Medical Journal" appears an article on "Hyperphoria" by Dr. J. Herbert Claiborne, Jr. In the course of the paper the author says "it appears that Dr. George T. Stevens was the first to describe the condition known as hyperphoria," and, farther on, "why, then, may not a latent insufficiency or overtension in one of these muscles (*i. e.*, the rectus superior or inferior) exist, as is known to be the case in the lateral straight muscles?" "and, if it exists, why may it also not cause symptoms of asthenopia?" The article from which these extracts have been made goes on to describe the tests which should be made and the treatment that may be applied in cases of insufficiency of the superior and inferior recti muscles. It is not my purpose to discuss the subject-matter of this paper. Here is an article calculated to afford the medical student much useful and interesting information. When the author, however, claims for the subject-matter of his discourse the distinction of its being a recent discovery in medical science he invites criticism, and a brief allusion to the history of this interesting chapter in ophthalmology may not be out of place. "Hyperphoria" is but another name for insufficiency of the vertical working muscles of the eyes. As long ago as August, 1869, von Graefe ("Klin. Monatsbl. f. Augenheilk.," vii. Jahrg., p. 268) described a case of vertical insufficiency treated by prisms. During the winter of 1869–1870 I had the opportunity, while acting as assistant-surgeon at von Graefe's clinique in Berlin, to frequently see such cases, and at that early day an examination of the eyes of a patient who presented himself at the clinique with any symptoms of muscular insufficiency that did not contemplate the possible existence and detection of dynamical disturbance of the vertical muscles would certainly have been regarded as incomplete. Should the record of prescriptions filled by the Berlin opticians, Paetz and Flohr, be today examined, a not infrequent formula of a combination of spherical glasses with prisms, base up or down, would be found. In an article on "Progressive Myopia and its Operative Cure," which the writer of this brief letter contributed to the "New York Medical Journal" in June, 1873, this same subject was discussed, and a case was related where this same hyperphoria (so called) was corrected by means of a prism of 4° (base downward). I should not venture to trespass so far upon the patience of your readers had not this astonishing claim for priority in investigation in this important chapter of ocular medicine been recently so urgently made. I again repeat what I have elsewhere said, that the operative treatment and that with prisms of the vertical as well as the lateral working muscles has been the common property of all competent ophthalmic surgeons here and abroad for at least twenty years.

Richard H. Derby.

# Proceedings of Societies.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of February 22, 1888.*

Dr. W. W. Keen in the Chair.

**Apex Expansion versus Pure Air in Pulmonary Consumption.**—Dr. Thomas J. Mays read a paper on this subject.

Next to the tubercle bacillus, he said, impure air stood most prominent among the many agencies which had been assigned as the causes of pulmonary consumption. Innumerable plans and methods had been devised and proposed for improving the ventilation of dwellings, hospitals, and workshops; volumes upon volumes had been written on the ill effects of breathing vitiated air; and the immaculate freshness of the country and mountain air had come to be universally regarded as a certain guarantee against pulmonary consumption. These, like many other popular notions, contained a germ of truth, but actually were delusive, inasmuch as they exaggerated the effects of a small evil, and afforded a false sense of security against the real source of danger in the production of this disease. This he would endeavor to show.

At the very outset he desired it to be well understood that he did not in the least underrate the value of fresh, wholesome air in the prevention and treatment of pulmonary consumption, and, while it was probably true that, on the whole, country people enjoyed greater immunity from this disease than city people—though this was not proved, on account of a lack of adequate statistics—yet he was convinced that the purity of the atmosphere played a very small part in bringing about this probable result. To make a homely hypothetical proposition, he would state that, if two individuals who respired the same quantity of air, and who were equally well off so far as heredity, food, clothing, warmth, comfort, etc., were concerned, were both enjoined to maintain a sedentary and a stooped position of their bodies for an unlimited period, one in a house and the other outside in the open air, there was no reason for believing that the one inside would fall a victim to this disease sooner than the one on the outside. If the disease was the result of breathing a vitiated and impure atmosphere, how could the fact be accounted for that the inhabitants of Iceland, Greenland, Lapland, and other cold countries of the north, who lived in dwellings notoriously wanting in ventilation, were practically exempt? Of the Icelanders, Mr. Warnford Lock, who was very familiar with these people and who spoke their language, had said that their life was one long exposure to the elements, and that during the night they lived in dwellings devoid of ventilation, which, if not buried beneath the earth, were built of turf and often became grass-grown; also that a very bad feature was the excessive stuffiness of the common living and sleeping room, where, owing to the absence of fires, the greatest possible crowding and plugging were necessary in order to maintain a tolerable degree of warmth. And yet Dr. Cullimore, from whose work the quotation was taken, had said that consumption in Iceland was never indigenous, but was always, when it did occur, imported from abroad and but seldom extended to the second native generation.

On the other hand, it might be stated that the people of the tropical regions of the globe, who enjoyed an uninterrupted reveling in pure, fresh air both night and day, winter and summer, were by no means free from pulmonary consumption. The only difference, so far as the physical life of these two classes of people was concerned, was that the warm climate, which produced such a luxurious atmosphere, also created a tendency to physiological sluggishness and an indisposition toward physical exertion, while the people of the cold and rigorous north were compelled to maintain the warmth and vitality of their bodies in great part, during the day, by physical exercise, of which their occupations of hunting, fishing, herding, etc., gave them a full share. It was also well known that miners and laborers employed in coal-mines, who continually respired an atmosphere which was not only loaded with impurities, but damp and musty, suffered but very little from this disease. One fact which lent color to the belief that pure air was such an essential element in limiting the ravages of consumption was that those who occupied elevated or mountainous regions were less liable to the disease than those who lived near the sea-level. Thus, Fuchs had shown from extensive data that at Marseilles, on the seaboard, the mortality from this disease was 25 per cent.; at Oldenburg, 80 feet above the level of the sea, it was 30 per cent.; at Hamburg, 48 feet above the sea, it was 23 per cent.; while at Eschevege, 496 feet above the sea-level, it was only 12 per cent.; and at Brotterode, 1,800 feet above the sea, it was but 0·9 per cent. Carrying this line of observation further, it appeared very probable that consumption was almost unknown among any native people who lived more than 6,000 feet above the level of the sea.

What concerned us here chiefly was the reason why mountain climates were, as a rule, so free from pulmonary consumption. Was it because the atmosphere was pure and free from septic germs? This was hardly possible, for, if it were true that the aseptic condition of the air played any very prominent part, why should the Icelanders, who nightly reeked in a most filthy atmosphere, or the dwellers along the Nile, who, according to Mr. B. Phillips, lived in huts where the pure air had neither ingress nor egress, except through a small hole near the ground, or the coal-miners, who continuously breathed a foul and poisonous atmosphere, all be comparatively free from this disease? Was it due to the general absence of humidity? He thought not, for Bogotá, the capital of the United States of Colombia, located on the Andes, near the equator, and at an elevation of over 9,000 feet, was said to be entirely exempt from the disease, although dampness prevailed to quite a large extent. There was much reason for believing that it was principally, if not entirely, on account of the attenuated condition of the atmosphere, and he would, therefore, at once proceed to consider the physiological influence of great altitudes on the human body.

It had been estimated by Dr. Denison that at an elevation of 6,000 feet the surface of the body was relieved of nearly 7,000 pounds pressure. When such an enormous weight was lifted from the body it was quite evident that its interior must also be decidedly affected—the pulse was accelerated from fifteen to twenty beats a minute; the respiration was quickened from ten to fifteen breaths a minute; evaporation from the skin and lungs was increased, and the amount of urine was diminished. These were some of the immediate effects. Protracted residence in such a high region enlarged the chest capacity. The Quichua Indians, who dwelt on the elevated table-lands of Peru, had enormous chests, containing capacious lungs with large air-cells. The Mexican Indians possessed chests which were out of proportion to the size of the individual. Dr. Denison had said that children born in the Rocky Mountains had chests of unusually large capacity, and M. Jaccoud had stated that at St. Moritz the respirations were not only more frequent, but fuller. The reason why the number of respirations increased while a person was ascending a great elevation became clear when we took into consideration the fact that at the sea-level a cubic foot of dry air contained about 130 grains of oxygen, while at an elevation of 6,000 feet it contained only about 106 grains—nearly 25 per cent. less than a person was accustomed to breathe at or near the seaboard—therefore, in order to supply the wonted amount of oxygen to the body, the respirations must increase either in number or in extent.

From all accounts it was very probable that respiration became accelerated only during the early period of exposure to such an attenuated atmosphere, and that subsequently this function became slow again because the air penetrated deeper and more completely into lung tissue but little called into play before.

That man did not suffer under such a deprivation of oxygen was evident from what we knew to be true of his lung capacity under ordinary conditions of life. Mosso had recently proved experimentally that man possessed a lung capacity nearly one fourth larger than the actual necessities of life at the sea level demanded; hence by employing his whole lung capacity he could extract a sufficient amount of oxygen from this attenuated atmosphere without difficulty. And herein lay the secret of why so many consumptives, and others with weak lungs, derived such great benefit when they resorted to a mountain climate. It might be trite, but it was nevertheless true, that all consumption practically began at the lung apices, because those parts were habitually inactive. They were inactive because, in the first place, the bronchial tubes were so arranged that they conducted the air with greater facility to the base than to the apex of a lung, and, in the second place, because the lung was larger than necessary; hence the base, which was filled most readily, was filled first, and the apex, if at all, toward the end of inspiration. The apices, therefore, became the superfluous parts of the respiratory organs. It was quite different, however, when the body was immersed in a highly attenuated atmosphere. Every available space in the chest was now brought into requisition to furnish the needed amount of oxygen, the apices were called out of their lethargic state, the alveoli were inflated, if the infiltrated areas were not dispersed the surrounding alveoli were kept permeable, and so the disease was, at least, limited and called into abeyance. This statement had been corroborated by those who had had large experience in the climatic treatment of pulmonary consumption. Thus, Ruedi had reported that, of 600 consumptives under his care at Davos, expansion of the thorax took place in no fewer than 584. Dr. Denison had said that the increased circumference of the chests of consumptives after undergoing the great-altitude treatment had been shown in many of Weber's cases, as well as in his own. Dr. Lindsay had stated that Davos did not cure consumption by its sunshine, or the purity and dryness of its air (although these conditions undoubtedly co-operated in the beneficial effect), but mainly by the rarefaction of its air, which stimulated respiratory activity, promoted healthy expansion and soundness of tissue in the lungs, and hence aided them to resist the spread of morbid deposits.

The fact was of still greater interest that those who followed active employments were less liable to this disease than those who pursued sedentary and quiet occupations. Thus, M. Lombard had found that in Paris, Geneva, Vienna, and Hamburg there were more persons leading a sedentary life afflicted with phthisis than of those leading an active life, in the proportion of 141 to 89. In the Brompton Hospital the relative liability had been found to be 63 per cent. of indoor males to 30 per cent. of outdoor, and all the consumptive females had followed indoor occupations. Dr. Guy had found, in the close workshops of a printing establishment, that the compositors, whose employment was sedentary, fell victims to phthisis in the proportion of 44 per cent. to 31·5 per cent. of the pressmen, who, although breathing the same air and in every other respect subject to the same habits of life, differed only in the active bodily exercise which the press imposed on them; and among the same class of operatives the deaths from the same cause did not exceed 25 per cent. in those who used exercise in the open air.

There could be no doubt, too, that those of our Indians who were still allowed to obey their roaming instincts of hunting and fishing, or to follow their vocation of farming, which a number had done, owed their immunity from this disease, which we knew they possessed, in great part, if not entirely, to the physical exercise which they obtained in this manner; while those who were subjected to the idle and improvident reservation life died rapidly from it, principally because they were deprived of their wonted exercise. This had a direct bearing on the main point at issue. Some of the former class of Indians, like the Pimas, for example, who might be called wild, although they were agricultural in their habits, were living in half-underground huts with very little or no ventilation; yet, from all accounts, consumption was an exceedingly rare disease among them.

Thus far it had been seen that, on the whole, those who occupied elevated habitations, as well as those who followed active exercise, were more exempt from the disease than those who lived near the sea-level or those who lived a life of quietude. In connection with this he would consider the influence of physical exercise on the lungs, and endeavor to ascertain how it afforded protection against consumption. During physical exercise more oxygen was consumed by the muscles, and more blood and air circulated through the lungs, than during rest. Just how much more air entered the lungs during activity than during rest could easily be estimated when it was known that during inactivity a man breathed 480 cubic inches of air a minute, and while walking at the rate of four miles an hour, or while tramping a treadmill, he breathed 2,400 cubic inches, and if he walked at the rate of six miles an hour he took in 3,260 cubic inches of air a minute. The difference between 480 and 2,400 cubic inches of air-capacity showed that during the exercise of walking, even at the rate of four miles an hour, five times as much lung surface was thrown into action than during rest, which proved very conclusively that bodily activity possessed a marked influence in determining the degree of lung expansion, and that under such conditions regions of lung would be called into service which were never fully reached by air during bodily rest. This was in entire accord with what practically existed. Thus, Darwin had said that the lungs in improved breeds of cattle, which naturally took little exercise and were domiciled much of the time, were found to be considerably reduced in size when compared with those possessed by animals having perfect liberty, and Waldenburg had stated that the vital lung capacity was smallest in persons who led sedentary lives, such as professional men, students, clerks, etc., and greatest in those who followed active outdoor occupations, such as sailors, recruits, etc. Chassagne and Dally, in their joint work on the "Influence of Gymnastics on the Development of Man," had reported that at the Military School of Gymnastics of Joinville-le-Pont, out of four hundred and one individuals subjected to gymnastic exercises for five months, three hundred and seven, or seventy-six per cent., had shown an increase of an average of 2·5 ctm. in the mammary circumference of the thorax. According to Dr. Abel, seventy-five per cent. of those who practiced gymnastics in Germany experienced an increase in the measurements of the chest. There could be no doubt that the principal reason why consumption increased with the advent of civilization was that everything in civilized life tended to produce physical inertia in our bodies. Walking was replaced by riding in carriages and in cars; manual labor was in great part done away with by machinery; active outdoor labor was supplanted by quiet indoor occupations—in fact, everything which tended to produce physical activity was exchanged for a life of ease and indolence. The American Indian, as had already been stated, was known to be comparatively free from the disease in his wild state, but as soon as he acquired the habits and customs of civilized life he became its victim.

Converging the two lines of reasoning thus far developed, it appeared that the immunity from consumption which was established by residing in a mountain climate and by practicing

physical exercise was chiefly brought about in the same manner—viz., by increasing the capacity of the chest. And from a practical point of view it was of some moment to know whether the former had more weight in bringing about such restoration than the latter—or, in other words, whether those who lived at great altitudes continued to enjoy this exemption if they refrained from active physical exercise and took up a sedentary occupation in such regions. From recent inquiry into this subject the author was inclined to believe, at least so far as the Rocky Mountain climate was concerned, that, as soon as outdoor pursuits were exchanged for sedentary indoor occupations, consumption increased in frequency. It was, therefore, quite certain that physiological exercise played a more important part in the problem of the prevention and cure of consumption than a residence in an elevated or mountain climate, however valuable the latter might be. We had, moreover, good reason for believing that the immunity which was established by means of physical exercise was more permanent than that which was secured by residing in a mountain climate, for it was a common observation that consumptives flourished at great altitudes only so long as they remained; a protracted stay at the sea-level was always regarded as perilous. Such consequences were in perfect harmony with what one would be led to apprehend from a knowledge of the physiological factors involved in the restoration of the patient. These factors were entirely local, and their influence did not extend very far beyond their immediate dominion. This objection did not hold good in regard to physical exercise. One thing might be said, however, in favor of a mountain climate which was not true of physical exercise—viz., it produced its beneficial results without conscious effort on the part of the individual; therefore, when the remedy was viewed from a standpoint of ease and comfort, and not from one of permanence, the mountain climate was to be preferred. In discussing the influence of mountain air it must not be overlooked that, on account of its rarefaction, it increased the circulatory and cellular activity of the body, and in this way undoubtedly aided the process of nutrition; yet even this influence could not be denied to physical exercise, although it was brought about in a more direct and positive manner.

While increased chest capacity was, therefore, the great desideratum in preventing and treating consumption, there was the strongest evidence for believing that it was not so much a question of developing the base of the lungs as of expanding the apices. This was well shown by the fact that the civilized female, although she had on the whole a much smaller chest capacity than the male, yet, owing to her increased costal expansion, which had been cultivated by the protracted influence of tight lacing, she was less liable to pulmonary consumption than the male.

It now remained to be shown how the effects of physical exercise could be obtained without resorting to a mountainous climate. Reference had already been made to the fact that muscular effort increased respiratory motion, and in taking up the question of pulmonary gymnastics it was not the author's purpose to discuss those exercises only which had a direct influence on the chest capacity, but also those which, through the body, had an indirect influence on the pulmonary organs. In all exercises it was very important that none should be carried to the extent of decided fatigue; and that, whenever possible, the body and head should be kept erect, the shoulders thrown back, and the lungs thoroughly filled with each breath; that breathing should take place only through the nose; and that sufficient food should be taken during the intervals. The power of walking was common to most people, and its influence on the lungs, as had been seen, was very marked. It was regarded as of great service even by those who exclusively advocated the utility of great-altitude treatment. Dr. Brehmer, of Görbersdorf, according to Schreiber, had been the first to prescribe, for consumptives, walking up a gradual ascent. A semi-daily walk of half an hour or an hour, either on the level or on a slight upward grade, was of immense advantage to the invalid. Running, dancing, skipping rope (especially when the rope was swung backward), bowling, etc., were to be highly recommended. Whatever the mode of exercise, it must be performed under as little compulsion as possible. One reason why the above-named exercises were so conducive to health was the fact that the excitement which they induced was so attractive that the consciousness of muscular effort was lost.

Among the many indoor exercises, the following movements were very valuable: The arms, being used as levers, were swung backward as far as possible on a level with the shoulders during each inspiration, and brought together in front on the same level during each expiration; or the hands were brought together above the head while inspiring, and gradually brought down alongside the body while expiring. When a deep inspiration was taken in accordance with either plan and held until the arms were gradually moved forward or downward, or even longer, the process of chest expansion was materially enhanced. Another very effective exercise was to take a deep inspiration, and, during expiration only, the patient was to count as long as possible in a loud voice. A man with a good chest capacity could count up to sixty or seventy, while in a woman with ordinary lungs this power was somewhat reduced. Practice of this sort would gradually develop the chest, and the increased ability to count was a measure of the improvement going on within the thorax. Many of these movements might have their effects greatly enhanced by the use of dumb-bells, chest weights, etc., which were made especially for the purpose.

The breathing of compressed and rarefied air was attracting wide attention at the present time in connection with pulmonary consumption, and constituted another most useful method whereby the chest capacity could be decidedly improved. Nearly four years ago Dr. Solis-Cohen, the honored president of our society, had advocated the substitution of compressed and rarefied air for a change of climate, in a paper read before the American Climatological Association. In that paper he had said that in many cases fully as much good could be secured by this treatment as by change of climate, and in a few much more, though in the vast majority of cases in which change of climate was advisable it was but a poor substitute. There could be no doubt that compressed and rarefied air was inadequate when used alone in many cases, but, when it was combined with pulmonary gymnastics and other judicious treatment, it was not sure that the results were inferior to those derived from climatic treatment. Recent experience had shown that, when consumptives who had spent one or two winters on the Rocky Mountains or on the Pacific slope without benefit were subjected to the use of compressed and rarefied air in association with other pulmonary exercises, such as had been described, their improvement became marked and decided. On the whole, the author's experience with the air treatment, combined with pulmonary gymnastics, had been very favorable, and he thought that this was in consonance with the observations of others. Thus, the late Professor Flint, in his work on "Phthisis," had said that it did not appear, from the analysis of his cases, that changes of climate had in a marked degree a beneficial influence as compared with the hygienic measures available at home.

The author believed, however, that, as a rule, these measures were applied too infrequently to be of the greatest service; and therefore he insisted that the pulmonary gymnastics be repeated every hour and a half during the day—the first thing in the

morning and the last thing at night—and for from fifteen to twenty minutes at each time; and that the air inhalations be given at first twice, and in the course of two or three weeks gradually increased to four or five times a day, and even oftener. It was very true that this method of treatment involved more labor and perseverance on the part of the patient than was required in a high mountain climate; but it was a question whether the patient was not more than repaid by the consciousness that a separation from friends was unnecessary, that the heavy expense, the dangers, and discomforts incidental to travel were avoided, and, above all, that the improvement which might take place would be persistent and practically unaffected by a change of residence.

After reviewing the whole subject, the author had been driven to the conclusion that the line of immunity from consumption, which, in the early history of our country, had been located at the Atlantic seaboard, and which had gradually receded westward with the tide of civilization, until at present it had reached Colorado, would not stop until it touched the shores of the Pacific; that the question of curing the disease did not depend on the purity or freshness of the air, or upon the number of bacilli which the atmosphere might contain, or upon the amount of oxygen which might be introduced into the body—for these were all secondary considerations; but it was simply a mechanical question—a question as to the best mode of expanding the lungs, and especially the apices of round-shouldered and flat-chested patients, of removing the infiltrated products already existing, and of enhancing the constitutional resistance.

Dr. William Osler said that the last statement of the paper contained a very important truth. With imperfect expansion there was a liability to clogging of the interstitial circulation in the apices and accumulation of tissue *débris* which might afford a nidus for the development of the *Bacillus tuberculosis*. The condition of activity of this interstitial circulation differed very much in different individuals. But little was yet known of the conditions which determined the development of tuberculosis. In part, at least, it was like the old parable of the seed and the sower: the nature of the soil would favor, retard, or prevent the growth. That the bacillus of tubercle would not grow in every soil was demonstrated by autopsies in large general hospitals. At Blockley, in every hundred sections, say, fifteen or twenty cases would be found with the usual lesions of phthisis; in fifteen or twenty there were no excavations, the lung was not extensively tuberculous, but at the apices there were small areas of induration, caseous nodules, and a few peripheral miliary nodules. The soil had not been congenial, and the development of the bacillus was restricted. Without bacillus, no tuberculosis, was the opinion of ninety-nine out of every hundred clinicians of the day.

Dr. Edward Martin said that while connected with the department of physical education at the University of Pennsylvania he had had an opportunity of studying the effect of exercise on chest development. Lads admitted with narrow lungs and supraclavicular depression suffered, after moderate exertion, with embarrassment of the pulmonary circulation. The right heart was congested, and there was evidently blocking of the blood-current in the lungs. After six or eight months of carefully regulated exercise there was a change in the local condition; no more obstruction was offered to the right side of the heart than elsewhere; the blood-vessels responded to the additional demand put upon them. With this free circulation went an increase of chest girth, from an inch to two or two and a half inches in six months. Inspiratory exercises were nearly always given these young men, especially those with that shape of chest which had been held to predispose to phthisis. Among these exercises was deep breathing, with or without movement of the arms. The arm was raised from the body to a right angle by the deltoid. After that the lifting was done by the serratus magnus, the most important external inspiratory muscle. As the arm was carried nearer to the head, the insertion and origin of the serratus were approximated and the muscle worked at a disadvantage. For this reason expiration was practiced as the arms were carried up, and inspiration as they were brought down. Exercise should be made vigorous enough to stimulate the heart's action. Slow motions, as a rule, did not strengthen the heart muscle, but had a local effect, whereas the object in these cases was to make the circulation free and the air-tubes pervious.

Dr. George E. Shoemaker heartily agreed with Dr. Mays that apex expansion was an important part of the treatment of incipient lung disease. A very important point was as to the action of rarefied air in expanding the apices. In localities that were warm, moist, and low—like Florida, for example—there was no such effect, and almost the sole benefit, as far as the climate was concerned, was from the patient's ability to be in the open air all the time. Would it not be better to send more patients to a climate where direct good was gained by the more thorough ventilation of the lungs, reserving for Florida the very weak and those liable to excessive hæmorrhage or to heart failure? In regard to impure air, it must be remembered that many of the persons who enjoyed good health in spite of their home surroundings lived out of doors most of the time, the children in particular living upon the doorstep or in the street, except in stormy weather. In the same way at mountain and sea-side resorts, the small and uncomfortable rooms drove visitors out into the air; and, whether or not it was ozonized or rarefied, it was pure, out-of-door air.

Dr. Mays thought it rather unfortunate that Dr. Osler had not confined himself to the topic of the paper and discussed the main points of the subject in his usual able manner. He himself had purposely avoided all except an incidental reference to the bacillus; but he must now say that he could not accept the dictum, "no bacillus, no tuberculosis." It seemed very strange that, if the bacilli needed a soil in which to develop, they should be able to penetrate into that portion of the lung which was hardly ever expanded in phthisical patients. Why, if the two sexes were put side by side in the same employment, did the men become diseased in greater proportion than the women? Why this fondness of the bacilli for one sex? He must also dispute the point that ninety-nine out of every hundred clinicians accepted this dogma. Though born in Germany, the doctrine was already losing ground among the Germans. He wished, in conclusion, to make a statement which he should have embodied in the paper, that, according to the latest researches, the apices expanded more in the recumbent than in the erect posture; therefore a person inhaled more air during sleep than in his waking hours.

**Macewen's Operation for the Radical Cure of Hernia, followed by a Speedy Return of the Hernia.**—The Chairman read a paper on this subject. He thought it important to report failures as well as successes. Macewen's operation had been so generally successful that it was the more important to report the failure in this case as the immediate result had seemed to promise a cure, but the hernia had quickly reappeared. For the notes of the case he was indebted to Dr. Lambach, the surgical resident.

The patient was a man thirty-two years of age, a fresco-painter, but for some time at work dredging for oysters. When seventeen years old he first noticed a right oblique inguinal hernia, for which he wore a truss for a year and then laid it aside. The hernia remained cured for thirteen years. A year

ago, while at work dredging for oysters, the hernia returned, and descended into the upper scrotum. He entered St. Mary's Hospital on the 6th of January, 1888, on account of the distress and inability to pursue his occupation. The operation was done on the 13th; on the fifth day five of the nine external stitches were removed, and on the twelfth day the remaining four. There was no pus at any time. The highest temperature was 100·2° F. He then had two chills, the first on the fifteenth day, his temperature rising to 103°; but, as there was no evidence of suppuration, as the fever yielded promptly to quinine and arsenic, and as his occupation had exposed him to miasmatic infection, this was attributed to malaria. He was kept in bed for twenty-nine days—*i. e.*, until February 11th. At this time the author examined him, and found the hernia perfectly cured. He was then allowed to get up, a spica and compress being applied. Yesterday (February 21st) the hernia was found to have returned. There had, however, been one gain—at the time of the operation the external ring was very large, requiring four double sutures; now it would only admit the point of the index finger. Moreover, the man was exceedingly comfortable, so that it was doubtful if he could be persuaded to undergo another operation.

The steps of the operation were illustrated on a model. An incision was made over the site of the hernia to its lowest point in the scrotum. With the blunt end of the scissors and the finger, the sac was then dissected from the surrounding parts, care being taken to leave no attachment to the spermatic cord. The index finger was then passed within the abdominal wall, and the peritonæum was dissected for half an inch around the circumference of the internal ring. A moderately stout ligature of chromicized catgut was tied to the lower part of the sac, and a series of stitches taken from the lower portion of the sac to its mouth. This stitch, by means of Dr. Ellwood Wilson's curved trachelorrhaphy needle, was then passed through the abdominal wall from within outward at a point half an inch above and external to the internal ring, the skin being drawn upward and outward so as to allow the stitch to emerge through the abdominal muscular wall, but not through the skin. Then traction was made on this stitch, thus puckering up the sac, which latter was drawn through the ring and rested against the inner surface of the abdominal wall to become adherent there, closing the hernial opening with a firm pad. The stitch was then carefully secured in place. The external ring was then closed with four double stitches of chromic catgut, passed from side to side.

The author had been extremely careful in denuding the inner surface of the abdominal wall to get a large raw surface at the internal ring, so as to gain firm union at that point, and the patient was kept on his back for four weeks, yet it gave way a few days after he was let up. The operation would be repeated if the man was willing.

(*To be concluded.*)

## MEDICAL SOCIETY OF THE COUNTY OF NEW YORK

*Meeting of November 28, 1887.*

The President, Dr. Laurence Johnson, in the Chair.

**A Malignant Tumor in the Sac of an Umbilical Hernia; Remarks on the Ætiology of Cancer.**—Dr. Daniel Lewis gave a history of the case of a woman, aged sixty-seven years, who had come to him in February, 1887. Until twelve months before, her health had been good, except that she had a hernia of fifteen years' duration. She had never borne children. She had had no treatment for the hernia, and nothing had been done to prevent the protrusion which took place when she was on her feet. It had been easily reducible until a year before, when she began to suffer pain about the umbilicus. The pain increased and became radiating, and she lost flesh and sleep and had fever.

Examination showed a tumor which extended nearly an inch beyond the border of the hernial ring; it seemed quite movable with the skin, and was found to invade the ring. An elliptical incision was made and the tumor was dissected out up to the ring, when careful search was made for intestinal contents; the sac was found to contain only omentum, which was not diseased. The subperitoneal tissue was infiltrated as far as the finger could reach. The patient died sixty-eight hours after the operation, apparently of shock. Dr. George T. Elliot had made a microscopical examination of the tumor, and had found it to be a large-round-celled alveolar sarcoma. In addition to the sarcomatous tissue, there were other histological elements which contributed greatly to the interest of the specimen; more or less glandular tissue was found which seemed in every way identical with the glands of Lieberkühn. He believed, therefore, that there had been an enteroteratoma which, after remaining quiescent for so long a time, had undergone sarcomatous degeneration. This was another fact which went to prove that cancer was not malignant in the beginning. The so-called hereditary origin of malignant disease was not supported by facts. Tumors of a non-malignant type proved irritating to adjacent tissues and caused cancer. The speaker believed, with Snow, that there were four or five clinical points which, if present in a given case, would prove that the disease was malignant, without resort to the microscope. For instance, a tumor which resisted all known medical agents, which showed a proneness to invade other organs and tissues and to recur after removal, which was painful, and which showed a tendency to destroy life, was malignant. There were at least four cases on record in which cancer had developed on a psoriatic base, and eczema of the nipple had been shown to cause the disease. He entered a strong protest against the common practice of applying caustics to diseased tissue which showed no tendency to recovery, as they acted as irritants, rarely did any good, and tended to bring out the malignant element. He presented a photograph of an eruption on a woman's breast which resisted treatment, and, if the breast were not amputated, he believed would become malignant.

Dr. David Webster referred to a case of glioma of the eye in an infant, thought to be due to the use of the obstetrical forceps.

Dr. A. F. Currier believed in the classification of cancer based upon the anatomical structure. He agreed with the author regarding heredity. He believed that the disease in the majority of cases began with a local irritation, and, if treated at that early stage, was curable.

Dr. W. M. Carpenter could not accept the statement that if the five points in the clinical history mentioned by Dr. Lewis were absent it was proof that the person did not have cancer. He recalled two cases in which the autopsy showed cancer of the stomach in one, and of the omentum in the other, yet there had been no sign or symptom pointing to the carcinomatous disease during life. The patients died of some other affection.

Dr. Lewis thought that absence of his five clinical points had not been proved in those cases.

**Bunions.**—Dr. Robert T. Morris read a brief paper on the subject of bunions on the great toe, considering their causation by ill-fitting shoes, the spasmodic action excited in the tendons by cramping of the foot, and the treatment. Inflammation was to be subdued by ordinary measures, such as elevation of the foot and cold or hot applications; on the corn a solution composed of salicylic acid in flexible collodion should be applied;

afterward it should be soaked in water and removed. The "anatomical shoemaker" commonly fitted a shoe to the deformed foot, and thus did what the mechanician would do if asked to apply an apparatus to promote the development of bunions. In health the great toe pointed a little inward, and the sole of the shoe should be made to correspond; it should be broad and sufficiently long, allowing full room for the expansion of the foot. The great toe should be made to point inward by retention in a compartment formed by sewing a strip of leather into the welt of the shoe. The stocking should be made also with a separate compartment for the great toe. The compartment shoe required to be low. A piece of court-plaster worn over the bunion would tend to prevent the development of a corn. In some cases the ligament had to be divided; in some the bursa and a portion of bone had to be excised. This operation could be rendered painless by Corning's method of using cocaine; it should be carried out antiseptically. Afterward a splint retaining the toes in the normal position should be applied, and subsequently the shoe with the separate compartment should be worn. The tendinous attachments should be preserved.

Dr. A. M. Phelps agreed with the author in advising the excision of bunions. By excision he would remove the head of the metatarsal bone, and get rid of the bursa and the reflex action of the tendons. Corns which appeared so frequently upon the sole of the foot were due to a narrow shoe. Wide soles and spring heels, instead of high heels, should be worn.

*Meeting of December 26, 1887.*

**Resorcin in the Local Treatment of Acne.**—Dr. G. H. Fox read a paper on this subject. There were many drugs used in the local treatment of acne, but he would confine his remarks to the one which in his hands had afforded the best results. It should be stated at the outset that there were very few cases of acne in which local treatment alone would effect a cure. In certain cases ordinary stimulating local treatment was worse than useless. From a therapeutic standpoint all cases of acne might be divided into two varieties, the indolent and the irritable. In the indolent variety, which included about half the cases, there was a doughy, thick skin covered with projecting comedones, papules, and pustules. One could in these cases press out the contents of the distended glands without doing any injury to the skin. These were the cases which were benefited by local treatment. On the other hand, there was perhaps an equal number of cases in which the glands were normal, the lesions being chiefly of a vascular character, with a few red blotches scattered over the face, and a marked tendency of the face to flush after eating and excitement. There were a few comedones, and any attempt to press them out would make the face look a great deal worse. The skin was thin and sensitive. In this class of cases local treatment would not effect a cure, and was apt to make the condition worse; we had to depend upon tonic and hygienic measures. But in the indolent class of cases, in which there was little acute inflammation of the skin, we could use some strong stimulating local treatment to advantage. The sulphur and mercurial ointments and lotions did a certain amount of good, but he thought the treatment with green soap infinitely superior. The chrysarobin treatment, as suggested by Dr. Metcalf, was certainly efficacious, but in his opinion the objections to it more than counterbalanced the objections to the disease. Resorcin he had found equally curative and free from the objectionable qualities of chrysarobin. Resorcin could be applied as a lotion or as an ointment. It caused a low grade of inflammation. Like carbolic acid, it was a mild caustic. Its application was followed by death and exfoliation of the thick epidermis, leaving a thin, healthy skin.

The President thought the difference in the appearance of the two classes of cases described by the author was due to temperament rather than to different varieties of the same disease.

Dr. Fox thought the old distinction made between the lymphatic and the sanguine temperaments might well be kept in mind at times. It was probable that these two different conditions of the skin pertained to the general temperament, but the point which he laid stress upon was the need of difference of treatment.

**The Treatment of Chorea by Cerebral Rest.**—Dr. J. Leonard Corning said that, in order to consider the subject in a systematic manner, he would in this paper briefly review the symptoms of chorea and then take up the subject of treatment. He did not approve of the subdivisions, chorea major and chorea minor. Among the exciting causes of chorea he laid stress upon too great mental exertion imposed upon children by parents and teachers; worry, a discontented, fidgety state of mind, and persistent imitation of those affected by chorea were also exciting causes, as was likewise phimosis, as well as other peripheral irritations. As to the seat of the lesions in chorea, it had been found that irritations of the gray matter of the cord, particularly of the posterior horns, might give rise to choreic movements; such movements might also be engendered by irritation of the gray matter of the brain. In the majority of cases there was more or less mental disturbance, and, as mental action was generated in the cortex, he could safely infer that in chorea there was some disturbance of the cortex. There was a small number of cases in which the irritability extended to the cord. In a relatively small number there was an organic lesion, and in such cases there was little hope of a cure. The treatment implied removal of peripheral irritations, when such exciting causes existed, and rest to the brain. If the child was at school it should be taken away, and even mild forms of intellectual work be prohibited. Complete rest to the exhausted ganglia could be secured only by sleep—by a state of complete unconsciousness. The patient probably was in the habit of taking insufficient sleep for even a healthy brain; much more would be required for a diseased, for an overworked brain. When there was a tendency to sleeplessness, as there was in many cases, it would be impossible to secure at once sufficient sleep to meet all the cerebral demands. In that event bromides should be given during the day, in increasing doses, to prepare for complete rest when the time came to go to bed. The most difficult class of cases were those in which there were digestive disturbances preventing medical treatment. The amount of sleep could be increased progressively by habit until in some cases it reached as much as sixteen hours a day. Peripheral irritation engendered by sound and light should be particularly avoided.

The author was accustomed to give Fowler's solution in increasing doses three times a day. He at the same time applied galvanism to the head after rendering the scalp anæmic by a rubber band and by ice-water. It was well in the early part of the treatment to confine the patient strictly to a farinaceous diet. He sometimes applied compression to the carotids to decrease the cerebral circulation.

Dr. David Webster had had one case of chorea in a lady, aged over twenty years, in which he was requested to operate for insufficiency of the externi of the eye, and in which there was no error of refraction. She was about three quarters cured of her choreic symptoms after the second operation. He had found benefit from correction of errors of refraction in some cases. He thought there was no doubt that removal of strain or irritation in certain portions of the peripheral nervous system would have a beneficial effect upon the general nervous system and indirectly upon the chorea.

Dr. KOPLIK had employed perfect rest in the treatment of chorea, particularly in children from five to twelve years of age, restraining all mental exertion, having the children eat at a table separate from the parents' lest they be corrected for their choreic movements, and giving abundant sleep. He thought children might be frightened if inclosed in a dark room during the day. Drugs, in his opinion, were valuable only as they acted as tonics.

Dr. FOX said, with regard to the use of galvanism to the head, that when the electrodes came in contact with the hair no effect was obtained, and when the bare scalp was touched it was apt to cause pain.

The PRESIDENT recited two cases in which chorea followed directly upon an attack of rheumatism, and he was disposed to look upon the rheumatism as causative of the chorea. These children were anæmic, and he prescribed a nitrogenous diet, and would object to the author's suggestion to limit them to farinaceous food. He objected also to the indiscriminate use of large doses of bromides. Regarding the very large doses of Fowler's solution which the author and others had succeeded in habituating some of their patients to, he had seldom been able to carry the dose higher than ten drops without producing toxic symptoms.

Dr. W. M. CARPENTER remarked upon the conflicting testimony of different writers regarding the curative value of arsenic in chorea, and said that some of the most experienced practitioners professed never to have seen a case cured with that drug. One recent writer maintained that in all such cases there were relapses, and that the relapses were worse than the original attack. The speaker mentioned one case of chorea which resisted all treatment, and terminated fatally.

## Book Notices.

*A Practical Treatise on Diseases of the Hair and Scalp.* By GEORGE THOMAS JACKSON, M. D., Instructor in Dermatology in the New York Polyclinic, etc. New York: E. B. Treat, 1887. Pp. 21 to 356. [Price, $2.75.]

ACCORDING to some of our would-be savants, the hair is the most direct connecting link between man and his Simian ancestry, and they confidently predict that in a more advanced stage of its evolution the human race will be bald-headed.

The men and women of the present day, however, do not seem desirous of attaining to that crowning civilization when the possession of hair will be accounted a superfluity; on the contrary, they cling most closely to their capillary symbol of savagery, and contemplate its loss with the same dismay as we may imagine our ancestors observed the gradual disappearance of their caudal appendages. According to our present standard, bald-headedness does not represent the highest type of civilization, but rather is associated with disease and age, and those who wish to preserve the semblance of youth, health, and beauty are most solicitous to preserve their capillary attractions.

Perhaps upon no other subject is the physician more frequently consulted than upon the loss of the hair and the best means of preserving it, while thousands of nostrum-venders find in an eager and credulous public ready purchasers of their "hair restoratives," "tonics," etc.

A scientific treatise upon the diseases of the hair and scalp has a great interest both for the specialist and for the general practitioner, not only on account of the intrinsic importance of the subject, but also because of the lack in medical literature of any complete and systematized collation of our knowledge respecting these diseases.

There have appeared many monographs and treatises on the hair, but they have been more or less incomplete and rather of a popular than a scientific character. While certain diseases of the scalp which occur in connection with diseases of the general integument have been treated of more or less fully in our text-books on dermatology, the essential diseases of the hair have received a brief and for the most part an unsatisfactory consideration. The most important contributions which have been made to our knowledge of these subjects are found scattered here and there in periodical medical literature, and are for the most part inaccessible to the general profession.

Dr. Jackson deserves great credit for his painstaking researches through this heterogeneous collection, and the admirable judgment displayed in winnowing the wheat from the chaff. The work before us contains a concise and at the same time complete presentation of all essential facts relating to the diseases of the hair and scalp, special prominence being given to the more practical points pertaining to their diagnostic treatment.

In Part I are considered the anatomy and physiology of the hair and the hygiene of the scalp and hair, Part II treats of the essential diseases of the hair, Part III of parasitic diseases of the hair, Part IV of diseases of the hair secondary to diseases of the skin, the whole concluding with a complete bibliography. Too much praise can not be given to the author for the compilation of this very complete and systematically arranged bibliography, the extent and variety of which illustrate the importance of the subject. It will prove of invaluable service to those wishing to prosecute further investigations in this direction.

The work is embellished by numerous cuts illustrating the anatomy of the hair, as well as the clinical appearance of many of the diseases included within this important class of affections.

The author's practical familiarity with the subjects under consideration is evident on every page, and we most cordially commend the book to the profession as the only complete, systematic, and scientific treatise on diseases of the hair and scalp that has appeared in this country.

*The Efficacy of Coca Erythroxylon.* Notes and Comments by Prominent Physicians. Paris and New York: Mariani & Co. Pp. 61.

THIS work comes to us as a supplement to the fifth edition of M. Mariani's admirable "Treatise on Erythroxylon Coca," and certainly deserves professional recognition. While not entering into the exhaustive details embodied in former works, it substitutes therefor that which from a practical standpoint is far more valuable—*i. e.*, clinical data from competent observers. A careful selection of articles relating to coca will be found in its pages, and much that is instructive and interesting can be gathered from its perusal. This work comes at an opportune time, as it reconciles many conflicting statements and opinions regarding the efficacy of coca.

### BOOKS AND PAMPHLETS RECEIVED.

A Practical Treatise on Diseases of the Skin. By John V. Shoemaker, A. M., M. D., Professor of Skin and Venereal Diseases in the Medico-chirurgical College and Hospital of Philadelphia, etc. With Colored Plates and Other Illustrations. New York: D. Appleton & Company, 1888. Pp. viii–633. [Price, $5.]

The Nature of Contagion. By J. W. McLaughlin, M. D., Austin, Texas. [Reprinted from "Daniel's Texas Medical Journal."]

Congenital Talipes Equino-varus. By Charles L. Scudder, of Bos-

ton. (The Boylston Prize Paper of the Boylston Medical Society of Harvard University for the Year 1887.) [Reprinted from the "Boston Medical and Surgical Journal."]

A Practical Treatise on the Medical and Surgical Uses of Electricity. Including: Localized and General Faradization; Localized and Central Galvanization; Franklinization; Electrolysis and Galvano-Cautery. By George M. Beard, A. M., M. D., etc., and A. D. Rockwell, A. M., M. D., etc. Sixth Edition. Revised by A. D. Rockwell, M. D. With nearly Two Hundred Illustrations. New York: William Wood & Company, 1888. Pp. xxx, 758.

Third and Fourth Biennial Reports of the Eye and Ear Clinic at the Central Dispensary and Emergency Hospital of Washington, D. C. Dr. Swan M. Burnett, Director, etc. Including a Report of the Postgraduate School of Ophthalmology, and a Bibliography, of the Director.

A Year's Work in Laparotomy (Forty-five Operations). By Paul F. Mundé, M. D., etc. With Four Photo-engraved Plates. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Drainage after Laparotomy. By Paul F. Mundé, M. D., etc. [Reprinted from Volume XII, "Gynæcological Transactions."

Contribution à l'étude de la syphilis des fosses nasales. Par le Dr. E. J. Moure, Professeur libre des maladies du larynx, des oreilles et du nez, etc., Paris.

A New Method of treating Episcleritis. By David Webster, M. D., etc. [Reprinted from the "International Journal of Surgery and Antiseptics."]

Agnosticism, based on Physical Science. Second (revised) Edition. By Alex. W. Stein, M. D., Visiting Surgeon to Charity Hospital, New York, etc., 1888.

Nouvelle méthode de traitement de la diphthérie. Par le Docteur G. Guelpa, Membre de la Société de médecine pratique, etc. Contribution au traitement de la diphthérie. Premières applications de la méthode de traitement de la diphthérie faites a l'hôpital Trousseau. Considérations et propositions au sujet d'un cas de diphthérie. Paris: Octave Doin, 1887. Pp. 7 to 76.

The Bones of the Leg considered as One Apparatus. By Thomas Dwight, M. D., Parkman Professor of Anatomy at Harvard University. Boston: Cupples & Hurd, 1888. Pp. 18.

Fifth Annual Report of the New York Skin and Cancer Hospital.

The First Quarterly Report of the Michigan State Laboratory of Hygiene. By Professor Victor C. Vaughan, M. D., Ph. D., etc. [Reprinted from the "Annual Report of the Michigan State Board of Health" for the Year 1887.]

Acute Psychoses following Gynæcological Operations. By Edward J. Ill, M. D., etc., Newark, N. J. [Reprinted from the "Pittsburgh Medical Review."]

Dangers in Gasoline. By John H. Kellogg, M. D., etc., Battle Creek. [Reprinted from the "Annual Report of the Michigan State Board of Health" for the Year 1887.]

The Nervous System and the Mind. A Treatise on the Dynamics of the Human Organism. By Charles Mercier, M. B. London and New York: Macmillan & Co., 1888. Pp. xi–374. [Price, $4.]

The Passage of Air and Fæces from the Urethra. By Harrison Cripps, F. R. C. S., Assistant Surgeon to St. Bartholomew's Hospital, etc. London: J. & A. Churchill, 1888. Pp. 80.

Certain Foods in Relation to Treatment. By John A. McCorkle, M. D., Professor of Principles and Practice of Medicine and Clinical Medicine in the Long Island College Hospital. [Reprinted from the "Brooklyn Medical Journal."]

A New Method of treating Episcleritis. By David Webster, M. D., Professor of Ophthalmology in the New York Polyclinic, etc. [Reprinted from the "International Journal of Surgery and Antiseptics."]

The Cure of Hernia. By Henry O. Marcy, A. M., M. D., of Boston, Mass. [Reprinted from the "Journal of the American Medical Association."]

Cystitis in the Female. By Henry O. Marcy, A. M., M. D., etc. [Reprinted from the "Journal of the American Medical Association."]

Elixir Paraldehyde. The Coming Remedy as a Substitute for Opiates and Anodynes. By A. B. Cook, A. M., M. D., etc., Louisville, Ky. [Reprinted from "Progress."]

Salt in Dermal Hygiene and Therapeutics. By Henry G. Piffard, M. D., New York. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Sur un cas de cirrhose hypertrophique pigmentaire dans le diabète sucré. Par A. Brault et L. Galliard. [Reprinted from the "Archives générales de médecine."]

The Efficacy of Coca Erythroxylon, Notes and Comments by Prominent Physicians. Paris and New York: Mariani & Co. Pp. 61.

# Reports on the Progress of Medicine.

## GENERAL MEDICINE.

By H. N. VINEBERG, M. D.

**The Temperature in the Epileptic State.**—Professor Bourneville ("Le progrès médical," 1887, No. 35) distinguishes two periods in the epileptic state, which he terms the *convulsive period* and the *meningitic period*. In the article there are temperature charts which show elevation of temperature in cases with only the convulsive period which ended in recovery. In one case the thermometer registered 40·3° C. (104·5° F.). In two other cases—one terminating fatally during the convulsive period, the other during the meningitic period—the temperature respectively was 41·4° C. (106·5° F.) and 42·4° C. (108° F.).

**Great Reduction of Temperature by Strangulation, and Recovery.**—Bourneville (*ibid.*, No. 38, 1887) relates the case of a man sixty-two years of age who was found in his room suspended from the ceiling by a rope around his neck, in whom the rectal temperature registered as low as 34·1° C. (93·4° F.). Sensibility and consciousness were completely abolished, the pulse was just perceptible (84), and the respirations were irregular and diaphragmatic. The patient was resuscitated by frictions, stimulation, etc., but the temperature did not reach its normal height until five hours after he had been found.

**The Treatment of Exophthalmic Goitre.**—Dr. R. Vigouroux (*ibid.*) No. 43) lays great stress upon the kind and method of application of electricity in the treatment of this affection. He employs faradization in the following manner: (1) A large electrode from 7 to 8 ctm. in diameter is applied to the inferior part of the neck posteriorly, and is held in position by the means of a band. The other electrode is olive-shaped or button-shaped, less than 1 ctm. ($\frac{2}{5}$ in.) in diameter, and is connected with the negative pole of the battery. This electrode is applied behind the angle of the jaw, in front of the sterno-mastoid muscle, and is made to press upon the carotid artery. The application is made during a minute and a half, and is then transferred to the opposite side, where it is continued for the same length of time. (2) The small electrode is then passed lightly over both orbiculares palpebrarum in turn. (3) The olive electrode is now replaced by a plate 4 ctm. ($1\frac{3}{5}$ in.) in diameter, and is applied to the thyreoid tumor. (4) The small electrode is now rendered positive, and is applied to the precordial region, in the third intercostal space, to the left of the sternum, and the current should be sufficiently strong just to excite fibrillar contractions. The application is made for two or three minutes. The séances are repeated every second day. There is no advantage in repeating them daily. The ill success of the treatment of this affection by some, the author thinks, is due to want of attention to the foregoing details. In most cases it was the only treatment he employed, and his results were exceedingly good. Hydrotherapeutics is unnecessary with this form of treatment.

**Treatment and Pathology of Catarrhal Icterus.**—M. A. Chauffard ("Rev. de méd," 1887, No. 9) publishes seven cases of catarrhal icterus in which he used enemata (2 quarts) of cold water, as first recommended by Krull. Thinking that he might shorten the course of treatment, he gave the enemata twice daily to some of the patients, but while these were well borne the treatment was no more successful than if only one had been given. The light color of the fæces in catarrhal icterus is due not only to absence of bile, but also to the presence of fatty products. In two cases in which the author examined the fæces with the microscope, in addition to plaques of fatty matter, he found acicular

crystals which corresponded in all respects to saponified fat. In all his cases he observed enlargement of the spleen. This enlargement of the spleen has been explained on a purely mechanical theory, the interlobular biliary vessels being filled with bile pressing against the interlobular branches of the portal vein, and thus bringing about congestion of the portal blood-vessels. This explanation the author does not think satisfactory, for the degree of splenic enlargement is not always in proportion to the extent of the biliary obstruction. He holds that catarrhal icterus is an infectious disease, and that the enlargement of the spleen is due to specific organisms which circulate in the blood. The action of cold-water enemata in treatment he explains by a peristaltic action which is set up along the whole length of the intestines; and, secondly, by a reflex action from the duodenum to the biliary ducts. In support of this opinion, a case is cited in which the enemata were followed by an attack of hepatic colic, and subsequently by attacks of intermittent hepatic fever. The treatment is therefore contra-indicated where calculi in the bile-ducts are suspected.

**Incubation Period of Roetheln.**—Dr. F. Willcocks and Dr. G. Carpenter ("Practitioner," Sept., 1887) observed an outbreak of rötheln and paid particular attention to the period of incubation. This period is stated by different authorities as varying from six to twenty-one days. Dr. Bristowe cites one undoubted case of five days' duration, and the authors observed one case in which the period was of about the same duration. In another of their cases the incubation stage was eight days. A third case gave a period of fourteen days.

[In an outbreak of this disease observed by the reporter on board of a sailing vessel the incubation period of the first cases was at least over thirteen days, for that period had elapsed after leaving port before the disease manifested itself.]

**Intra-cerebral Hæmorrhage in the Young.**—Dr. B. Sachs ("Jour. of Nervous and Mental Diseases," Aug., 1887), is of the opinion that hæmorrhage within the cerebral substance in the young is commoner than it is supposed to be. He narrates in detail the histories of two cases which ended in recovery, and hence the opportunity of confirming the diagnosis by an autopsy was lost. The clinical events, however, as related by the author, pointed very strongly to that pathological state as being the cause of the symptoms. The first case occurred in a healthy child, two years and a half old, which had just recovered from a slight attack of amygdalitis. The day preceding the night during which the attack of hemiplegia set in it was noticed that the child had been very quiet and gave expression to no vocal sounds. The paralysis, which was not complete, affected the right side of the body and was attended with aphasia. Improvement set in on the fifth day, the child began to speak on the thirteenth day, and all symptoms disappeared in three weeks. No further cerebral trouble was noticed, although the child had gone through an attack of whooping-cough some months later. The author, in making the diagnosis, properly excluded (1) diphtheritic paralysis, which seldom or never occurs as a hemiplegia, (2) thrombosis, and (3) embolism. The latter condition was excluded because the heart was healthy, there had been no history of rheumatism, and, in addition, the onset was gradual.

The second case was observed in a young man nineteen years of age, with a good family history, who was seized with a slight hemiplegia while preparing for his college examinations. The onset was gradual, without coma or convulsions, and after three weeks, during which the symptoms had receded typically, the paralysis disappeared completely. Exactly one year and one day later he was seized with a similar attack, manifesting itself first by numbness. After walking home, an hour and a half later, he became comatose, in which condition he remained for eighteen hours. There were no convulsions. The paralysis, which was complete, affected the left side, and, though the patient was left-handed congenitally, but right-handed by education, there was no aphasia. The author draws attention to the second case, which illustrates the danger of repeated attacks of hæmorrhage when it occurs in very young persons. As to the pathology of these cases, the analogy with adult cases justifies the supposition that the lesion is a similar one—miliary aneurysms of the middle cerebral artery. The author refers to Osler's case, published in the "Canada Medical and Surgical Journal" (1886), in which an aneurysm of the anterior cerebral artery was found in a boy six years of age.

**Cases of Spontaneous Rupture of the Aorta and Heart.**—Dr. W. Coode Adams ("Lancet," Oct. 1, 1887) reports two cases of this kind. One case occurred in a woman twenty-three years of age, of healthy parentage and family history. She had had typhoid fever eleven months before. She was suddenly seized with cardiac pain one day, but recovered in a few days. Some days later she had a similar attack, attended with faintness and vomiting. She became comatose, and died fourteen hours afterward. At the autopsy, a small opening just sufficient to admit a probe was found in the posterior wall of the aorta at its junction with the left ventricle. No areas of fatty degeneration could be detected. The valves of the heart were normal.

The second case was in a man fifty-nine years of age, who had suffered for some months with occasional but slight pain in the cardiac region, the pain radiating into the arms. One morning he was seized with vomiting, and was found dead a few hours later. A small valvular opening was found in the anterior wall of the left ventricle. The mitral and tricuspid valves were normal, the aortic valves were atheromatous, and the coronary arteries had undergone extensive calcareous degeneration.

**On the Incidence of Albuminuria among the Sick.**—Dr. I. Grainger Stewart ("Brit. Med. Jour.," Oct. 15, 1887) has made careful investigations regarding the presence of albuminuria in 150 consecutive patients in private practice, in 150 consecutive cases in the Royal Infirmary, in 100 patients at the out-door department, in 50 patients in the Royal Hospital for Sick Children, in 40 cases in one of the wards of this hospital which is devoted to the treatment of patients suffering from alcoholism, in 50 patients in the Fever Hospital, and in 25 cases of women who had been confined in the Maternity Hospital. The result showed that albumin was present in the urine in 24 per cent. of the private patients, in 49 per cent. of the infirmary patients, in 19 per cent. of the Out-door Infirmary patients, in 14 per cent. among the children, in 66 per cent. in the fever patients, and in 72 per cent. in the maternity patients. The probable causes of the albuminuria were nephritic, febrile, vascular, alimentary, nervous, glycosuric, functional, and accidental. [For further details we must refer those interested in the subject to the original article, which is poorly adapted for condensation.]

**A New Contrivance to aid in the Diagnosis of Heart Murmurs.**—Dr. W. Whitla (*ibid.*, Nov. 26, 1887; "Practitioner," Feb., 1888) describes this contrivance, which he has termed a systolometer, and its mode of application as follows: It consists of a small saucer-shaped disc of metal, about half an inch in diameter, from the concave surface of which arises a hollow stem, which receives a fine silver wire capable of being retained by the tiny thumb-screw in the socket formed by the hollow stem. The end of the wire is bent at a suitable angle, and, tipped with a small bead, is made probe-pointed. The convex side of the disc is warmed, and, being tipped with lead plaster, will firmly adhere when pressed against the chest-wall over the region of the apex-beat of the heart. The motion of the impulse is thus communicated to the wire, which, acting as a lever, can be made to exaggerate each movement in proportion to the length of wire. If, now, in the vicinity of the apex-beat the ordinary stethoscope is applied and the wire so adjusted that it taps slightly against the wood of the stethoscope, the ear will hear what may be practically regarded as an artificial standard systolic sound by which murmurs can be timed with ease and accuracy.

**On the Causes of Subcutaneous Inflammation and Suppuration.**—Dr. P. Grawitz and Dr. W. de Bary ("Virchow's Archiv," Bd. cviii, Hft. 1) have been experimenting to determine the relationship between subcutaneous injection and inflammation and suppuration. The literature on this subject up to the present time shows that (1) in man various subcutaneous injections may be made, even without disinfected instruments, without evoking suppuration; (2) that in dogs as much as 350 c. c. of water and over 200 c. c. of oil and milk, which have been rendered absolutely sterile, may be absorbed without any untoward effect; and (3) that when in dogs the injection of indifferent sterilized fluids is followed by suppuration, bacteria in the pus are detected. Of different fluids which can not be taken up by the lymph-vessels without further change—such as dilution and division—solutions of salt and of sugar were first experimented with. These solutions, when injected repeat-

edly or in large quantities, gave rise to œdema, but not to suppuration, even when the solution contained numerous staphylococci. Suppuration occurred only when the skin became necrosed, or when the animals wounded it by biting or by scratching. Acrid substances, soluble in water, may be divided into three groups, according to whether they destroy, hinder the growth of, or are indifferent to, the pus coccus.

To the first group belong corrosive sublimate and nitrate of silver, which, in five per cent. and weaker solutions, certainly kill the pus coccus. Of the second group, the mineral acids, potash and soda solutions, and ammonia, were subjected to experimentation. Acids in one per cent. solutions were absorbed without injury, even when pus cocci were injected at the same time. The same results were obtained with dilute solutions of potash. Concentrated solutions of this agent produced a soft hæmorrhagic mass, but no suppuration. On the other hand, ammonia, in sterilized solution, was followed in the dog by suppuration; cultivations of the pus remained sterile; weak solutions, even with the addition of pus cocci, were simply absorbed; but, on the injection of stronger solutions with pus cocci, these were found in large numbers in the developed abscess.

These experiments show that, in dogs and rabbits, the subcutaneous injection of pus cocci into normal subcutaneous tissue can not evoke inflammation, and, further, that chemical substances of various kinds, free of bacteria, under certain conditions, will produce suppuration, and, when the solution is of a certain strength, it is certain to produce suppuration in the right species of animal.

**The Cure of Anthrax by Bacteria.**—Pawlowsky ("Ctrlbl. für klin. Med.," 1887, No. 39) has had the following results with this novel method of treatment: Cases of local anthrax were cured by the subcutaneous injections of various micro-organisms, but most promptly with Friedländer's pneumococci. The yellow pus cocci had a similar effect, but the *Bacillus prodigiosus* was uncertain in its action. A cure of general anthrax was obtained only occasionally, and here also the best results were obtained with the pneumococcus. The injection of the *Staphylococcus aureus* into the circulation did not save the animals with anthrax, neither did the cocci of erysipelas, or the *Bacillus prodigiosus*. A microscopical examination confirmed the progressive phases of the struggle between the organism and the anthrax bacilli in all the foregoing experiments. These phases were illustrated by the lesser number of the bacilli in the organism, and in the taking up and destruction of these by the phagocytes.

**Trismus or Tetanus Neonatorum.**—Dr. E. Peiper (*ibid.*, No. 42) has confirmed Beumer's experiments, published recently, which went to show that tetanus could be transmitted to mice and rabbits by inoculating them with portions of tissue from the umbilical wound of a child suffering with trismus. Peiper carried the experiments further, and made inoculations with sterilized cultivations of the tissue, which showed, among various forms of cocci, small, delicate rods. Of six mice thus inoculated, all were attacked, after a variable period, with tetanus. Two guinea-pigs were inoculated with portions of muscle from these mice, and in from four to five days they also showed unmistakable symptoms of tetanus. These experiments teach how essential it is to treat the umbilicus in the newly born with the greatest care. They also show how the disease may be carried about from one to another by unclean hands and instruments.

**The Influence of Traumatism upon the Origin of Gastric Ulcer.**—A. Ritter (*ibid.*, No. 43) has undertaken to test by experiments on animals the clinical observations of Leube, and the post-mortem evidences in one case found by Hofmann, regarding the origin of gastric ulcer through traumatism of the external surface in the region of the stomach. In three instances in which dogs, after being well fed with meat and afterward anæsthetized, were hit several times with a hammer in the region of the stomach, and then killed, the following conditions were found: In one case, in addition to rupture of the left lobe of the liver and copious hæmorrhages into the abdominal cavity, there was a fresh hæmorrhage under the mucous membrane of the stomach, in another case there were two hæmorrhagic elevations of the mucosa, and in the third case the results were negative. The author maintains that in the two instances in which pathological changes were found, if the dogs had been allowed to live under certain conditions the digestive action of the gastric juice would have produced ulcers after a time. He draws attention to the circumstance that in the female sex the conditions for the origin of gastric ulcer in traumatism exist in the tight-laced corsets.

**Experimental Researches regarding the Causation of Gastric Ulcer.**—Dieches (*ibid.*, No. 47), taking into consideration the circumstance that statistics show that gastric ulcer occurs with great frequency in cooks, undertook to carry out some experiments regarding the rôle hot food plays as a factor. Two medium-sized dogs were slightly narcotized and hot soup of a temperature of 50° (R. or C.?) was introduced into the stomach. The dogs were afterward killed by anæsthetization. The autopsy revealed in one of the dogs a small hyperæmic patch in the neighborhood of the pylorus caused by a small hæmorrhagic extravasation between the mucous and muscular layers. In the other dog there was also found on the posterior wall a small hæmorrhage between the mucous and muscular layers, with slight elevation of the mucous membrane. In addition to this there were, contiguous to the pylorus, two small areas with the typical appearance of gastric ulcer. The experiments, therefore, confirmed the clinical observation that hot foods act as a factor in the causation of ulcer of the stomach.

**Asthma Crystals without Asthma.**—Dr. Pfuhl, an army surgeon ("Dtsch. med. Ztg.," 1887, No. 76), relates the case of a soldier whose expectoration contained numerous crystals described by Leyden as being characteristic of asthma without the slightest evidence of that affection being manifest. The author has examined the sputa of 855 patients suffering with diseases of the lungs and found the crystals only in this case.

## Miscellany.

**On the Relations of the Profession to the Public.**—In concluding his annual address before the Philadelphia County Medical Society, January, 1888, the president, Dr. J. Solis-Cohen, commented as follows on the relations of the profession to the public:

It is to be deplored, on the score of professional ethics, that mention of some of our scientific work is occasionally noted unofficially in the public newspapers, despite the express interdiction in our by-laws. Whether this prohibitory clause is deemed judicious or not, it is plainly the duty of all members to accede to its behests. Those who disapprove of it should present their reasons for so doing in full meeting and should endeavor to have it rescinded. They have neither the right to ignore it on the one hand, nor the right to disobey it on the other. On several occasions when reporters of the daily press have been present at our meetings they have assured me that they were present on invitation of a member; that they had no desire to intrude, and had believed that their presence would be agreeable to the society. This subject leads me to offer a few remarks upon certain relations of the profession to the public. While there is no reason to doubt that much of the individual editorial advertisement of subjects discussed or to be discussed at societies, or of operations performed or to be performed in public places or in private, is due to officiousness on the part of a student, a follower, an attendant, or a patient, there is equally good reason to believe that most of it is courted, directly or indirectly, by the individual most interested. Of this fact I have been amply assured by newspaper men who have been my own patients, and to whom I have put the question direct. I have been assured, further, that it could be taken for granted that little matter of personal medical importance ever gains access to the papers without the knowledge of those most intimately concerned. On the other hand, it is equally true that matters of some immediate momentary interest to the public do not always reach the newspapers, even when passing through the mails in hundreds of notices openly printed upon postal cards.

While it is gratifying to believe that this itch after newspaper notice may be much less prevalent in Philadelphia than in some other localities, the hope is to be indulged that it may eventually become entirely extinguished. The disease at present is in great measure a mere matter of taste—quite poor taste, according to the ethics of the Philadelphia County Medical Society.

One custom in which the ordinary conduct of the physicians of Philadelphia is to be commended in their relations to the public consists in their unwillingness to cater to gratifications of the morbid appetite of the newspaper public for tattle as to the nature of the diseases with which some of their distinguished patients may be afflicted, and as to the prospects of their death or survival. Propriety indicates that such inquiries should be referred to the patient if he is in a responsible condition; or, if not, to that member of the family upon whom the responsibility has devolved. The confidential relations of a patient to his physician should remain undisturbed even when the patient is no longer competent to withdraw his confidence, and no communications presumptively disagreeable to him in his senses should be furnished for press gossip without the consent of those who are most immediately interested. The pleasure derived by an invalid from the daily perusal of his favorite newspaper is often exceedingly great—far greater than when, under the press of affairs, he read chiefly headings and telegraphic items. He reads it much more thoroughly, sometimes even to the advertisements. As he reads day by day of what is going on in the great world outside, his little world of bedroom life seems somewhat less constricted. Let us avoid curtailing his gratification by acts of ours. If his newspaper can not be taken up without a dread of seeing some paragraph discussing the nature of his malady and the prospects of his early demise, this innocent source of enjoyment is poisoned for him. He must rest content with a mutilated paper, the very gaps in which are repulsively suggestive, or he must consent to have it read to him, or give it up altogether and thus become deprived of taking interest in many things outside of his own illness. It is hard enough for him to fear or to know that his malady is incurable, without having the fact forced upon his attention at some comparatively happy moment when it is out of his thoughts. Harder still, perhaps, to steel himself into indifference.

It is unnecessary to mention examples. They must be familiar enough. In some instances there has been abundant reason to believe that death has been hastened by thoughtless comments in newspapers. Shall the individual always be sacrificed to the multitude? It has been stated that occasionally, when potentates or very wealthy individuals have been the subjects of these items, special copies of newspapers have been printed for their use, in which the objectionable personal passages of the general edition have been replaced with other matter. But there is little hope that the sores of the afflicted will not be exposed to public gaze, unless their own physicians protect them by the charity of their reticence. The public maw is so rapacious that the average newspaper man dares not deprive it of any tidbit, however unfit the food, and, worse than the cannibal who sometimes kills the sick man that his people may devour him, the editor sometimes delivers the sick man to his readers that they may devour him even while he is dying.

**The Medical Department of the University of Buffalo.**—The forty-second annual commencement exercises were held on Tuesday, February 28th. The degree in medicine was conferred on forty-four candidates.

The thirteenth annual meeting of the Alumni Association was held on the same day. The address of welcome was delivered by Dr. M. D. Mann.

**The Law of Compensation.**—"It is reported," says the "Evening Wisconsin," "that a Georgia farmer made $100 off an acre planted in watermelons, and a physician in the neighborhood made $200 off the same acre."

**Medicine and the Law.**—The similarity of these professions lies in the fact that members of each are visited for the same purpose—to enable a man to recover. And the likeness continues in that it is often difficult to recover from the recovered man.

**The Health of Boston.**—During the week ending Saturday, March 3d, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 18 cases and 6 deaths; scarlet fever, 28 cases and 1 death; typhoid fever, 5 cases and 4 deaths; measles, 56 cases. There were also 29 deaths from consumption, 47 from pneumonia, 1 from whooping-cough, 15 from heart disease, 8 from bronchitis, and 4 from marasmus. The total number of deaths was 207, against 187 in the corresponding week last year.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 2d:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending February 11th corresponded to an annual rate of 22·2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 15·2, and the highest in Preston, viz., 36·4 in a thousand. Small-pox caused 31 deaths in Sheffield, 1 in Bristol, 1 in Leeds, 2 in Oldham, and 1 in Nottingham.

*London.*—One thousand eight hundred and thirty-eight deaths were registered during the week, including 15 from measles; scarlet fever, 36; diphtheria, 40; whooping-cough, 154; enteric fever, 12; and diarrhœa and dysentery, 12. Diseases of the respiratory organs caused 504 deaths; different forms of violence, 58; and 4 suicides were registered. The deaths from all causes corresponded to an annual rate of 22·4 in a thousand. In greater London 2,361 deaths were registered, corresponding to an annual rate of 22·3 in a thousand of the population. In the "outer ring" 12 deaths from diphtheria, whooping-cough, 48, and scarlet fever, 6, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending February 11th in the sixteen principal town districts of Ireland was 29·6 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 8·5, and the highest in Lurgan, viz., 71·8 in a thousand. In Dublin 202 deaths were registered, including 1 from measles; whooping-cough, 9; scarlet fever, 6; enteric fever, 2; diarrhœa, 2; and dysentery, 1.

The deaths registered in Ireland during the quarter ending December 31, 1887, corresponded to an annual rate of 17·5 in a thousand.

*Scotland.*—The deaths registered in eight principal towns during the week ending February 11th corresponded to an annual rate of 22·5 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 14·4, and the highest in Aberdeen, viz., 27·5 in a thousand. The aggregate number of deaths registered from all causes was 568, including 13 from measles; diphtheria, 8; scarlet fever, 8; whooping-cough, 24; fever, 2; and diarrhœa, 7.

During the quarter ending December 31, 1887, the deaths registered corresponded to an annual rate of 18·8 in a thousand of the estimated population.

*Buenos Ayres.*—The United States minister, in his dispatch dated January 12, 1888, states that cholera has appeared at Salta. "In the past three days there have been 20 cases and 7 deaths. The Government has sent a number of physicians there with a full supply of medicines. Salta is a city of 40,000 inhabitants, located near the 24th parallel, 10 degrees north of Buenos Ayres, and not far from Bolivia. It is a beautiful place 3,780 feet above the sea-level, and at times inundated by the Arias and Silleta rivers, which is always followed by malarial fevers. It is regarded very unhealthy generally."

*Callao.*—The United States consul, in his dispatch dated January 25, 1888, states that "the latest cholera reports from Chili show a falling off of the disease at Santiago, and a slight increase at Valparaiso and the southern ports. The most unfavorable statement refers to the appearance of two cases of the epidemic at the city of La Serena, a short distance inland from Coquimbo to the northward of Valparaiso. This is the only indication of a deviation in the course of the disease, which had been proceeding steadily in a southwardly direction. Here the interdiction of all vessels from Chilian ports is still vigorously maintained, and last week a British man-of-war, the Hyacinth, from Arica, was refused admittance, although official interference was resorted to. Steamers arriving from Panama, and touching at Guayaquil, are subject to five days' quarantine of observation, owing to the appearance of yellow fever at the last-named port. The public

health of Lima and Callao continues to be satisfactory, and no cases of cholera or yellow fever have made their appearance on the Peruvian coast."

*Santiago de Cuba.*—The sanitary inspector reports, for the week ending February 18th, 3 cases of yellow fever at the military hospital. In the country there are still some cases of small pox, but they are of a mild character, and are rapidly getting well. The city, he reports, has never shown a better sanitary condition than it has done for the last two or three weeks.

*Havana.*—One death from yellow fever and 27 from small-pox are reported for the week ending February 18, 1888.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | February 11. | 2,220,945 | 1,131 | .. | .. | 13 | .. | 9 | 6 | 52 |
| Glasgow | February 11. | 545,078 | 243 | .. | .. | .. | .. | .. | 6 | 3 |
| Warsaw | February 4. | 439,174 | 194 | .. | .. | 7 | .. | .. | 1 | 4 |
| Calcutta | January 7. | 433,219 | 307 | 19 | .. | .. | .. | .. | .. | 2 |
| Calcutta | January 14. | 433,219 | 265 | 32 | .. | .. | .. | .. | .. | .. |
| Amsterdam | February 4. | 389,916 | 182 | .. | .. | .. | .. | 2 | .. | 3 |
| Munich | January 28. | 275,000 | 137 | .. | .. | .. | .. | 1 | 2 | 5 |
| Bristol | February 11. | 226,510 | 77 | .. | .. | .. | .. | .. | 1 | 1 |
| Belfast | February 11. | 221,122 | 142 | .. | .. | .. | .. | 1 | .. | 1 |
| Genoa | February 11. | 179,370 | 110 | .. | .. | 8 | .. | .. | .. | 2 |
| Leipsic | February 11. | 170,000 | 67 | .. | .. | .. | .. | .. | 3 | 5 |
| Trieste | February 11. | 151,500 | 128 | .. | .. | 5 | .. | 2 | 1 | 5 |
| Toronto | February 18. | 130,000 | 25 | .. | .. | .. | .. | .. | .. | 6 |
| Stuttgart | February 11. | 125,510 | 48 | .. | .. | .. | .. | .. | 1 | 2 |
| Bremen | February 4. | 122,000 | 44 | .. | .. | .. | .. | 1 | .. | 1 |
| Havre | February 11. | 112,074 | 101 | .. | .. | 6 | .. | 1 | .. | .. |
| Barmen | February 11. | 109,000 | 42 | .. | .. | .. | 1 | .. | .. | .. |
| Leghorn | February 12. | 101,444 | 65 | .. | .. | .. | .. | .. | 1 | .. |
| Merida | February 22. | 48,711 | 36 | .. | .. | .. | .. | 1 | .. | .. |
| Cienfuegos | February 13. | 35,464 | 40 | .. | .. | 30 | .. | .. | .. | .. |
| Cienfuegos | February 20. | 35,464 | 56 | .. | .. | 42 | .. | .. | .. | .. |
| Guayaquil | January 21. | 30,000 | 69 | .. | 2 | 10 | .. | 25 | .. | .. |
| Guayaquil | January 28. | 30,000 | 65 | .. | 3 | 21 | .. | 17 | .. | .. |
| Sagua la Grande | February 11. | 15,605 | 13 | .. | .. | 4 | .. | .. | .. | .. |

United States.

*Vineyard Haven, Mass.*—The captain and some of the crew of small-pox infected vessels recently quarantined at Boston had previously been ashore at Vineyard Haven. A supply of vaccine virus has been furnished the medical officer of the Marine-Hospital Service for use at that port.

*Red Wing, Minn.*—The secretary of the State Board of Health, in a communication relative to newspaper reports of "winter cholera," states that there is "no occasion for alarm. There are lots of diarrhœa and cases of cholera morbus in Minneapolis. A systematic inquiry is now being made, in co-operation with the local board of health."

*San Francisco, Cal.—Small-pox Epidemic.*—The following are copies of official telegrams relating thereto:

Washington, D. C., *February 25, 1888.*

Surgeon H. W. Sawtelle,
*Marine-Hospital Service, San Francisco, Cal.:*

Applications are being received for aid in small-pox epidemic. Call upon board of health and ascertain what is required.

Hamilton, *Surgeon-General.*

Washington, *February 25, 1888.*

Secretary State Board of Health,
*Sacramento, Cal.:*

Applications are being received for governmental aid in small-pox epidemic. What do you require?

Hamilton, *Surgeon-General.*

Sacramento, Cal., *February 25, 1888.*

Small-pox is scattered throughout this State. Suppose other States want the frontier guarded to keep it [small-pox] from getting out by rail. G. G. Tyrrell, *Secretary California State Board.*

San Francisco, Cal., *February 28, 1888.*

San Francisco Board of Health has informed me that no governmental aid is required on account of small-pox epidemic here.

Sawtelle, *Surgeon, M.-H. S.*

**The Roosevelt Hospital.**—We learn that Dr. Henry B. Sands has tendered his resignation of the position of surgeon to the hospital, to take effect on the appointment of his successor. We understand that it is only the pressure of Dr. Sands's private engagements that has impelled him to take this step, and that he still takes the utmost interest in the institution, the surgical service of which his labors have done so much to build up.

**The Cartwright Lectures.**—The Cartwright lectures of the Alumni Association of the College of Physicians and Surgeons, course of 1888, will be given at the college on Thursday evenings, March 29th, April 5th, and April 12th, at 8.30 o'clock, by Professor William H. Welch, of the Johns Hopkins University, on the subject of "The General Pathology of Fever."

## ANSWERS TO CORRESPONDENTS.

*No. 156.*—As we understand it, a conjoint meeting is to be held in September of the present year, and thereafter once in four years.

*No. 157.*—The last French edition was published in 1870.

*No. 158.*—We see no objection to the use of such a device, and no *a priori* reason why it should not succeed.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### REPORT OF TEN CASES OF INTUBATION OF THE LARYNX, *WITH REMARKS.**

BY J. W. PINKHAM, M. D.,
MONTCLAIR, N. J.

WHEN we consider the great prevalence of diphtheria in this vicinity, its great mortality, and the frequency with which diphtheritic laryngitis becomes its most distressing feature, and with its accompanying stenosis—the determining cause of death—any contribution, however humble, to the study of croup and its treatment has its justification in the importance of the subject.

With especial propriety can this statement be made concerning intubation of the larynx, partly because the operation is new and still, in a certain sense, on trial, and partly because the success already achieved furnishes ground for the belief that, when the method is perfected and the best means have been devised for conducting the after-treatment and averting the accidents which are incident to it, it will show results in percentage of recoveries which will demonstrate its superiority to all other methods.

Owing to the impossibility of obtaining statistics of mortality, as well as the impossibility of ascertaining the rules which have been adopted by different tracheotomists in determining the time of operating, we can make no satisfactory comparison at this time between intubation and tracheotomy.

Those who have performed intubation, and have reported their cases, seem all of them to have followed the rule which has been observed by O'Dwyer in all his cases, and have waited before operating until the symptoms became threatening, until it seemed certain that, without relief, a few hours would bring a fatal termination. Following this rule (certainly most unfavorable to a brilliant record), in about one thousand reported cases the recoveries have been nearly thirty per cent. It is certainly reasonable to hope that when a greater number of operators have become more expert, and more efficient means have been devised for averting incidental dangers, this percentage will be greatly increased.

Last April, you will remember, at the monthly meeting of this society, after having practiced intubation on the cadaver under Dr. O'Dwyer, at the New York Foundling Asylum, until I had acquired, in the opinion of that gentleman, a degree of expertness in introducing and removing the tubes sufficient to justify me in operating on the living subject, and having done so on a patient in the practice of Dr. Nolan, of New York, I had the pleasure of giving you an account of my efforts, and of demonstrating the operation on the cadaver in your presence. Since that time, and principally by courtesy of members of this society, I have performed intubation in ten cases of croup, and it is my purpose on this occasion to give you a history of these cases, and to make such remarks on intubation and the general treatment of croup as have been suggested by my recent experiences.

In all operations requiring rapid and gentle manipulation it is difficult for the operator to restrain himself from using force and prolonging his efforts when he finds that he is unable to accomplish his object quickly and easily. In no operation, perhaps, is it more necessary to exercise self-control in these particulars than in that of intubation of the larynx. The exercise of even a moderate amount of force when the tissues are swollen and tender, as they frequently are in croup, is almost sure to do serious if not irreparable damage, and a prolonged effort not only causes great suffering to the patient, but places him in danger of immediate death from suffocation.

Of these things I was fully aware before I was called upon to operate, having had them impressed upon my mind by what I had heard and read, as well as what I had seen; but I had formed no adequate estimate of the degree to which one is tempted, in the zeal of the moment, to overcome obstacles by muscular effort, and to persist in that effort until it is crowned with success—a success which, gained in this way, is infinitely worse than defeat.

I determined, however, at the outset, at any cost of time, and at any risk of seeming to be inexpert, to act in accordance with the maxim, *quickly, without haste, and without force*, and, as a result of this determination, I am able to state this evening that, to the best of my knowledge and belief, I have not injured the throat of any patient by the exhibition of force, nor endangered his life by persisting too long in my efforts. It is, however, somewhat humiliating to confess that I have succeeded only five times out of twelve introductions in placing the tube in the larynx easily and quickly at the first attempt. In one case I failed four times, succeeding on the fifth attempt; in two cases on the fourth, in one on the third, and in three cases on the second trial.

In two of these cases I encountered a great amount of swelling, making the passage to the larynx so small that I found it not an easy thing to pass the tube along the guiding finger, for want of room, and still more difficult to engage the end of the tube in the laryngeal opening.

In one case there was a spasmodically closed epiglottis, causing it to hug the rim of the glottis so closely that I was unable to get my finger behind it until I had made several trials. In two cases I was baffled in my efforts by excessive gagging, which put the throat of the patient into rapid and irregular motion, thus defeating me in my attempts to engage the tube in the opening of the glottis. I have learned that success in easily introducing as well as removing the tube depends to some extent on careful attention to what at first sight might seem small and unimportant details. So small a matter as the selection of a suitable chair for the person who holds the child is important, for it is necessary that the occupant of this chair should sit erect, so that he can hold the child erect, with its feet between his knees. The plainest kind of chair should be provided for this

* Read before the Orange Mountain Medical Society, February 24, 1888.

purpose, just high enough to allow its occupant's feet to rest upon the floor. In such a chair, sitting erect, with his head inclined a little to the right to make room for the head of the child, he should hold it, firmly but not forcibly, with its head well above his left shoulder. The assistant, whose duty it is to hold the child's head and keep it in the right position, should stand a short distance behind the chair, and should take the child's head between his hands in such a way that he can prevent any motion of the head, and can steady the gag with the middle finger of his left hand and keep it from slipping forward—a thing, by the way, which it seems very much inclined to do. Any change in the relation of the parts after they have been adjusted should be prevented by this assistant. He should hold the head so that the axis of the mouth is at right angles with the axis of the larynx, and so that the axis of the larynx is at right angles with the floor.

I will say here that I am dwelling only on the points which I have not seen mentioned by those who have written on the subject. I am not attempting to describe the operation in full, but to point out the stumbling-blocks which have impeded my own way.

The physician called upon to perform intubation generally finds himself in an atmosphere of alarm if not of actual panic; and, as all emotions are more or less contagious, there is danger that his own nervous equilibrium may be disturbed and his muscles become less obedient than usual to the mandates of his will at the very moment when he wishes them to do their best work, if he does not provide against the exhibition of intensely wrought-up feelings in his presence by insisting that all leave the room except those engaged in the operation. After the relatives and sympathizing friends have departed, the gag has been put in place, and the head of the patient is properly adjusted, the child should be allowed a minute or two to recover from its agitation before the operation is commenced. During this time the operator can with great advantage go over in his mind the different steps of the operation. He should also review the position of his patient and correct any errors which he may detect. I have sometimes seen the blanket which is wrapped around the child to restrain its arms and legs brought up around its neck in such thick folds as to constitute an obstacle to the placing and retaining of the gag, especially of the old style of gag. With Denhard's there could hardly be any difficulty from this cause.

I have seen it stated by several writers in medical journals that intubation of the larynx is an operation which may safely be attempted by the general practitioner without previous practice on the cadaver or on animals, provided he makes himself familiar with the use of the instruments. From this opinion I feel compelled to dissent. My small experience forces upon me the conclusion that the general practitioner—unless he possess expertness in manipulative procedures far above the average, and has had positive proof that he can do in many similar operations, without instruction and without practice, what the average man can do safely only after considerable training and education of the sense of touch, or unless he has had such special practice in examining and operating upon the larynx, and has such special knowledge of its anatomy, as may fairly entitle him to the name of laryngologist—would be guilty of reckless and almost criminal daring who should attempt intubation except under circumstances of the utmost urgency, when the alternative would be certain death. His chances of relieving his patient without doing him serious injury would be much better if he resorted to tracheotomy. The process by which I have reached this conclusion I will briefly describe.

During the time that I practiced intubation at the Foundling Asylum I witnessed the early and later attempts of several gentlemen who seemed to possess the average amount of intelligence and the average amount of innate and acquired expertness and dexterity, and I feel confident that my judgment is not blinded by my self-esteem when I say that my early efforts (illustrating my natural dexterity) were as successful as those of my fellow-students, and that I acquired by my practice and study during the six weeks of my tuition a facility in performing intubation on the cadaver equal to that acquired by my fellows. What I mean to assert is this: I was able when I finished my course of lessons to operate as quickly, as safely, as surely, and with as much precision of movement as the average student. These students were not boys whose "*tactus eruditus*" had not yet been developed, but men, apparently in the prime of life and fully up to the times in everything, who had left their fields of labor for the purpose of making themselves familiar with this method of relieving laryngeal stenosis, and who had enjoyed for years all the usual opportunities for developing their manipulative skill. Now, if these opportunities for observing the relative success of different operators in the different stages of their efforts and of comparing their success with my own were sufficient to constitute me a judge of what the general practitioner can do in his first attempts in the dead-house, and of the degree of skill he can attain to by practice on the cadaver, and if the assurances of Dr. O'Dwyer and Dr. Brown to the effect that I was not below the average student in natural aptness nor in acquired skill may be taken at their face value, and if my subsequent experience in operating on the living in cases of croup enables me to form an estimate of the difficulties which the general practitioner encounters in performing intubation in such cases, then the opinion stated above is expressed in language none too emphatic.

Of the ten cases of croup in which I have operated, three presented no symptoms of diphtheria, having commenced like a common cold which developed into a bronchitis. The croup appeared from four to eight days after the commencement of the attack. One of these was that of a boy five years old. The tube gave instant relief to his dyspnœa and he did well for three days, taking food fairly well and making his wants known by whispering. He grew weaker, however, and died on the fourth night, apparently of apnœa. It is a matter of regret that the tube was not removed.

The second patient with ascending croup, a girl of thirteen months, was relieved of all croupy symptoms, but continued to manifest symptoms of bronchitis. When the tube was introduced an attempt had been made to perform trache-

otomy, which was abandoned on reaching the thyreoid, leaving the patient in an exhausted condition. The tube remained in for four days, and was removed on account of increasing dyspnœa. There were no symptoms of laryngeal stenosis after the tube was removed, but the patient died seven days after of broncho-pneumonia with marked cerebral symptoms. So far as the croup was concerned the patient recovered. The third case of this group was that of a boy, three years old, who had had symptoms of a cold, with cough, etc., for four days. This patient died in one day after the insertion of the tube, apparently of suffocation.

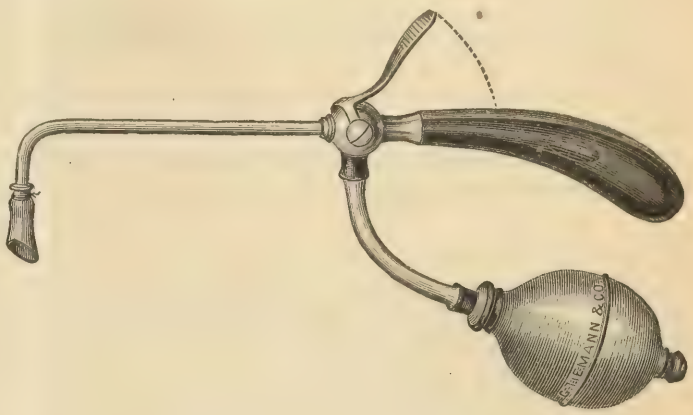
Seven were cases of diphtheritic laryngitis, and two of the patients recovered—viz., a girl of five and a boy of two. The former was a child of poor parents and her surroundings were not favorable. She was recovering apparently from a pharyngeal diphtheria when there was a return of the membrane on the tonsils and uvula, with concomitant invasion of the larynx. Before the introduction of the tube the suffering from dyspnœa was extreme. There was immediate relief, which continued until the end of the sixth day, when the tube was removed. There was no return of croup. Convalescence was, however, retarded by the continuance of the albuminuria which had been a feature of the case, and which was now accompanied by scanty urine and prostration; all bad symptoms, however, disappeared in the course of two or three weeks. This was my fifth case.

My tenth case, up to the time I saw it, had a history exactly similar to the case last described. It was that of a boy, two years and a half old, who had hardly been able to sleep for forty-eight hours, on account of dyspnœa. He was immediately relieved by the tube, and in a few minutes was sound asleep, and continued so for most of the day. He progressed favorably until the commencement of the sixth day, when I removed the tube. It was noticed that the breathing was somewhat embarrassed immediately after the removal, but it was supposed that this would soon disappear, as there was no distinctly croupy element in it.

It rapidly grew worse, however, and at the end of an hour the dyspnœa had become extreme and made the prompt re-insertion of the tube necessary. This relieved him as before, and he retained the tube for fifty-five hours, when he coughed it up. Since that time he has had no signs of croup, and has convalesced rapidly, being at this time, four weeks after the expulsion of the tube, entirely well. This patient also had albuminuria, but it did not complicate convalescence. This child had been treated locally from the start with a solution of mercuric bichloride, and after the introduction of the tube he had it internally as well.

I have used this remedy lately in two other cases of malignant diphtheria, both of which ended in recovery, and I incline, putting my own experience with the reports of others which I have recently seen in the medical papers, to give this remedy the first place among our remedial agents in the treatment of diphtheria.

This patient was fortunate in having for his nurse his own father, a druggist of intelligence, self-reliance, and ingenuity, who on one occasion, when the child was struggling to remove mucus from its throat and was suffering greatly from inability to do so, attached an elastic catheter, properly curved and with its distal end cut off, to a Davidson's syringe and removed what he estimated to be a tablespoonful of mucus, giving the child prompt and entire relief. I had several weeks before this been convinced that accumulation of mucus above the tube often interfered greatly with respiration, and had devised an aspirator which I thought could be used successfully in removing collections from above the tube, and possibly from the tube itself. This instrument is now finished, and, from the tests which I have




been able to apply, I think it will accomplish its object very well.

To use the aspirator, press down the trigger and press the air from the rubber bulb to the extent which seems necessary; then let go the trigger, and, with the forefinger of the left hand as a guide, apply the rubber tip of the aspirator to the head of the tube; then hold down the trigger for two or three seconds while the tip is *in situ*, and then, letting go the trigger, remove the instrument. The operation can be done in five or six seconds, and will give slight inconvenience to the patient.

Five other cases of diphtheritic laryngitis terminated fatally. I will not detain you with their detailed histories at this time, but will state that they were all cases of such severity that recovery was not to be expected, although in every case I believe the symptoms were so mitigated by the tube that we, for a time at least, had hope of a favorable termination. In several cases there is reason to regret that the tube was not removed when symptoms of obstruction occurred. I have become impressed with the importance of keeping the tube and the parts above it free from mucus, and recommend that when there are evidences of its presence the patient be prevented from sleeping too long, and that remedies be given which excite cough and which render the secretions less viscid, and hence more easily removed. On account of their tendency to make the mucus of the throat scanty, thick, and adherent, as well as their tendency to create tolerance of its presence in the throat, I think opium and belladonna ought not to be given. These ten cases of croup occurred in the practice of the following physicians in the order of their cases in point of time:

1. Boy, five years old, died four days after intubation—Dr. Graves.

2. Girl, thirteen months old, wore the tube four days; died six days after its removal.—Dr. Shelton.

3. Boy, three years old, died twenty-four hours after intubation—Dr. Robinson.

4. Girl, aged ten, died three days after intubation—Dr. Van Wagenen.

5. Girl, five years old, *recovered*; wore the tube six days—Dr. Shelton.

6. Boy, two years old, died in twenty-four hours after intubation.—Dr. Whitehorne.

7. Boy, three years old, died in four days after intubation—Dr. Shelton.

8. Girl, eleven years old, died six hours after intubation—Dr. Pierson.

9. Girl, five years old, died one day after intubation—Dr. Harvey.

10. Boy, two years and a half old, *recovered*; wore the tube seven days and seven hours—Dr. Love.

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SIMPLE AND YET VERY EFFICIENT TREATMENT FOR

# DISEASES OF THE KNEE AND ELBOW.*

By V. P. GIBNEY, M. D.,

PROFESSOR OF ORTHOPÆDIC SURGERY IN THE NEW YORK POLYCLINIC, SURGEON-IN-CHIEF TO THE HOSPITAL FOR THE RUPTURED AND CRIPPLED.

*The Knee.*—By way of introduction, let me state that I had the opportunity during the past summer of seeing the practice of a surgeon in Liverpool who is generally respected throughout Great Britain for two or three splints he has invented. The simplicity of the apparatus seems to have commended itself to the English surgeons, but this very element seems to have prevented its acceptance in this country. Orthopædic surgeons with us pride themselves on their beautiful appliances; every one seems bent on devising some complicated apparatus that is best used by himself. I confess to a certain degree of pleasure on seeing in some of the London and provincial hospitals the splints of Hugh Owen Thomas in active use. I do not propose this evening to say anything about his hip-splint, but I want to present his knee-splint, which I think serves the purpose for which it was devised. It practically is a perineal crutch with means for fixing the joint. If any gentleman present this evening has any definite ideas about the value of extension of a joint, with preservation of motion at the articular surfaces, I shall be glad to discuss this question with such an one; but if he only relies on what he has heard or what he thinks he has seen, I think it unwise to enter into such a discussion. My plea this evening shall be for absolute immobilization of a diseased joint. I find that surgeons generally are somewhat afraid to advocate this doctrine, however strong their faith may be. It is not fully settled in the minds of surgeons whether ankylosis is the result of immobilization or the result of inflammation. For my own part, I am willing to affirm, without fear of successful contradiction, that ankylosis depends not upon immobilization, however prolonged, but upon the character and the activity of the inflammation, and upon our failure to secure this object in our therapeutics. Rely, therefore, for relief, both from abscess and from deformity, upon fixation of and protection to the joint. The best way of securing these two ends, in my judgment, is to employ the Thomas knee splint, which I now show you. It consists, as you see, of a ring at each end, the top one set obliquely to fit the pelvis. It is not exactly circular, but is wider in the lower portion than in the upper. The lower ring is circular, or it may be elliptical. The stems are made long enough to extend three or four inches beyond the bottom of the foot, and thus the patient is enabled to walk without doing injury to the affected knee. At the same time, by means of leather pads or the ordinary roller bandage, the limb can be secured in position without interfering with the circulation. In cases where deformity exists the correction may be made under ether, or by gradually applied force, the roller being employed for this purpose. The thigh, for instance, can be secured to the upper portion of the splint and a roller can be applied, passing behind the calf and over the rods, while an effort is made to bring the limb into line with the splint. A very good way is to combine these methods—that is, place the patient under ether, extend slowly, and gain what you can with as little risk as possible; then complete the correction by means of the roller, as stated above. I have myself usually employed the splint in connection with the solid plaster-of-Paris bandage, but, from a careful study of Thomas's cases, I can see how the plaster splint might be objectionable. It covers too much surface, including not only the healthy but the diseased area, and it is well known that the object of all splints is to accomplish the end with the minimum amount of infringement upon the sound area.

The first patient I venture to show you this evening is one whom I succeeded in getting under treatment before any serious deformity had arisen, but when there was considerable infiltration about the knee. The result has been very satisfactory, but I have had the usual experience, namely, difficulty in persuading the mother to keep the splint on at all times and under all circumstances. She has now long since appreciated the value of fixation, and I, of course, profit considerably by her intelligent co-operation. The following is an abstract of the case:

A male child, three years of age, brought to my office by Dr. Charles Bliss, on the 26th of May, 1885, had been limping for two months, and this defect of gait followed in the wake of measles. No other exciting cause was known. The left knee was three fourths of an inch larger than its fellow, there was no atrophy of the calf, the inner condyle of the knee and the head of the tibia were much enlarged, and quite tender on pressure. The motion was limited to a small arc, and there was an unusual amount of reflex spasm when motion was attempted. There was no marked deformity, inasmuch as Dr. Bliss had protected him from this by means of a plaster bandage. The patient was placed under my care and I applied a Thomas splint with a two-inch-and-a-half high shoe for the other limb. I also continued the plaster-of-Paris bandage. The little boy soon learned to walk on the apparatus; in fact, he walked fairly well two days after its application. The solid bandage was continued until the 4th of March, 1886, ten months in all, at which time there were 53° range of motion. The con-

* Read before the New York Clinical Society, October 28, 1887.

tour of the knee had altered considerably in this time, and the patient seemed convalescent.

A few days after the removal of the bandage he strained his knee at night, and I found it necessary to apply another. About the 1st of June the condition had improved so much that I removed the plaster altogether, and he went into the country. At the end of three weeks, however, he came back with considerable swelling at the knee. The bone seemed also enlarged and the veins were rather prominent. He could extend quite easily to 170° and could flex to 120°. Still, reflex spasm was excited when this point was reached. I found it necessary to reapply the plaster, and he continued wearing this until a few months ago, when I again removed it, and, finding no infiltration about the knee, finding the joint free from tenderness and without extra heat, encouraged him to employ voluntary motion. The splint was still continued by day. After trying him for about three or four weeks, I found more resistance to extension, and I made him a plaster splint to be worn at night.

In this case, if I had employed a roller, I might have secured immobility quite as well as I did with the plaster; still, the roller is easily removed, and is in this respect inferior to the plaster. The splint has been converted into a caliper splint by bending the distal extremities on the stems at a right angle. The point of bending is about an inch and a half from the lower extremity. These pointed ends then fit into a tube which is fastened in the shank of the shoe. Mr. Thomas inserts the tube through the heel, very near the shank.

The treatment is not complete, and the question may naturally arise as to when the splint can be dispensed with. This, of course, depends upon the soundness of the joint, and I find myself in hearty accord with Mr. Thomas on this point, that the joint is sound (after a prolonged rest) if it will stand the test of a month's use. By this I mean that the patient should go without the apparatus and use the limb for this period. If it is found that the stiffness, not *ankylosis*, yields during this period, we can rest assured that the joint is quite sound. Let me elaborate a little more on this point. When, it may be asked, can we begin this testing? I would answer: After subsidence of infiltration, heat, tenderness, and pain in the joint, the patient himself shows a certain confidence in moving the joint under the surgeon's eye, then the testing may be made. Usually a splint should be worn from one to three years, according to the condition of the limb when the patient comes under treatment.

The second patient is one who came under my treatment quite early in the course of the disease. I felt sure of my diagnosis, and succeeded in convincing the parents that I was correct, although there were few signs present. I found his mother quite intelligent in this matter. His history, which I now give, will show upon what points I made my diagnosis:

A patient ten years and a half of age came under my observation in November, 1885. The history the mother gave was as follows: Four years previous to this time there was a little stiffness about the right knee. Nothing was discovered on examination, and he had no symptoms that were noted until a week prior to my first observation. About this time he began to walk lame, his knee became stiff, and I found that he could flex the left knee to 40°, the right to only 90°. He could extend the left to 195°, the right to 175°. There was some fullness about the ligamentum patellæ, and there was bony tenderness about the head of the patella. The patella was movable over nearly the entire normal area. There was little extra heat. The thigh was an inch and a half smaller than its fellow, the knee half an inch larger, and the calf half an inch smaller. Upon the foregoing I made a diagnosis of ostitis of the knee. He wore the Thomas splint with the high shoe for nearly a year. The knee was also immobilized in plaster of Paris. During the past winter the caliper was substituted for the long splint, and the plaster of Paris was discontinued. Early in April of the present year all appliances were removed, and, while there was a little stiffness left, this had about disappeared and he could walk without lameness. Almost the only sign now present is a bony enlargement about the knee. He can use the limb very well, and the result is fully as much as I expected—viz., perfect restoration of function.

The third case is one where abscess had already formed, and is also presented this evening as an illustration of the treatment here employed. The result you can see for yourselves.

A female patient, about three years of age, came under observation on May 19, 1885. The joint and immediate surrounding structures were apparently free from any disease. She had been limping, however, for about six or eight weeks, and without any apparent cause. Signs of an abscess had appeared about this time. I found evidently a periosteal abscess which had reached fair proportions. This case seemed to be one of osteo-periostitis of the tibia. It seemed to be peculiarly suited for operation. On the following day the abscess was freely opened, thoroughly scraped, and put up in plaster of Paris. A Thomas splint was ordered, though not as yet applied. She was to be kept in bed until this could be ready for use. We had some difficulty in getting her to walk with the apparatus, and toward the latter part of November I learned that she had worn it but very little; it was too long in the first place, the ring was not suitable (so the mother stated), and hence it was not used, so that she relied simply upon the plaster-of-Paris bandage and went about as usual. The sinus at this time was still open. This was a Polyclinic patient, and I was so convinced that she could get relief if the splint was employed that I devoted personal attention to her case, had her come to my office, and had the splint altered. Finally it was satisfactory, but about this time it was found that the disease had involved the knee joint, and she presented the usual signs of tubercular ostitis. It was quite evident then that this case belonged to that class wherein the joint is involved subsequent to the bone. The treatment has been continued uninterruptedly to the present time, although the plaster splint has long since been dispensed with. The lesion in the knee has apparently undergone resolution and her joint is quite free; motion is not perfect, but it is improving all the time, and it is gratifying now to report this excellent result.

Take, now, an adult, a patient twenty-two years of age at the time when I saw him. He told me that when sixteen years of age he developed disease of the knee joint. Sixteen months later he came under the care of Mr. Thomas, in Liverpool. He remained in his hospital five weeks. There was much fluid in the joint, and aspiration was made with the result of removing about half a pint of pus. Two weeks later another aspiration was made, and again at the end of another two weeks a third. An abscess had already formed on the outer side of the thigh. The splint at first was extended three or four inches below the bottom of the foot. The details of the treatment are not pertinent to the case specially, inasmuch as they were given by

the patient. When I saw him on the 22d of November, 1884, he was wearing the caliper splint, the knee was perfectly straight, and there was motion over a small arc; the patella was movable over nearly the normal area. There was no pain or tenderness. A cicatrix on the posterior and outer aspect of the thigh was prominent. He went to the far West and I did not see him again until March, 1885, the arc of motion having increased to all appearances. There was some grating in the joint as he moved it. On the 25th of June, 1887, he called again with the report that he had left off the splint about a year previously. He walked with a trace of lameness. Some people, he said, were scarcely able to detect it. He is a good runner and is somewhat of a gymnast. He can flex his knee to 90° without any difficulty; can extend fully. What little tenderness he had seems to have disappeared.

*The Elbow.*—A very simple method of treating diseases of the elbow is to put the forearm in a sling, approximating the wrist as closely to the neck as possible. This constitutes simply a flexing of the forearm as much as possible, and in this way a fixation is secured that is very nearly perfect. Under no circumstances must the arm be taken down except in the presence of the surgeon, and it is done then merely to test the condition of the joint. This can be accomplished, however, without taking the sling down, by palpation, by the appearances of the parts, and by the presence or absence of infiltration. The time it is kept in this position is usually about two or three months. An ordinary roller bandage of flannel is employed, and this is knotted so that it can not be removed without the knowledge of the surgeon. This is also a method that I saw practiced by Mr. Thomas, of Liverpool, and his custom was to seal the knot. I, of course, have no experience other than what I learned by observation. The patients whom I had the opportunity of seeing under this treatment were free from pain and the joints were quite easily handled. I confess I was favorably impressed not only by the simplicity but by the efficiency of the method. I saw Mr. Thomas put a few elbows up in this manner, and his remark was, "Come back to see me in a week" in some instances, "two months" in others. I saw quite a number of his patients who were already under this treatment, and they had become accustomed to the position. The question naturally arose in my mind, Is not this a very awkward position in which to have an ankylosed elbow? But I was assured that, if ankylosis was desirable, the hand need not be put so near the neck. I had an opportunity of examining the elbows in one or two patients who had been under treatment for two or three months. I found, to my surprise, that there was considerable motion present, and I was assured that as soon as the joint became sound this motion would increase. I have considerable hesitation, however, in presenting you this treatment, because I can not give you any personal experience. I merely present this portion as a point worth investigating.

Note.—Since presenting these remarks I have received from Mr. Thomas a volume recently published by him entitled "Fractures, Dislocations, Diseases, and Deformities of the Bones of the Trunk and Upper Extremities," H. K. Lewis, 136 Gower Street, London. In this volume I find the subject of elbow-joint diseases and deformity very fully discussed. The methods of correcting deformity are given in full, and I am quite sure it will repay any one to study this volume quite closely.

## URETHRAL CARUNCLE, ETC.

By FREDERICK A. CASTLE, M. D.

I am led to offer the following comments on the subject of urethral caruncle, because it seems to me that the malady is much more common than Dr. J. G. Perry's experience, as expressed in his paper of March 3d, would indicate, and because I think that its nature may be more readily understood by comparison with a similar affection of another mucous outlet.

The reason why Dr. Perry has observed but one noticeable case during his long service in the Woman's Hospital may be due to the practice (in vogue in the hospital) of examining most patients by Sims's method, which favors emptying the urethral veins. In the Out-door Department of Bellevue Hospital—where examination in Sims's position was the exception, owing to the absence of an attendant capable of holding the speculum, and where the dorsal or knee-chest position was necessarily resorted to—I do not remember to have failed to demonstrate the existence of urethral caruncle to students in numerous cases. In most cases the caruncle is nothing else than a varicose condition of the veins of the urethra, and closely resembles enlargement of the veins of the anal region. They are, in fact, *urethral piles*, and, like anal hæmorrhoids, commonly exist in moderate degree without causing much discomfort. When, however, conditions are present which cause them to become overdistended with blood or produce inflammation, they then, like anal piles, cause more or less suffering, and give rise to symptoms which closely resemble those attending an attack of anal piles, as illustrated by the first case quoted by Dr. Perry.

A smaller percentage of caruncles are of the nature of mucous polypus, and resemble the polypoid growths not uncommonly occurring in the anal mucous membrane of children or in the nasal passages.

The principles of treatment which relate to anal hæmorrhoids are in all particulars applicable to urethral hæmorrhoids, and in my experience equally successful.

In this connection I should like to speak of something which will help to illustrate the frequency of this trouble, and at the same time mention a method for avoiding one source of discomfort caused by it. In catheterizing female patients it quite often happens that they complain of great and sudden pain while the catheter is being withdrawn, and the operation is followed by the escape of a few drops or more of blood. This is most likely to occur when the silver pocket-case catheter is used, which has a comparatively large fenestra with pretty sharp edges. It is caused by the prolapse of one of these vascular growths through the fenestra, and the injury which results from force used to withdraw the instrument. When this happens, cease at once any attempt to withdraw the catheter and insert the small nozzle of a syringe into the outer extremity. By filling the

catheter then with water, the caruncle will be dislodged and the instrument can be withdrawn at once and without further pain. To prevent this accident after emptying the bladder of a pregnant or parturient woman (who generally presents a condition of venous engorgement of the urethra), I invariably place the end of the forefinger of the hand holding the catheter over the outlet while the last portion of urine is still escaping, and before commencing to withdraw it from the bladder. This insures the lumen of the catheter being full of urine, and prevents the entrance of a caruncle. I then hold the fenestrated end over the receptacle for the urine, while removing the forefinger, and allow the instrument to empty itself.

There is another advantage attending this little manœuvre. It is generally recognized that if air gains admission to a bladder whose mucous membrane is irritable, catarrh is very apt to result, and that the onset of many cases of cystitis is coincident with the use of a catheter. Now, what occurs when a bladder is allowed to completely empty itself through a catheter, and the instrument is withdrawn without the precaution of closing the outlet? The act of withdrawing the instrument is like pulling upon the piston of a pump, and a vacuum is created which is filled by the entrance of air through the catheter. Unless this air is aseptic (a condition which is hardly likely to be the case in the puerperal bed) we have all the conditions requisite for awakening an attack of cystitis.

55 East Fifty-second Street, New York, *March 3, 1888.*

## NOTE ON THE PHYSIOLOGY OF THE RECURRENT LARYNGEAL NERVES.

*From the Physiological Institute of the University of Berlin.*

By FRANK DONALDSON, Jr., B. A., M. D.,
BALTIMORE, MD.

In my original article on the function of the recurrent laryngeal nerve, read before the American Laryngological Association in May, 1886, will be found these two statements, viz.:

"That it is with weak stimuli only (without ether) that abduction of the vocal cords takes place, which movement of abduction gradually passes into one of adduction as the strength of the stimulus is increased," and "*that the rate of stimulation does not affect the general result.*"

After many times contradicting my statement of this perfectly evident physiological fact, Dr. Franklin H. Hooper, of Boston, comes out in the "New York Medical Journal" for November 26, 1887, and says:

"Slow rates of stimulation (eighteen to twenty-eight a second), with *weak* currents, *produce opening*" [of the glottis.]

"By increasing the rates (thirty to forty a second), the intensity remaining the same, closing is called forth," and

"Rapid rates, with weak or strong currents, produce closing." And so he concludes: "I feel inclined to suspect that the reason other observers have obtained dilatation with feeble currents is to be found in the slow rate of vibration they have used."

This, however, is plainly not the case. In the first place, the various Du Bois-Reymond induction coils which I used in the course of my experiments, extending over eighteen months, did not all beat between eighteen and twenty-eight a second; and, in the second place, as I stated above, I found that the rate of stimulation, with as slow and rapid rates as could be obtained from such a coil, did not affect the *general* result.

I have lately, however, performed some experiments on this point in the Physiological Institute here, with the kind help of my friend, Professor Sad. We measured the exact rates—slowest and highest—which could be obtained from two Du Bois-Reymond induction coils. We first used a coil of which the slowest rate was twenty a second and the highest forty, and with these rates we *invariably* obtained *abduction* with *weak* currents. The second coil had a slowest rate of forty a second and a highest of eighty,* and with this also we obtained the *same result*, but with this difference: with very rapid rates the abductor fibers are soon exhausted, and abduction quickly gives place to adduction. For, as is well known, the abductor fibers are very prone to exhaustion, and the stimulus from a Du Bois-Reymond coil is the most exhausting we can use.

Finally, there is a slight difference between the effect of the slow and rapid stimuli upon the opening of the larynx, but it is only one of degree, in that, while with very rapid rates perfectly distinct abduction can be obtained, such rates sooner exhaust the abductor fibers, and we have, on stimulation, only adduction. And from these later experiments I can confidently reassert my *original* statement, "that the rate of stimulation does not affect the general result." Under all rates, up to at least one hundred and twenty a second, weak currents produce opening of the larynx.

Berlin, *February, 1888.*

* In both these coils the hammer showed double these numbers of *oscillations*, but we could not be certain that the nerve received the same number of stimulations, so we have only reckoned on half the number of stimuli in a second—that is, a stimulus *either* on the make *or* on the break of the contact.

## Correspondence.

### LETTER FROM LONDON.

*The New University for London.—Medical Advertising.—The Operative Treatment of Relapsing Typhlitis.—A Curious Defense in a Divorce Suit.*

London, *February 21, 1888.*

The agitation in regard to a new and real university for London has probably now reached its height, and the various petitions are now before the Privy Council. It seems in the highest degree improbable that any of them will be acceded to until a Royal Commission has been appointed and has made a report; that is to say, it is almost certain that nothing will be done for at least three years, as a Royal Commission is a cumbrous machine, and takes a long time to make its inquiries and formulate its conclusions. The scheme that is considered to be most deserving of approbation at present is that of the University and King's Colleges, as they have already established and

have more or less in working order several faculties besides those of medicine, but I hope that in the new university those two bodies will not, as regards their medical faculties, be given any advantages over the other hospitals, for, so far as I can see, they do not deserve it. Meanwhile the unfortunate London students are without a degree in medicine obtainable on reasonable terms.

The College of Physicians is reported to have devoted two meetings lately to passing a resolution condemnatory of advertising on the part of its members, fellows, or licentiates. I should have thought that such a resolution was superfluous, the respectable portion of the profession having long been of the opinion that to advertise is undignified and unprofessional; and a mild resolution of this kind will not have a deterrent effect upon the minority who do not think with the rest of their professional brethren. Moreover, it raises the question as to what an advertisement is. I have never seen any really comprehensive definition of this word, for it is quite clear that what would be an advertisement for one man would not be one for another. For instance, a new-comer might put a card into the local papers announcing that he had taken up his abode and intended to practice at such and such an address. This, though the custom in some of our colonies, would be a heinous offense here, and yet all the daily papers may announce that Sir William Jenner was sent for to see some magnate or other, or Dr. Matthews Duncan may sign a bulletin to the effect that a princess has been safely confined of a baby, without the conscience of the Board of Censors at the College of Physicians being in the least perturbed, although such public announcements are nothing more nor less than first-rate advertisements for the practitioners in question. I think it is a mistake for any set of people to pass a resolution when they can not give a clear definition of what is meant. In this particular instance it rather savors of making one law for the rich, etc.

Abdominal surgery had a great innings at our societies last week, the two chief ones—viz., the Medico-chirurgical and the Clinical—each giving up a whole evening to it. At the former a paper by Mr. Treves, on "The Operative Treatment of Relapsing Typhlitis," monopolized the evening. He held that in the majority of cases of so-called typhlitis the appendix was the cause of the trouble and the perityphlitic abscess was more usually an encysted peritonitis, due to perforation of this process, than to disease in the cæcum. The appendix might become the starting-point of inflammation by reason of congenital deformities, of changes that took place in its mesentery producing bending, or of the lodging of foreign bodies or concretions that remained unmoved on account of the feeble muscular coat of the tube. This source of manifold disturbance could be destroyed by removal of the appendix or by correcting any simple deformity of which it was the seat. The papers at the Clinical Society dealt with the diagnosis and treatment of ruptured intestine without an external wound, and with laparotomy for intestinal obstruction, of which several interesting cases were narrated.

A curious and, I believe, in this country, unique, case was heard in the divorce courts last week. The lady, from whom her husband sought a divorce on the ground of adultery, did not deny it, but pleaded that at the time of the adultery she was insane and therefore not responsible. I believe a similar line of defense has once been raised in America, but I think I am right in stating that it has not before been raised here. It was shown that the husband and wife had been separated for some time on account of repeated outbreaks of mania on her part, that he had charge of the children, that he had done all in his power to have his wife taken care of, and, further, that in every step he had consulted and followed the wishes of her own parents. The jury found without hesitation for a divorce.

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## THE ÆTIOLOGY OF CEREBRO-SPINAL MENINGITIS.

With the establishment of the general principle that suppuration is always due to the action of micro-organisms, and with the demonstration of the causal relations existing between bacteria and a large series of infectious diseases, the ætiology of epidemic cerebro-spinal meningitis naturally presented itself for investigation. The observations thus far made, although rather numerous, have not afforded any satisfactory solution of the questions involved, probably because of the comparatively few opportunities that are presented for the investigation of such cases. In reviewing the recent literature bearing upon the ætiology of cerebro-spinal meningitis, if we exclude those cases in which the disease has occurred as a secondary complication in the course of various other infectious diseases, such as pneumonia, puerperal fever, ulcerative endocarditis, otitis media, etc., and in which the same micro-organism was found as in the original disease, we find that there are but few observations as to the bacteria present in idiopathic uncomplicated cases of this affection.

Fränkel, Foa and Bordoni-Uffreduzzi, and Weichselbaum have all succeeded in obtaining pure cultivations of Fränkel's pneumococcus in a series of cases of primary cerebro-spinal meningitis. They have also succeeded in producing an experimental meningitis by the injection of these cultivations under the dura mater of animals after previous trephining. Weichselbaum alone has described a new form of bacterium, which he has found in six cases of idiopathic cerebro-spinal meningitis, and with cultivations of which he has also produced an experimental meningitis in animals.

In a recent number of the "Centralblatt für Bakteriologie und Parasitenkunde," Dr. F. Goldschmidt reports the results of his observations in one case of this disease. The patient was a child, four months of age, who presented symptoms of hydrocephalus internus in addition to those of cerebro-spinal meningitis. The patient died after eight days' sickness, and in every respect the autopsy confirmed the clinical diagnosis—that of cerebro-spinal meningitis with internal hydrocephalus. A purulent exudation was present on the convexity, most marked along the large vessels and at the base, thickest between the pons and the infundibulum. The exudation was also present over the cerebellum, and extended down in the dural sac of the spinal cord. The ventricles were enormously dilated and filled with a cloudy fluid. The other organs were perfectly normal.

Goldschmidt naturally expected to find, in this case, Fränkel's pneumococcus, as no other organism had been described, except in Weichselbaum's cases. He therefore prepared his cultivations according to Fränkel's directions for such

cases. Inoculations were made upon agar-agar cultivation plates with a platinum wire, by drawing fine lines upon the surface of the agar-agar after introducing it at different points into the purulent exudation. The cultivations were placed in a cultivation oven at 35° C. On the following morning, along most of these lines of inoculation a gray-white growth was apparent, which was microscopically found to be made up of diplococci. No other organism was apparent, and none developed subsequently; so that proof was at once afforded of the presence of this single form of bacterium in the meningeal pus. In microscopical preparations of the pus and in sections of the brain, the cocci appeared to be few in number. In part they were free and in part they were inclosed in pus-cells. Upon further examination, this coccus was found to be almost completely identical with the coccus found by Weichselbaum for the first time in cerebro-spinal meningitis. It had not been previously described.

This organism does not grow well at the ordinary temperature of a room, or at a temperature of 15° or 20° C. At this temperature, in beef-peptone-gelatin cultivations, after many days, a small gray-white point is apparent on the surface that shows no tendency to extend into the neighborhood or along the line of inoculation. The coccus develops best on agar-agar in the cultivation oven at a temperature of 35° or 40° C. After twenty-four hours the cultivations appear as gray-white lines, about 2 mm. broad, and have a slightly elevated border. They are very viscid. In puncture-cultivations the growth is on the surface; along the line of inoculation there is only a slight cloudiness apparent. At the brood-oven temperature growth also occurs on potatoes and gelatin. In this alone does the history of the organism differ from that described by Weichselbaum, but probably this difference was due to the fact that his cultivations were kept at the temperature of the room.

Goldschmidt observed, as Weichselbaum had also found, that the cultivations very soon lost their vitality, and that, when transfers were made, the inoculated tubes remained sterile. The transfers are best made after from one to three days; then an abundant growth is obtained. After the third day the inoculated colonies are always smaller, and after eight days transfers can no longer be made.

Microscopically, the cultivations are composed of cocci which for the most part are joined in pairs, forming diplococci. They are round, except when they lie together as diplococci, and they are sometimes flattened on their adjoining sides. There is a distinct space between them, equal to about one third the diameter of a single coccus. They show no motion in the hanging drop. They are easily stained with all the aniline dyes, but are decolorized by the Gram and modified Weigert staining methods. This organism belongs to the obligatory aerobic bacteria, for, after the exclusion of oxygen, even at the temperature of the brood-oven, no growth appears.

Inoculation experiments were made only upon white mice. Subcutaneous injections produced no result. After injections of cultivations into the pleural or the peritoneal cavity, the animals died in from twenty-four to forty-eight hours, according to the amount injected. For the first hour or two the animals remain perfectly well, but soon they huddle together and become quiet, the respirations are more frequent, the head droops, and the eyes are closed. Presently the hind limbs are extended, all movement becomes impossible, and death follows. At the autopsy a cloudy, viscid exudation is found in both pleural cavities and in the peritoneal cavity, and there is an acute enlargement of the spleen. In the microscopical examination many diplococci were found in all the organs and in the exudation in the pleura and peritonæum. The distribution of the organisms varied in different cases, according to whether the animal had withstood their action a longer or a shorter time. In the former case many diplococci were found inclosed in the cells, several organisms being contained in a single cell, and an appearance like that produced by the gonococcus was presented. When the animals succumbed quickly to the infection, the exudation contained but few cells, and fewer cocci were present in them.

This observation of Goldschmidt's is interesting as confirmatory, so far as it goes, of the important function of the white blood-corpuscles in the production of immunity. Editorial reference was made to this in our issue for August 27th, in connection with the work of J. von Christmas-Dirckinck-Holmfeld. There seems to be but little doubt that there exists a constant relation, as regards several of the infectious diseases certainly, between the amount of suppuration and the degree of immunity that different animals show to the respective diseases. The greater the emigration of leucocytes the greater is the insusceptibility, and *vice versa*, the leucocytes apparently destroying or counteracting the effects of the micro-organism. Suppuration thus comes to be a conservative process, protecting the system from the action or entrance of the microbes. Perhaps this is always its function. Dr. Biggs, of New York, found in one case of uncomplicated cerebro-spinal meningitis an organism corresponding very closely to this one described by Weichselbaum and Goldschmidt, and it is probably identical with it.

Goldschmidt, concluding his paper, says: There is presented here a diplococcus that in its morphological and biological characteristics appears to be almost identical with one found by Weichselbaum in six uncomplicated cases of cerebro-spinal meningitis. This organism, because of its peculiar and characteristic arrangement in the pus-cells, may be called *Diplococcus intracellularis meningitidis*. Weichselbaum has employed it for the inoculation of rabbits and has produced a meningitis in them. Three of these animals were inoculated underneath the dura after trephining. One died, and at the autopsy a spot of softening was found which contained large numbers of the diplococci. He also succeeded in producing in dogs in one case cerebral softening, and in two cases an inflammation of the dura and pia.

Too much importance should not be attached to the results obtained from experimental inoculations, as a meningitis or an encephalitis may be produced by other organisms, and especially the pyogenetic germs, in the subdural or intracerebral injec-

tion of cultivations. Goldschmidt concludes, with Weichselbaum, that, when this coccus is found in the meningeal exudation in cerebro-spinal meningitis, it bears an essential etiological relation to the disease.

## MINOR PARAGRAPHS.

### THE ACADEMY OF MEDICINE.

In pursuance of the movement to acquire a sufficient fund to provide the Academy with a new building suitable for the purposes of its meetings and its library, the committee on subscriptions have prepared a circular for the information of persons from whom contributions to the fund may be hoped for. They ask the Fellows of the Academy for the names and addresses of such persons, in order that they may send them copies of the circular, and they announce their willingness also to supply the Fellows with copies which they can send out themselves. This seems a thorough plan of work, and we hope that it will result in substantial additions to the building fund, which is already gratifyingly large.

### A NEW SPECIALTY.

The latest specialty—so far as the delay in the mails admits of our knowing—is stomatology. According to the "Union médicale," a *Société de stomatologie* has been founded in Paris, having for its object the study of disease of the mouth, the dental apparatus, and their annexa. We presume the time is not far distant when those who devote their energies to these annexa will think it incumbent on them to subdivide stomatology, and we may even see a parotid society, a submaxillary society, a sublingual society, and a society for diseases of the frenum linguæ or for herpes labialis. There seems hardly any limit to the possibilities in this direction.

### THE STORM.

It is to be feared that the phenomenally severe storm of wind and snow that raged in this part of the country all day on Monday must have been productive of more serious consequences than temporary suffering. For at least twenty-four hours locomotion was practically impossible for most persons, and many a physician must have found himself absolutely prevented from visiting patients, no matter how urgent their needs may have been; and great distress, if not serious risk, was doubtless caused in many instances of sudden sickness, or the aggravation of illness already in progress, by the sheer impossibility of communicating with the family physician. It would be difficult to mention an industry which has not been seriously crippled by the protracted interruption of railway, telegraphic, telephonic, and other means of communication. It has interfered materially with the preparation of this issue of the journal, and we trust that our readers will take that fact into account if the number fails to reach them at the usual time.

### ITEMS, ETC.

**The Bellevue Hospital Medical College** held its twenty-seventh annual commencement exercises at the Carnegie Laboratory on Monday afternoon, the 12th inst., when a class of one hundred and forty-four was graduated. Dr. David H. Williams, Jr., Dr. David H. McAlpin, Jr., and Dr. Lawrence Litchfield, who were among the honor men, were declared appointed on the house staff of the hospital.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 13, 1888:

| DISEASES | Week ending Mar. 6. | | Week ending Mar. 13. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 8 | 4 | 4 | 0 |
| Scarlet fever | 151 | 24 | 144 | 18 |
| Cerebro-spinal meningitis | 8 | 5 | 6 | 5 |
| Measles | 65 | 2 | 57 | 3 |
| Diphtheria | 149 | 36 | 115 | 42 |
| Small-pox | 14 | 0 | 13 | 1 |

**The late Professor Austin Flint.**—Last Saturday evening the memorial tablet to the late Professor Austin Flint erected in the Carnegie Laboratory by the Alumni Association of the Bellevue Hospital Medical College was unveiled with appropriate ceremonies. A eulogy of Dr. Flint was read by Dr. Leroy Milton Yale.

**The President of the City Board of Health.**—It is announced that Mr. Bayles, the president of the Board of Health of the Health Department, has received a diploma of honor for designs for sanitary works submitted at the International Health Exhibition held in London in 1884.

**The Long Island College Hospital** held its twenty-ninth annual commencement exercises in the Brooklyn Academy of Music on Friday evening, the 9th inst., when a class of thirty-six was graduated. Dr. George Wagner White was the valedictorian.

**Dr. D. Hayes Agnew, of Philadelphia,** it is announced, will be tendered a reception by the Medical Faculty and students of the University of Pennsylvania on April 25th, when he will have been for fifty years a member of the medical profession.

**The Obstetrical Society of Philadelphia.**—At the meeting of March 1st, Dr. W. H. H. Githens, who had resigned the secretaryship at the beginning of the year, after having held it continously for eleven years, was presented, in the name of the society, with a very handsome mantel set, including a clock and side ornaments, in recognition of the very valuable services he had rendered during his long term of office. The officers for the current year are as follows: President, Dr. Thomas M. Drysdale; vice-presidents, Dr. Charles H. Thomas and Dr. J. C. Da Costa; secretary, Dr. J. M. Baldy; treasurer, Dr. Alfred Whelan; curator, Dr. T. Hewson Bradford.

**The Society of the Alumni of Bellevue Hospital.**—The first annual address before the society will be delivered at the Academy of Medicine on Wednesday evening, April 4th, at 8.30 o'clock (the regular time for the April meeting), by Dr. William T. Councilman, of Baltimore, associate professor of pathology in the Johns Hopkins University, on the subject of "Predisposition in Tuberculosis." Members of the profession are cordially invited to be present.

**The Execution of Criminals.**—At a meeting of the Medico-legal Society, held on Wednesday, the 14th inst., the committee appointed to investigate the question of the most humane method of inflicting the death penalty, reported in favor of the abolition of hanging and the employment of electricity, or of some poison hypodermically administered. It was also recommended that executions be private, that the details be not made public, and that the criminal's body be given to some medical college.

**Instantaneous Photography,** with the help of the "flash light," is now employed for the purpose of obtaining exact representations of anatomical demonstrations. A dissection is made and the parts are photographed while they are in a fresh condition. In this way pictures are obtained that are marvels of fidelity. The illustrations in Dr. Gerster's "Rules of Aseptic and Antiseptic Surgery" are principally from photographs taken in the operating-room, and are the first of their kind to be used in illustrating a medical work.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 4 to March 10, 1888:*

Fisher, W. W., First Lieutenant and Assistant Surgeon. Sick leave extended one month on surgeon's certificate of disability. S. O. 50, A. G. O., March 2, 1888.

Shillock, Paul, First Lieutenant and Assistant Surgeon (recently appointed). Ordered for duty at Fort Assiniboine, Montana. S. O. 50, A. G. O., March 2, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 1, 1888:*

Stone, E. P., Assistant Surgeon. Detached from the Coast Survey Steamer Bache and ordered to Hospital, New York, for treatment.

Keeney, James F., Assistant Surgeon. Commissioned March 1, 1888.

Brush, George R., Surgeon. Ordered to the Omaha when the Pensacola arrives at Aspinwall.

Means, Victor C. B., Passed Assistant Surgeon. Ordered to the Omaha when the Pensacola arrives at Aspinwall.

**Society Meetings for the Coming Week:**

Monday, *March 19th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *March 20th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings; Ogdensburg, N. Y., Medical Association.

Wednesday, *March 21st:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Medical Society of the County of Allegheny (quarterly), N. Y.; New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society (clinico-pathological).

Thursday, *March 22d:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

Friday, *March 23d:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *March 24th:* New York Medical and Surgical Society (private).

## OBITUARY NOTES.

**Frederick R. S. Drake, M. D.,** died on Friday, the 9th inst., after a short illness, at the age of forty-three years. He was a native of Connecticut. He obtained his medical degree from the Medical Department of the University of the City of New York in 1871. Dr. Drake was one of the physicians to Bellevue Hospital and a member of the Academy of Medicine, of the Medical Society of the County of New York, and of the Pathological Society. He was a busy and much-respected practitioner.

**Edward Livingston Shaffer, M. D.,** died on Monday, the 12th inst., after a brief illness. He was a brother of Dr. Newton M. Shaffer, and was a physician of much promise.

**Willis W. French, M. D.,** a native of New Hampshire and a graduate of Bowdoin College, died on Sunday, the 11th inst., after a short illness. He obtained his medical degree from the College of Physicians and Surgeons in 1883. He had been in practice in New York since 1886.

# Letters to the Editor.

## INSUFFICIENCY OF THE OCULAR MUSCLES.

130 Lexington Avenue, *March 13, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In sending you my paper on "Hyperphoria" I did not hope to arouse any discussion as to who was the first to describe and treat the condition known as hyperphoria. It seemed to me that a philosophical discussion of the condition was not malapropos. It will be distinctly observed by reading my paper that I wrote: "*It seems* [Italics recent] that Dr. George T. Stevens was the first to describe the condition known as hyperphoria." After having read the discussion of this question in other columns, I confess myself as having been left in a condition of indecision as to who deserved the credit of priority in the matter. It was in this condition of uncertainty, and on account of it, that I wrote the fatal words *it seems.* If the distinguished gentlemen who have participated in this controversy can not settle it, nobody can. I have no desire to enter the discussion. Dr. Derby's object is unquestionably to give credit to whom credit is due. This is a sentiment with which I am in full accord, and I should not be willing to give credit to whom credit was not due or to detract from the glory of the illustrious von Graefe and his successors. Dr. Derby has seen fit to criticise me because, as he says, I have claimed for the subject of my article "the distinction of its being a recent discovery." In view of the indefiniteness of my words I hardly think I can be said to have made such a claim. I should have used unequivocal words had I intended to state an unquestioned fact. In order, therefore, that opinion may be unanimous on this point, I distinctly state that I do not make any such claim.

Dr. Derby's reference to the work done in von Graefe's clinic in 1869 seems to me to settle the question of priority in the treatment of *insufficiencies* of the vertical straight muscles of the eye. Dr. Derby refers to a case in which he himself prescribed a prism of 4° base downward for insufficiency of one of the inferior recti muscles.

In my own experience, which is not patriarchal, I have only treated cases of *paresis* of one of the vertical straight muscles. I have rarely found the power of these muscles to be as much as 4°. Assuming that this is the *total power* of such muscles in health, if I should find a case in which one of these muscles presented as much as 4° of *insufficiency*, I should be inclined to put that case in the territory at least of paresis. Surely, however, this is a matter of opinion. If there has been any separate and distinct treatise on this subject before Dr. Stevens's I am unacquainted with it. The recording of cases of insuffi-

ciency need not involve a systematic description of the condition nor of the method of procedure in examination; but, if Dr. Derby can point to such a treatise, he will settle this point also.

In my article I wrote: "Why, then, may not a latent insufficiency or overtension in one of these muscles [*i. e.*, the superior or inferior rectus exist, as is known to be the case in the lateral straight muscles; and, if it exists, why may it also not cause symptoms of asthenopia?" I have incurred criticism on this point, I presume, not on account of any improbability in the suggestion therein contained, but on account of its apparent triteness. In answer here I would say that, strange as it may seem, I have not infrequently heard it doubted whether any such condition as hyperphoria existed. This innocent piece of reasoning was, therefore, not intended for the edification of experts, but was written expressly for those who were inclined to doubt the existence of such a condition, and for those whom my critic has designated under the generic title of "medical students."

J. Herbert Claiborne, Jr.

# Proceedings of Societies.

## NEW YORK SURGICAL SOCIETY.

*Meeting of February 22, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**Old Unreduced Dislocation of the Hip, with Probable Fracture.**—Dr. R. Abbe presented a patient with the following history: A year and a half before he was working in a mine, when a portion of the roof fell upon him, striking him on the right hip when he was in a stooping posture. During the first four weeks following the accident he received no treatment; then a surgeon endeavored to reduce the dislocation, but was unable to do so. He went to Santa Fé, where he was etherized and the limb was straightened, although he does not know the exact nature of the manipulation. The leg was kept in plaster for four weeks, and after this was removed it was more nearly straight than before, but there was decided shortening. Nothing had been done since. Although the exact character of the original injury was not clear, it was evident that there had been a forward dislocation, as the patient was sure that until he was treated at Santa Fé the limb was much shortened, and the foot was so adducted as to rest upon the opposite one. At present there was shortening to the extent of three inches, but the patient could walk well, and had but little pain, except when he lay upon the affected side.

Dr. H. B. Sands did not see how the condition could be simple dislocation alone, as the foot was now everted.

Dr. Abbe suggested that the tissues around the head of the bone might have become so worn during the year and a half that had elapsed since the accident that a greater range of motion was now allowed than had been the case at first.

The President said that he could feel a prominence that moved independently of the trochanter, but was too high to be the head of the bone; he thought that there had probably been a fracture as well as a dislocation.

Dr. Abbe said that four weeks after the accident, when the unsuccessful attempt at reduction was made, the miners who assisted the surgeon said that they heard something snap during the manipulation; there might have been a fracture at this time.

**Radical Cure of Hernia by the Czerny-Riesel Method.**—Dr. F. Hartley presented a patient upon whom he had operated for the radical cure of hernia four months before. The man was thirty years of age, a cook, and had suffered from a reducible inguinal hernia upon the left side for a year previous to the operation. At the time of the operation the hernia had become strangulated, was of about the size of a large orange, and contained about six inches of intestines and some omentum. In operating, Dr. Hartley made use of Riesel's modification of Czerny's method, as it allowed a more complete obliteration of the funnel-shaped portion of the peritonæum at the neck of the sac. The pillars of the ring, as well as the deeper tissues, were sutured with catgut, and the sac was dissected out. The man remained in bed for four weeks after the operation, although the wound healed by first intention. Since the operation he had worked constantly, with the exception of two weeks. At his work he was obliged to stand upon his feet during the greater portion of the day. He had not worn a truss, except for a week, after which time he discontinued it. This was done at the advice of a friend, and against the advice of the operator. In reply to a question by Dr. Poore, Dr. Hartley said that he did not favor the use of a truss after the radical operation, as it tended to thin out the tissues by constant pressure.

**Traumatic Stricture of the Œsophagus in a Child, treated successfully by Dilatation and Internal Œsophagotomy.**—Dr. Sands presented a patient with the following history: J. M., aged seven years and a half, was admitted into the Roosevelt Hospital February 20, 1887. He had swallowed some concentrated lye when a year and a half of age—five years before. On examination under ether, all instruments were arrested at a point seven inches and a half from the dental arch. On February 23d a flexible bougie, No. 7 (F.), with a No. 5 tip, was passed through the stricture. The time occupied by the boy in drinking a pint of milk varied from eleven to twenty-three minutes. On March 11th the bougies introduced were arrested at a point eight inches from the teeth, none entering the stricture. On the 16th a flexible bougie, No. 9, with a No. 7 tip, passed through. On the 18th a small catgut bougie was passed through, and was left *in situ* for an hour, in order to dilate the stricture. No instrument was passed afterward until April 12th, when bougies Nos. 7, 8, and 9 were introduced. On the 16th No. 10 was passed, on the 18th Nos. 7 to 11, on the 22d Nos. 7 to 12, on the 25th Nos. 8 to 15, on May 12th No. 16, on June 28th No. 18, on July 20th No. 20, and on August 24th No. 22. On the latter date internal œsophagotomy was attempted by Dr. Hartley with Dr. Sands's œsophagotome, having a No. 19 bulb; no advance was made, as a No. 23 bougie engaged tightly in the stricture. On September 16th and 30th œsophagotomy was again attempted, but without effect; No. 23 failed to pass, as the œsophagotome used was of smaller caliber than bougies that had already been passed. On November 1st a No. 23 passed with difficulty. On December 5th an œsophagotome with a No. 24 bulb was passed by Dr. Sands, and an attempt was made to cut the stricture posteriorly; it was unsuccessful on account of the dullness of the blade. On the 10th the same instrument was introduced, and an incision was made anteriorly, after which bougies Nos. 24 and 25 passed easily; on the 19th No. 29 passed with ease. On January 12, 1888, No. 28 was passed; on the 21st internal œsophagotomy was performed with a No. 27 bulb, an incision being made posteriorly. On February 22d bougies up to No. 34, inclusive, passed easily.

Dr. Sands remarked, in conclusion, that the patient had been very anæmic when he first entered the hospital, being able to take only a small quantity of fluid, and that with great difficulty; his general condition had improved greatly. He was

now able to eat soft solid food readily, and the speaker hoped that the cicatricial ring in the œsophagus had been completely divided, so that there would be no further trouble. No reaction had followed the introduction of instruments, except on one occasion, when the patient complained of pain in his chest following the passage of a No. 16 bougie. It was feared that some damage had been done, but this symptom soon disappeared.

The little girl with an œsophageal stricture, who had been presented to the society a year ago last October, was now perfectly well, and could eat any solid food; no bougie had been passed for a year. These cases, the speaker remarked, were not very common. It was generally believed that the operation was quite a dangerous one, but, if it was performed slowly and only a slight incision was made, no harm resulted. It was also a common belief that this treatment was of slight avail. In the present case, when the patient first came to Dr. Sands, he was unable to pass a filiform bougie.

In reply to a question by Dr. J. D. Bryant, the speaker said that œsophagotomy seemed to cause no more pain than the passage of a bougie. There was no hæmorrhage.

**Spontaneous Dislocation of the Hip-joint; Operation.**—Dr. C. T. Poore related the history of the following case:

William L., six years of age, was admitted into St. Mary's Hospital in August, 1886. He was said to have had cerebral meningitis due to an injury to his head by falling out of a wagon and striking his head against a post. This occurred in June last. Some time in July his right side became paralyzed, and at the same time he lost the power of speech. He was brought to the hospital on account of his low condition. He was very feeble and suffering from bed-sores, one of which was over the trochanter of the right side. The speaker was asked to see him in June on account of extreme flexion of the right thigh upon the pelvis.

The head of the femur upon the right side was found to be dislocated backward and upward so that the head was hooked over and appeared to rest upon the sacrum. This had existed for some time, as the thigh had remained in this position ever since he had been in the hospital, a period of five months.

*February 8th.*—An attempt was made to-day to reduce the dislocation, but no change could be effected in the position of the head, nor could it be thrown out from behind the posterior edge of the ilium.

On February 18th the patient was etherized and an incision made over the head and down the shaft of the femur so as to give easy access to the parts. The head was found inclosed in the capsule, which had been stretched and greatly thinned. The head could not be moved from its position until most of the muscles attached about the trochanter major had been divided; also the tendon of the psoas and iliacus had to be cut. The acetabulum did not seem altered. The cartilage covering the head of the femur as well as that of the acetabulum was normal in appearance. The ligamentum teres had disappeared. The head was placed in the acetabulum and the wound closed by deep and superficial sutures. A long splint was applied extending from the axilla to the middle of the leg, and then extension was made. The wound united readily, except in the cicatricial tissue over the trochanter major, which sloughed and healed by granulations. He was kept in bed for eight weeks and then allowed to get up. The joint became ankylosed at an angle of about 135° with the transverse diameter of the pelvis, and three quarters of an inch shortening. This was a case of spontaneous dislocation of the femur. There was no disease of the joint, the head of bone being forced out of the acetabulum either by muscular contraction or by position. It was to be noted that the capsular ligament was not ruptured.

**Prolapse of the Rectum.**—Dr. Poore also related the history of the following case:

William F., five years and a half of age, came under observation December 31, 1884, with the following history. He had had a diarrhœa for some time, during which the rectum had come down after each passage, but either returned of itself or could easily be replaced until two weeks ago, when it came down, and since then had continued prolapsed, and he was admitted into the hospital to-day. On examination, there was found a tumor three inches long and about six inches in circumference protruding from between the nates; it was of a grayish color and covered with mucus. The patient did not seem to suffer much pain. There was an opening in the center of its distal end, through which fæces passed.

He was put under ether so that a more careful examination could be made and reduction accomplished. The prolapse consisted of the whole thickness of the gut; its external surface was continuous with the orifice of the anus, there being no sulcus at the verge of the anus. The finger could be readily passed into the center of the prolapsed portion. The part felt hard and brawny. All attempts to return the parts failed.

*January 2d.*—Dr. G. A. Peters was asked to see the child, who was again placed under ether and another attempt more persistent than the former made to reduce the prolapse, but with no better success. There was noticed at this time a slough of the mucous membrane over the lower portion of the tumor. The bowels and bladder were relieved this morning.

*3d.*—The slough was becoming deeper and involving the muscular coat; ordered a charcoal poultice.

*6th.*—The slough now involved about three quarters of the prolapsed gut, and a line of demarkation was evidently forming.

*7th.*—The slough separated, leaving a granulating stump.

*8th.*—This morning the remains of the gut passed into the abdominal cavity. Patient has no control over the sphincter.

He was left alone until late in January, when, on account of difficulty in defecation, he was again etherized so that the parts could be satisfactorily examined.

It was found that the sphincters were very lax. Coughing did not bring down any of the gut. On passing the finger into the rectum, at a point two inches above the anus it encountered a hard ring involving the whole caliber of the gut, into which the end of the finger could but just enter. On using a little force it could be passed through, and beyond this constriction was felt the normal caliber of the gut. By the aid of a speculum and reflected light the band was seen to be still cicatrizing. In February the parts had become well healed, and a stricture resulted which was gradually dilated and kept so for two months, when the patient was dismissed from the hospital. He had not been heard from since, but it was supposed that he would have further trouble.

The speaker did not think that in this case the obstacle to restitution of the gut into the abdominal cavity at the time of his admission into the hospital was due to the swelling, but to adhesions having been formed between two layers of the rectum which were abnormally brought into contact. He was not able to make out any hernia of the intestine into the sac thus formed. It was only from gross negligence that a condition such as the one described could have been brought about. How much the manipulations in attempting to reduce were a cause of the slough he was unable to say. At the time of admission the lower portion of the prolapse exhibited a slight slough of the mucous membrane.

**Hip-joint Disease; Intrapelvic Abscess; Opening of the Rectum and Bladder.**—The following case was also reported by Dr. Poore:

Oscar S., three years and a half old, was admitted into St. Mary's Hospital, March, 1886, with disease of the left hip joint of some months' duration. A hip splint was applied and he went about without any pain and rested well at night. In June an abscess was discovered above the joint. This was opened and he was able to be about again as before. He was at the sea-side until autumn, but during that time had much pain about the joint. After his return to the hospital he still suffered much, especially before having a movement of his bowels or passing urine; his bowels were constipated.

*November 4th.*—The patient was etherized and an examination made of the joint. The ilium was found to be greatly diseased and the acetabulum perforated, and an abscess of considerable size existed within the pelvis. The end of the femur was removed between the trochanters so as to afford drainage for the pelvic abscess. The wound healed, except a good-sized sinus, which formed a direct communication with the pelvic cavity.

In December fæces were found in the dressings, after each movement of the bowels, of good consistence and shape. The longest piece was about three inches. At this time the discharge was slight, but the parts were very sensitive.

*January 8, 1887.*—Patient was again etherized for examination. The finger could be easily passed through the sinus and the acetabulum into the pelvis. There was found a large cavity apparently formed by forcing the fæces inward; its boundaries could not be made out with the finger, but the bladder could be easily made out. No fæcal accumulation could be felt, nor, upon washing out the cavity, could any be found in the outflow. Apparently no water passed into the rectum, nor from the rectum into the cavity, but water passed freely from the abscess cavity into the bladder and out of the urethra. The patient was returned to his bed, and it was supposed that serious and fatal symptoms would follow, but there was nothing beyond a temporary elevation of temperature to 103° F. for two days. There was no cystitis, and from this date no fæces ever were discovered in the wound, but some appeared on the dressings, so that they were saturated with it, the patient still passing some through the urethra, but the major portion through the sinus about the hip. Discharge of pus slight.

As water still passed through the wound, on February 28th an opening into the bladder was made, the same as for the median operation for stone, in order to afford drainage to the bladder and thus prevent any accumulation of urine, in the hope that the opening in that viscus would close. A rubber drainage-tube was inserted. This in a few days was replaced by a female silver catheter. After this, urine was passed both by the perineal wound and by the sinus about the hip, through the latter in smaller quantities than before. Gradually it ceased to flow through the hip wound, so that by April it had stopped.

In May some glands in the groin suppurated and were removed, and after this he passed all his urine through the urethra. Early in June the patient was allowed to be up, and went about without a brace. During the summer he was down at the sea-side, and in October was discharged. The amount of shortening at this time was one inch. All wounds and sinuses had closed.

The speaker remarked that intrapelvic abscesses in connection with hip-joint disease were not very unusual; connection with the gut or bladder had been reported, and cases where fæces had appeared in sinuses about the hip were mentioned, but they had almost always been followed by a fatal termination. In this case the disease was more marked in the pelvic bones than in the head of the femur. Where the opening into the rectum took place could not be made out. The fæces came through the sinus as well formed as though they had come through the normal passage. In regard to the opening into the bladder, he thought it was formed at the time of the first examination, possibly by the injection of water, yet he did not think that much force had been used. In regard to the size of the rent, it must have been considerable, because the flow of bloody water from the urethra after a catheter had been passed was of the full caliber of the instrument. It was an odd coincidence that no fæces were passed from the sinus after the injection of water into the cavity, and that none occurred subsequently. The opening in the perinæum did not seem to afford the relief that it was expected it would. The intense pain before any movement of the bowels or passage of urine, without doubt pointed to the intrapelvic abscess, as it ceased immediately upon a passage being afforded to the pus by excision of the joint.

Dr. Bryant, referring to Dr. Poore's case of dislocation, asked how much of the bone had been removed.

Dr. Poore replied that the section had passed through the trochanter major.

Dr. Bryant asked if the acetabulum had been much involved.

Dr. Poore said that both the rim and the floor were extensively diseased, and that practically all the affected portion had been removed.

Dr. C. McBurney asked how much time had elapsed since the femur was reduced.

Dr. Poore said about a year. In reply to a question by the President, he said that the head of the bone was within the acetabulum. It had been out for five years. He was unable to account for the present shortening. There had been no arrest of development in the lower limb.

Dr. Sands asked if it was not very rare to have three quarters of an inch shortening.

Dr. Poore did not think so. He had made a hundred measurements in Charity Hospital, and had found that amount of shortening in several cases.

The President said that he had made numerous measurements on the cadaver, and regarded three quarters of an inch as extreme shortening.

Dr. Sands had rarely found more than half an inch.

The President referred in this connection to the case of the patient presented by Dr. Abbe; if the neck of the femur had been broken in this instance, its vitality had been preserved.

Dr. Bryant referred to a case which he had observed when house-surgeon at Bellevue Hospital. A sailor fell from the rigging and dislocated his thigh. Some time after it had been reduced it was noticed that the neck of the bone was within the acetabulum, while the head was still on the dorsum ilii. The patient could walk well, and the local condition was the same when he left the hospital.

Dr. R. F. Weir spoke of the case of a woman, weighing two hundred and fifty pounds, who came under his care having a thyreoid dislocation of five or six weeks' standing. While trying to reduce the dislocation he fractured the neck of the femur. The limb was placed parallel to its fellow and kept in a Buck's apparatus for six weeks, when the patient returned to her home in the country. A bad result was expected, but six months later she was reported walking about in a satisfactory manner.

The President said that a sharp distinction must be made between the different sites at which fracture might occur. Union was less apt to occur if the narrow part of the neck was broken. In the latter case mobility at the hip joint was greatly restricted.

Dr. McBurney said that over a year ago he had reported a

case of dorsal dislocation of six months' standing in a child seven or eight years of age, in which he made a free incision over the joint and then effected reduction. The acetabular cavity was filled with a pulpy material, which was removed, but was, unfortunately, not examined microscopically. The wound healed with the exception of a small sinus, but some months later the head of the bone became carious, so that it was necessary to excise it. At the time of reduction the head and acetabulum seemed to be free from disease, but at the second operation both were found to be carious. There was a question if the pulpy material in the acetabulum was not tuberculous. In reply to the President, the speaker stated that the dislocation was due to a fall.

The PRESIDENT said that Dr. McBurney's case of dislocation was almost unique. In all the other reported cases but one the operation had failed to reduce, and after the successful reduction the patient had died of septicæmia. When the head was excised the results had been better than after osteotomy.

Dr. POORE asked if a good result was to expected from subtrochanteric osteotomy in a case such as the one under discussion. The difficulty was that flexion always returned.

The PRESIDENT cited Van Buren's case of a child, both of whose thighs were abducted and flexed. Excision was performed on one side, and subtrochanteric osteotomy on the other; the former operation gave a movable limb, the latter a straight but ankylosed one.

Dr. SANDS thought that there was never much motion in cases of old traumatic dorsal dislocations, at least he had never noted it. All the anatomical conditions were against mobility.

Dr. POORE said that he had seen movable joints in children under these circumstances.

Dr. ABBE said that he had performed subtrochanteric osteotomy six months before for the relief of dorsal dislocation in a paralytic. The right thigh was adducted across the left in such a manner that the patient was greatly inconvenienced. The position of the limb was so rectified that it was parallel with the other. In reply to Dr. Sands, he said that there was only slight mobility before the operation, the head of the bone resting high on the dorsum. The dislocation had been progressing for several years, and no instrument had accomplished anything.

**Avulsion of the Terminal Phalanx of the Thumb, with its Tendons.**—Dr. WEIR showed, through the courtesy of Dr. J. J. Hull, the terminal phalanx of a thumb, to which were attached the tendons of the extensor longus pollicis and the extensor secundi internodii pollicis, the tendons measuring eight and nine inches respectively. The patient, a young man, had caught his thumb between the cogs of an elevator-machine, and, in endeavoring to free it, torn away the portion shown. He had severe pain at first, which lasted but a short time. The wound healed without febrile reaction under antiseptic dressings.

**Multiple Abscesses of the Liver; Death after Hepatotomy.**—The PRESIDENT exhibited a liver removed post mortem from an Italian woman who had been suffering for several days before entering the hospital with fever and ascites. A friction sound was heard over the liver, and the operation was deferred for a few days in order that parietal adhesions might form. An incision an inch in length was made in the median line just below the sternum, and the liver was found to be perfectly free, moving with respiration. The abscess was punctured with an exploring needle, and pus followed the withdrawal of the needle. The abscess was then opened, and its walls were stitched in the abdominal wound. A second incision was then made through the abdominal wall, at a point lower down, in order to drain off the ascitic fluid. The patient was unruly, and removed the dressing and pulled out the drainage-tube on the third night; the next day the temperature rose, and she died thirty-six hours after. At the autopsy there were no evidences of peritonitis. The liver contained one large abscess-cavity, having a wall a quarter of an inch thick (containing about a quart of pus), and several smaller abscesses, which were scattered throughout the organ. The abscesses were supposed to be of syphilitic origin, but the patient had presented no evidences of syphilis. In reply to Dr. SANDS, the president said that he could not state the exact cause of death. The patient had had a high temperature for a week before she came under his care, the thermometer sometimes registering 105°.

Dr. ABBE asked if the result of the case did not seem to indicate that exploratory puncture of abdominal abscesses was dangerous.

The PRESIDENT agreed with Dr. Abbe, and said he had refrained for a week from making an exploratory puncture through the parietes, because of the risk and to allow the formation of adhesions. But the wall of the abscess was a quarter of an inch thick. The needle used was of rather small size.

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## OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Meeting of March 1, 1888.*

The President, Dr. THOMAS M. DRYSDALE, in the Chair;
Dr. J. M. BALDY, Secretary.

**An Aseptic Two-way Catheter** was shown by Dr. HOWARD A. KELLY, who stated that the instrument would conduct and discharge water and solutions with the utmost freedom, and at the same time allow of perfect and ready cleansing after being used, which was a great desideratum. In the light of the antiseptic surgery of the present day, the use of such two-way catheters as were commonly found in the surgeon's bag a few years ago was in the highest degree dangerous, because of the necessarily tedious process of cleansing them and the impossibility of being sure that they were clean. One of the best ever devised for the use of the gynæcologist was Bozeman's, which had been so modified by Fritsch and Olshausen that the delivery-pipe and the discharge-pipe were two separate pieces, the former being inclosed in the latter and held in place by a cap when the instrument was not in use. This would be better understood on examining the speaker's modifications. The syringe, as constructed by him, consisted of three parts: 1. The delivery-tube, which conducted the stream from the hose connected with the reservoir into the uterus. This tube was well curved, and was furnished with a knob at its entrance, to hold the hose better. It terminated in a button, with a series of holes around and a little below the outer margin, in the form of a rose, so placed that the stream was thrown out on all sides and directed a little backward. The two other pieces were the two lateral halves of the exit-pipe, which were attached very simply by inserting one end of each in the shallow collar under the rose, bringing the two together around the inlet-pipe, and screwing the nut down on the thread on their upper end. Each side had a fenestra in it near the point, and was scooped out near its upper end so as to form a good-sized hole when the two were fitted together. The water would flow forcibly from the holes at the end, washing with it débris and fluids, which at once entered the large fenestra on the side and were carried down through the large tube into the receptacle. After the instrument had been used, all its parts could be readily separated and cleansed. The inside ought to be as highly polished as the outside. The instrument had been made very satisfactorily by

Mr. Genrig, who had also made one of solid silver for Dr. Sweetnam, of Canada, which the speaker now showed. If the nomenclature was to be kept up as in the past, the device should be called the Bozeman-Fritsch-Olshausen-Kelly catheter.

**A Vaginal Cotton-packer** also was shown by Dr. Kelly, who had used it constantly for many months with great satisfaction. It consisted of a delicately tapering handle terminating in three diverging tips a little flattened on their upper and lower surfaces.

**The Placenta of a Uni-ovular Twin Gestation** was shown by Dr. B. C. Hirst. It formed one mass, of about twice the size of an ordinary placenta, with the most intimate anastomoses between the two sets of fœtal vessels. There had been hydramnion of one of the fœtal sacs.

**A Parietal Bone with a Spoon-shaped Depression** was also shown by Dr. Hirst, taken from an infant that had died two days after its birth. The labor was a difficult one, and was terminated with the forceps. The child presented by the vertex in the right occipito-posterior position; the head was large, the occipito-frontal circumference being 36·5 ctm.; and the mother's pelvis was slightly flattened. At the point corresponding to the indentation of the bone there was a deep, broad depression of the brain-substance. The child had apparently died of congestion of the brain and serous effusion into its substance.

Dr. William Goodell remarked that Ambroise Paré had compared such depressions to the indentation on a kettle-drum. In this case it was very typical. After turning, in cases of flat and narrow pelvis, these indentations were very marked; then they occupied the temporal and not the parietal region, the shorter bitemporal diameter being the one implicated, showing the two mechanical advantages of turning—the presentation of the small end of the cephalic wedge at the conjugate and the engagement of a shorter cephalic diameter than the biparietal.

Dr. John C. Da Costa wished to know if Dr. Goodell thought that turning could always be done in such cases. He spoke of a case of his own in which the bone had been much more depressed than in the specimen shown; the whole left side of the head was forced in by a large fibroid of the uterus, which fitted into the depression after the manner of a mortise-and-tenon joint. The pelvis was of good shape and roomy, the cervix was wide open and soft, and yet the head, which was at or above the superior strait in the left occipito-anterior position, could not descend on account of the tumor. As the woman was in good condition and nothing seemed to be going wrong, the speaker did not interfere for a time, and then, with the aid of some manipulation, the head began to disengage itself from the tumor and rotated into an occipito-posterior position, and the child was born alive. This child could not have been turned, as the membranes had ruptured and the uterus was grasping the body firmly; and, even if it could have been, it would probably have died from pressure on the cord during the long delay that would have ensued in extracting the head, for the tumor would most probably have been caught under the chin. The forceps could not be applied, on account of obstruction to the left side of the tumor.

Dr. Goodell thought that Dr. Da Costa would have had less trouble if he had been able to turn the child; he did not think the neck would have been caught. He had been speaking before of the mechanical advantages of version, and not of the difficulties in its performance.

**An Improved Obstetrical Forceps** was shown by Dr. W. S. Stewart (see the report of a meeting of the Philadelphia County Medical Society, page 301).

Dr. Kelly had examined the instrument, and had been surprised to see how the difficulty of parallel handles had been overcome. He thought, however, that the axis-traction mechanism should have been added.

Dr. Baldy was not particularly fond of using forceps of any kind, and had often seen a head expelled spontaneously on which the use of the instrument had been urged. However, there were cases in which its use became necessary, and in such cases it was desirable to have as perfect a forceps as possible. He had no objection to make to the parallelism of the handles in the one presented, but he thought that a very serious objection was to be found to the so-called toggle-joint. With this instrument as it stood there was no possible way of regulating the compression force applied to the child's head, and, although Dr. Stewart had not yet marked or injured a child, he would surely do so sooner or later if he continued its use. He thought, with Dr. Kelly, that an axis-traction mechanism should be applied to a modern obstetrical forceps.

Dr. G. E. Shoemaker had on a previous occasion called attention to the dangerous compression power developed by the toggle-joint. He thought that, to make the instrument safe, there should be an adjustable attachment—such, for instance, as a sliding ring about the handles—to limit the compression force at will, as the present shoulder was fixed and was situated too far back.

Dr. Longaker found serious objections in the number of joints in the instrument, which made it difficult to keep it aseptic. He did not think that Simpson's forceps could be improved upon.

Dr. Stewart was surprised at the number of objections raised against the instrument, as well as at the doubts expressed concerning the results of its use. He had now extracted eight children with it without injury. He could deliver with it in cases in which delivery with any other forceps was impossible. Those present must take his word for the results obtained thus far, or go with him and see if there was any evidence of injury to any of the children, all of whom were living, on whom the forceps had been used.

**Dermoid Cyst of the Ovary; Chronic Cystitis.**—On behalf of Dr. Holmes, Dr. Longaker presented the history of a case which had terminated fatally after long suffering with pain within the pelvis and elsewhere, together with chorea. It was interesting from the fact that at the autopsy no lesions were found more serious than a moderate-sized dermoid cyst of the ovary slightly adherent to the omentum, with chronic cystitis, and from the simplicity of the operation that would probably have given relief.

Dr. M. Price spoke of the frequency with which cases came up of pelvic disease treated as malarial, rheumatic, neuralgic, etc., and mentioned as a case in point that of a lady whom he was now treating for ovarian disease. She was at present forty-seven years old. She was married when she was fifteen, contracted gonorrhœa from her husband at that time, and had since remained sterile, with scanty menstruation, and great pain—sometimes agonizing—on coitus. At times she had severe pain running down the left leg. On examination, the ovary was found to be as large as an orange and excessively tender, so that, when pressure was made on it in bimanual palpation, she went into convulsions on the table. The speaker did not know what relation this condition had to the trouble in her early married life, but it was certainly the cause of her barrenness.

**The Use of Terebene in a Case of Uterine Cancer.**—On behalf of Dr. J. S. Gibbs, Dr. Longaker read notes of the case of a lady with advanced carcinoma of the cervix uteri, in which, after a hæmorrhage had been controlled with Monsel's solution on a certain occasion, pledgets of cotton saturated with a mixture of one part of terebene and four parts of olive-oil were

packed against the cervix, according to the plan of Betrin, of Geneva. This mitigated the offensive odor, but it was suspected of being connected with the patient's death; within a few hours of the time of its application she sank into a somnolent state from which it was difficult to rouse her, with strangury and almost complete suppression of urine, and died in thirty-six hours. Post mortem, the cervix was found extensively infiltrated and ulcerated, and there were a few nodules in the body of the uterus. The ureters and the pelves of the kidneys were dilated. It was noteworthy that there was no cachexia or emaciation.

Dr. G. E. Shoemaker thought that the suggestion that death had been due to an application of terebene should be carefully considered. He was constantly using the drug and observing its use internally in much larger quantities than could have been absorbed from such an application, and without observing signs of irritation. He asked if death might not have occurred from uræmia independently of its use.

Dr. Longaker believed that the application of terebene had hastened the death; the strangury and suppression had come on quickly after it, and the case had lacked some of the ordinary symptoms of uræmia.

**Conjoined Twins.**—Dr. Goodell showed a specimen that had been sent to him by Dr. Junius F. Fuller, of Roxborough, N. C. It was a perfect specimen; the bodies were united at the hips and there were three feet in common. Some years before, analogous living conjoined twins had been on exhibition in Philadelphia, and he had brought them before his class at the university and given a lecture on the subject. From investigations then made, he had found that this form of conjoined twins was not a very rare one, as Aldrovanus and other old writers had described and figured them. The specimen now presented must have been cast off at the third month of gestation.

**Hydrosalpinx.**—Dr. Goodell also showed a specimen of hydrosalpinx, which was the largest one that he had ever seen, although he had met with much larger specimens of pyosalpinx. The patient had been treated by many gynæcologists, but the true condition had not been recognized. Complete relief from pelvic pain had followed the operation, but menstruation had continued up to the present time, although the periods were growing less frequent. Since it had been contended by some eminent surgeons that, when menstruation continued after the removal of the uterine appendages, some ovarian stroma must have been left behind, he wished to call attention to the complete removal of both ovaries and tubes in this case. Although the former had been more or less adherent, it was evident from the specimen that not a particle of ovarian stroma had been left behind.

Dr. M. Price had had two cases in which menstruation had not ceased at once after removal of the appendages, but had continued for a year and a half in one and for six months in the other. He had no doubt that Dr. Goodell's patient would show the same result; most operators had little doubt that in such cases the removal had not been complete.

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## NEW YORK CLINICAL SOCIETY.

*Meeting of January 27, 1888.*

The President, Dr. Robert Abbe, in the Chair.

**Lateral Curvature of the Spine; its Treatment by Exercise and Posture after the Method of Bernard Roth, with Demonstrations.**—Dr. V. P. Gibney read a paper on this subject (to be published hereafter), and made the demonstrations.

**Tubercular Disease of the Sheath of the Extensor Tendon of the Thumb.**—Dr. R. J. Hall presented a man with this not very common affection. The case was of interest because of the demonstrability of the tubercular character of the rice-like bodies present in the granulation tissue, the true nature of which had not until recently been shown. The patient was a German, aged twenty-nine, with no family tubercular or venereal history. He himself, however, had had a tubercular lymphoma in the neck, which had been removed some years before in Germany, the scar of which still remained. Several months ago he thought he strained the extensor muscle of the thumb, acute inflammation developed, and Dr. Lange operated three years and a half ago. But the difficulty returned, although the wound had healed eight weeks after the operation. The patient consulted the speaker in July, 1886, at which time he had a fluctuating tumor containing rice bodies. In addition to the rice bodies, the cavity was lined with soft tubercular granulation tissue, which could be scraped away with the sharp spoon. Many years ago Koenig had pointed out that these bodies were probably tubercular, but the tubercle bacillus had not been demonstrated. The speaker had first shown its presence in a case of Dr. Bull's. He proved that the bodies had not the structureless formation of coagulated fibrin, but were tubercular, with consecutive fibroid change. In the present case there had been a recurrence at the upper end of the sheath of the tendon.

The President asked whether the tendon was entirely denuded of its sheath, and remarked that at one time it was believed that the sheath was absolutely necessary for the free play of a tendon. It was now known, however, that a tendon could lie loose in the cellular tissue, denuded of its sheath, yet in a short time regain its freedom of motion.

Dr. Hall remarked that the granulation tissue in these cases was frequently mistaken for sarcoma.

The President recalled the case of a girl of six years ago, who had a condition similar in appearance to that described by Dr. Hall, which was pronounced sarcoma. She was operated upon in the New York Hospital, and there had been no recurrence, which went to show that the disease was not sarcoma.

**Fistula of the Trachea.**—Dr. D. B. Delavan presented a man who was in the third stage of phthisis. About five months ago a swelling developed over the lower part of the larynx, which progressed and formed an abscess. He applied for treatment at a homœopathic dispensary, where the abscess was opened, and during rather vigorous probing the instrument entered the trachea, forming an aerial fistula just below the cricoid cartilage. The fistula had never closed. The man appeared at the speaker's clinic a short time ago, and it was found that the abscess cavity had never been thoroughly cleansed, but was filled with broken-down, cheesy material. He asked the president what the prospects were of closing the opening by operation.

The President had had one case of aerial fistula in which the opening was sufficiently large to admit the finger. It was closed readily by a plastic operation.

**A Discussion on Alexander's Operation.**—Dr. H. C. Coe said that he could speak of the operation simply from observation. He was more interested in the anatomical questions involved than in the technique. Moreover, he had been able to observe in out-door patients the ultimate results of operations by several gentlemen, a privilege not always enjoyed by the operators themselves. With reference to the mechanical theory of the operation, he had never been able to divest himself of the idea that it was to a certain extent faulty. Granting that in cases of Alexander's operation, when performed for the relief of retroversion, the shortened ligaments served simply to retain the uterus in a position of anteversion, so that it could be acted upon by the intra-abdominal pressure and the weight of the intestines, it could not be denied that, when it was performed for the relief of old procidentia, the heavy organ was

actually suspended by two slender cords which were never intended by nature to sustain such a weight. The inference was that, while retroversion might be permanently cured by shortening the round ligaments, in prolapsus there was a constant tendency to relapse from stretching of the ligaments. Why should they not stretch just the same as the vaginal tissues stretched after plastic operations designed to afford support to the uterus? It seemed to the speaker as if the tendency was even greater, since the stretching force in the former case acted from below. Evidence was both anatomical and clinical; the former the speaker had derived from observations made in the dead-house, where he had satisfied himself that the amount of cord which it was necessary to draw out before the uterus was brought into the position aimed at theoretically was greater than that pulled out by most operators. The speaker had witnessed operations in which he was sure that the uterus fell back to at least the first degree of retroversion as soon as the sound had been removed. The operator could seldom judge exactly how much of the cord to pull out, as each patient presented individual peculiarities with regard to the normal length, thickness, and elasticity of the ligaments and the attachment of the peritonæum.

Remembering how often we met with pathological conditions of the tubes and ovaries where the extent of the disease had not been appreciated before the abdomen was opened, and the serious results that might follow forcible traction upon them when adherent, we could see one possible danger in dragging the uterus above the plane in which it had long been situated. Fatal cases were not unknown; the speaker had made an autopsy upon a young woman (perfectly healthy before the operation) who died of pyæmia following shortening of the ligaments for simple retroversion. Both wounds sloughed badly and the pus extended upward along the canals. The uterus was found lying in the hollow of the sacrum, as before the operation.

If the uterus was drawn upward to a sufficient extent to entirely overcome the prolapsus, the bladder was elevated to an abnormal degree and constant traction was exerted upon its neck, leading to frequent micturition, sometimes with tenesmus. This symptom the speaker had observed in two cases of Dr. Mundé's, in which the ultimate result of the operation as regarded the maintenance of the uterus in its normal position had been perfect. One patient was operated upon two years ago, the other five months ago. Still, the speaker had noted this same symptom in a case in which he performed hysterorrhaphy for retroflexion with fixation. It was practically impossible for the operator to know exactly how much traction could be exerted upon the uterus without also making undue traction on the bladder.

There could be no doubt, from the standpoint of the non-surgical physician, that Alexander's operation was rather a severe method of dealing with a condition that in itself caused simply annoyance and discomfort, and never shortened life—did not even make the woman an invalid. Its true sphere was admitted to be in cases of procidentia in working women. But they were just the persons in whom the results were least likely to be permanent. We should see patients at the end of one, two, or three years before making up our statistics. Unfortunately, this had been done in only a small proportion of the recorded cases (now amounting to several hundred). The speaker had performed Le Fort's operation for complete procidentia, and the uterus remained in position for two years, but finally came down again. The organ was not large, but continual straining and lifting finally overcame the resistance offered by the adhesions of the vaginal walls. Let us clearly understand whether Alexander's operation offered a cure in itself, or simply enabled a patient to wear a pessary to greater advantage than before. Certain operations on the vagina and perinæum accomplished this also.

The President had had an experience with Alexander's operation which had developed in him some enthusiasm for it. He had performed it eight times, with, as far as could be judged at present, marked success. The earliest operation, however, dated back only a year and a half. In four cases the operation was done for extreme procidentia, in three for moderate procidentia, and in one for retroversion.

The case of retroversion was the first. The uterus was tilted completely backward on to the rectum, and gave the usual symptoms in great severity. The patient was practically disabled. The ligaments were very easily found, and the uterus was dragged up by pulling them out three inches and a half on one side and four inches on the other. Then one ligament was pulled through the subcutaneous cellular tissue over the pubes to the opposite side, and there tied in a knot with the opposite ligament so as to make it perfectly secure against retraction. The wounds healed primarily and the womb was held up against the pubes. The patient remained perfectly well five or six months, when pains developed in the pelvic cavity of a different character from those which had existed there formerly. It was found necessary to remove the ovaries, and during the operation he had an opportunity to examine the condition of the uterus. It was being held up in its normal position without the slightest retroversion. The round ligaments were firm, but not in a state of marked tension, showing that they were in the position they had been placed in a year before. The uterus when first replaced was in a state of hyperplasia; the fundus was large and heavy, and the cavity measured three inches and a half. At the time of the laparotomy the uterus was still large, yet it was being held in position. The removal of the ovaries led to marked atrophy of the womb.

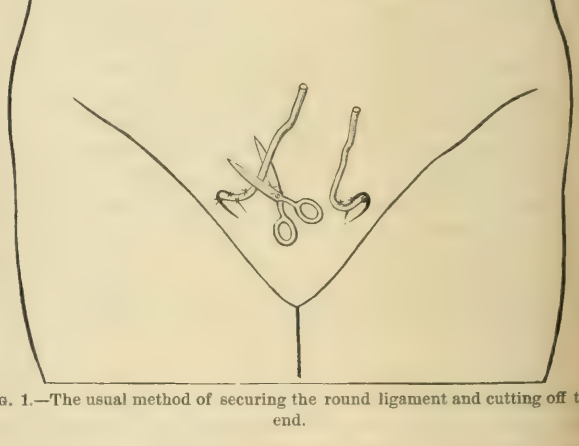


Fig. 1.—The usual method of securing the round ligament and cutting off the end.

The next case was one of procidentia uteri. While it was not an extreme case, yet the womb was outside the body. Alexander's operation was performed in the same way as in the first case, except that the ligaments were pulled out a distance of four inches on either side. A small incision was made over the symphysis, through which both ligaments were drawn, one from either side, when they were looped together and the two ends stitched to one another to retain them firmly in place. Primary union took place and the patient made a good recovery. The patient married a second husband soon after the operation, and there had not since been the slightest indication of recurrence of the procidentia. The operation was done eighteen months ago.

In another case the procidentia existed in the third degree, and cystocele was well marked. In this case he tied a knot in

the round ligaments over one inguinal ring. Primary union occurred. The uterus was retained well up in position. This pa-

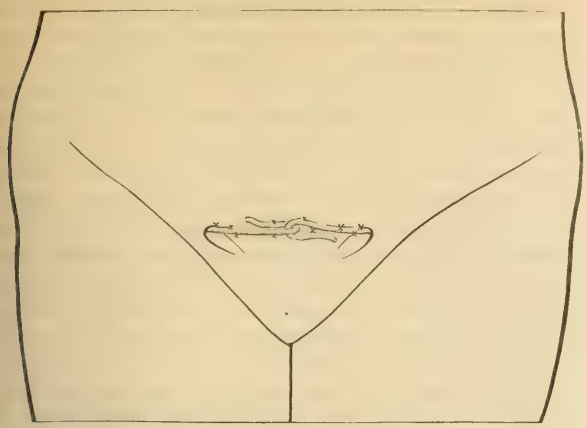


FIG. 2.—Subcutaneous looping and stitching of the ligaments together, a small incision being made.

tient had had the womb outside of the vulva three or four years, and had suffered much in consequence.

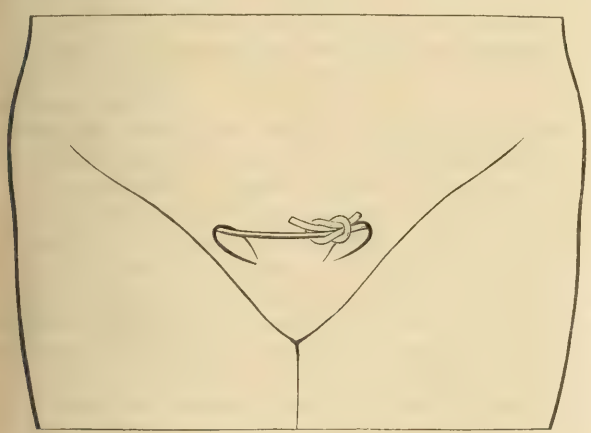


FIG. 3.—Knotting of the ligaments together subcutaneously.

In one other case he resorted to a different method which he thought well illustrated the manner in which success was obtained in holding the uterus in position by the round ligaments. The ordinary method of cutting off the redundant portion of the ligaments after pulling them out, and stitching the remaining portion at the inguinal ring, it seemed to him, gave a

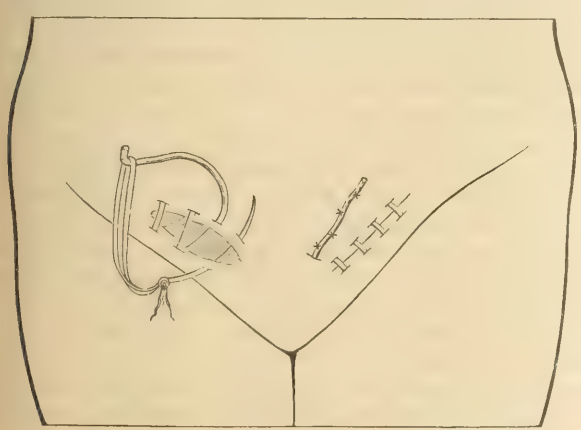


FIG. 4.—Suture of the inguinal ring with the round ligament.

chance for the ligament to slip back. He had practiced three different methods in order to avoid this accident. The first consisted in looping the ligaments together, the second in tying them together in a knot, and the third in using them as a suture to close the wound made while searching for them. He had resorted to the latter method in three or four cases. Primary union had followed, the ligament could not possibly slip back, and the result had been uniformly good. In one case he had been able to find but one ligament, which he used as a suture in the manner described, and it held the womb well in place.

Regarding stretching, it did not seem very probable that the round ligament would stretch much. He had had opportunity to examine the conditions of the womb and ligaments after laparotomy performed some time subsequent to Alexander's operation in one other case. Dr. McBurney had performed Alexander's operation on the patient with the result of the round ligaments holding the uterus well in place, and the speaker had occasion to perform laparotomy for a circumrectal growth some months later.

Dr. COE asked the president in what way he would account for the subsequent fall of the uterus outside the vulva after Alexander's operation if there was no stretching of the round ligaments.

The PRESIDENT supposed that in such cases there was slipping back of the round ligaments. That the ligaments could support the uterus was evident from the fact that in one of his cases he had employed no other support; there was laceration of the perinæum, which he did not close, yet the womb was retained perfectly in place after shortening the ligaments. The ligaments could be felt to roll under the fingers over the pubes after the operation.

Dr. G. M. TUTTLE'S experience with the operation had been limited to the observation of cases in the hands of other operators and to two of which he had had the immediate care. The technique of the operation in the hands of skillful surgeons seemed to be uniformly practicable. A theoretical objection which had presented itself to his mind was that the operation did not seem to imitate Nature's method of doing her work. He fully agreed with Dr. Coe that we needed an experience of some time to prove that a large, heavy uterus could be hung by two cords which all anatomists acknowledged did not in the natural state do much toward supporting that organ. He found it difficult to believe, on either theoretical or practical grounds, that the uterus could be hung successfully for any length of time when all the supports below had given way. The case reported by the president would seem to be a very unusual one. He did not think the operation was adapted to extreme procidentia unless supplementary methods were employed—that was to say, building up the pelvic floor from below. The operation appeared to him to have a true field in uterine retroversion and retroversion with retroflexion. There, as all men with practical experience in trying to correct such displacements knew, it was of the greatest difficulty to throw the uterus so far forward that the intra-abdominal pressure would exert itself chiefly on its posterior wall. That was chiefly what we tried to do with the pessary or tampon applied in the vault of the vagina. Shortening the round ligaments under such circumstances would seem a valuable supplementary measure in keeping the uterus for a time at least in its forward position. A further supplementary measure in cases of enlarged uteri was the induction of involution by cutting out a piece of the neck, as practiced by Martin, of Berlin. The speaker hoped that all surgeons who had performed the operation would realize the importance of reporting the full results for as long a period as the patients could be kept under observation.

Dr. W. M. POLK, by invitation, was sure that the remarks which he had heard were ample stimulus to any one to speak in favor of the operation if he had a predilection in that direc-

tion, as he most decidedly had. There was nothing in the new operation which so attracted one's attention as the fact that in setting out to accomplish a certain object it did it with at least as little risk as procedures which had already been devised for that purpose. That being the case, the operation should be judged only by its curative results as compared with those of others.

Dr. Tuttle was probably correct in the view that, if we sought to correct procidentia by swinging the uterus from the round ligaments, we should be flying in the face of Nature. But operators of experience had ceased to rely upon shortening of the round ligaments alone to retain the fallen uterus in its corrected position without resorting to further measures. It was necessary to repair the perinæum and narrow the vagina, and, having done this, it was further necessary to adopt some means of retaining the uterus in the anterior inclination, to prevent its resuming that of retroversion. To accomplish the latter object, the speaker looked upon the Alexander operation as the ideal one. It was imitating nature as nearly as possible under the circumstances.

As to the results, in his cases they had been the same as those related by the president, nor could he see any reason why the patients should not remain permanently benefited. The results up to the present time had been good. He asked Dr. Coe whether in the case referred to in his remarks, in which the cervix appeared at the floor of the pelvis, there had not been hypertrophic elongation of the cervix.

Dr. Coe replied that in two cases the uterus itself had fallen.

Dr. Polk said that that brought up the question as to whether the ligaments themselves could become stretched. He thought there was no doubt that they could. In one of his cases he made too great traction upon one ligament, and it broke, so that he had only the remaining one with which to support the uterus. On the fourth day he learned that the nurse had neglected to use the catheter, and, as the woman could not void the bladder voluntarily, the viscus became distended and caused backward and downward displacement of the uterus. He opened the wound to see whether the ligament had broken from its attachments, but he found the sutures had retained it in the position in which he had left it, thus proving that the cord must have become stretched. Of the cases of procidentia treated by colporrhaphy and perinæorrhaphy by Schroeder, about one third relapsed at the end of two years, but the speaker thought that if he had added Alexander's operation, so as to bring the uterus forward and hold it there, there would not have been those relapses. The mere fact that one third of the cases relapsed after the old operation was reason for adding Alexander's.

Regarding Alexander's operation for retroversion of the uterus, its benefits were conceded even by its opponents. One of the objections which had been raised to it was that in some cases it was unquestionably an anatomical success but a therapeutic failure. It was often the case that the therapeutic failure was most pronounced a few months subsequent to its performance. But when we inquired into the causes of this failure it would be found that in many instances it was due to an improper selection of cases. He urged upon those who took any interest in the procedure the importance of making an accurate diagnosis. In retroversion and retroflexion it was necessary to determine exactly the condition of the uterine appendages, and that could be done only under anæsthesia. Fortunately this examination could be made at the time of the proposed operation. Simple bimanual examination as ordinarily practiced was not sufficient. The uterus should be grasped with the volsella, the finger introduced into the rectum, and a thorough examination made of the posterior surface of the uterus, of the round ligaments, and of the Fallopian tubes, for it was often only in this manner that it could be determined whether or not there were conditions present which might contra-indicate the operation. When disease of the tubes or ovaries was found, the operation should either be abandoned or be performed with the express understanding that it might not prove successful. When the tubes were dilated it should not be done at all, for in that case another procedure would be better. If there was cystic enlargement of the ovaries, Alexander's operation would be of no service, whereas, if there was enlargement of those organs due to congestion, it would result in good by bringing about involution. In these cases there was usually subinvolution of the body of the uterus, which might be a guide to the form of enlargement of the ovaries.

When the operation was done we should not pass judgment upon the results until sufficient time had elapsed for the disappearance of the congestion incident to the former displaced condition of the organ. That time differed in different women. In some it required only a month; in others it took six months. Therefore we should allow at least six months to elapse before we pronounced the operation a failure in a given case. Many of the most distressing cases were those in which the uterus was bound down because of inflammation in the structures around it, cases in which there was fixation of the ovaries and tubes as well as of the uterus. This state of things had been treated in various ways. Formerly it was attempted to bring the uterus up by pressure from the vagina, while subsequently the pressure was made from the rectum; again, the same result was sought for by forcibly bringing the uterus up with a sound inserted into its cavity, and Schultze had brought forward some very interesting experiments performed through the rectum while the patient was under the influence of ether. The speaker suggested that in this class of cases the abdominal cavity should be boldly opened and the adhesive bands binding down the tubes and ovaries torn up. If these organs were sufficiently inflamed to justify it, they should be taken out. He was satisfied that in some of these cases the cause of the patient's sufferings was simply the binding down of the tubes, ovaries, and uterus by adhesions. Where the tubes and ovaries were bound down by adhesions we should expect interference with their nutrition, and we might reasonably suppose that if they were released they would return to their normal state. Only last Saturday he had operated in a case in which he found only one tube bound down, and its opening at the fimbriated extremity readily admitted a probe. But if the adhesions were torn up and the organs were allowed to drop back, the question would arise, Might they not again become adherent and the painful symptoms be renewed? He believed that, if in such cases Alexander's operation was added, the patient's chances of recovery would be greater.

Regarding the results of the operation, he had performed it thirty-nine times, and his house physician had done it three times under his immediate supervision, thus making forty-two cases which he had to report. As examples he recited three. In the first the patient had suffered extremely from dismenorrhœa for years. Even during the intermenstrual period her life was a burden. She had been able to command the best surgical and medical care, but her condition failed to improve. She married, but no change for the better took place. Finally, in despair, a surgeon advised her to have her tubes and ovaries removed. She objected and came under the speaker's care, and he performed Alexander's operation. He had seen her that day, and the result had been a permanent cure. The second patient was one who had been treated five years for what was called nervous prostration, and during a year and a half had

been confined to bed. The speaker found posterior displacement of the uterus and prolapsus of both ovaries. She had had the best medical care without relief. He performed Alexander's operation a year ago and she was now well. The third case was that of a broken-down hospital patient, who had retroflexion and hyperplasia of the uterus, also congestion and prolapsus of both ovaries. She was hysterical in an extreme degree. He did Alexander's operation, and a month afterward she became pregnant and gave birth to her child at term. The pregnancy went along without accident, as did also the labor, which was the easiest she had had. Thirty days after the labor he examined her, and found the uterus small and in precisely the same position in which it had been placed at the time of Alexander's operation. The case showed that stretching of the ligaments would not in all cases lead to a return of the uterus to its former bad position. It was true that in this instance there was physiological stretching, and subsequently there was physiological contraction.

The speaker thought it was well to join the two ligaments in the manner suggested by the president, although he had never so operated. The single incision over the publes was preferred. Regarding the wearing of a pessary, he had not used it, but he thought it would be well to do so as a precautionary measure. To avoid suppuration he now employed drainage. If necessary, he thought there was no objection to opening up the canal to the peritonæum in order to secure the ligaments.

The PRESIDENT asked Dr. Polk whether he had seen difficulty from frequent urination following the operation.

Dr. POLK replied in the negative. Nor had he seen prolapsus of the anterior wall of the vagina, to which attention had been called by Dr. Mundé.

The PRESIDENT remarked that he had observed cystitis follow the use of a dirty catheter after this operation, which had caused difficulty with urination, but otherwise there had been no special bladder trouble. He asked Dr. Polk what his guide was to the length of the ligament to be withdrawn.

Dr. POLK said he was guided solely by the position of the uterus.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of February 22, 1888.*

Dr. W. W. KEEN in the Chair.

(*Concluded from page 273.*)

**Macewen's Operation for the Radical Cure of Hernia.**—In the discussion of Dr. Keen's paper (see page 272), Dr. H. R. WHARTON said that he had had no personal experience with Macewen's operation for the radical cure of hernia, but had seen two cases in which Agnew's operation had been employed, and three or four in which MacDowell's method had been resorted to; these had been subcutaneous operations, and did not compare with this open operation in thoroughness. The immediate results had seemed good in the cases referred to, but in a short time the hernias were down again. Recent reports from England, though still too recent to allow us to estimate the permanency of the cure, were very encouraging. As to Macewen's operation, the speaker thought it one of the best that had been proposed, and if any radical procedure was to be undertaken it seemed to promise the best results. Of course, any operation was more apt to be successful in children than in adults.

Dr. C. DULLES asked if any appliance other than the bandage had been used after the patient began to go about. The hernia looked as if it had been down some time, and not as if it had descended recently. He thought it would be best not to trust solely to the strength of the tissues for a little while after these operations. There was a point in the mechanics of hernia which he had noticed, and which he had not seen described by others, and that was that a patient with an inguinal hernia usually had a pendulous abdomen. He had been curious to see if this spare patient of the chairman's followed the rule, and he saw that he did. He might lay too much stress upon the matter, but he believed that the best appliance was not one which made pressure over the ring alone, but one which corrected this abdominal outline and changed the direction of the thrust of the intestines from one at right angles to the plane of the hernial opening to one parallel to its plane. Such an abdominal supporter as women wore would answer the purpose, and he believed that it would add to the chances of permanent success after operations for the radical cure of hernia.

Of the cause of failure the CHAIRMAN could only say that apparently the reparative power had not sufficed to produce adhesion of the sac to the abdominal wall. Why, unless the two chills referred to had had some influence, he did not know. The usual practice of those who had had a large experience with these operations had been not to use any truss. He must take exception to a diagram drawn by Dr. Dulles. That gentleman was right as to the shape of the abdomen, and in correcting it to a more oblique outline, but the pressure would always be at right angles to the abdominal walls anteriorly, and not, as he had it here, down into the pelvis. That would, however, correctly express the direction of the rebound. As to the exact time when the hernia reappeared he could not say.

Dr. DULLES said that when we bore in mind the comparatively mobile state of the contents of the abdomen we must see, of course, that the intra-abdominal pressure was exerted in all directions, and we might draw any number of arrows to indicate it; but there was only one direction of "*thrust*," which was the resultant of all the lines of pressure; and by supporting the abdomen, as he had suggested, by a firm and comparatively unyielding support, we turned the direction of that thrust into a line following the axis of the pelvis, and took it off the ring.

**An Improved Obstetric Forceps.**—Dr. W. S. STEWART read a paper on this subject. It was not his intention to enter into a general discussion of the merits or demerits of forceps; he would content himself with endeavoring to point out the advantages of having parallel handles, so that the application of either blade first could be made at will, as the exigencies of the case might require. The improvement in the instrument shown was not restricted to any special form of blade, but could as readily be applied to the straight as to the curved, its use being equally effective with either form. The first object, for which he had been most solicitous, was to have an instrument which could be used readily in presentations where it might be desirable to apply the second blade first, as sometimes in the second position of the head when jammed into the cavity of the pelvis and rotation to the antero-posterior diameter had been prevented by a narrow, contracted passage. In all such cases there was no difficulty in applying and adjusting the first blade, but occasionally it was impossible to apply the second, the only remedy being to reverse the order by applying the second blade first, running the risk of injury to both mother and child in the recrossing of the handles, in order that they might be locked before making traction. This he had overcome by having the handles made parallel to each other, and without overlapping, as in the ordinary instrument. Each handle had its own independent lock, the two being connected by a plain bar, which would admit of adjustment, no matter which blade was applied first.

To overcome the danger of slipping, and to secure the grasp

on the fœtus, it was necessary to devise some method of reversing the direction of the handles, in order that traction might be applied. To accomplish this a double lever was devised, one part on each handle, and each working on the same pivot or fulcrum; to this the traction was applied, resulting in a power perhaps superior to anything that could have been expected. The compression of the fœtus was no longer in proportion to the power in the grip of the hand applied to the instrument, as in the cross-handles, but was regulated simply by the resistance to be overcome, and beautifully illustrated the mathematical relationship between the force and the resistance; consequently all fear of the slipping of the instrument was obviated, and the only force necessary to be applied was for the extraction of the fœtus, serving at the same time for compression and traction. The compression, however, was controlled by a shoulder on the toggle-joint, preventing any risk to the child, and its limit corresponding to the position of the blades of the cross-handled instrument when the handles were in apposition. Should there be any irregularity of application, and consequent difficulty in locking, he had devised a coned hub with a winged nut, which, though the handles might be at an angle of twenty degrees, enabled them to be adjusted.

The advantages of this improvement, as experience had demonstrated, were as follows: 1. The applicability of either blade first. 2. The impossibility of the slipping of the blades when properly applied. 3. Moderate and even compression, the degree of compression being regulated by the amount of resistance. 4. Greater facility for making traction.

Dr. Longaker thought that the only advantage of this modification was that the forceps was not so likely to slip. This was due to the parallelism of the blades, which was maintained even though the blades were not on opposite sides of the child's head, and in cases of very large heads, where it was difficult to recross the handles. There was in existence another device for the same purpose, a very simple one, a mortise lock at the end of the handle. Personally, he thought the forceps introduced by Sir James Y. Simpson could not be improved upon.

Dr. Packard thought that the difficulty of recrossing the handles ought not to be such as to render a special mechanism needful in order to avoid it. And he could not but think that the deviation of the blades from parallelism, however brought about, involved danger. In the old style of forceps—and the Hodge pattern had always seemed to him the best—each blade, used singly, was a vectis; one handle was a blunt hook, an instrument often of great value; the other was a sharp hook, covered, when not in use, with a steel cap screwed on. Such a combination of instruments, which was very convenient in a practice involving long distances, could not be, or at least was not, offered in the forceps presented by Dr. Stewart.

Dr. George E. Shoemaker said that, while this instrument was, no doubt, safe in Dr. Stewart's hands, it might not be so in those of others. That toggle-joint was a very powerful mechanical appliance, and the "shoulder" did not limit its action until the blades were quite close together. A moderately large head would not let them get so near together, and a very violent and harmful compression would result from even moderate traction upon the handle.

Dr. Stewart said that among the original forceps as represented in the older works were those with parallel blades, but he did not know of anything like this instrument. Of course, he did not claim all the credit of this invention, but shared it with the instrument-maker, who had carried out his ideas. He had been induced to have such an instrument made because of a number of complicated cases which had come under his care, especially a difficult one in which he had been called to assist a friend, who had been trying all night to get on the second blade of the forceps in a very narrow pelvis, where the child's head was jammed (in the right iliac region) and would not rotate. He advised using the second or female blade first, which was done with caution in recrossing the handles, and the delivery was speedily effected. He was not anxious to use forceps or to make lacerations. His rule was not to apply instruments as long as there was any rebound to the labor. There need be no fear of the toggle-joint permitting the blades to approach too closely, as the shoulder could be adjusted to any desired distance. If a wedge was all that was wanted, the toggle-joint was a better wedge than the cross-joint. The amount of compression was regulated by the necessities of the case. If the mother was left alone, she compressed the head of her child in her labor. In the cases (eight) where he had used this instrument he had not found a trace of its mark twenty-four hours after delivery. He believed that in cases of contracted pelvis where other instruments could not deliver, this could.

## Book Notices.

*L'iodisme.* Par Elisabeth N. Bradley, Docteur en médecine de la Faculté de Paris; Membre de la Société zoologique de Paris. Paris: G. Steinheil, 1887. Pp. iv–168.

This book has a history. The ceremony of defending a thesis is the final exercise which is exacted of a Parisian medical student preparatory to receiving the college diploma. "L'iodisme" is the thesis upon which our American author was questioned with great shrewdness and ability by four of the leading professors of the *École de médecine*—Fournier, Gautier, Porchet, and Robin. Each of these gentlemen brought to the examining-room a copy of the book, with multitudinous interrogation-marks on the margin. With admiring frankness, after an hour and a half of trenchant questions, the examiners thus spoke: "You have been working a new field. We can not agree with many of your conclusions. Further investigations may lead either yourself or us to different views; but, meanwhile, you have presented to the college a thesis which does you uncommon honor, and for which we unanimously award you the maximum mark of merit."

Dr. Bradley's "Conclusions" at the end of the volume, fifteen in number, give a bird's-eye view of the subject-matter: 1. Free iodine is absorbed by the skin and by the mucous and serous membranes. It is carried throughout the body by means of the circulation and eliminated by every gland. 2. Preparations of iodine are not absorbed by the skin or the mucous or serous membranes until they have undergone a species of decomposition by which the iodine is set free. 3. In certain conditions of physical degeneration, especially in cardiac and renal troubles, or conditions of morbid nervous irritability, iodine may produce augmented physiological phenomena, together with signs of poisoning. 4. Symptoms of iodine poisoning manifest themselves by derangement of all the functions of the organism, intensified at any point of particular weakness. This condition of affairs may appear immediately or only after the prolonged use of iodine. In either case their onset may be gradual or abrupt. 5. The most constant symptom of iodine poisoning is an excessive acceleration of the pulse, which is feeble, compressible, and sometimes not discoverable in grave cases. 6. This morbid state of the pulse is unaccompanied by a corresponding elevation of temperature. The temperature may be normal or subnormal. 7. The cause of this lack of correspondence between the pulse and temperature must be sought

for in some morbid condition of the nerve-centers themselves. 8. Disorders of the circulation are manifested above all by an œdema that may confine itself solely to the eyelids in slight cases, but which in severe ones extends to the glottis, the lungs, or the brain, or throughout the entire body. 9. The nature of the blood is altered, and hæmatosis does not take place naturally. 10. The circulatory disorders are followed by changes in the quantity and quality of the urine. Albuminuria, nephritis, and hæmaturia are of frequent occurrence, and follow a decrease in the amount of urine eliminated, or may be sequelæ of ischuria. 11. The nervous phenomena are those alike common to cerebral anæmia and cerebral hyperæmia, sometimes appearing as uræmic convulsions or uræmic coma, and again as hypochondria or general paresis. 12. The lungs participate in this condition of general disorder. There are pulmonary diseases that are more or less directly traceable to derangement of the circulation, such as bronchitis, œdema, hæmoptysis, etc. Frequently there are dyspnœa, irregular respiration, and apnœa. 13. Digestive abnormities take the form of anorexia or bulimia, nausea, vomiting, intestinal or gastric pain, sometimes diarrhœa or constipation. 14. The nutrition of the skin is defective, and there is passive dilatation following spasm of the capillaries. Eruptions of various kinds make their appearance, such as erythema, urticaria, papular and vesicular affections, and purpura. 15. The joints also may be attacked and become swollen and painful.

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*Rectal and Anal Surgery*, with a Description of the Secret Methods of the Itinerants. By EDMUND ANDREWS, M. D., LL. D., Professor of Clinical Surgery in the Chicago Medical College, etc., and E. WYLLYS ANDREWS, A. M., M. D., Adjunct Professor of Clinical Surgery in the Chicago Medical College, etc. With Original Illustrations. Chicago: W. T. Keener, 1888. Pp. vi–111.

THIS little book aims to show two things: 1. The best methods of diagnosis and treatment of rectal affections known to the regular profession. 2. The secret methods of the itinerants, and their value.

In dealing with the first question the book is merely a useful compend of salient points in rectal surgery, not purporting to be at all complete. The greater part of the subject has been omitted, but what has been written is sound and true, and shows good judgment and some experience. It constitutes a manual of the rudiments of rectal surgery.

On the second point Dr. Andrews has spent a good deal of time, and seems really to enjoy his crusade against the traveling "rectal surgeon." He stands him up and knocks him down with never-ceasing delight. It is a good work, too, inasmuch as it shows the fallacy of the idea that these men have any secrets not known to the regular profession. But the traveling rectal specialist is dead, and this little *exposé* is a very fitting monument for him.

## GENERAL LITERARY NOTES.

AMONG recent foreign publications we note the following:

ASSELIN & HOUZEAU, Paris.—S. Jaccoud, "Leçons de clinique médicale faites à l'hôpital de la Pitié (1886–1887)." (7*fr.*)

J. B. BAILLIÈRE & FILS, Paris.—N. Charles, "Cours d'accouchements donné à la Maternité de Liège." 2 vols. (15*fr.*) —— C. Vibert, "Étude médico-légale sur les blessures produites par les accidents de chemin de fer." (3*fr.* 50.) —— P. M. Simon, "Le monde des rêves; le rêve, l'hallucination et l'hypnotisme," etc. (3*fr.* 50.) —— B. Ball, "La folie érotique." (2*fr.*)

A. DELAHAYE & E. LECROSNIER, Paris.—Durey-Comte, "Contribution à l'étude du rétrécissement congénital de l'artère pulmonaire." (3*fr.* 50.)

O. DOIN, Paris.—Huguet, "Traité de pharmacie théorique et pratique." (18*fr.*) —— A. Peytoureau, "La glande pinéale et le troisième œil des vertébrés." (2*fr.* 50.) —— A. Corre, "Traité clinique des maladies des pays chauds." (15*fr.*)

J. GALLET, Lyons.—L. Meurer, "Des amputations à lambeaux cutanés."

G. MASSON, Paris.—"La syphilis et la prostitution dans leurs rapports avec l'hygiène, la morale et la loi." 2d ed. (5*fr.*) —— E. Willm and M. Hanriot, "Traité de chimie minerale et organique, comprenant la chimie pure et ses applications." 4 vols. (45*fr.*)

BUREAUX DU "PROGRÈS MÉDICAL," Paris.—Pinon, "Administration et comptabilité hospitalière." (1*fr.* 50.) —— E. Rolland, "De l'épilepsie Jacksonienne." (3*fr.*) —— A. Ferret, "De l'ophthalmie granuleuse (ophthalmie endémique d'Algérie)." (2*fr.* 50.)

J. ROTHSCHILD, Paris.—A. Coutance, "Venins et poisons." (10*fr.*)

G. STEINHEIL, Paris.—H. Barbier, "Étude clinique de l'albuminurie diphthéritique et de sa valeur séméiologique."

T. C. F. ENSLIN, Berlin.—M. Schulz, "Impfung, Impfgeschäft und Impftechnik." (3*M.*) —— L. Becker, "Anleitung zur Bestimmung der Arbeits- u. Erwerbsunfähigkeit nach Verletzungen." (3*M.*)

HEUSER, Neuwied.—Brennecke, "Beiträge zu einer Reform des Hebammenwesens." (2*M.* 40.)

L. HOFSTETTER, Halle.—P. Bunge, "Ueber Exenteration des Auges." (3*M.* 60.)

O. KLEMM, Leipsic.—L. Feldmann, "Ueber die Entwicklung organischer Erkrankungen des centralen Nervensystems bei Personen welche lange an schwerer Hysterie gelitten haben."

LAUPP, Tübingen.—C. Gerhardt, "Handbuch der Kinderkrankheiten." Part vi, 2d ed. —— C. Gerhardt, "Die chirurgische Krankheiten des Kindesalters." Part i. (12*M.*)

J. F. RICHTER, Hamburg.—C. Lomboroso, "Der Verbrecher in anthropologischer, ärztlicher und juristischer Beziehungen." (15*M.*)

F. C. W. VOGEL, Leipsic.—E. Lesser, "Lehrbuch der Haut- und Geschlechtskrankheiten." Part ii, 3d ed. (6*M.*)

L. VOSS, Hamburg.—C. Arnold, "Repetitorium der Chemie." 2d ed. (5*M.*) —— E. Harnack, "Die Hauptthatsachen der Chemie." (2*M.*)

A. ZIMMER, Stuttgart.—Lindenmeyer, "Praktische Anleitung zur Ernährung des Kindes."

FRATELLI RECHIEDEI, Milan.—N. De Dominicis, "Piccolo dizionario di terapia clinica ossia formulario clinico terapeutico." (5*l.* 50.) —— G. Berruti, "Formulario terapeutico ragionato." (5*l.*)

F. VALLARDI, Rome.—A. Guzzoni degli Ancarani, "Il taglio cesareo." (1*l.* 25.)

# Reports on the Progress of Medicine.

## OPHTHALMOLOGY.

BY CHARLES STEDMAN BULL, M. D.

**The Nature of the Disturbance of the Light-sense.** — Treitel ("Arch. f. Ophthal.," xxxiii, 1), in reviewing the various theories that have been advanced upon this subject, states that Wolfberg's method of investigation does not establish the existence of an anomaly of the light-sense, but rather a disturbance of function which constitutes the nature of hemeralopia. According to views hitherto held, in cases of opacity of the media and largely in diseases of the optic nerve and retina only the space-sense and color-sense are affected, while the light-sense remains intact, and that in cases of hemeralopia in consequence of abnormal light-sense, disturbances of the space-sense and color-sense result. By the establishment of a more correct system of description of the disturbance of the light-sense, however, it is found that the disturbances of function of the various qualities of the visual sense always run a parallel course, and that they may arise in one of three ways: from cloudiness of the refractive media, from diseases of the optic nerve and retina, and from hemeralopia. The light-sense can not be interfered with independently of the space and color-sense, a fact not without interest with reference to the pathology of visual perceptions.

**Two Cases of Primary Glaucoma in Young Persons, with Remarks on the Doctrine of Glaucoma in General.**—Lange (*ibid.*) does not believe in the existence of inflammatory processes in the eye which last but a few hours or even minutes and then disappear without leaving a trace behind. But the long catalogue of symptoms met with in simple glaucoma may all be referred to disturbances of circulation. These disturbances of circulation and the symptoms evoked by them are only temporary and soon disappear, as long as the regulatory apparatus of the affected eye is in a position to equalize the disturbances of circulation occurring in the blood and lymph currents. Lange regards Mauthner's statement that increase of intra-ocular tension does not necessarily belong to the glaucomatous complex of symptoms as decidedly dangerous. It is, on the contrary, to be regarded as the pathognomonic symptom. Glaucoma may occur without excavation, as the latter, known as pressure excavation, is only developed at a relatively late stage of the disease. Lange has never failed to observe in the various forms of glaucoma increase of the intra-ocular tension, or at least demonstrable variations of tension. The so-called glaucomatous or overhung excavation of the papilla need not necessarily be ranked among the complex of symptoms of glaucoma. As regards the occurrence of cicatrization after iridectomy for glaucoma, Lange regards the filtration-scar as desirable, as it is a guarantee for the normal state of intra-ocular tension. What has hitherto been called glaucoma is no clear pathologico-anatomical idea, but is a more or less complicated complex of symptoms, the nature of which is very variable and by no means always understood. In the present uncertain condition of our knowledge on the subject it is well to judge of each theory of glaucoma by its application to some one case which it seems to explain; in other words, to give a certain amount of credence to all theories without favoring any one theory as explanatory of all cases of glaucoma. Lange denies the truth of the view that hypermetropic eyes are peculiarly prone to glaucoma. He reports on the refractive state of 163 cases of primary glaucoma in which there were 40 cases of myopia.

**The Influence of Mydriatics and Myotics on the Intra-ocular Tension under Physiological Conditions.**—Stocker (*ibid.*) draws the following conclusions from his experiments: 1. Atropine slowly diminishes the intra-ocular tension under physiological conditions—that is, in the eye of the animal under the influence of curare. 2. Cocaine diminishes the intra-ocular tension under normal conditions for about two or three millimetres. In the majority of cases the diminution of tension is preceded by a slight increase of tension. 3. Eserine increases primarily the tension in the physiological eye. This is not preceded by a diminution of tension, but subsequently the tension diminishes to a greater degree than it was previously augmented. 4. Pilocarpine diminishes the tension slowly in the physiological eye after the primary increase of tension has subsided. During the period of pressure variations, there may be observed an increase of the middle intra-ocular tension on both sides. The play of the pupil does not necessarily stand in any causal relation to the increase or diminution of the ocular tension. Both mydriatics—atropine and cocaine—exert no influence upon the radius of curvature of the cornea so far as this can be shown by the ophthalmometer. Both myotics—eserine and pilocarpine—during the myotic effect, shorten the radius of curvature of the cornea from 0·1 to 0·2 of a millimetre.

**Spontaneous Absorption of Senile Cataract.**—Meyer (*ibid.*) draws the following conclusions from his observations: Spontaneous absorption of cataract, not only in the young but also in elderly persons, has been occasionally observed, even when the entire lens has been cataractous. As regards the possibility of absorption of cataract with maintenance of the lens-fibers in an intact condition, Kunde's experiments on frogs have proved that this is possible. In the human lens, however, this has not been demonstrated; and, since in total cataract the clearing up occurs by absorption, the rare cases of retrogression of beginning cataracts must be ascribed to absorption, and not to a clearing up with maintenance of the lens-fibers. This process has been frequently observed in traumatic cataracts.

**Overstrain of the Accommodation and its Consequences.**—Schoen (*ibid.*) begins by calling attention to two factors which aid in the obstruction of overstrain: 1. The lamellæ of the suprachorioidea are the tendons of the meridional fibers of the ciliary muscle, are inserted in the sheath of the optic nerve, and consequently surround the entire vitreous. 2. The zonule is anatomically divided into an anterior and a posterior band, which, in the act of accommodation, possess different functions. In addition, there are a few median zonula fibers, which are inserted immediately behind the equator of the lens. The fibers of the ciliary muscle are functionally divided into three groups: external meridional fibers, internal meridional fibers, and circular fibers. The meridional fibers pass into the optic-nerve fibers, which form the external layer of the chorioid, and are inserted into the sheath of the optic nerve. The external meridional fibers are also inserted anteriorly around the canal of Schlemm. The internal meridional fibers have anteriorly a relatively movable insertion. The external meridional fibers compress the vitreous and draw the chorioid forward. The internal meridional fibers compress the vitreous, and draw the internal angle of the ciliary body backward. The circular fibers draw the internal angle of the ciliary body toward the axis of the eye. The result of the combined contraction is: movement of the inner angle of the ciliary body inward and backward, and compression of the vitreous with increase of tension. In accommodation for the distance, both leaves of the zonule are put on the stretch. The entire tension of the vitreous is brought to bear against the posterior surface of the lens. In accommodation for the near, the posterior fibers of the zonula relax, the vitreous approaches the lens in the spaces around it, and ceases to exert any material pressure. The anterior fibers of the zonule, in accommodation for the near point, are not relaxed, but rather put still more on the stretch. There is a "hyaloidea propria," or hyaloid membrane of the vitreous, which lies directly in contact with the posterior fibers of the zonule. In accommodation for the near point, the anterior zonula fibers run as far as the equator, pressed toward the anterior surface of the lens. The posterior side of the anterior layer of zonula fibers runs close to the middle zonula fibers from the equator onward. In accommodation for the distance, the equator of the lens lies free between the laminæ of the zonule. There exists a "tonus" in the fibers of the ciliary muscle, as in other smooth muscular fibers, especially in the external meridional fibers. In looking over a large number of cataract cases, Schoen found that nuclear sclerosis never existed without equatorial cataract, while he found ninety cases of equatorial cataract without nuclear sclerosis. The causes of overstrain of the accommodation Schoen places as follows: 1. Hypermetropia. 2. Presbyopia. 3. Normal low and high degrees of astigmatism. 4. Corneal maculæ. 5. Extremely fine work. 6. Customary close bending over one's work. 7. The use of too strong concave glasses. The consequences of overstrain of the accommodation are as follows; 1. Accommodative excavation of the disc, caused by pulling on the optic-nerve sheaths. 2. Plication of the lenticular capsule, and tendency to proliferation of the capsular epithelium by tension on the anterior and middle zonula fibers. 3. Inverted (*sic*) astigmatism. 4. Halo, or enlargement of the scleral ring. 5. Venous pulsation. 6. Blepharospasm. 7. Inflammatory irritation. As a final result: 1. Glaucoma simplex. 2. Cataract. 3. Acute glaucoma. The results of overstrain of the accommodation may be classified as follows: 1. Most favorable: the accommodation gradually yields. The patient receives the proper glasses, and the normal muscular tonus is prescribed. 2. The continuous overstrain leads to accommodative excavation, with glaucoma simplex as the result, equatorial and afterward total cataract. The accommodative excavation becomes glaucoma as soon as the visual acuity or the visual field begin to suffer. 3. A portion of the muscle of accommodation suddenly fails—the internal meridional and circular fibers—the lens falls forward, and acute glaucoma is present. Complete loss of tone of the ciliary muscle is very rarely met with.

**Scotomata in Glaucomatous Diseases of the Optic Nerve.**—Sachs ("Ctrlbl. f. prakt. Aug.," June, 1887) has found, in examining the visual field of twenty-seven glaucomatous eyes, five cases in which scotomata were present, and advises the careful examination of all such visual fields, as in his opinion scotomata are not so very rare in these cases. The position of the paracentral scotoma is such that, when it affects the right eye, it renders the reading of continuous type very difficult. Larger words were not glanced at. Objects which at a greater distance fell within the limits of the scotomata, were not recognized.

The disturbance in the color-sense in two of his five cases showed that sharp distinction is not always to be made in the color-sense between glaucomatous and atrophic diseases of the optic nerve. All five cases showed but very slight glaucomatous changes in the anterior segment of the eye, and the tension was sometimes normal, and sometimes only slightly increased. In two cases the scotoma did not appear until after the eyes had been operated upon. The one constant anatomical change which he found in these five cases with scotomata was the excavation of the optic disc. These scotomata bore a very strong analogy to the scotomata found in toxic amblyopia.

**Uniform Notation of Astigmatism and of Cylindrical Glasses.**—Armaignac ("Ann. d'oc.," May–June, 1887) offers the following propositions for consideration: 1. In every designation of astigmatism it should be stated whether the latter is objective (corneal) or subjective (functional). 2. In corneal astigmatism, as in static or dynamic refraction of the eye, that meridian should always be regarded as the principal one which has the least curvature—that is, the least refracting. 3. The direction of the astigmatic meridan should be indicated by the continuous graduation of the lower semicircle of the spectacle-rim placed on the nose of the patient, and the zero of the scale should be placed at the left extremity of the horizontal diameter, and 180 at the right extremity. 4. The notation should be the same for each eye. 5. All the instruments for measuring objective or functional astigmatism should be graduated in conformity with the preceding propositions. 6. In the description of compound astigmatism and sphero-cylindrical glasses we should write as follows: First the letters O D or O S, according as it is the right or left eye; then the spherical glass, preceded or not by the letters *sph ;* then a comma or semicolon, and finally the degrees of astigmatism, and the figure of this astigmatism preceded by the sign + or —, according as it is positive or negative.

**Spontaneous Absorption of Senile Cataract.**—Kipp ("Amer. Jour. of Ophth.," June, 1887) reports a case of this nature in a man aged sixty-eight. He was first seen in 1873, and at that time was in good health. He had a nucleo-cortical cataract in each eye, the left eye being fully mature and the right eye almost mature. Perception of light and projection were good. There was no sugar in the urine. An extraction was done on the left eye in November, 1873; the wound healed rapidly and three weeks after the operation his vision was in L. E. $\frac{15}{40}$ with $+\frac{1}{3\frac{1}{2}}$, and he read Jaeger No. 1 with $+\frac{1}{2\frac{1}{2}}$. Twelve years later he was seen again, in November, 1885. He stated that he had no operation done on the right eye, nor had he met with any injury to that eye. He had noticed an improvement in the sight of the right eye during the last few years. An examination showed that in the right eye $V = \frac{18}{30}$ with $+\frac{1}{3\frac{1}{2}}$, and he could read the smallest print with $+\frac{1}{2\frac{1}{2}}$. The right eye appeared perfectly normal. There was no scar in the cornea or sclerotic. The anterior chamber was very deep. The iris was intact but tremulous. The pupil was small, free, and active, and, on being dilated by atropine, nothing but the capsule was found to remain, apparently intact and attached all around to the suspensory ligament. It was thin and transparent, except below, where a small, opaque whitish mass was adherent to its inner surface.

**Rupture of the Optic Nerve at the Chiasm.**—Post (*ibid.*) reports a rare accident of this kind occurring in a colored man, aged twenty-three, who accidentally struck his eye a violent blow against the fender of a carriage-wheel. When Post first saw him the eye was hanging by a large amount of tissue just outside the palpebral opening. The fender of the wheel had struck the lower lid just above the orbital ridge of the superior maxillary bone, and the blow had dislocated the globe, and also ruptured both lids vertically at the internal angle. The muscles and conjunctiva and orbital tissue were snipped away until the optic nerve was reached, and on making gentle traction the eye came out, bringing with it somewhat more than two inches of the optic nerve.

**Hypopyon-keratitis treated by frequent Irrigations with Sublimate.**—Hotz (*ibid.*) recommends that such eyes should be thoroughly washed with a solution of corrosive sublimate (1 to 5,000); then both eyes are to be covered with compresses wrung out of the sublimate; every half hour or hour the bandage must be removed, and the eye irrigated with the solution. Then the compresses and bandages are to be reapplied. Signs of improvement appear within twenty-four hours. The results are rapid healing, smooth translucent scars, and small loss of tissue.

**Astigmatism.**—Javal ("Rev. gén. d'ophthal.," May, 1887) reports that, from an examination of a very large number of astigmatic eyes, he concludes that there are at least three distinct species of regular astigmatism. One of these is present in eyes in which the vertical meridian has the greatest curvature. The second is met with in eyes in the reverse direction to the preceding. The third variety is met with more often in eyes in which the meridians are situated at 45°. In the first variety almost the entire amount of the astigmatism is in the cornea. In the second variety the deformity resides principally in the lens; here the total astigmatism is much greater than the corneal astigmatism. It is this variety of astigmatism which is so often the cause of glaucoma and cataract. The third variety is accompanied by a decentration of the globe sometimes as high as 20° or 25°.

**Rheumatic or Gouty Cyclitis Minima.**—Boucheron (*ibid.*) reports that the symptoms of this variety of cyclitis vary according as the arthritic cause attacks the ciliary muscle, the plexus of nerves, the vessels, the ciliary processes, or all the elements together. There may be pain on pressure in the region of the ciliary processes, or a spontaneous pain in the same region, intermittent in character and neuralgic in type. There may be accommodative troubles from insufficiency or excess, or irregularity of contraction of the rheumatic ciliary muscle, which can not be corrected by the use of any glass. There may be a slight and transient increase of the intra-ocular tension. There are sometimes floating bodies in the vitreous immediately behind the lens (ciliary exudation or exudative cyclitis); but this exudation only appears in very severe cases. Sometimes the congestion of the processes resolves itself in a slight hæmorrhage into the vitreous. There is a certain amount of photophobia. The duration of the attack may be very short, but relapses may be frequent. Locally, mydriatics and cocaine should be employed, and hot applications frequently repeated. These should be supplemented by the internal administration of sodium salicylate, salol, colchicum, or lithia.

**The Shallow Anterior Chamber of Primary Glaucoma.**—Priestley Smith ("Ophth. Rev.," July, 1887) considers that a shallow anterior chamber, though not always present in primary glaucoma, is a well-marked characteristic of that disease, and especially of its more acute congestive forms; an advance of the lens and iris toward the cornea usually accompanies the onset of the high tension. Still, he is unable to assert that the disease is actually induced by an obstruction in the circumlental space, impeding the normal flow of fluid from the vitreous to the aqueous chamber. An advance of the lens is the natural consequence of an increase in the quantity of blood in the interior of the eye. When the quantity of blood contained in the internal vessels of the eye is augmented, either by a quicker afflux or a slower efflux, compensation must be made, either by the expulsion of some other fluid from the eye or by overdistension of the sclera. There can be no doubt that, when the amount of blood in a healthy eye is increased, the escape of the aqueous is quickened so that a compensatory reduction is effected in the fullness of the aqueous chamber, the partial emptying of the chamber being accompanied by an advance of the lens. This advance seems to be inevitable when we consider that the turgescence of the uveal tract tells mainly upon the contents of the vitreous chamber. Under ordinary circumstances such variations in the depth of the anterior chamber are doubtless very small. Congestion of the head does produce some alteration of vision. The compensatory changes are usually slight, transient, and devoid of danger. But under certain predisposing conditions an advance of the lens may involve an attack of glaucoma. Certain experiments have shown that, when the lens is driven forward by a slight excess of pressure in the vitreous chamber, the ciliary processes are pressed forward against the base of the iris and the angle of the anterior chamber is closed so firmly as to arrest the escape of the aqueous fluid. The advance of the lens locks the outlet. This locking of the outlet after a certain quantity of the aqueous has been driven out is a preservative mechanism, for in the absence of such a check external pressure would squeeze out the whole of the aqueous, and endanger the internal structures. This is a physiological process; it is not glaucoma. It leads to glaucoma only in a

small minority of cases, in which the outlet of the eye is predisposed to compression and occlusion. The usual predisposing cause is an insufficient circumlental space. In the youthful eye the lens is comparatively small, the anterior chamber deep, and the space at the disposal of the processes sufficient for their free expansion without undue displacement of the iris. As life advances, the conditions alter; the lens enlarges and encroaches on the space in which it lies; the anterior chamber grows shallower, the ciliary processes are brought into closer relations with the adjacent structures. A congestion of the eye which would be harmless in early life may in advanced life easily induce acute glaucoma. The vessels of the uveal tract become overfilled; the ciliary processes swell up; a part of the aqueous is expelled, and the lens advances, the angle of the anterior chamber is compressed. From this moment the intra-ocular pressure rises rapidly, and the obstruction at the outlet intensifies itself. The increased pressure within the eye embarrasses the escape of venous blood still further, and aggravates the swelling of the processes; the engorgement increases, the lens is driven forward still more forcibly, until not an atom more of the aqueous can be forced through the closed outlet; a shallow but firmly locked anterior chamber remains. The internal circulation of the eye is strangulated because the normal process of compensation by the aqueous is arrested. The external vessels dilate, and serum escapes in the direction of least resistance. This is acute glaucoma. The high tension depends more upon excess of blood in the eye than upon an excess of the intra-ocular fluid. The author considers that *glaucoma fulminans* is the expression of a maximum obstruction of the circulation; *glaucoma simplex*, of a minimum; the conditions of the eye which predispose to the disease being similar in the two cases. In the former there is strangulation sudden and complete; compensatory adaptation of the blood-vessels is impossible; an acute œdema limited by pressure ensues, and reveals itself by the extreme impairment of vision met with in such cases, by the cloudiness of the media, and by the chemosis of the conjunctiva. In the latter variety, on the other hand, the vascular disturbance is gradual and slight; the vessels adapt themselves to the slowly increasing pressure; the angle of the anterior chamber is more or less compressed, but not closed. A too exclusive study of histological changes has diverted attention from the physical principles involved in the problem. It is remarkable that dissertations on glaucoma are still published in which little or no value is attached to Leber's all-important discovery, the escape of the aqueous at the angle of the anterior chamber, or to the common characteristic of all forms of glaucoma, the obstruction of this outlet.

## Miscellany.

**The New York Academy of Medicine.**—At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 19th inst., Dr. Gorham Bacon will read a paper entitled "A Case of Carcinoma of the Ear having its Origin probably in the Tympanum or Mastoid Cells," and Dr. J. O. Tansley will report "Two Deaths from Chronic Ear Disease."

At the next meeting of the Section in Theory and Practice of Medicine, on Tuesday evening, the 20th inst., Dr. L. Weber will read a paper on "Aneurysm of the Thoracic Aorta, with Remarks on the Pathology of Aortic Aneurysm," and Dr. J. W. Roosevelt will read a paper entitled "Pernicious Anæmia, with Reports of Cases and Autopsies."

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 22d inst., Dr. Grace Peckham will read a paper on "Wormian Bones in the Fontanelles, and their Effect in Childbirth," and Dr. W. E. Bullard will read a "Report of a Case of Placenta Prævia."

At the next meeting of the Section in Materia Medica and Therapeutics, on Friday evening, the 23d inst., the chairman of the committee on collective investigation, Dr. W. H. Thomson, will read a report on "The Combination of Cardiac Neurotics." A "Therapeutic Résumé" will be read, and new remedies will be shown.

At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 27th inst., after the presentation of patients, instruments, etc., there will be a discussion on "Therapeutics applied to the Upper Air-passages, with special reference to the Use of Patent Nostrums and Proprietary Medicines by the Laity and the Profession," in which Dr. F. A. Castle will present "Facts and Fallacies in the Use of Nostrums," and Dr. A. H. Smith will treat of "Legitimate and Positive Medication."

At the next meeting of the Section in Pædiatrics, on Wednesday evening, the 28th inst., Dr. A. Jacobi will read a paper on "Sepsis of the New-born," Dr. Andrew F. Currier will read a paper on "Icterus Neonatorum; its Relation to Sepsis," and Dr. J. Lewis Smith will report "Cases showing the Commencement, Progress, and Results of Sepsis in the New-born."

**Faith-cure and Fatal Illness.**—A correspondent writes as follows: "The matron of one of our charitable institutions is a believer in healing by faith. Recently she was attacked with acute pneumonia. The managers procured a trained nurse, and one of them, a physician, made frequent visits. The patient refused to take any liquors, wines, or medicines. On the fifth day her faith-curing pastor prayed with and anointed her. There was no perceptible change in her condition. No matter how slowly she convalesces, her recovery will doubtless be accredited to answered prayer. But if she dies, who shall bear the stigma? The physician disclaims all responsibility. Do his visits and dietetic suggestions constitute 'attendance'? And can he be compelled to write a certificate?"

We suppose that the physician could legally be required to certify in case of the lady's death, but his answer to the question as to when he had last seen her would reveal a state of things that would probably lead the Board of Health to order an inquest. Perhaps his statement as to that point alone would lead to the same result.

**The State Medical Society of Arkansas** will hold its thirteenth annual meeting at Fort Smith, on Wednesday, Thursday, and Friday, April 25th, 26th, and 27th.

**The New York Hospital.**—Dr. A. B. Ball and Dr. E. L. Partridge have been elected physicians to the hospital.

**The Health of Michigan.**—According to the State Board of Health's summary of returns for the five weeks ending March 3d, diphtheria was reported from forty places, scarlet fever from forty-five, typhoid fever from seventeen, measles from thirty-nine, and small-pox from one place. During the month of February there was a great prevalence of an affection variously termed a "common cold" and "epidemic influenza," characterized by an unusual involvement of the root of the tongue. It ran through families, neighborhoods, and schools.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 9th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending February 18th corresponded to an annual rate of 20·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 14·1, and the highest in Wolverhampton, viz., 29·4 in a thousand. Small-pox caused 30 deaths in Sheffield, 2 in Bristol, 2 in Leeds, 1 in London, 1 in Manchester, and 1 in Nottingham.

*London.*—One thousand six hundred and eighty-nine deaths were registered during the week, including 14 from measles; scarlet fever, 30; diphtheria, 18; whooping-cough, 122; enteric fever, 18; diarrhœa and dysentery, 8; and small-pox, 1. Diseases of the respiratory organs caused 487 deaths; different forms of violence, 39; and 2 suicides were registered. The deaths from all causes corresponded to an annual rate of 20·6 in a thousand. In greater London 2,147 deaths were registered, corresponding to an annual rate of 20·3 in a thousand of the population. In the "outer ring" 8 deaths from diphtheria, and whooping-cough, 46, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending February 18th in the sixteen principal town districts of Ireland was 28·3 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 12·7, and the highest in Drogheda, viz., 93 in a thousand. In Dublin 175 deaths were registered, including 1 from measles; whooping-cough, 4; scarlet fever, 7; diarrhœa, 2; typhus, 1; diphtheria, 1; erysipelas, 1; and mumps, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending February 18th corresponded to an annual rate of 22·5 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 13·5, and the highest in Paisley, viz., 30·4 in a thousand. The aggregate number of deaths registered from all causes was 568, including 8 from measles; diphtheria, 13; scarlet fever, 5; whooping-cough, 21; fever, 4; and diarrhœa, 11.

*Lima.*—The United States minister, in his dispatch dated January 25, 1888, transmits copies and translations from two daily papers; also a copy and translation of an official cablegram from the Peruvian consul at Guayaquil; also a copy and translation of a decree issued by the Minister of Justice, Señor Garcia, that the shipping from Guayaquil be submitted to five days' quarantine, with a medical officer on board. The following are the copies:

VALPARAISO, *January 13, 1888.*

Valparaiso, yesterday, 55; deaths, 20. Santiago, yesterday, 46; deaths, 16. Peruvian consul communicates cholera at Concepcion; Talcahauno and neighboring ports, probable infection. In southern provinces it continues. Cholera at Salta, Argentine.

VALPARAISO, *January 17, 1888.*

Valparaiso—attacked, 60; deaths, 36. Santiago, 35; deaths, 11. Continues south. Suspicious cases at La Serena.

GUAYAQUIL, *January 15, 1888.*

With change of season yellow-fever cases have appeared. Steamships Colombia and Pizarro carry foul (patente) bill of health.

LIMA, *January 17, 1888.*

In to-day's session the board agreed that the shipping from Guayaquil be submitted to five days' quarantine, with medical officer on board, the Callao board being charged with the ordering of the measures they may deem most proper for the fulfillment of this accord.

*Santiago de Cuba.*—The sanitary inspector reports, for the week ending February 25th, that "the sanitary condition of this city has been good for this week. We have no contagious or infectious maladies to record, either in the towns or the harbor. Only one case of yellow fever at the military hospital, ending fatally, and no other cases of it in the hospital. . . . Tetanus enters largely into the mortality of the week. This is owing to the changeable state of the temperature. The case of the adult who died of it is curious in this respect, that he was attending on a sick horse that died of tetanus. If the theory of the equine origin of tetanus is true, then this case seems to prove its truthfulness."

*Callao.*—The United States consul, in his dispatch dated February 11, 1888, regarding cholera, states that, "under date of the 2d instant, the Peruvian medical representative cables that at Valparaiso there were only 17 new cases and 4 deaths. At Santiago, 27 new cases and 7 deaths. In the southern towns of Curico, Parrol, and Concepcion disease declining, and in the north, at Serena and Chalinga, only a few cases. From other information received the last-mentioned cases did not present the characteristic symptoms of Asiatic cholera, and little alarm was manifested. The Peruvian consul at Guayaquil reports that yellow fever at that place had almost disappeared. The Honorable Mr. Buck, United States Minister to Peru, arrived here by the steamer from Panama on the 30th ultimo, and, owing to one fatal case of yellow fever which occurred on board the vessel, the passengers have been kept in strict quarantine until to-day, when they were allowed to land. The public health of Lima and Callao continues to be satisfactory."

*Demerara.*—The United States consul, under date of February 14, 1888, states that "yellow fever has broken out in this city, but, fortunately, very few cases have occurred. Up to date 10 cases have been reported, 3 of which have proved fatal. The last death occurred on the 10th ultimo. Should no further cases occur, in a few days this consulate will issue clean bills of health."

*Buenos Ayres.*—One thousand one hundred and thirty-seven deaths are reported for the month of December, 1887, including small-pox, 95; enteric fever, 28; scarlet fever, 2; and diphtheria, 68.

*Bordeaux.*—Six hundred and twenty-nine deaths are reported for the month of January, 1888, including small-pox, 3; enteric fever, 30; scarlet fever, 1; and diphtheria and croup, 13.

*Havana.*—The sanitary inspector reports 608 deaths for the month of February, 1888, including yellow fever, 7; small-pox, 140; enteric fever, 10; so-called pernicious fever, 10; diphtheria, 6; and croup, 5. "Although small-pox still prevails pretty actively in many places of the middle and western departments of this island, the disease, as far as mortality from it furnishes a criterion to judge by, is diminishing considerably in Havana and its immediate vicinity. It is said, however, that the epidemic is milder in type than it was a month or two ago, and, as no report of cases is made to any person, board, or body, it is not easy to even approximate at all closely to the actual number of cases existing. Yellow fever has within the last few days shown a little increased activity, and has made several victims among employees of different establishments, who have in the main been sent to the Quinta de los Dependiente. As usual, several cases exist in the military hospital, which is located contiguous to one of the commercial wharves of this port."

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Glasgow | February 18. | 545,678 | 262 | .. | .... | .... | .... | 1 | 4 | 6 |
| Warsaw | February 11. | 439,174 | 220 | .. | .... | 9 | .... | .... | 8 | 5 |
| Calcutta | January 21. | 433,219 | 262 | 19 | .... | .... | .... | .... | .... | 1 |
| Amsterdam | February 11. | 389,916 | 240 | .. | .... | .... | .... | 2 | .... | 4 |
| Rome | January 7. | 382,973 | 216 | .. | .... | 6 | .... | 1 | 2 | 4 |
| Munich | February 4. | 275,000 | 152 | .. | .... | .... | .... | .... | .... | 6 |
| Palermo | February 19. | 250,000 | 129 | .. | .... | .... | .... | 3 | 2 | 5 |
| Belfast | February 18. | 224,422 | 124 | .. | .... | .... | .... | .... | 1 | 2 |
| Havana | February 25. | 208,000 | 147 | .. | 4 | 29 | .... | 2 | .... | .... |
| Leipsic | February 18. | 170,000 | 63 | .. | .... | .... | .... | 1 | 2 | 2 |
| Trieste | February 11. | 154,500 | 117 | .. | .... | 4 | .... | .... | 1 | 3 |
| Toronto | February 25. | 130,000 | 23 | .. | .... | .... | .... | .... | .... | 2 |
| Bremen | February 11. | 122,000 | 39 | .. | .. | .... | .... | .. | 1 | .... |
| Havre | February 18. | 112,074 | 104 | .. | .... | 4 | .... | 1 | .... | .... |
| Barmen | February 18. | 109,000 | 40 | .. | .... | .... | .... | .... | .... | 1 |
| Mayence | February 11. | 65,701 | 26 | .. | .... | .... | 1 | .... | 1 | 1 |
| Cienfuegos | February 27. | 35,464 | 37 | .. | .... | 28 | .... | .... | .... | .... |
| Guayaquil | February 6. | 30,000 | 62 | .. | 4 | 16 | .... | 16 | .... | .... |
| Guayaquil | February 13. | 30,000 | 74 | .. | 7 | 11 | .... | 23 | .... | .... |
| Sagua la Grande. | February 18. | 15,605 | 12 | .. | .... | 8 | .... | .... | .... | .... |
| Sagua la Grande. | February 25. | 15,605 | 10 | .. | .... | 6 | .... | .... | .... | .... |

UNITED STATES.

The medical officer in charge of the United States quarantine station at Sapelo Sound reports that the German bark Vesta, sent to that station on the 25th ultimo as suspicious, though dirty and arriving from a small-pox infected district, was not herself infected, and was therefore only detained for one precautionary fumigation. The disease on board, he reports, was bilious remittent fever.

*Key West.*—The medical officer in charge of the United States Marine Hospital at Key West reports, under date of February 29, 1888, a total of 7 cases of small-pox, with 2 deaths, 3 recoveries, and 2 still sick. A small pest-house is being erected by the county board of health. He also reports, under date of March 3d, that the municipal authorities have recently passed an ordinance establishing a city health department, and reviving the office of city health officer. A number of the business men of the city have also had a meeting to organize an auxiliary sanitary association for the purpose of purchasing and operating odorless excavating machinery. It is estimated that there are three thousand privy-vaults upon the island, consisting mainly of excavations in the ground, not water-tight, and often in proximity to leaky cisterns upon the same level.

## THERAPEUTICAL NOTES.

**Some Uses of Cannabis Indica.**—Surgeon-Major J. F. P. McConnell, M. D., M. R. C. P., of the Bengal Medical Service ("Practitioner," Feb.

1888) recommend the use of cannabis to overcome loss of appetite consequent upon exhausting diseases, such as prolonged fever, diarrhœa, dysentery, phthisis, etc. For this purpose he uses from five to ten minims of the tincture or from a quarter to half a grain of the extract.

In dyspeptic diarrhœa and in tropical diarrhœa (hill diarrhœa, the *diarrhœa alba* of the tropics), in which the secretion of bile is defective, cannabis is very efficient during the early months of the affection, but the author thinks that in advanced cases organic lesions of the liver occur which no treatment can reach. In this disease he gives, three times a day or oftener, at first ten minims of tincture of cannabis, then fifteen, twenty, twenty-five, or even thirty, together with ten grains of subnitrate of bismuth, half a drachm of mucilage of acacia, twenty minims of compound spirit of chloroform, and an ounce of cinnamon water or peppermint water. The unpleasant effects of the drug (such as headache, giddiness, and hallucinations) may be prevented to a great degree by giving it after meals.

Finally, the author recommends the drug as a hypnotic in chronic heart disease and chronic Bright's disease—from fifteen to twenty minims of the tincture, together with ten grains of hydrate of chloral and thirty grains of bromide of potassium. He has assured himself by experiment that the effect is largely owing to the cannabis.

**Beta-naphthol in Ozæna and Purulent Rhinitis.**—Rualt ("Riforma medica," 1888, No. 13; "Internationale klinische Rundschau," Jan. 29, 1888) has found β-naphthol of much service in ozæna and purulent rhinitis. Twelve parts of β-naphthol are added to 84 parts of 90-percent. alcohol; a teaspoonful of the mixture is diluted with a quart of lukewarm water when the remedy is to be used, and the nasal passages are irrigated with it. The irrigation causes some pain, but it is only transitory. With very sensitive patients a weaker solution may be used or, what is better, the parts may previously be sprayed with a solution of cocaine of from 2 to 5 per cent.

**Guaiacol in the Treatment of Phthisis.**—Dr. H. Sahli ("Correspondenzbl. f. schweizer Aerzte," 1887; "Fortschritte der Med.," 1888, No. 3) recommends guaiacol (pyrocatechinmethylether), the chief constituent of creasote, as a substitute for that liquid in the treatment of phthisis. On account of its irritant properties, it must be largely diluted. The author employs the following formula:

| | |
|---|---|
| Guaiacol | 1 or 2 parts; |
| Distilled water | 180 " |
| Alcohol | 20 " |

The mixture should be kept in a black bottle. From a teaspoonful to a tablespoonful may be given in a glass of water two or three times a day. It may also be taken in cod-liver oil.

**A Deodorizing Injection for Uterine Cancer.**—Duchesne ("Nouveaux remèdes," Feb. 8, 1888) credits Chéron with this formula:

| | |
|---|---|
| White vinegar | 300 parts; |
| Tincture of eucalyptus | 45 " |
| Salicylic acid | 1 part; |
| Salicylate of sodium | 20 parts. |

From one to five tablespoonfuls, added to a quart of tepid water, to be used daily for vaginal injections.

**Bromidia.**—The "Alienist and Neurologist" says of Battle & Co.'s bromidia that there is no better mixture for use under the circumstances in which its ingredients are indicated, but that the directions accompanying it (not to exceed three or four doses in the course of twenty-four hours, and to give it by preference during the evening or night) ought to be strictly followed. In many cases in which bromidia is used, our esteemed contemporary thinks that the amount of bromide of potassium contained in it might well be doubled, according to the following formula:

| | |
|---|---|
| Bromidia | 2 drachms; |
| Bromide of potassium | 30 grains; |
| Syrup of balsam of Tolu | 3 drachms; |
| Peppermint-water | to 1 ounce. |

To be given at 8 or 9 P. M., well diluted with water, and repeated once during the night if necessary.

**Rectal Injections of the Vapor of Ether in Lead Colic** have proved very satisfactory in the hands of Dr. A. Torre, of Brest ("Bull. gén. de thérap.," Feb. 15, 1888), calming the spasmodic state and rendering the action of purgatives less irritating. A case is mentioned in which the vapor of fifteen grains of ether sufficed to produce such results.

## ANSWERS TO CORRESPONDENTS.

*No. 159.*—1. In our issue for November 14, 1885, page 545. 2. Dr. Kelsey's book, published by William Wood & Co.

*No. 160.*—We presume that the work you have in mind is one that is being prepared under the direction of Dr. Sajous, of Philadelphia, to be published by Mr. F. A. Davis, of that city.

*No. 161.*—We know of no way to test the accuracy of a clinical thermometer except that of comparing it with a standard thermometer or with one that has recently been so compared. It is not enough to compare the instruments at a single temperature or at the two extremes of the scale; it is best to make a comparison for each degree, the temperature of the liquid in which both bulbs are immersed (at the same level, regardless of the length of the tube) being gradually raised or lowered by adding small amounts of a hotter or colder liquid. It is convenient to fasten both instruments to a card for the purpose.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# ON PREVENTIVE TREATMENT IN PRIMARY SYPHILIS.*

BY EDWARD BENNET BRONSON, M. D.,
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THERE is no more important question in the whole therapy of syphilis than one that confronts us at the very outset of the disease and relates to the possibility of preventive treatment in the primary stage. The poison of syphilis having once been effectively inoculated, are there any means in our control by which we may hope to prevent the impending constitutional effects? By preventive treatment is not necessarily meant abortive treatment, but it embraces all measures tending in any degree to abridge or mitigate the subsequent course of infection and its effects on the constitution. The utility of any such measures will depend, first, on what the nature or essential quality of syphilitic infection is, and, second, on the special status of this infection during the primary stage of the disease. But of syphilitic infection we have no positive knowledge, either as to what constitutes its essential element or what is its mode of progress. As to these we are still at sea, vexed by the most contradictory opinions and the most discordant experiences. Often has it seemed, with the rapid advances in bacteriology, together with our increasing knowledge of the minute anatomy of the syphilitic products, that the secret was on the point of being revealed, while the reported successes of Auspitz and his followers in ectrotic treatment encouraged the hope that we were on the eve of a new and better era in the management of syphilis. The revelation has not yet come; the hope is still deferred. But, so long as the problem remains unsolved, it is no time to pause. Until more light is granted we must make the most of what there is. The question, in the form in which it immediately presents itself, may be stated as follows: Are the indications thus far afforded by our imperfect knowledge of syphilitic infection such as to render any attempt at preventive treatment in the primary stage of the disease unavailing and absolutely hopeless? For that is what many maintain.

There are two modes of approaching the question—one theoretical, the other empirical. Were it certain, on the one hand, that during the primary stage of syphilis the pathological conditions were such as to afford a probability of successful abortive treatment, no number of failures would justify remitting continued efforts in this same direction, while, on the other hand, our course would be equally plain could we but have the assurance that in any, however few, instances such treatment had been attended with a definite measure of success.

In considering the indications furnished by the pathological conditions in syphilis, the first inquiry is naturally directed to the essential cause of the disease, to that unseen agent to which all the manifestations of syphilitic infection are due, and which we call the "syphilitic virus." Here all is hypothetical. The best we can do is to accept provisionally that view by which most is explained. No theory yet proposed explains the observed phenomena of syphilitic infection so satisfactorily as that which attributes them to the presence and growth of certain specific micro-organisms in the tissues. Thus far, however, the microbe of syphilis has not been positively identified, and the parasitic theory serves only as a good working hypothesis. But, even were it fully established that syphilis is a parasitic disease, due to known forms of bacilli or micrococci which could be cultivated outside the body and be subjected to various experiments, it is by no means certain that the answer to the question of preventive treatment would be affirmative. Although antiseptics would then have a definite object which they do not now possess, their availability would yet remain to be determined. Judging from experience in such diseases as tuberculosis and contagious anthrax, in which specific micro-organisms have been identified, the success of antiseptic treatment is far from assured. But the conditions in syphilitic infection are peculiar. Not only does the inoculation usually take place at a single point where it is freely accessible to manipulative procedures, but there are indications in the slow and gradual progress of the disease that general infection does not take place immediately, but that there is a temporary sojourn of the virus in the region where first implanted. All the more obvious facts in the clinical history of the initial stage of syphilis seem to point to the entirely local character of the primary lesions. After the virus of the disease has been inoculated there ensues a period of apparent quiescence of several weeks' duration, when, little by little, there begins the formation at the inoculated point of a neoplastic, indurated growth that essentially consists of inflammatory granulation tissue, answering in its general character to an irritative lesion provoked by the presence of a foreign and disturbing element. This growth is the "initial lesion" of syphilis. Simultaneously with this, or shortly following its first appearance, the nearest lymphatic glands become swollen and indurated in consequence of a cellular growth of a corresponding character to that of the initial lesion. These local manifestations remain for a considerable period the sole evidences of disease, till finally, at the expiration of this period, with more or less sudden onset, the symptoms of general or constitutional syphilis make their appearance.

The simplest and, it seems to me, the most rational explanation of this course of events is that the virus, when first implanted in the tissues, does not immediately pass into the general circulation, or what portion does is insignificant; that, mainly at least, it is at first confined to the spot where the future chancre is to develop; that here, finding a favorable soil, it grows and slowly increases till its intrusive presence becomes a source of offense to the tissue harboring it, and gradually inflammatory reaction results. From this source of generation the virus contaminates, sooner or later, the nearest lymphatic glands, which in turn become other sources of supply, till, finally, from these multiple foci the whole organism becomes infected. Accord-

* Read before the New York Academy of Medicine, March 1, 1888.

ing to this, the main route to the general circulation is by way of the lymphatics and through the *receptaculum chyli*.

To this view Auspitz has opposed certain objections. Within the initial lesion, he says, the lymphatics show comparatively little change, while the walls of the blood-vessels are commonly implicated and their caliber is often occluded. The so-called "lymphatic cord" that is often felt along the dorsum penis is attributed wholly to the thickened blood-vessels. Furthermore, it is objected that, between the chancre and the *receptaculum chyli*, the chain of indurated glands has not yet been shown to be continuous and complete.

That the lymphatics in the primary induration are but slightly affected may, perhaps, be the very reason why their absorbent function is not disturbed. Through their patulous channels the virus would find a way of ingress which is denied it by the occluded blood-vessels. Moreover, the intimate connection of the adventitia with the lymphatic system would easily account for the marked implication of the vascular walls and for the "lymphatic cord."

The objection that the lymphatic chain is not continuous seems to be based mainly upon three pathological specimens preserved in the *Musée de Lourcine*, and described by Fournier. They were all taken from women in the primary stage of syphilis with genital chancres, and they displayed the condition of the inguinal and iliac glands. No enlarged glands occurred beyond the point where the hypogastric is given off. Between this point and the crural arch, in all of the specimens, there were a number of affected ganglia, showing about as much enlargement as those below in Scarpa's triangle. Obviously enough, this represented the condition for a certain period of the disease. How long the disease had lasted when the patients died is not stated. It is possible that, had the process continued, the lumbar glands would have become affected next, and so on regularly to the *receptaculum*. Or, on the other hand, even supposing that general syphilis had already supervened, the absence of a continuous chain would not necessarily show that the virus had traveled by another route than the lymphatic. It is not the view maintained here that the lymphatic ganglia serve as barriers to the general infection in the sense that they can not be traversed till they are themselves affected and diseased, but rather that each as it is infected in turn becomes a new generator of virus, and when all of the sources of supply, whether few or many, have delivered more of the poison into the blood than the system can tolerate, it is then that constitutional syphilis declares itself.

Thus far indeed the pathological conditions seem to imply that in syphilis the disease advances by way of the lymphatics in a manner that is analogous to the diffusion of the malignant tumors. Whether, however, in syphilis the contamination advances by such regular approaches from one gland to another that any definite interval can be said to exist between the affection of one gland and that of the next in succession is very doubtful. Usually as soon as the inguinal adenopathy can be made out at all, at least three distinctly enlarged glands can be felt. Whether several are really affected simultaneously at the start—and, if so, how many—we have no definite knowledge. With regard to the specimens above referred to we may surmise that the affection of the iliac glands took place subsequently to that of those in the groin, but of this we have no evidence.

In the indications thus far presented we find nothing incompatible with the supposition that during the primary period of syphilis the disease is localized within the vicinity of the point of inoculation. But the view is current among many syphilographers that the manifestations of this period are always anticipated by infection of the general system, of which they are only prodromal symptoms. According to this position, directly upon its inoculation the syphilitic virus passes into the general circulation. The apparent quiescence at the point of inoculation is real quiescence. The incubation pertains not to any materies morbi in that vicinity, but to something in the blood, and the initial lesion is the first tangible sign of the blood disease, reflected in some arbitrary and inexplicable manner to the spot where the virus effected its original entrance. It is very strange, it must be observed, that the second transit of the virus through this region should produce such decided effects, while at the first the tissues suffer its passage and betray no resentment whatever.

Two facts are alleged concerning the primary stage of syphilis, upon which the theory of the symptomatic character of the initial lesion is based. The first is that an individual who has been inoculated with syphilis has always acquired immunity from any subsequent inoculation of the syphilitic virus before the chancre develops, and the second, that extirpation of the chancre does not prevent the regular course of the disease. The reasoning from these propositions appears to be as follows: Both of these facts imply that, at the time the chancre develops, the disease is already constitutional; but if the constitutional disease suffices to annul the effect of a second inoculation it should also prevent the development of any direct effects from the first inoculation, and therefore (to escape the dilemma) the initial lesion is regarded as a symptom of the general disease.

That there is a period within a certain time after inoculation when the tissues are not refractory to a second implantation of the virus is shown by the fact that, when a second or third inoculation takes place within a short period from the first exposure, successive and multiple chancres result. The immunity therefore is not established at once. But it is maintained that after the chancre has once formed constitutional infection is an accomplished fact and the immunity is then complete. In verifying this point one important consideration should not be lost sight of—viz., the length of time it requires for the chancre to develop. The second inoculation might have its effects forestalled and prevented by constitutional infection intervening before the completion of its incubation, even though at the time of this second inoculation no such general infection existed.

While it is true that, as a general rule, autoinoculations and reinoculations in the primary stage fail to produce any perceptible effect, a sufficient number of cases have been reported to show that the rule is not invariable. Two such cases were published in 1882 by Bumm, of Würzburg, and

several (four or five) were reported by Bidenkap and Boeck. In all of these cases the autoinoculations were practiced within six weeks from the time of the first exposure and before there were any general evidences of disease. They suffice to show that the presence of the syphilitic chancre is no positive proof that the bearer is insusceptible to the effects of a second inoculation, and, if immunity is the test of general saturation with the syphilitic poison, we must conclude that the chancre is not positive evidence of constitutional disease, and hence can not be its symptom.

It must be admitted as a fact, however, that autoinoculations and reinoculations during the primary period of syphilis, as a rule, produce no specific effect except when performed very early. Reinoculations following the first exposure at a short interval are tolerably sure of being successful, while autoinoculations from the chancre are very rarely so, and then only, in all probability, when made sufficiently early to allow their periods of incubation to elapse before the advent of the secondary stage of the disease. It may be conceded, furthermore, that in the majority of cases immunity *does* precede what is known as secondary syphilis. From the materials at our command it seems not improbable that a slight degree of general infection may exist in primary syphilis which, though sufficient to confer immunity upon the individual from any second installment of the virus, is yet insufficient to cause general disease. It does not suffice to arrest the progress of the growth and dissemination of virus at those points where depots have already been established, but it may act as an effective injunction against the establishment of any new depots. We have a notable illustration of such an immunity in the case of the mother of a syphilitic child who, notwithstanding she may at no time present any outward sign of syphilitic infection, is immune from contagion and suckles her child with impunity. Moreover, there is nothing in the view just proposed that does not accord with the results of preventive inoculation which have been achieved, notably by Pasteur, in other infectious diseases. Practically these results depend upon the fact that the infection that is superinduced artificially is in a mitigated form. It may be presumed that the attenuating process to which the virus is subjected before its inoculation so modifies its power of reproduction that when it enters the body it reproduces itself only to a comparatively slight extent, which, though sufficient to modify the tissues in such a way as to render them insusceptible to another inoculation of the same virus, causes no manifestation of virulence. Is it not possible that in the initial stage of syphilis similar conditions prevail? If the nests of infection in the vicinity of the point of inoculation could at an early period be exterminated, is there not some hope that that mitigated form of an infectious disease which is evidenced only by the insusceptibility to reinoculation might be preserved, and the further progress of the disease be arrested then and there?

The results thus far of ectrotic treatment have afforded but little encouragement. It is affirmed to be the rule in infectious diseases generally that take their origin from a local point of inoculation that it is impossible by cauterization to prevent general infection. Such was Cleve's experience after cauterizing vaccination punctures with nitrate of silver. Aimé Martin had a somewhat different experience. He cauterized the inoculated points with Vienna paste in from one to twelve hours after vaccination. No proper vaccine pustules were formed in any of the seven cases reported, but in only two of these was revaccination successful. Bouley and others in the Veterinary School at Alfort found that the time required for absorption of the virus of various infectious diseases was very short. Horses were inoculated with glanders, and the place was excised one minute after, but without preventing the disease. Sheep also were subjected to a similar experiment for variola ovina, and with like result. Between these diseases, however, and syphilis it is hardly fair to make comparison. In syphilis all the obvious signs point to a much slower development of the disease.

As an offset to the above-mentioned experiments, we may refer to certain results reported by Sigmund, of Vienna, which would seem to be clearly in favor of abortive cauterization immediately after syphilitic inoculation. Of fifty-seven patients who presented themselves with abrasions after suspicious connections, thirty-five were cauterized, and of these only ten developed syphilis. Out of the twenty-two not interfered with, eleven became syphilitic. Moreover, there were indications that the earlier the cauterization was practiced the better the chance of its success. Of the thirty-five patients cauterized, in twenty-four it was from the first to the third day following the suspicious exposure, and of these only three became syphilitic; of eleven cauterized from the fifth to the tenth day, seven became syphilitic, which would tend to show that after the fourth day the chances were against the success of the operation.

Most discouraging is the well-known case reported by Berkeley Hill: A patient who presented himself with a torn frenum twelve hours after a sexual encounter was cauterized with fuming nitric acid. On his return a month later the cicatrix had become indurated and syphilis followed. A possible loop-hole of escape may be found in the supposition that the patient had exposed himself to the disease during his month of absence. But there is evidence enough to show that the virus of syphilis passes beyond the reach of caustics within a short time after its inoculation. *A fortiori*, by the time the chancre is developed it should be still further removed.

But, though inaccessible to caustics, it has been hoped that the infected part might be included in a free incision. Upon this slender chance have been based the hopes of the army of experimenters who, within the past few years, have, with the most exasperating diversity of result, reported excisions of the syphilitic initial lesion. It is not my purpose to enter upon a critical analysis of these results. Such a task would be impossible as well as profitless. Suffice it to say that, in a considerable percentage of the many cases reported (and there have been hundreds of them), the occurrence of constitutional syphilis was apparently prevented. There is so little uniformity in the different results compiled that, as statistics, their utility is very doubtful. So great is their disparity that one can not avoid the suspicion that in these investigations the "personal equation" has been a disturbing factor. Two elements of doubt mar their sta-

tistical value. The first relates to the possibility of error in diagnosis. The second concerns the uncertain factor of prognosis. How many cases of true syphilitic infection and how many real syphilitic chancres are there which are never followed by any manifestations whatever of constitutional disease, or by manifestations so slight and insignificant that they easily escape all notice? There is sufficient evidence, familiar to any experienced observer of the disease, that in many instances the duration of syphilis is limited, so far as outward symptoms are concerned, to the primary period. What the proportion of these cases is no one knows, but it is certainly large enough to entitle it to consideration in these statistics.

It can not be said, then, that the results of excision make conclusively either for or against the hypothesis of the local character of primary syphilis. But, even were it shown that extirpation of the chancre did not prevent the course of general infection, it would not thereby be proved that the initial lesion was merely a symptom of the constitutional disease, nor would it prove that the syphilitic process was not essentially local in this period. We must not lose sight of the rôle played by the lymphatics. As a manifestation of primary syphilis, the chancre is hardly of less importance than the indolent adenopathy. That the indurated lymphatic glands in the vicinity of the initial lesion are contributory sources of infection there is little reason to doubt. Were the initial lesion removed they would doubtless still suffice to contaminate the system. To the production of syphilis it is only necessary that the germs of the disease effect a lodgment somewhere in the tissues. The seed must then take root, and when it once begins to germinate its potentialities for infection may reasonably be supposed to be the same as those of the original implantation at the point first inoculated.

While, then, it can not be affirmed of any period in the course of the malady that the disease is strictly limited to the site of the initial lesion, the proposition that syphilis is essentially a local disease remains still uncontroverted. The periods of incubation preceding and following the development of the chancre correspond to what we may provisionally term a process of germination that takes place *in situ* and not in the general circulation. During the forming stage of the chancre, during the period of apparent quiescence, and before any changes at the point of inoculation are outwardly perceptible, certain alterations are doubtless in progress: the round cells are accumulating, the walls of the blood-vessels are being infiltrated and occluded, till at length the initial lesion is formed. Meanwhile it is not unlikely that certain infectious elements find their way in small quantity into the general circulation. A few such germs might possibly be at once destroyed or eliminated from the economy, but they would gradually increase as the initial lesion and the affected glands continually added to the supply, and, sooner or later, their influence upon the tissues would be such as to superinduce that condition or modified infection which suffices to secure immunity against reinoculation, but is insufficient to elicit constitutional symptoms. Finally, re-enforced by larger and larger incursions of infectious matter, it accumulates in the blood in such excess that the organism, unable to tolerate it longer, reacts with the characteristic manifestations of general disease.

If this view of the course of syphilitic infection is the true one, and it appears to meet the conditions fairly, so far as we can comprehend them at present, what hope does it afford of preventive interference? It was intimated at the start that an answer to this question might be equally valid whether based on theoretical or on empirical grounds. Empirically, the answer is so ambiguous that we have been forced to have recourse to theory, and here we find the omens not unpropitious. An infection whose limits are circumscribed and more or less definable is a very different thing from one that has already taken possession of the entire organism. In the ordinary affairs of life it is deemed a much simpler task to remedy an evil at the outset than after it has gained headway and become confirmed. But in the first stage of syphilis most authorities advise only expectant treatment. Even those who admit that constitutional treatment may delay the advent of the secondary symptoms, deny its utility on the ground that the delay does not prevent the disease from displaying ultimately the same virulence or malignancy that it would if left alone, and, furthermore, by so much longer must we await the confirmation of our diagnosis. "We may be mistaken," say our masters; "wait a little till we are sure." It is only a little fire now, by and by it will be a conflagration. "If it turn out to be syphilis, then we will begin our assault." Then mercury! Mercury externally and mercury internally. Mercury on the flank by inunction, mercury in the rear by hypodermic injections. Sometimes as an alterative, then a depletive, now a tonic, and again an antiseptic, but always mercury, and mercury for four years. Admitting, as indeed we must admit, that it is the sovereign and unrivaled remedy for constitutional syphilis, must all the virtues of this wonderful drug be reserved for the secondary stage? Is there no alternative but to wait for the disease to take possession of the entire economy before we attack it? During the forty days' sojourn of the enemy in its outlying camps, while the insidious infection is slowly advancing its outposts from the periphery to the vital centers, is there absolutely nothing that we can do? It may be so, but have we yet exhausted all the available means? Are there no other resources than in excision of the initial lesion, which is but one of the multiple foci of infection, or this together with extirpation of a few inguinal glands, and in constitutional treatment with mercury and iodide of potassium? These, together with the now abandoned practice of syphilization, comprise about all the expedients thus far resorted to.

Excision of the initial lesion may have accomplished something. Certainly, when practicable, it is a perfectly rational, safe, and proper surgical procedure. It is removing an annoying symptom and a possible source of danger to others. Regarding the chancre as a depot of generation and supply of virus to the economy at large, its removal has another purpose, though, for considerations already given, with but small outlook of success. In a few instances excisions of inguinal glands together with the initial lesion have been reported, but thus far without note-

worthy result. It is extremely doubtful whether an operation to include every indurated or infected gland would be practicable. The inguinal adenopathy is rarely or never recognized as a monadenitis, but as soon as any enlargement at all is felt it plainly consists of a lymphatic group, and how many glands in any given case this group would include, and how far it would require the operation to be extended, it is difficult to surmise. In the three specimens described by Fournier and already alluded to, the number of glands affected varied from eleven to sixteen. In one specimen there were seven inguinal and four iliac glands; in the second, six inguinal and nine iliac; and in the third, eleven inguinal and five iliac. Manifestly in these cases the extirpation of all the affected ganglia, both inguinal and iliac, many of the latter occurring high up above the crural arch, would have been out of the question. It is by all means desirable, though, that experiments in this direction be continued.

The idea of preventing an infectious disease by some kind of modified inoculation similar to what has proved so successful for variola has long been a ferment in the minds of those interested in the study of syphilis; but hitherto the cultivation has only produced unfertile suggestions. It is over forty years since Auzias-Turenne first proclaimed his fancied discovery, but the doctrine of syphilization remains only a chimera. A singular substitute for it was proposed some years ago by Diday. Inspired by the success of Pasteur in his preventive inoculations for charbon, it occurred to Diday that, by inoculating a patient recently infected with syphilis with an attenuated syphilitic virus, the course of the disease might be prevented. He conceived the idea that such virus might exist in the blood of a woman who had acquired the disease in carrying a syphilitic fœtus, and in whom the infection is apparently a modified one. The ingenious notion has never, to my knowledge, been put in practice, and it has met with but little favor. But the field of investigation it suggests is an attractive one, and, though the idea has thus far proved sterile, the future is always pregnant with possibilities.

As to the value of medicinal antisyphilitic treatment during the primary stage there is a diversity of opinion among syphilographers. While it is pretty generally conceded that the employment of mercury in this stage tends to retard the appearance of constitutional symptoms, the apprehension has been expressed by some that, in repressing the outward manifestations of infection, we are risking a more serious implication of internal organs. Thus, Julien concluded from certain statistics that late lesions of the nervous system were invariably associated with mercurial treatment in the initial stage, and that a similar connection existed in the case of syphilitic affections of the testicle. He examined one hundred and six cases with tertiary lesions, and of these forty-seven had been treated during the primary stage, and fifty-nine had not. It is stated that while in its normal course the so-called tertiary symptoms occur, as a rule, within the first four years, and after that period are comparatively rare, in those cases that had been treated in the primary stage the gravest symptoms occurred from the fourth to the fifth years. From this he would conclude that the employment of mercury at the start tends to delay the symptoms, and possibly may adjourn them indefinitely, which would be sufficient reason for early treatment but for the fact that when the symptoms do occur they are more severe. Diday has published statistics of similar purport. Of seventy-four cases of syphilitic chancre, forty-nine were treated without mercury. In these, secondary symptoms appeared on an average in 43·23 days. In twenty-five treated with mercury, the average duration before secondary symptoms was 49·08 days. In the forty-nine cases not treated, the syphilis was slight in seventeen cases, moderate in twenty-seven, severe in five. In the twenty-five treated, the syphilis was slight in six cases, moderate in fourteen, and severe in five. If it is admitted that these statistics prove anything, they prove that the mercury renders the subsequent syphilis severe as surely as that it delays the period of secondary manifestations. But there is an inconsistency in the idea that, for the month or so of primary syphilis, the same remedy is to be shunned, because of dangerous after-effects, whose continued employment during the years of the constitutional disease is accepted without demur.

Usually the advocates of early constitutional treatment have been those who believed in the symptomatic character of the initial lesion. Some who have opposed it have done so for no better reason than that it would postpone a confirmation of the diagnosis. Those who believe in a primary local infection have deprecated constitutional treatment for the local disease on the ground of its indirectness. It was subjecting the system to a toxic remedy before there was any systemic trouble; it was offering the antidote before the poisoning had taken place. But in how many instances do we administer mercury internally in syphilis for strictly localized lesions where the general system shows no sign of the disease whatever, and with unquestionable effect! There is hardly any one but admits that when the chancre is formidable in size, or slow in yielding to local measures, a mercurial course will hasten its involution. It must be granted, though, that it is taking a very roundabout road to reach the result. In localized affections generally, which are not symptomatic of systemic disorder, our main reliance is always placed upon the topical treatment, though an adjuvant effect may be derived from internal medication. In primary syphilis the disease is essentially a local one. While it is conceded that a certain degree of infection may exist in the blood, it is extremely doubtful if by internal medication it is possible to reach it. We know that mercury cures the symptoms; that it can not be relied on to prevent them is an every-day experience. It is possible that mercury is the direct antidote to the syphilitic virus. Granting the hypothesis of the parasitic nature of the virus, it is not unreasonable to infer that the efficacy of mercury in syphilis is attributable to its germicidal action. Whether, finally, this will be shown to be its only virtue in this disease is doubtful, and it will remain to be explained why this virtue is not displayed in a similar manner in other infectious diseases of a zymotic nature, such as lepra and tuberculosis. But, supposing that mercury does act as a germicide in syphilis, it is very questionable whether it could

have any effect upon germs circulating in the blood. Much more probable is it that the effect would be exerted where both the germs and the mercurial would be most apt to accumulate, as at such places of elimination as the skin, or where deposited in the tissues. That mercury does exert a most decided influence upon the local manifestations of syphilis, when topically employed, we have undoubted evidence; then why should not this potent influence be brought to bear directly upon those local lesions which are also dangerous foci of infection in the primary period of the disease? And this brings me to the concluding and main object of my task, which is to advocate a more direct employment of mercury in the region where the chief source of danger has its seat.

It is only recently that the so-called "regional treatment" of primary syphilis has received much attention, nor have any remarkable results been yet reported. My own experience has been mainly confined to certain experimental attempts as to the feasibility of the method. It is, therefore, almost purely on theoretical grounds that this treatment is commended. The scheme consists in the local use of antisyphilitics by a method designed to bring the remedy or germicide in direct communication with the whole of the affected region in primary syphilis, including more particularly the initial lesion and the diseased glands. As commonly employed, the regional treatment has consisted simply in the use of mercurial hypodermics beneath the initial lesion (except this lesion be excised) and into the mass of the indurated lymphatic glands. But the plan may be easily extended. The field of operation may include all of that district whose lymphatic vessels tend in their course toward the ganglia which are the seat of disease. When the initial lesion is situated upon the genitals, the area most available would consist of the external genitals, the perinæum, the upper, inner, and anterior aspects of the thighs, together with the inguinal region and lower part of the abdomen. By multiple small subcutaneous injections and by inunctions within this area the remedy may be introduced little by little into the lymphatics with the hope of its being conveyed in sufficient amount to the diseased glands to destroy the infectious germs, or to retard their multiplication.

The only agent thus far employed for this purpose is mercury. Notwithstanding its irritant properties are a great hindrance to its use, no substitute for it has yet been found. The question that concerns us at present is how to introduce this irritating substance into the affected region with the least amount of offense to the normal tissues, but in sufficient quantity to exert its antidotal or destructive influence upon the germs of the disease. Where hypodermics are used it is not necessary that the drug be injected in large quantity in any one spot, nor in a concentrated form. A twentieth of a grain or less of the bichloride introduced in separate injections of not over a hundredth of a grain each would afford a more reasonable hope of effectively reaching the seat of the disease than a much larger dose given by the mouth. I have used a solution of one part in four hundred or five hundred parts of mucilage and water, with a small quantity of common salt added. Of this, four or five injections are made of four or five minims each, distributed over different parts of the cutaneous area above described. The discomfort caused by the injections is insignificant, especially if caution is taken to prevent any escape of the fluid into the corium. Similar injections may be made beneath the primary induration, when it is not excised, and into the substance of the indurated glands. The number and frequency of these injections will depend on circumstances and on individual judgment. Into the skin of the abdomen and thighs they may be repeated daily or every second or third day. Together with the injections, but more especially in situations where the former are less admissible, as in the perinæum and over the penis and scrotum, inunctions also may be employed, and for this purpose a mercurial soap * will be found preferable to the mercurial ointment.

Many modifications of the plan here briefly outlined will doubtless suggest themselves in the future should this method of treatment receive the consideration which I believe it merits. Brilliant results we can not expect at once, but there is a certain satisfaction, nevertheless, in following a course that appears to be dictated by reason. It may be said that regional treatment is also constitutional treatment, as in a degree it doubtless is, but it is something more, and surely it is something better than doing nothing at all. Better is it to act on any chance, however slender, than be bound helpless to a dogma that is open to question and that would leave the victim of an insidious infection without succor and without hope during what may be the most momentous period of his disease.

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## BOVINE TUBERCULOSIS.†

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After passing through the various controversies regarding gray tubercle, yellow tubercle, giant cells, scrofulosis, etc., at the present time we find the question of tuberculosis narrowed down to bacillary infection, and we are confronted with the inquiry, "Is bacillary tuberculosis conveyed to the human race from animals affected with this disease?"

All civilized races on the face of the globe have surrounded themselves with domestic animals. We have the horse, the pig, the sheep, the goat, the dog, the cow, and others. Of these we find that the horse is entirely exempt from tuberculosis. The sheep, the goat, and the dog are not found in nature affected with this disease, and they likewise resist artificial infection well; under certain conditions the pig takes on tuberculosis; it is, in fact, from this animal that we get our word scrofulosis. But, as we find them at the present time, they are not tubercular, because in this animal in-and-in breeding, which favors the development of tuberculosis in all creatures prone to this affection,

* A very excellent soap for this purpose is the "sapo unguinosus" (seu "leniens") of Dieterich, described in the "Helfenburger Annalen," 1886, and also in the "Monatshft. f. prakt. Dermatol.," 1887, No. 23, p. 1068.

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is not profitable to the breeder, as swine animals of close consanguinity fail to have young as a rule, and, if they do, the offspring dies soon after birth. Thus breeders are careful to put sows to boars not at all related, and we find the pig of the present day remarkably exempt from scrofulosis. The only reliable statistics to which I have access are some compiled in Bavaria in 1879. According to these, of 66,403 animals slaughtered for food, only two swine were found to be tubercular. When, however, we come to the bovine race, we find among these domesticated animals always a certain percentage of them affected with tuberculosis in its various forms. In fact, this race and the human are preeminently tubercular. In all the experiments of the present day, whether inoculation or cultivation, matter from either the human or the bovine race is used; and the question *pro* and *con* relating to the contagiousness of this disease lies between these two races. Of all the domesticated animals known, none is so intimately or closely related to the human race as the cow. We are veritable parasites on this animal. We milk her as long as she will give milk, and we drink it; then we kill her, eat her flesh, blood, and most of the viscera; we skin her, and clothe ourselves with her skin; we comb our hair with her horns, and fertilize our fields with her dung, while her calf furnishes us with vaccine virus for the prevention of small-pox. Strange it would be, indeed, if, under all these circumstances, we did not acquire from her some malady; she has tuberculosis, and we have tuberculosis; certain it is she does not acquire it from us. Artificial inoculation of tubercular matter from the cow in very many cases tubercularizes other animals, and, by the success of many of these experiments, scientific men have, many of them, been excited into becoming alarmists, and have appeared before the world in print with sweeping and startling assertions, but have failed to attract the attention they deemed their alarms entitled to.

The question of the contagiousness of the disease under consideration is an old one. Morton, writing two hundred years ago on consumption, says: "This disease is also propagated by infection, for this distemper, as I have observed it by frequent experience, like a contagious fever, doth infect those that lie with a sick person with a certain taint." Although this statement has been reiterated, and many of us have become convinced from our own experience, few believe that it is contagious among the human race. At a recent meeting in England, when the question was under discussion, Dr. Henry Bennett exclaimed: "Such a theory is dangerous, because, if it were true, the disease would be worse than the plague, and each tubercular patient would have to be treated as were the lepers of old." This is a queer statement, and evinces in a certain degree human perversity. I do not know what there is about this disease which fails to alarm the human race; it is contagious, insidious, deceitful, and destructive. Men afflicted unto death are seldom or never convinced that they are dying. As illustrating this strange human fallacy, we notice that at one time in Germany the name for tuberculosis in cattle was *Franzosenkrankheit*, the then popular name for syphilis, and hence for a long time the flesh of animals thus diseased was not eaten in that country; but, when they found that the disease was simply tuberculosis—an affection that kills a far larger number than the other disease—they fell to eating the meat again, just as we do.

Virchow says: "Man is far more susceptible to the diseases of animals than the latter are to similar diseases from man." Now, if Virchow is right, and he generally is, the question arises, Why are not more of the human race tubercular, as we find a certain percentage of all cows that furnish milk and meat to the human race are tubercular? Fleming reckons that 5 per cent. of all the bovines in England are infected. We have no complete statistics on this matter.

I have been told by inspectors of the Bureau of Animal Industry that a much larger percentage of our cows are affected. Indeed, among the thoroughbred Jerseys in the Northern States 20 per cent. are affected, as I have been told by Professor R. A. McLean, the chief of this district from the bureau. Now, with this large percentage of tubercular cows, and assuming that it is a fact that tuberculosis is communicated from the bovine to the human race, and considering our close relationship to the animal, why are not more of the human race killed by this disease?

The total number of cows in the United States for the year 1887 was 14,522,083—that is, one cow to every four and three tenths (4·3) persons. There exists, according to Lynt, a true parallel between bovine and human phthisis; the curves of double mortality are the same for different districts in the Duchy of Baden. Now this must mean that a larger proportion of the bovine race dies from phthisis than of the human race, because of the difference in the length of life between the races. We have no statistics of this kind in the United States, but Professor R. A. McLean, the authority before referred to, tells me that where cows are affected by tuberculosis in great numbers, the death-rate from phthisis is correspondingly large in the human race in the same districts; this is his observation from his large experience among diseased cattle.

Now let us see what the conditions of the two races are, how they differ, and how this difference modifies the disease under consideration. Without going into detail in comparing the two races, you will find, after due comparison, the most marked difference to be that of the normal temperature of the two races, and this difference you will at once concede is of more effect in relation to the disease than any of the other conditions. Many years ago I made an attempt to discover the true normal temperature of the cow, by thermometric observations of large herds in the field, and became completely puzzled at the lack of uniformity and the very high average. I then searched my books for some authority on the subject, and found a lamentable ignoring of the whole question in many works relating to bovine pathology. The only allusion I could find was in Steele's work, which, while excellent in some other respects, simply quotes bovine temperature from Armatage, and this quotation was in turn a quotation from an English book out of print, the name of whose author was not given. These quoted temperatures (100·9° F. to 101·9° F.) are much lower than the results of my observations, and the differences I observed in the range were far greater. I have

found cows in apparently perfect health with a temperature of 103·5° F., and ranging from that down to 101·2° F. From my own observations among cows and the experience as given in books, I find that all the animals endowed with hairy and woolly coats, but without well-developed sudorific glands—that is, that do not sweat readily—do not maintain a uniformity of temperature. The difference between a quiescent condition and one of activity is several degrees without affecting the health. But all these animals have a higher range of temperature than the human species. Thus we find in the published tables the following figures:

Cows and oxen during confinement, 100·8° F.; during work and liberty, 101·8°; calves and stirks during confinement, 100·9°; during work and liberty, 101·8°; sheep during confinement, 102·5°; at liberty, 104·5°; lambs at liberty, 104·9°; pigs in confinement, 101·6°; at liberty, 103·2°; dogs in confinement, 99·3°; at liberty, 101·9; and horses in confinement, 99·2°; at work and liberty, 100·3°; rabbits, 103°; guinea-pigs, 102°; the common fowl, 106·7°.

Now, if you compare this table with all the recent inoculation experiments on bovine tuberculosis, you will find that the success of such experiments is in direct ratio with the temperatures—that is, commencing with the lower temperature, that of the dog, we find the resistance lessening as we go up the scale till we come to the common fowl, with the highest temperature, where there is no resistance whatever. Feeding with tubercular matter is always positive with this bird.

We can now see why the human race is not more extensively affected with tuberculosis, which, in my candid opinion, is all derived from the bovine race. A germ cultivated in the cow is a tropical growth, because her average temperature is between 101° and 103° F. The human race, by this mode of illustration, represents the temperate zone. Coffee will not grow in Connecticut unless you put it in a hot-house. Ringer, in his valuable little monograph on the temperature of the body as a means of diagnosis and prognosis in phthisis, states that in acute cases the temperature of the human body rises daily to a high point—103° to 105°. Further, a patient in previous good health is seized with pretty copious and repeated hæmoptysis; there are no physical signs, and beyond a cough and an elevated temperature of 102° or 103° F. there is no evidence of phthisis. These symptoms are, however, sufficient to declare the nature of the case. Thus you will see that the temperature as cited here by Ringer is about the normal temperature of the bovine race. Ringer further says: "Thus, in all cases observed in which the deposition of tubercle was going on there was a continual elevation of the temperature, while in those cases in which the deposition had ceased the temperature was normal." To quote further from Ringer, whose testimony is valuable on this point: "Thus we meet with cases of phthisis accompanied with elevation of temperature during several weeks before we get physical signs indicative of the deposition of tubercle." Now, although Ringer does not draw such a conclusion from this fact, the interpretation is plain to me that from some cause or other the temperature was increased to the right degree to start the growth of the *Bacillus tuberculosis*, which, when well started, like all other ferments, had the power of keeping up the temperature by its own activity. That is, the temperature has been increased to the proper degree to permit of the growth of the bacillus, and the deposition of tubercle is simply the result of the multiplicity of bacilli creating for themselves places of congregation. At least, I take it that this is the true relation of the germ to the tubercle. The germ does not kill directly, but an aggregation of the bacilli surrounded by the new growth is the tubercle, and when the tubercle is formed the germ has finished its activity; and, if this new formation becomes organized or cretified, death does not result, but if the tubercle, that has been formed simply as a resting-place for the bacillus, breaks down, death results from sepsis.

These facts relating to temperature also illustrate localized deposits of tubercle from traumatism. Thus a human body in which the bacilli are already present, but not growing for lack of temperature, finds its proper conditions where the temperature is raised by reason of the injury, as traumatisms always produce local inflammatory action. If this theory is accepted, the argument regarding the scrofulous origin of joint diseases becomes superfluous; both parties, in fact, have been right. In further proof that a high temperature is necessary for the growth of the *Bacillus tuberculosis*, the late Dr. Flint, in his valuable work on practice, says: "I do not hesitate to express the belief that in a certain proportion of cases alcohol exerts a curative influence in pulmonary phthisis." Wunderlich, in his valuable book on "Medical Thermometry," writes: "In febrile conditions the effect of alcohol is to lower the temperature." He also says: "Habitual drinkers have, as a rule, under parallel circumstances a lower temperature than other persons."

Not only does temperature play an active part in the creation of tuberculosis as a disease, but we find that in cultivations outside of the body it requires a nicer adjustment of temperature than any of the other germs.

In regard to the rôle played by temperature in the disease under consideration we have a very interesting experiment of Toussaint's. He extracted some juice from the lung of a tubercular cow; some of this virus he injected into a pig and two rabbits; then he heated in a water-bath part of the same virus to a 130° and 137° F. for ten minutes, and injected the virus into four hogs and four rabbits. He says general infection occurred very rapidly in all these animals. Curiously to state, the rabbits that had been inoculated with the heated liquid died before the others.

The only cited experiment that I can find where tuberculosis was conveyed directly from the bovine to the human race I clipped from the New York "Medical Record" some years ago: "Two Greek physicians inoculated a patient who was dying of gangrene of the leg with tubercular matter from a cow. They state that the patient's lungs were healthy prior to the inoculation, and at the autopsy there were well-marked tubercular deposits in the lungs." If this is an authenticated case, which of course I can not affirm, there was undoubtedly the proper temperature for

the growth of the germs, and hence the success of the experiment.

My occupation brings me into close contact with dairy cattle, and I have therefore been compelled to devote my attention to the subject of the diseases afflicting dairy stock. That there is a large number of dairy cows afflicted with tuberculosis I can affirm; that there has never been an attempt to exterminate this disease is a fact of which I am also cognizant. Last year the Federal Government appropriated half a million dollars to stamp out zymotic pleuropneumonia. This disease does not affect the human race, as no other animal except the bovine has ever been known to suffer from it. It affects the pockets of the cattle-dealers grievously; but the health of the general public is not threatened by it, while bovine tuberculosis, which the Government inspector finds coincident with a high death-rate in human phthisis, is left uncontrolled. Cattle-breeders everywhere have unrestrictedly followed the homicidal practice of in-and-in breeding of dairy stock. This method of breeding we all know favors the development of the disease, and the development of this disease in the bovine race simply means more phthisis in the human race. One simple fact that strengthens my belief that human bacillary tuberculosis is all derived from the bovine species is, that where this animal does not exist, pulmonary consumption is unknown. The Kirghis on the steppes of Russia, who have no cows, have domesticated the horse, using its milk, meat, and skin, and a case of pulmonary tuberculosis has never been known to exist among the tribe. The Esquimau has no cows, neither has he pulmonary phthisis, and I think it can be laid down as a fact that where the dairy cow is unknown pulmonary consumption does not prevail.

Among the numerous statistics giving the occupation of those persons who die of bacillary phthisis, I do not find the occupation of a farmer included; my own observations in farming districts convince me that large numbers of these people die of lung tuberculosis. That these people are in greater danger of infection from milk from tubercular cows is evident from the fact that they very often drink the milk "warm from the cow," while the city consumer almost always gets his milk after it has been chilled, and all the cultivation experiments go to prove that this germ will not grow at a temperature of less than 87° F. The reason why these farmers' deaths are not included in statistics is due to their remoteness from the great centers where the statistics are collected.

The cow has redeemed us from one dreadful scourge, small-pox. I am, however, inclined to think a greater scourge is continued to us by the same animal. It is the deceitfulness and insidiousness of this disease that lure us into a quiet state. Bacillary infection is not rapidly fatal as a rule; the infection received into the system of a human being lies in wait for a proper condition of its host before it can assert its sway, and, if the opportunity never occurs in the individual originally infected, the infection is continued to the offspring, and the wasting bacillus finds its opportunity some time. Men never know when they receive the infection that results in a fatal attack of pulmonary phthisis.

We long ago acknowledged our inability to check this scourge when it has once got its insidious grip on a human creature. Certain cases do end in recovery, but under circumstances that thus far we have been unable to comprehend; we have no known methods of successful treatment. Let us then, as medical men, turn our attention to prophylactics.

There is no good reason why we can not be instrumental in passing laws to regulate the breeding of dairy stock. The disease is well marked, therefore there would be little difficulty in selecting animals afflicted and excluding them from the dairy and butchers' shops, and in indicating to our legislators the necessity of passing laws to prevent the breeding together of tubercular animals, or the in-and-in breeding of any of the bovine species. Let us treat this disease, especially among the cows, as leprosy was treated of old, and then we shall be saved from the painful necessity of treating the human race in like manner, for I am convinced that, if we stamp out tuberculosis in the bovine race, a few generations will eliminate it from the human family.

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## A CASE OF HOUR-GLASS CONTRACTION OF THE UTERUS.

By CHARLES W. PHILLIPS, M. D.,
SCIPIO, IND.

Mrs. H., aged thirty-seven, mother of three children, miscarried twice, and was under treatment for chronic endometritis from the time of her last miscarriage, which occurred in 1881, until her last conception.

I saw her, for the first time, in labor at 2 P. M., November 25, 1887. She had been in labor since 6 A. M. that day. When I saw her the pains were efficient, and labor was progressing satisfactorily though slowly. At 3.30 the membranes ruptured and the child was born at 5 P. M. After giving the child over to the nurse, I replaced my hand on the lax abdominal wall to follow down the contracting uterus, and then felt what seemed to be a fissure dividing it into two segments, the upper one being much the smaller of the two. Both segments of the uterus seemed to be very tense, and there were not at any time the alternate contraction and relaxation which belong to this stage of normal labor.

Immediately after the birth of the child my attention was also directed to the character of the pain. It continued incessantly, corresponding in this respect to the tense condition of the uterus. The lady complained a great deal, pleading earnestly for relief. She said the pain was "of a grinding and sickening character, and not like the bearing-down pains she had experienced at her previous births." In fifteen or twenty minutes, as there was some slight hæmorrhage, I administered a small dose of ergot (Squibb's fluid extract, ʒss.), and the hæmorrhage soon ceased. This, probably, I should not have done. However, I do not think the ergot in so small a dose could have influenced the case much, for either better or worse.

I then made an examination, and found the placenta high up in the vaginal canal—so high that I could only touch it. In twenty minutes another examination still showed it to occupy the same position. Not having an anæsthetic with me, I sent for the "A. C. E." mixture, but the druggist was not in, and it was nearly two hours before I could get it. (There is but one drug-store at this place.) During this time the lady suffered severely, the pain never abating the least, and she had become

almost exhausted. I gave the anæsthetic, introduced my hand into the cavity of the uterus, and found the placenta detached, but, when I made gentle attempts to scoop it out, it refused to yield. A closer examination proved that a portion of the membranes was grasped by a constriction near the fundus uteri. This constricting ring was so firm that it was difficult for me to insinuate my index finger through it. I finally introduced three fingers past it, scooped out the retained membranes, and removed the placenta.

From the constriction to the fundus measured to the second joint of my index finger, a little less than two inches.

The interesting points to me in this case are these:

1. The constriction was near the fundus and not at the internal os. (Yet I must admit that hour-glass contraction near the fundus is acknowledged by the best authorities—Playfair for one.)

2. Both segments of the uterus seemed to be in a state of violent contraction. Duncan says: "Hour-glass contraction can not exist unless the parts above the contraction are in a state of inertia." I can not be positive that the upper segment was contracting, as it was very small. The lady was emaciated, and her abdominal wall was thin and lax, thus affording an excellent opportunity for external examination. But, so far as I was able to discern, the upper part seemed as tense as the lower.

3. There was no traction made on the cord at any time, so that can not be assigned as a cause.

4. The persistent pain was not caused by the ergot. It existed before the ergot was given.

5. Though she had been troubled with chronic endometritis, the irregular contraction was not due to adhesion of the placenta. It was detached, and a portion of the membranes only was grasped by the constriction, thus causing its retention. If I had made strong traction on the placenta, this part of the membranes would have been torn off and left *in utero*.

It is strange to me why a portion of the membranes only should be caught and not the placenta. Yet, the fact that the placenta probably occupied a lateral position makes it altogether possible that the membranes at its upper margin could be caught in this way.

6. The removal of the placenta was not followed with any hæmorrhage worthy of note. I expected a deluge of blood on removing it, but in this I was happily disappointed.

My description of this case is brief and deficient in detail, in order to be concise, but I trust the reader will get enough from what I have given to give him some idea of its more important points.

From what I had gleaned from the literature concerning the causes of this form of uterine contraction, I was prompted to entertain the opinion that it should not occur in the hands of the prudent and careful practitioner, and had learned to regard it almost with indifference. But that opinion has been somewhat modified by this, the only case I ever saw.

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**The Death of Mr. Thomas B. Curling** is announced in the "Lancet" as having occurred at Cannes on the 4th inst. The deceased was in his seventy-seventh year.

# LEPROSY IN THE UNITED STATES, AND ITS RELATION TO THE STATE.*

By CHARLES W. ALLEN, M. D.,

SURGEON TO CHARITY HOSPITAL; ATTENDING PHYSICIAN, NORTHWESTERN DISPENSARY, DEPARTMENT OF SKIN DISEASES; ATTENDING SURGEON, BELLEVUE HOSPITAL OUT DOOR POOR, DEPARTMENT OF GENITO URINARY DISEASES.

Those not wholly familiar with the history of lepra in our own country, and especially those who have never had their attention called in a practical way to the subject by personal experience with the disease, are apt to regard it as one with which we have little or no concern, or at least of such rare occurrence here that it can be practically ignored.

It might indeed be asked, with seeming propriety, by the majority of general practitioners in most parts of our country, "Why should leprosy be a subject of concern to us aside from the natural scientific interest we all have in a disease which has been the scourge of many lands, and at all ages of the world's history most dreaded as a foul and surely fatal affection?" "Why should we stop to discuss a disease which appears of so little practical importance to us?"

I will ask you to take with me a hasty retrospect of the history of leprosy in the United States, to see just how we are situated in regard to it here, and whether the facts justify us in so practically ignoring it as a source of danger.

Presumably there was a time when no leprosy existed here, but just when the first cases were observed I am unable to say. In Louisiana there were some lepra cases many years ago, but prior to 1866 it was supposed to have wholly disappeared. It existed at first among the French settlers who came from Canada and the West Indies, but not among natives.

In the annual report of the Louisiana State Board of Health for 1880, Professor Jones reports sixteen cases, and Dr. White, in an excellent article,† says it can be traced back for generations.

In 1869–'70 Professor Boeck, of Christiania, visited Wisconsin, Iowa, and Minnesota, and found eighteen lepers, all of whom had come from Norway. Nine had the disease before emigrating; the other nine showed their first symptoms here. Eight had a family history of the disease, and in them the first signs appeared after they had been here from two to ten years. One woman became leprous after being fourteen years in this country. There was a history of her having at one time cared for a leper.

In 1884 Dr. Grönvold published in the "Journal of Cutaneous and Venereal Diseases" an account of leprosy in Minnesota subsequent to the visit of Professor Boeck. Six subjects were at that time known to exist in the State, and ten were known to have died (one came to New York). These six had been in the country from twelve to twenty-seven years and had been affected from seven to eighteen years. One girl, aged twenty-two years, had come to this country at the age of thirteen, so had been here nine years before any signs of the disease appeared, and in the mean

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* Read before the Medical Society of the County of New York, February 27, 1888.

† "Amer. Jour. of the Med. Sciences," October, 1882.

time had seen no case of leprosy. She denies all knowledge of the existence of leprosy in either of her parents' families.

In the December number of the same journal Dr. Stoddard relates the case of still another Norwegian leper whom he saw in Renville Co., Minnesota. His disease had appeared about the time he reached this country some four years before. The only case of leprosy the patient had ever seen occurred in the person of his own aunt.

Dr. Geddings reports in the "Medical Record" of August 16, 1884, a case of indigenous leprosy in a girl twenty years of age, whose ancestors were of English origin and had lived in South Carolina for several generations. Her disease began at the age of six. The author says he has during the past twenty-five years seen about twenty cases of indigenous leprosy in and about Charleston, and that for more than forty years cases have been observed along the South Carolina coast.

In 1863 Dr. Holmboe, of Bergen, in Norway, made a tour of Illinois, Iowa, Minnesota, and Wisconsin, in which States Norwegian immigrants principally settle, and found some leprosy prevalent among them.

In 1864 there were found to be twelve cases in Minnesota alone, two of which had developed here, the other patients having had the disease when they landed.

On the Pacific coast Chinese immigrants introduced the disease into California and Oregon, and twenty cases are said to have been observed in Sacramento. During the ten years prior to 1883 fifty-two victims were admitted into the small-pox hospital in San Francisco, besides which a number were sent back to China.

Dr. Orme has reported to Dr. McNutt, President of the California State Medical Society, that six Chinese lepers were found in Los Angeles from 1883 to 1887.

There is one blind leper reported in the almshouse at St. Croix, Wis., and in Iowa there have been eight cases during the past twenty years.

Professor Piffard reported four cases which were under his treatment at Charity Hospital, of this city, in 1883, in the "Journal of Cutaneous and Venereal Diseases" of the same year, and at that time he stated that since 1864, when he saw his first case in this city, upward of thirty cases had been observed by him.

In this journal of the same year Dr. Amidon reported the case of a Cuban, born of healthy parents but whose brother had died of leprosy, who was under his treatment in 1881.

Dr. Atkinson reported at the American Dermatological Society, in June, 1882, a case of leprosy occurring in a woman, aged forty, of German parentage, who resided in Baltimore, and had never been outside of the State of Maryland. She had lived in the same street with a leper named Brown for two years, and for a year he was her next-door neighbor. Brown's case was reported by Dr. Rohé in the "Maryland Medical Journal," July, 1878. This patient subsequently died in Charity Hospital in this city, and the case is one of those reported in 1883 by Dr. Piffard. Only three cases of leprosy had been observed in Baltimore for many years, and Dr. Atkinson very justly regards it as highly probable that she contracted the disease from her next-door leprous neighbor. An excellent article by Dr. White, of Boston, appeared in the "American Journal of the Medical Sciences" in October, 1882. Three persons with leprosy had been seen in Boston, two having escaped from the lazaretto of Tracadie and another from Louisiana, and still another from Tracadie had been seen in Providence. One case is reported by Dr. Abbott in the Massachusetts State Board of Health report for 1883. A former resident of Salem had contracted the disease while residing in Honolulu, and it had made its appearance several years before he came home. He died in March, 1883.

Dr. Costales published the following case in the "Journal of Cutaneous and Venereal Diseases," September, 1883:

> A resident of Brooklyn contracted leprosy in Venezuela fourteen years ago in the following manner (he came under the writer's observation in 1878): A lady in South America was taken sick with the disease, and an aunt of Dr. Costales's patient called frequently to see her. Before the death of the lady referred to the aunt contracted the same disease, which, so far as known, never previously existed in the family. The aunt used to carry Dr. Costales's patient, and was with him considerably

I shall refer to this case again in speaking of contagion.

Dr. Fox has seen a number of cases in this city, one of which, that of a Cuban, I remember seeing when he presented him at the New York Dermatological Society in April, 1886. He records the following case in "The Quarterly Bulletin," November, 1885:

> A gentleman born in the Sandwich Islands, but of New England parents who had gone there as missionaries, had there contracted the disease. For seven years he had noticed a dark patch on the left thigh and numbness of the fingers, etc. He was under Dr. Fox's treatment for some months in this city, and continued treatment with great benefit after going to live in a Western State.

Dr. Sherwell presented a case at the New York Dermatological Society in 1883.

Dr. Bulkley reported ("Medical Record," 1881, vol. i) two cases of leprosy occurring in natives of the United States who had never been five hundred miles from New York. The first was the case of a man, aged thirty-eight years, who lived in Hudson, N. Y. He died in the ninth year of the disease. The second case occurred in a man who had never been out of the country. This patient died in the eighth year of the disease. Dr. Bulkley had treated in all about nine cases here up to that time; four of them, however, are reported elsewhere.

An instance of a native of this country acquiring the disease by going among the lepers is that reported by Hyde.*

> An American, born in Oswego, N. Y., ran away from home at the age of sixteen and went as a sailor to Honolulu, remaining there fourteen or fifteen weeks, associating freely with natives, indulging in the usual pastimes of sailors. For a number of years thereafter he made frequent trips to the Sandwich Islands, remaining there at times as long as seven months. Some ten or twelve years after returning permanently to this country the disease appeared. It was the fifth case of leprosy reported in Chicago.

* "American Practitioner," February, 1879.

Hyde mentions two cases from Nebraska in his handbook on "Diseases of the Skin."

Dr. Van Harlingen presented a case at the October meeting of the Philadelphia County Medical Society, and reported two other cases:

Case I, seen in 1883, was that of a native of Cuba who had been in this country but a few months.

Case II was that of a native of Pennsylvania, who was married at the age of seventeen to a native of Brazil, where she went to live with him. Her first symptoms occurred about three years ago. In December, 1886, the patient was sent to St. Joseph's Hospital, but, suspicion having been aroused as to the nature of the disease, she was dismissed, and later on found employment in a small hotel.

Case III was that of a daughter of the patient in Case II, twelve years and a half old. The disease had begun at about the same time as that of the mother.

Still further cases will be found in the transactions of the American Dermatological Society during the past ten years.

In the five years from 1878 to 1882, nineteen cases were reported from the four cities, New York, Boston, Chicago, and Baltimore.

There are undoubtedly other cases which have never been reported, the patient, knowing with what horror the public regards the disease, naturally shunning publicity, and the physician humanely guarding his secret.

Two hitherto unpublished instances of lepra in New York I am permitted to add to the number already given:

One is the case of F. A. Victor, a native of the island of Mauritius, where there are several thousand lepers. He entered the Colored Home of this city in 1878 at the age of twenty-one, in the second year of the disease, and died in April, 1887. His history and autopsy record have been kindly furnished me by Dr. Bickerton. He had frequent eruptions of bullæ upon the body and ulcerations of the fingers. Occasional improvement was noted under the use of chaulmoogra oil. Death was due to broncho-pneumonia and chronic diffuse nephritis.

During his stay at the Home, "Vic," as he was familiarly called, frequently went out for longer or shorter periods, twice being absent for four or five months. During one of these absences he applied to me for treatment at the University Dispensary.

Dr. Wiener has related to me the case of a gentleman born in Texas who had never been out of this country. The patient came to him for advice in 1885, having been treated for syphilis elsewhere. The lesions were unmistakably those of lepra, but the origin of the disease could not be accounted for. After remaining under treatment for a time here, the patient went to Paris.

In looking over the histories at Charity Hospital, I find that during the past ten years there have been treated at least eight cases. It may be interesting to trace the subsequent history of the four cases reported by Professor Piffard in 1883.

Case I.—This is the patient whom I present to you. James E., aged twenty-seven, a native of Bermuda, born of English parents, was admitted to the hospital about eight years ago. There was no family history of the disease, nor had the patient ever, to his knowledge, associated with a leper. He resided in the West Indies until the age of twelve, when he came to this country in apparently good health. After about two years he noticed brownish spots or patches over both hips, which were attended with some heat. These patches subsequently extended to the thighs, arms, and legs. One year after this he returned to the West Indies and remained two years. Tubercles now developed where the brown patches were, and also appeared on the forehead and face.

He was treated with chaulmoogra oil and nux vomica internally, and cardol was applied locally.

About three months ago I found that this patient was growing worse, having taken no medicine for some time. Chaulmoogra oil was begun again in twenty-drop doses three times a day; recently this dose was increased to thirty drops. He has shown some improvement. Early in February I excised several disfiguring tubercles from the face and nose, and treated others by linear quadrilateral scarification. A week ago I removed the outer two thirds of the left eyebrow, which had become so altered and thickened by leprous infiltration as to hang over the eye and interfere with the sight, besides causing disfigurement, which annoyed the patient. To the opposite side of the face and to the arm and thigh I have applied a solution of pyrogallol in collodion in strength of a drachm to the ounce. The surgical procedures were followed by prompt healing, and the results were satisfactory. The pyrogallol, so far as employed, has caused in a measure resorption of tubercles and patches of infiltration. Although the patient sees quite well, the eyes are extensively implicated, and Dr. Andrews, who has recently made an examination, reports leprous deposit in the iris with distortion and degeneration. This same condition he has found in the eyes of lepers in China. There are also injection and infiltration of the ocular conjunctiva around the cornea. The *Bacillus lepræ* was found in the excised tubercles.

Case II.—Peter Anderson, whose case was the second reported by Piffard, died in the hospital on November 16, 1883.

Case III.—Adolph Miller died during my term of service at the hospital in December, 1885, of acute lobar pneumonia and acute parenchymatous nephritis.

Case IV.—Owney Johnson was discharged in July, 1883, somewhat improved.

The following four cases I will mention briefly:

Hugh Lay, aged twenty-seven, a native of China, was admitted May 29, 1883. He had been well until fifteen months before, when small tubercles appeared upon the face. There was no family history. Treatment consisted of nux vomica in doses of from four to ten drops twice daily until September 12, 1883, when he was discharged not improved.

The following history is of interest as showing another instance of a native of this country acquiring the disease by going into a leprous region:

Abraham B., aged forty-five, a native of the United States and a bricklayer by trade, was admitted into Charity Hospital, July 5, 1878. Family history good. Twelve years ago he went to Cuba and lived in Santiago for three years, but does not know that he ever saw a case of leprosy there. For the past nine years he has been in New York. In February, 1878, first experienced a sensation of formication upon the forehead, and had chills, and did not feel quite himself for some time. In April a tubercular eruption appeared upon the face, and the eyebrows and lashes soon fell out. Sensation lost in tips of fingers, followed by similar condition in legs. One year later the skin was very much discolored, nose, ears, and lips infiltrated, arms and legs covered with fine scales. These symp-

toms were followed by ulceration of joints and laryngeal ulcerations, etc. (See report by Dr. Elsberg, N. Y. "Med. Record," Aug. 2, 1879.)

The patient died suddenly on April 19, 1879, and the autopsy showed infarction in the lower lobe of the lung, two inches in diameter, in yellow stage. Thrombi in pulmonary artery on both sides, collapse of lungs, etc. Chronic diffuse nephritis, stony hardness and enlargement of ulnar nerve, and other nerve changes.

William W., a native of Jamaica, was admitted November 3, 1884. There was no family history. There were pigmentary spots, anæsthesia, enlargement of ulnar nerve, ulceration, etc., and bullæ subsequently formed. He was treated with tincture of nux vomica in doses of five to ten minims three times a day until the following July, when he was discharged much improved. Treatment was here of decided benefit, and patient was cured of the severe lesions and symptoms he had on admission.

In 1880 there was a German in the hospital who had contracted the disease in Mexico. The patient, James E., whom I have presented, is the only patient now in the hospital. There is a further case of a German who contracted the disease in Mexico, and was in Charity Hospital in 1880.

Quite a number of deaths from leprosy have occurred in this city during the past seventeen to twenty years. I have before me a report from Dr. Nagle, of the Bureau of Vital Statistics, which he has kindly sent me. It shows that since 1871 eighteen deaths have been recorded for this city as due to "elephantiasis." That by this is meant elephantiasis Græcorum, in the majority of cases at least, is indicated by the fact that this term alone is used for all the cases of death which I have mentioned as deaths from lepra. Dr. Nagle says: "I am quite certain that there were other deaths of persons who had this disease, the medical attendant failing to state it." I know of at least one such instance.

Thus we see that in the aggregate lepra has existed to a considerable extent in this country during the past twenty years, and, without going into a careful calculation, I think we can safely put the number of cases at one hundred and fifty, without counting twice those cases reported by two different observers. Now the question is whether the disease is on the increase here, or whether is it dying out. Prior to 1866 there does not appear to have been any leprosy in Louisiana, none in Minnesota until the Scandinavian immigrants brought it some years before this date, and none in California before the Chinese introduced it there. About Charleston, S. C., it appears to have existed for many years. Whether cases were seen in New York, Boston, and Philadelphia before this same time I do not know, as I find no report of any.

If we should take the actual count of lepers in this city to-day, and compare the number with those here in 1883, we might find a smaller number, and might infer that the disease was decreasing. If we turned to Minnesota, we should probably find that, despite continued immigration, the number was now less than it was in 1869–'70, and should be led to agree with Daniellsen and Boeck that in this northern climate the disease tended to disappear.

That, however, I believe is not the proper way to arrive at the truth. The question requires more study. And, by the way, no country at the present day would seem to be better suited for a proper study of the disease than our own. Here the disease is of comparatively recent introduction, making possible exceptions for Louisiana and South Carolina.

Here we have a new country, free from the element of hereditary taint. All parts of the country are well supplied with competent medical men, whose observations may be safely trusted. The small foci of the disease are well known, and any new cases are not likely to escape observation. And we know pretty accurately when the first cases were observed. Of much greater import, it seems to me, is the fact that no fewer than five indigenous, sporadic, and unexplained cases of leprosy have of late years sprung up than that foreign lepers previously landed on our shores should have followed the natural course of the disease and died. Furthermore, nothing prevents enough immigrants, with the disease already in their systems, from landing and making good the number, or increasing it to any extent.

Besides being a favorable country for the study of the disease, the United States is geographically so situated that we are at all times likely to have lepers visit us and settle here.

To the northeast of us we find leprosy of long standing in New Brunswick, a lazaretto having been established at Sheldrake Island as early as 1844, and at Tracadie in 1849, which by 1875 contained nineteen lepers, and there were seventeen outside in the province. In May, 1885, the lazaretto contained twenty-one lepers, and only four were then known to be at large. The diminution, by two at least, is accounted for by those cases which had come to this country from Tracadie, reported by Dr. White, of Boston, in 1882.

To the south we find leprosy in Mexico, Central and South America, especially in Brazil, where, according to the last census, there are five thousand lepers in a population of ten million people, and Lutz* thinks, if the truth were known, the number would be ten thousand, or even more. Available data in regard to the disease in Brazil do not go further back than 1755. The disease is also found quite largely among our neighbors in the West India Islands.

Westward we find it in its most active and destructive form in the Sandwich Islands, and, at a still greater distance to be sure, but near through commercial intercourse, in China and Japan.

From the east we are continually threatened by immigration from Norway and other countries where it has not died out.

Thus on all sides we are accessible to the leper. According to recent reports, the disappearance of leprosy in Norway is rapidly being effected. The first reliable statistics were collected in 1884. They showed that in 1856 there were 2,867 cases in the country. This number has steadily decreased until, in 1884, there were but 1,500 or 1,600. Some of them, as we have seen, came to this country.

Now, it becomes a serious question whether we should receive these afflicted people, aside from the question of

* "Monatshefte für Dermat. u. Syph.," 1887, Nos. 10 and 11.

their becoming a burden to the State. Is there no fear of the increase of cases here keeping pace with the decrease in leprous districts abroad? If lepers are freely allowed to land and to settle where they please, to marry and rear families, to come and go at will, why, under hygienic and sanitary conditions somewhat different from those now enjoyed by us, can not much the same thing happen as has happened in other countries? If more freedom is allowed them here than at home, if better treatment can be here obtained, will the number of new-comers not continue to increase as it already surely has?

Furthermore, sailors, who, it would seem, from their habits of promiscuous intercourse with natives of foreign ports, are especially prone to become affected, are likely at all times to make a landing in our seaboard cities.

I think I shall be borne out in the statement that of late years we have received many more visits than formerly from well-to-do persons, natives of foreign countries, who come here in search of health. Each year our large cities are visited by travelers having leprosy, who come here hoping to find a cure, or at least a climate more favorable than the one in which the disease was contracted.

But, you may say, why should they not come and receive the benefits our climate offers? What is the danger? Those who settled in Iowa all died and did not spread the disease. I can only answer—wait. We are young yet. They have not been coming long, and as yet there is not much crowding. Formerly, if a native of New York or of Massachusetts contracted leprosy, he had to go to it. Now it is brought to him, and the result is already seen in several sporadic and "unaccountable" cases.

What we might be led to expect, should the conditions of life in any part of our vast country become such as we find them among the Hawaiians (and such as they probably are in the more densely settled portion of our cities), may be inferred from a history of the present scourge in their islands.

So far as records go (and I have the official reports of 1886 before me), the disease first became known about fifty years ago. Various theories have been advanced to account for the outbreak of the disease. Its introduction has been attributed to the Chinese, and it has always been called the *mai pake*, or Chinese sickness.

It seems probable to me that a few cases existed prior to the date of Chinese immigration, just as it has existed in some of the Southern States here, and that the promiscuous mingling of the people and careless modes of life at a time of increased commercial relations with the outer world, together with the possible influence of improper and careless vaccination, determined the outbreak.

Dr. Hagan * says that Dr. Baldwin, a missionary physician, was on the island when the first case occurred in a native in 1838.

A Chinese servant in the family had the same disease. "In from seven to ten years the disease not only showed itself in other members of the family, but in their friends, and spread in such a way that long before they knew the name of the disease they were sure it was a blood disease and clearly contagious."

* "Southern California Practitioner," March, 1886.

Dr. Fitch,* a physician in charge of a leper hospital in Honolulu and also a leper settlement on the island of Molokai, says that a native named Ahia was a leper as early as 1840, and that Naara, the father of Queen Dowager Emma, became a leper in 1845.

Other writers state that the Chinese first brought the disease to the island, and that it appeared about 1848. However this may be, by the year 1879 there were two thousand lepers in the island, and in 1866 a law was passed compelling their segregation, and from this date to 1886 three thousand and seventy-six cases were consigned to the Kalawao leper settlement. Thus in fifty years, from an insignificant starting-point, we find this vast multitude of human beings civilly dead and worse than virtually so—objects of horror and dread, regarded as sources of contagion, whether justly so or not, without the hope of any great or lasting benefit from medical skill, with nothing to look forward to in this world but a loathsome death.

Although no further proof of the spread of the disease seems to me to be required than its history in the Hawaiian Islands, I will, however, add a contribution from the pen of Dr. Suzor, of Mauritius, taken from the "Progrès médical," No. 14, 1885.

"In Guiana leprosy was unknown either among the natives or white settlers prior to the introduction of slavery. Among the negroes there were some afflicted with leprosy. Isolation was practiced and the disease was limited strictly to the blacks; but in 1831 more than four hundred were established in a settlement on the banks of a river near which some Indians lived. In 1842, eleven years later, a large proportion of these natives were affected, but it was only those belonging to the affiliating tribe to whom the disease had extended, and especially had it occurred in children of this mixed parentage. At the present time two in a thousand of the entire population are leprous, and the whites and mulattoes furnish their share."

The Philadelphia Board of Health, considering lepra a contagious disease, imposed a fine of $100 upon Dr. Van Harlingen for not reporting the cases already referred to, and, after an unsuccessful attempt to send the patients back to Brazil, placed them in strict confinement in the Municipal Hospital.

Now, the Philadelphia Board of Health is either in the right or it is seriously interfering with the rights of others. It is no light matter, where no crime has been committed and no law broken, to deprive one of that liberty which is so integral a part of our national right, the birthright of every born American, the boon of every new-comer to our shores.

The whole question of State interference turns upon the question of the contagiousness of the disease.

Are we possessed of sufficient data on which to base an opinion that the disease is transmitted from individual to individual?

Discussing the question of the contagiousness of lepra might be looked upon as superfluous did we not find the opposite opinions held by many eminent men and careful investigators. Dr. Zambaco, whose opportunities for observing lepra at Constantinople and elsewhere have been

* "Pacific Med. and Surg. Journal," October, 1885.

exceptional, maintains its non-contagious nature, and in the memorable discussion which took place before the Paris Academy of Medicine in 1885 Vidal almost alone supported the theory of contagion against Constantin Paul, Dujardin-Beaumetz, Hardy, Le Roy de Méricourt, and others. The general sentiment of the Academy was opposed to the contagiousness of the disease.

Even the physicians having extended experience in the Hawaiian Islands are divided on the matter. The majority, however, favor contagion. "Dr. Fitch believes himself justified in saying that leprosy is hereditary, and can not be communicated by one person to another under any circumstances."

*(To be concluded.)*

## INJURIES TO THE FŒTUS DURING PREGNANCY.*

By BARTON COOKE HIRST, M. D.,
DEMONSTRATOR OF OBSTETRICS IN THE UNIVERSITY OF PENNSYLVANIA: OBSTETRICIAN TO THE PHILADELPHIA AND TO THE MATERNITY HOSPITALS.

The position of the fœtus in utero is one that secures it the greatest possible immunity from external violence, surrounded as it is by liquid, protected by the soft and flexible uterine muscles, and further shielded by the fatty, muscular, and cutaneous tissues that form the abdominal walls; but, in spite of this evident attempt of nature to afford it every protection, the fœtus may experience injuries of the gravest nature, either in connection with serious injury to the mother, or occasionally with very slight evidences of violence to the maternal tissues. Thus, in cases of gunshot,† stab,‡ or other perforating wounds of the abdomen in pregnant women, the fœtus has likewise been severely and fatally wounded. Also, in the performance of laparotomy,# by a mistaken diagnosis the trocar that was plunged into what was thought to be an ovarian cyst has penetrated the fœtus, and wounds have been inflicted by both sharp and dull instruments ignorantly used to bring on an abortion or in the hands of physicians who overlooked the condition of pregnancy. On the other hand, as instances of fatal injury to the fœtus without apparent injury, externally at least, to the mother, might be cited those interesting cases of Maseka ‖ and Gurlt,△ in which the cranial bones of the fœtus were fractured by the mother falling from a height, or the still more remarkable case described by G. von Hoffmann◊ of a woman in the fifth month of pregnancy who threw herself out of a fourth-story window and was killed by the fall, although she exhibited no signs of external injury; the uterus was uninjured, and the fœtus, externally, was apparently unharmed, but on opening its abdomen the liver was found to be almost disintegrated. The case, however, reported by Dr. Lumney* shows more clearly how a slight violence to the mother may be fatal to the fœtus. A pregnant woman, within ten days of term, attempting to enter a doorway, slipped and struck the left lower portion of her abdomen against the edge of the door. The movements of the child thereupon ceased, and eight days afterward a dead fœtus was born with a fracture of the left frontal and parietal bones of the skull.

These cases of fœtal injury not only are interesting from their rarity, but they may assume importance from a medico-legal point of view. Thus, Gorhan† records the death of a fœtus from violence done the mother at the hands of another woman in the course of a brutal quarrel between two sisters-in-law, during which the pregnant woman, being at the time in the sixth month of gestation, was thrown to the ground and stamped upon by her infuriated relative. Two months afterward a dead fœtus was born, corresponding in development to the sixth month of pregnancy, and exhibiting a transverse fracture of both parietal bones. Here the individual who did the violence to the pregnant woman was directly responsible for the fœtal death, and should have been held accountable for it.

To these cases, rather hastily collected from medical literature, I would add one that I have recently observed in the Philadelphia Hospital.

J. B., aged nineteen, primigravida, says that exactly at the beginning of the seventh month of pregnancy she was severely squeezed between a bale of goods and the wall in a warehouse where she was employed. She was much shocked at the time, and went home feeling very ill; from that time she was subject to constant nausea and vomiting, retaining scarcely any food, and becoming, in consequence, much reduced in flesh and strength. This condition of affairs lasted for a month until premature labor came on. With the expulsion of the fœtus the woman began to improve, and soon regained health and strength.

The fœtus was macerated, and corresponded in development to the seventh month of intra-uterine life. The post-mortem examination was unsatisfactory on account of the degenerative process that all the tissues had undergone, but over the region of the brain corresponding to the parietal eminences there were large clots of blood, whether of ante-mortem origin or simply the jelly-like masses resembling blood that one meets with in macerated children, it would have been difficult to say. Its appearance suggested the former explanation. The placenta showed no sign of premature detachment nor of ante-partum hæmorrhage.

* Read before the Philadelphia Obstetrical Society, March 1, 1888.

† Hays, "Ann. de gyn.," 1880, xiii, p. 153.

‡ Finnell, "Tr. of the N. Y. Path. Soc.," iii, 249; Tarnier et Budin, "Traité de l'art des accouchements," ii, p. 345; Guelliot, "Gaz. des hôp.," 1886, p. 405.

# Goodell, "Lessons in Gynæcology," p. 352.

‖ "Prager Vierteljahrschrift," 1857.

△ "Monatsch. f. Geburt.," 1857, p. 343.

◊ "Wien. med. Presse," xxvi, 1885, Nos. 18, 20, etc.

* N. Y. "Med. Rec.," 1886, p. 359.

† "Wien. med. Presse," xxvi, p. 370.

**Polymorphous Erythema.**—The pathogeny of many erythemata is ill-understood. These areas of hyperæmia occur under a great variety of conditions, but their connection with rheumatism is not the least interesting. Rayer considered that polymorphous erythema was a form of rheumatic fever with cutaneous instead of arthritic manifestations. Haushalter regards multiform erythema as an eruptive fever, having, like the acute specifics, an eruptive period, a period of incubation, and visceral manifestations such as bronchitis, endocarditis, and nephritis. Search has been made, without success, by Haushalter for a micro-organism in these cases, but cultivations in agar-agar gave rise to white colonies, which, however, suspended in distilled water and injected into guinea-pigs, gave no result.—*Lancet.*

THE
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## THE MARINE-HOSPITAL SERVICE AND THE PROPOSED NATIONAL BUREAU OF HEALTH.

In a monthly report to the Secretary of the Treasury, dated March 1st, Surgeon-General Hamilton, of the Marine-Hospital Service, gives an account of the proceedings at a hearing before the House Committee on Commerce, held on the 24th of February, with reference to a bill proposing the establishment of a national bureau of health. On that occasion Dr. Hamilton submitted a brief setting forth succinctly the additional expense that would be entailed upon the country by the establishment of such a bureau and the lack of any real necessity for the step. Dr. Hamilton was allowed to speak for a few minutes in support of the positions taken in the brief, and several gentlemen whose interest in sanitary matters is well known were heard in support of the bill. Among them were Dr. Walcott, of Massachusetts, Dr. McCormack, of Kentucky, and Dr. Billings (whose remarks, in accordance with his own request, have not been printed) and Dr. Sternberg, of the army.

So far as the main argument was concerned, the supporters of the bill seem to have depended chiefly on the prospect which it was assumed to hold out of a substantial return to the methods of the defunct National Board of Health, with the performance of continuous laboratory work in the investigation of infectious diseases, etc., and the regular reception and prompt publication of returns from local boards of health. As to the first of these items, Dr. Hamilton met the objection to the present arrangement with the statement that he had had a laboratory fitted up at New York, although he had not "blazoned it out to the world," and that Dr. Kinyoun was steadily at work in the investigations for which such laboratories were intended. As some of our readers may remember, in our issue for November 12, 1887, we published an article entitled "Observations on the Cholera Bacillus as a Means of Positive Diagnosis," by Dr. Armstrong and Dr. Kinyoun, embodying the results of certain studies in bacteriology made by themselves, in conjunction as to some portions of the work with Dr. Biggs, of the Carnegie Laboratory, and Dr. Prudden, of the Alumni Laboratory of the College of Physicians and Surgeons. In the same issue we published Dr. Biggs's article on "The Diagnostic Value of the Cholera Spirillum, as illustrated by the Investigation of a Case at the New York Quarantine Station." Reference to these articles will show that both of them were the outcome of important laboratory as well as clinical study undertaken at short notice, and that the work was performed quite as satisfactorily and creditably as it could reasonably have been expected to be done by any continuous investigator acting under the auspices of a national bureau of health.

As to the other function of the proposed bureau—that of collecting and promptly disseminating information of the prevalence of infectious diseases—Dr. Hamilton was correct, we think, in maintaining that no national legislation could compel local boards and officials to furnish a central bureau with the facts in question. Under our present laws, whatever information of the sort is given is furnished voluntarily in the interest of the public welfare; if, as Dr. Walcott intimated, Massachusetts can not get it from New York, it is not unreasonable to suppose that a national bureau would encounter the same difficulty. If the local authorities profess, however, that they are willing to report to such a bureau as is proposed in the bill, but unwilling to send returns to the Surgeon-General of the Marine-Hospital Service, to the ordinary understanding they confess themselves to be actuated by something else than devotion to the cause of public health, and they go far toward justifying a question asked at the hearing by a member of the committee as to whether the matter was "a doctors' fight."

It was complained that Dr. Hamilton's abstracts of consular reports were not received early enough to prove monitory, but were generally forestalled by dispatches in the daily newspapers. To this Dr. Hamilton replied that, as a matter of course, a weekly publication could not compete with the daily press, and he added that he had often stopped the printing in order to insert telegraphic dispatches received after going to press. He might have said also with perfect truthfulness that his abstracts had been published with a promptness quite unequaled by similar documents emanating from any board of health. Under one form or another, the old National Board of Health has been sought to be revived on several occasions, and each time Dr. Hamilton has had to oppose the attempts almost single-handed; to the superficial observer he may have appeared to be only the champion of his own corps, but it is our conviction that he has simply acted in the interest of the public. So long as the affairs of his office are conducted with the ability and fidelity that he has displayed ever since his accession, it will take other arguments than any we have ever known to be advanced to lead us to see the desirability of such a bureau as the bill in question provides for.

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## AMMONIUM SALTS AND CAMPHOR AS STIMULANTS.

Within the past few years experimental investigation has placed therapeutics on something approaching a scientific basis, but there are still many problems to be solved in that branch of our art. The phenomena observed after the administration of drugs to the lower animals in a state of health or in induced pathological conditions do not always coincide with what is seen at the bedside. So often is this the case that there is no lack of intelligent physicians who either have no faith in the remedial virtue of drugs or prefer to administer them on the plan of empiricism rather than on one deduced from laboratory work. But when an instance occurs in which empiricism, or rather clinical observation, is supported by experiments carefully carried out in the laboratory, the hope gains ground that the properties of certain drugs will become established on a

firm basis and that their use will cease to be subject to individual caprice or fashion. Such considerations lend interest to an article by Professor Binz, published in a recent issue of the "Centralblatt für klinische Medicin," founded upon experimental researches with camphor and the salts of ammonium by Dr. v. d. Helm, under the guidance of the author and Dr. Geppert.

It was found that the introduction of three quarters of a grain of ammonium chloride into a vein in a healthy rabbit increased the respiratory capacity by one fifth in the course of a few minutes without the onset of spasms. After the subcutaneous injection of a grain and a half of the same salt, the blood-pressure increased each time a quarter above the normal, and this effect was independent of the irritation of the nerves of the skin by the salt, for it took place just the same when the chloride was injected painlessly into a vein. After the breathing capacity and the blood-pressure had been considerably reduced with large doses of chloral hydrate, a subcutaneous injection of ammonium chloride always had the effect of increasing them; but this result was produced only by repeating the injection (of a grain and a half), and, moreover, it was transitory, and a persistence in the use of the drug brought on convulsions.

Liquor ammonii acetatis was formerly held in high esteem as a diaphoretic, but lately it has lost much of its repute, having been largely superseded by pilocarpine. Marmé having found that this preparation much resembled pilocarpine in its action, producing decided perspiration of the paws when given to cats, v. d. Helm repeated Marmé's experiments with exactly the same results. Thus a time-honored remedy is rescued from threatening oblivion by experimental researches.

Camphor has long been considered a trustworthy stimulant, and it has been well known that in large doses it was capable of producing convulsions by irritating the medulla oblongata. But hitherto little has been done with the drug experimentally, so that v. d. Helm's experiments pertained to an almost uncultivated field. They corroborate clinical observation. A rabbit's breathing capacity was very much diminished by the injection of a third of a grain of morphine directly into the jugular vein, and it was then given two grains and two thirds of camphor subcutaneously every ten or twenty minutes. In less than five minutes the breathing capacity had almost reached the height that existed before the administration of the morphine. After the sixth dose—seven doses were given in all—the animal became restless and showed spasmodic movements, but these soon passed off, and in five hours after the beginning of the experiment the rabbit was running about as usual. On the following morning, however, it was found dead in its cell, and, judging from its condition, death must have been preceded by violent convulsions. The morphine had evidently staved off the convulsions, but when its effect had passed off the irritative action of the camphor set in, with the result stated. Binz had previously shown that camphor was a cardiac stimulant with the lower animals, so that experiment fully sustains clinical observation in this case. The value of the drug in tiding the patient over the crises in acute fevers, when death threatens by respiratory paralysis, is now placed on a firm footing and can not be overestimated.

## MINOR PARAGRAPHS.

### THE CARTWRIGHT LECTURES AND THE BELLEVUE HOSPITAL ALUMNI ADDRESS.

We have already notified our readers that the Cartwright lectures were to be given this year on the evenings of March 29th and April 5th and 12th, and that the first annual address before the Society of the Alumni of Bellevue Hospital would be delivered on the evening of April 4th. As the dates mentioned are drawing nigh, we would again remind our readers that a general invitation to the profession to listen to the discourses in question has been given. Two of our Baltimore colleagues are to be the speakers, and what each finds to say—Dr. Welch on the general pathology of fever, and Dr. Councilman on predisposition in tuberculosis—will undoubtedly be well worth hearing.

### THE NEWARK CHARITABLE EYE AND EAR INFIRMARY.

The "Eighth Annual Report" of the board of trustees, for the year 1887, shows an increase in the amount of work done by the institution during the last year, and no lack of indications of a continuance of the excellent manner in which both its professional and its business affairs have been managed. Appended tables of the ophthalmic and aural affections that came under treatment show the wide range of the services rendered by the medical staff.

### THE NEW YORK ORTHOPÆDIC DISPENSARY AND HOSPITAL.

By the "Twentieth Annual Report" of this institution, for the year ending September 30, 1887, we are reminded anew of the good work which the institution accomplishes, not the least of which is the annual course of lectures given by Dr. Shaffer, the attending surgeon in charge.

### THE NEW YORK QUARANTINE ESTABLISHMENT.

Like everybody else, the State Board of Health thinks that the New York quarantine station is in need of a thorough overhauling. It prefers not to recommend any definite plan of its own, but, knowing that the work required to put the establishment in proper order will be costly, and considering that the officers of the State are fully competent to plan and advise in the matter, it suggests that the Health Officer of the Port of New York and the State Engineer should prepare the plans. It thinks, however, that the plans ought finally to be submitted to itself for approval.

### LEGISLATORS AND SANITARY MATTERS.

Much of the time of the fourth annual meeting of the National Conference of State Boards of Health, held in Washington last September, the proceedings of which the State Board of Health of Michigan has published, was devoted to the consideration of methods of accomplishing sanitary legislation. One of the speakers said frankly that in his opinion the plan of educating the people up to the point of demanding such legislation was too slow a process; the best way was to secure the services of some recognized leader in each house of the Legislature, the other members of which would for the most part follow him without question. Another speaker gave a quaint

illustration of the difficulty of impressing politicians with the importance of sanitary matters. The Hon. Mr. F., of his State, he said, having been spoken to on the subject by a member of the State board, had replied: "Oh, my God! don't bore me about that. When I was in the Senate a set of d——d cranks bored me to death."

### A GOOD WORD FOR A HOSPITAL.

Appreciation of the benefits received in a hospital is, we believe, by no means uncommon among those whom injury or disease happens to make the subjects of its care, but such a thing as the public expression of the feeling is rare indeed, while it is by no means infrequent for churlish persons to give vent to a far different sentiment in the newspapers. We are glad, therefore, to see that a gentleman living in Newark has written a letter to the editor of the "Evening Post," in which, after stating that it was lately his fortune to be taken to the Chambers Street Hospital in an ambulance, he speaks in warm commendation of the treatment that he received during a stay of over two weeks in the institution, and expresses his gratitude to the surgeons for their skillful and faithful care. He further states that what he heard from all the convalescents was to the effect that they were well satisfied to have been brought to the hospital.

### CANCER OF THE BLOOD.

It has often been maintained more or less explicitly that the blood, although a liquid, is to all intents and purposes a tissue. Proceeding upon this doctrine, M. Bard ("Lyon médical," 1888, No. 7; "Lancet," March 3, 1888) broaches the theory that leucocythæmia is in reality cancer of the blood, and explains the absence of a definite tumor by the obedience of the neoplasm to the law of the preservation of the essential attributes, including the liquid state, of its parent tissue.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 20, 1888:

| DISEASES. | Week ending Mar. 13. | | Week ending Mar. 20. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 4 | 0 | 11 | 4 |
| Scarlet fever | 144 | 18 | 160 | 29 |
| Cerebro-spinal meningitis | 6 | 5 | 4 | 5 |
| Measles | 57 | 3 | 57 | 7 |
| Diphtheria | 115 | 42 | 144 | 58 |
| Small-pox | 13 | 1 | 13 | 6 |

**The New York Polyclinic.**—The faculty of the Polyclinic gave a dinner to the directors of the institution at Delmonico's on Tuesday evening of this week.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 11 to March 17, 1888:*

Sternberg, G. M., Major and Surgeon. Ordered to proceed to Brunswick, Ga., on official business, and upon completion of same will return to his proper station. S. O. 57, A. G. O., March 10, 1888.

Crosby, William D., First Lieutenant and Assistant Surgeon. Granted leave of absence for two months, with permission to apply for an extension of one month, to take effect after being ordered to a new station. S. O. 60, A. G. O., March 14, 1888.

Keas, Jefferson R., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Sill, Indian Territory, and ordered for duty at Fort Robinson, Neb. S. O. 56, A. G. O., March 9, 1888.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending March 10, 1888:*

Hutton, W. H. H., Surgeon. To proceed to Brunswick, Georgia, on special duty. March 5, 1888. Detailed as president of board to select site for Gulf Quarantine Station. March 10, 1888.

Carter, H. R., Passed Assistant Surgeon. Detailed as recorder of board to select site for Gulf Quarantine Station. March 10, 1888.

Wasdin, Eugene, Passed Assistant Surgeon. Granted leave of absence for thirty days. March 8, 1888.

Bratton, W. D., Assistant Surgeon. Ordered to examination for promotion. March 7, 1888.

**Society Meetings for the Coming Week:**

Monday, *March 26th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement.

Tuesday, *March 27th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Lewis (quarterly), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *March 28th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Auburn, N. Y., City Medical Association; Philadelphia County Medical Society (conversational); Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *March 29th:* Cumberland, Me., County Medical Society (Portland).

## Letters to the Editor.

### INSUFFICIENCIES OF THE OCULAR MUSCLES.

33 West Thirty-third Street, *March 18, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In the letter of Dr. Derby to the Journal of March 10th, the two propositions which include the substance of the communication appear to be incorrect. In referring to Dr. Claiborne's remarks about hyperphoria, Dr. Derby asserts that in the "New York Medical Journal" for June, 1873, he discussed this same subject (under another name), and reported the correction of the trouble in a case by the use of a prism.

I suppose that no one familiar with the literature of ophthalmology doubts that prisms have, from time to time, been used in a variety of ways, but in the case as reported by Dr. Derby a prism was not used for the correction of hyperphoria. Hyperphoria "is that condition in which, with the ability to maintain binocular vision, there is a tendency of one visual line in a direction above that of the other."* There is a certain

* "N. Y. Med. Journal," Dec. 4, 1886; "Archives of Ophthalmology," No. 2, 1887.

degree of latitude within which, in muscular irregularities, binocular vision may be maintained. I do not hesitate to say that Dr. Derby's case was out of the range of this latitude. Insufficiency of the interni of 9° may not of itself necessarily imply habitual failure to maintain binocular vision; and one may see singly with an insufficiency of 4° in the vertical direction. In a case combining these two conditions it is safe to assume that binocular vision was not maintained, and direct proof would be required to show that it was maintained. In this case we are left in no doubt in this respect, for the report assures us that after operations on one of the external and one of the superior recti muscles "binocular vision was secured." If binocular vision was secured by these two operations it did not exist before. It has never been questioned, so far as I know, that von Graefe performed tenotomy of the superior rectus, but his writings do not show that he performed this operation for the relief of hyperphoria.

The second statement of Dr. Derby, that treatment, operative and by prisms, of the vertical as well as of the lateral muscles "has been the common property of all competent ophthalmic surgeons both here and abroad for at least twenty years," if intended to refer to strabismic conditions, is and has been unquestioned and there is nothing at issue. But, if it is intended to apply to the condition described as hyperphoria in its relation to asthenopia, it is entirely incorrect. I need bring only one or two facts to bear upon this point.

In 1876, at the International Ophthalmological Congress held in New York, Dr. C. R. Agnew and Dr. H. D. Noyes presented analyses, the first of 1,060, the second of 1,079 cases of asthenopia. These groups represented respectively the experience in private practice of each of these surgeons in this class of cases. The large number included in each analysis indicates the extensive experience of these observers. Dr. Agnew found, among the causative influences of the affection, refractive errors, insufficiency of the interni, insufficiency of the externi, and other conditions, but no case in which insufficiency of the vertical muscles was supposed to have induced asthenopia. Dr. Noyes, in his very elaborate analysis, found his smallest group, consisting of six, in which "failure of equilibrium belonged to the muscles moving the globe upward and downward." In all these six cases the examination was made, not for faulty tendencies, but for faulty directions of the optic axes. "The search was for double images of whose existence in any part of the field the patient had been unconscious." In three of these six cases of double vision a distinct diagnosis of paresis was made.

Thus we have the experience of two observers, covering about one half the time during which Dr. Derby would have his readers believe that the surgical and other treatment of hyperphoria was the common property of all competent ophthalmic surgeons, and yet in these large experiences not one case appears in which the condition described as hyperphoria was found.

Much more evidence might be brought to show that the subject of vicious tendencies of the optic axes in the vertical direction, short of diplopia, has been greatly neglected until quite recently. It has not, I presume, been doubted by any one who knows that there are half a dozen muscles engaged in maintaining the position of each eye, that irregularities might occur in any direction, and no well-informed person doubts that prisms have, in ophthalmic practice, been used with bases up or down; but the absolute absence of facts bearing upon hyperphoria, in the statements of those who have alleged that a knowledge of this condition has long been common property, only serves to emphasize in a very unexpected manner my statement, which is, I believe, the subject in question, that "special attention was first called to the condition of hyperphoria *as an important and frequent anomaly*" within a very recent period.

GEORGE T. STEVENS.

# Proceedings of Societies.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of January 19, 1888.*

The President, Dr. A. JACOBI, in the Chair.

**A Method of Preventing Diphtheria.**—Dr. A. CAILLÉ read a paper on this subject. Probably, he said, every experienced practitioner had observed that in certain families one or more members regularly had diphtheria in the spring or autumn. This was particularly true of children. It had occurred to him that such persons might harbor the microbes or other essentials to the development of the disease in the nasal and oral cavities. The germs of diphtheria would readily take hold of damaged mucous membrane. In trying to establish the correctness or fallacy of this view of self-infection, he had selected eight cases, in all of which the patients had suffered from true diphtheria twice or more prior to October, 1885. The families were well known to him, and they had occupied the same houses or had the same surroundings for a number of years. The parents of the children were intelligent enough to carry out his instructions. All carious teeth were to be filled or extracted, the teeth to be examined from time to time; the mouth was to be thoroughly rinsed three times a day, after each meal, with either a three-per-cent. solution of chlorate of potassium in water, a five-per-cent. solution of liquor sodæ chloratæ, or a saturated solution of borax in water. Besides using it as a mouth wash and gargle, some of the solution was to be drawn into the nose. From October, 1885, to December, 1887, not one of the persons experimented upon suffered from diphtheria, although five of them had several attacks of acute pharyngitis and amygdalitis. There was diphtheria in the family of three of the number, but they did not contract the disease. While these cases were insufficient to furnish absolute proof of the benefit of such prophylactic measures, yet they went far to establish the belief that, if the nasal and oral cavities were kept clean by a mild antiseptic solution, the frequency of diphtheritic inflammation would be decidedly reduced. The treatment of diphtheria was a perennial subject for discussion all over the civilized world, yet prophylaxis had not received the attention which it demanded. If we scrutinized what had been called diphtheria, we would have to admit that we could not say positively what the nature of the diphtheritic virus was, what its mode of propagation was, or why it showed a predilection for certain persons. If we admitted our ignorance of the true nature and significance of so-called diphtheria, we must admit our inability to distinguish clinically between the contagious diphtheria and some of the non-contagious affections of the oral and nasal cavities, and it was therefore necessary to look with suspicion upon all such changes and apply prophylactic methods. The correctness of this view, promulgated by Dr. Jacobi, had been doubted by many in 1860, but was accepted by the majority in 1888. As there was no specific for diphtheria, the author thought it was not too much to say that in the present state of our knowledge practical methods of prophylaxis would prove of more value than methods of treatment. Regarding prophylaxis, there were, in the first place, general preventive measures, relating to hygiene, clothing, food, and isolation; secondly, there were prophylactic methods within the family, directed to or against the in-

dividual. Without underestimating general sanitary laws, he would suggest that in a large city only a limited number of the inhabitants could live in salubrious surroundings. He was convinced, therefore, that, while the benefits of general sanitary science should be taken advantage of so far as practicable, yet the utmost importance should be attached to personal preventive measures. In the vast amount of literature on diphtheria the subject of individual prophylaxis had barely received mention. The overheating of school-rooms and of living-apartments should be most emphatically denounced as dangerous. Isolation of the sick should be insisted upon. The management of isolation houses for the sick poor should be such as to readily gain their confidence. Enlarged tonsils should be removed. Carious teeth should be removed or filled promptly. Parents should inspect their children's mouths and throats daily before they went to school. Children should learn to gargle at an early age. Children suffering from apparently simple sore throat should not go to school until they were well. Kissing upon the lips should be forbidden. Children old enough to gargle should be taught to do so after each meal, a weak solution of an antiseptic being used, a few drops of which should be dropped into the nose.

The President had understood the author to say that the germs of diphtheria, whatever they might be, remained in certain cases in the mucous membrane or the glands, and that under favorable circumstances they would become active again and give rise to an attack of diphtheria. He believed it to be true that the poison could remain in the mucous membrane, and particularly in the neighboring lymphatic glands. Persons with a healthy mouth and pharynx were less easily infected than those who had a catarrh of any form. The slightest scratch might give rise to erysipelas, and the same was true of diphtheria. One point in the prevention of diphtheria was of great importance: everybody had seen cases in which the patient was apparently about getting well, but suddenly had a new attack, and the attacks might thus be renewed four or five times, the final one perhaps ending fatally. This was due to renewed infection from the curtains or other things in the room occupied by the sick. In these cases prevention of renewed attacks was possible. If there were only two rooms, the child should be transferred from the one to the other at intervals of a few days, and the vacant room cleansed and thoroughly ventilated, and, if possible, disinfected.

Dr. L. E. Holt had the impression that enlarged tonsils favored the development of diphtheria and made the attack more severe.

Dr. Caillé said he had removed the tonsils of two children who had never had diphtheria, but who had frequently suffered from inflammatory trouble of the throat, and some days or weeks after the operation they contracted true diphtheria. But he did not think the removal of the enlarged tonsils had had anything to do with the occurrence.

The President was positive that in a number of cases in which enlarged tonsils had been reduced, diphtheria had not been seen afterward, whereas diphtheritic affections had been frequent before.

Dr. J. E. Winters spoke of preventing the spread of diphtheria in a family in which some member was already suffering from the disease. Besides isolation, as far as was practicable, and disinfection, he examined the throats of the well members daily, regulated their diet, and invariably gave large doses of tincture of chloride of iron, twenty drops to children three times daily, also tonic doses of quinine and small purgative doses of calomel.

**The Induction of Premature Labor for Amaurosis and Amblyopia in the Albuminuria of Pregnancy.**—Dr. T. R. Pooley read a paper on this subject. Among the indications for abortion from the albuminuria of pregnancy, disturbance of vision had not received attention commensurate with its importance. It had long been known that disturbance of vision was prone to occur at any time during pregnancy, and that it might recur in several successive pregnancies, also that it was more likely to occur during the latter months, and might last for weeks afterward, and in some cases become permanent. The disturbance of vision in the albuminuria of pregnancy might be more or less marked; it might come on suddenly or by degrees; it might be more or less transitory; there might be complete loss of sight; it might exist without appreciable change in the fundus oculi; again, the neuro-retinitis might be well marked on examination. These facts being well established, it seemed strange that only until recently had the induction of premature labor been suggested in these cases. Were we ever justified in inducing premature labor solely to save the sight, whether other symptoms commonly recognized as indications for this step were present or absent? To Dr. Loring was due the credit of first suggesting and writing upon the indications for premature labor in disturbed vision, although the case which that author had made the basis of his paper was not one in which there were other evidences of disease of the kidneys. Dr. Loring's paper had been followed by one by Dr. W. O. Moore.

Dr. Pooley briefly related a series of cases of disturbed vision from the albuminuria of pregnancy, in which either the patients were allowed to go to full term or premature labor occurred spontaneously or was induced artificially, to see whether the results on vision would be improved thereby. Some of the cases were those reported in the papers of Loring, of Moore, and of Holmes, of Chicago. The author thought nature had given us a hint as to the treatment of amblyopia and amaurosis in the albuminuria of pregnancy, when in some instances spontaneous abortion had occurred with the result of improvement of vision, with improvement in the more unpromising cases, and with full restoration of sight in the more favorable ones. The author thought that in all cases of pregnancy it was desirable not only to examine the urine for albumin from time to time, but to make an ophthalmoscopic examination. The fact that varying degrees of blindness did not appear until toward the end of pregnancy did not prove that a retinitis had not existed for some time. The evidences of the albuminuria of pregnancy not infrequently showed themselves in the eye before they did in the urine. When uræmic amaurosis existed, labor should be induced without waiting for the supervention of other symptoms to endanger sight and life. In neuro-retinitis with grave organic lesion of the retina and optic nerve, if the child was not yet dead from the effects of the kidney disease, but was viable, it was not only justifiable, but necessary, to bring on premature labor. In some cases the responsibility of deciding whether abortion should be brought on would have to lie with the oculist alone. Pregnant women who had had some loss of vision in previous pregnancies should, with their husbands, be informed of its nature, and of the dangers of its return.

Dr. E. G. Loring emphasized the importance of early examinations with the ophthalmoscope during pregnancy. It was thus easy to detect the retinitis of albuminuria. Regarding the frequency of such a retinitis, he thought Dr. Pooley had underestimated rather than exaggerated it. The inflammation might begin early in pregnancy and continue throughout its course; then, although the patient might see well after delivery, shrinkage might begin, and for the first time vision be seriously interfered with. He related a case illustrating the fact that the retinitis might develop in connection with other uterine disturbances than the albuminuria of pregnancy. The case was that of an unmarried woman who had disturbance of vision and

changes visible with the ophthalmoscope during suppression of the menses; the eye symptoms would return with each recurrence of the menstrual disorder. Kidney disease could not be detected. He thought there was a delicate peripheral optic neuritis with which the kidneys had nothing to do.

Dr. FRUITNIGHT had attended over a thousand cases of pregnancy, in some of which there had been the eclampsia and other symptoms of albuminuria, but in none had he seen disturbance of vision.

Dr. ROBERT MURRAY said, with regard to the value of examinations with the ophthalmoscope during pregnancy, that of pregnant women having albuminuria only a small proportion had eclampsia, and of those having eclampsia only a small proportion had disturbance of vision; yet it had been said that a large percentage of pregnant women had ocular changes visible with the ophthalmoscope. From these facts and his own experience with the ophthalmoscope, the speaker had come to the conclusion that the general use of this instrument on pregnant women would only give rise to unnecessary anxiety on the part of the physician and patient.

Dr. POOLEY agreed with Dr. Loring that in most cases the affection of the kidney was acute, and that the prognosis as to life was good.

## Book Notices.

*Anatomy, Descriptive and Surgical.* By HENRY GRAY, F. R. S., etc. The Drawings by H. V. CARTER, M. D., etc., with Additional Drawings in Later Editions. Edited by T. PICKERING PICK, Surgeon to, and Lecturer on Surgery at, St. George's Hospital, etc. A New American from the Eleventh English Edition, thoroughly Revised and Re-edited, with Additions, by WILLIAM W. KEEN, M. D., Professor of Surgery in the Woman's Medical College of Pennsylvania, etc. To which is added "Landmarks, Medical and Surgical," by LUTHER HOLDEN, F. R. C. S., with Additions by WILLIAM W. KEEN, M. D. Philadelphia: Lea Brothers & Co., 1887. Pp. 1100.

THIS well-known text-book might have held its own for many years more without any additions or corrections; for, although the faults of previous editions have been obvious, its great merits as a student's book are so conspicuous that they would still have maintained its status as the favorite work on the subject of human anatomy. It is therefore highly to the credit of the writers who have contributed toward making it what it now is that they should have done their work as thoroughly as they could have done it if a damaging rival had sprung up. Not the least valuable of the additional work has been done by the American editor. Both he and the publishers are to be praised for the improved appearance of the book, particularly in the matter of the illustrations. The use of colors makes many of them more striking than they were before. It is safe to say that Gray's "Anatomy" is destined to remain a popular text-book for years to come.

### BOOKS AND PAMPHLETS RECEIVED.

Diseases of Man: Data of their Nomenclature, Classification, and Genesis. By John W. S. Gouley, M. D., Surgeon to Bellevue Hospital. New York: J. H. Vail & Co., 1888. Pp. 24–25 to 408.

Interstitial Salpingitis. By H. J. Boldt, M. D., New York. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Diseases of the Heart and Circulation in Infancy and Adolescence. By John M. Keating, M. D., Obstetrician to the Philadelphia Hospital, etc., and William A. Edwards, M. D., Instructor in Clinical Medicine and Physician to the Medical Dispensary in the University of Pennsylvania, etc. Illustrated with Photographs and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 9 to 215. [Price, $1.50.]

The Year-book of Treatment for 1887. A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co., 1888. Pp. viii–336. [Price, $1.25.]

On the History, Nature, and Treatment of Syphilis. By J. L. Milton, Senior Surgeon to St. John's Hospital for Diseases of the Skin. London: Henry Renshaw, 1887. Pp. x–377.

Puncture of the Intestine for Tympanites. By J. Chris. Lange, M. D., Professor of the Principles and Practice of Medicine at the Western Pennsylvania Medical College. [Reprinted from the "Pittsburg Medical Review."]

On a New Treatment of Chronic Metritis, and especially of Endometritis, with Intra-uterine Chemical Galvano-cauterizations. By Dr. Georges Apostoli, Member of the Society of Medicine of Paris, etc. With Nine Figures in the Text. Translated by A. Lapthorn Smith, B. A., M. D., etc. Detroit: George S. Davis, 1888. Pp. 119.

Photographic Illustrations of Skin Diseases. An Atlas and Text-book combined. By George Henry Fox, A. M., M. D., etc. Hand-colored Plates. Nearly One Hundred Cases from Life. Parts 3 and 4. Second Series, Complete in Twelve Parts. New York: E. B. Treat, 1888.

The Lettsomian Lectures, delivered before the Medical Society of London, January, 1888. On Some Points in the Surgery of the Urinary Organs. By Reginald Harrison, F. R. C. S., Surgeon to the Liverpool Royal Infirmary, etc. [Printed by Request.] London: J. & A. Churchill, 1888.

A Very Valuable Lesson for those who use Anæsthetics. By Julian J. Chisolm, M. D., Professor of Eye and Ear Diseases in the University of Maryland, etc. [Read before the Baltimore Academy of Medicine.]

## Reports on the Progress of Medicine.

### MATERIA MEDICA AND THERAPEUTICS.

**Untoward Effects of Antipyrine.**—Dr. P. Guttmann ("Fortschr. der Med.") publishes two cases in which antipyrine caused dangerous symptoms. In the one case there were violent palpitations, intense cyanosis, and a feeling of the want of air; in the other there were great excitement (pulse 132), œdema, and ephemeral amaurosis, together with pruritus and urticaria. These symptoms appeared on the administration of a few gramme (15-grain) doses. Recovery took place in both cases under the usual treatment with camphor, sinapisms, etc., but in the second case this did not occur until the third day.

**Observations on Iodoform.**—König, the well-known surgeon ("Ther. Monats."; *ibid.*), has been stimulated to publish his observations on the *modus operandi* of iodoform by the rather startling experiments of Heyn and Roosing. These authors, as it is well known, found that bacilli thrived and developed in a culture medium containing iodoform. König does not underestimate the worth of these investigations, but thinks that they can be of importance only when combined with observations in disease. The great value of iodoform consists in its influence upon the secretion of wounds. In fresh wounds the secretion is entirely arrested. The same applies to the resection of tuberculous joints and the cavity wounds. In these instances one can not avoid the inference that the drug has a specific effect upon the tubercle bacilli. Even in cases in which rapid primary union does not occur, and in which tuberculous areas have been left here and there, the treatment of the wound with iodoform prevents a recurrence of the disease. In the treatment of wounds in cavities, such as the mouth, rectum, vagina, etc., the property of the drug in keeping the wound dry for about two weeks is of incalculable value.

P. Bruns, as a practical surgeon, expresses (*ibid.*) himself somewhat

similarly to the foregoing author on the value of iodoform as an anti tubercular agent. This property of the drug, he says, is especially noticeable in tubercular cold abscesses treated by injections of iodoform. Histological examinations have shown that the tubercle bacilli in the abscess walls disappear entirely in the course of a few weeks.

Binz (*Ibid.*) throws some light by experimental investigation upon the drying virtue of iodoform on wound secretion. He applied a few drops of a concentrated oily solution of iodoform upon a frog's mesentery which was undergoing active suppuration. It was observed that the excessive migration of the white blood corpuscles was first checked and then completely arrested.

**The Action of Alcohol on Pepsin.**—Dr. Bardel ("Nouveaux remèdes," 1887, No. 18) has undertaken to determine, by a number of experiments, the solubility of pepsin in alcohol, and the influence of the latter upon the physiological action of pepsin. He found that alcohol of 95° precipitated the greater part of the pepsin, while in alcohol of 50° pepsin was as soluble as in water (1 in 15 parts). The physiological activity of pepsin remained unimpaired in alcohol of 20°, but from 25° to 70° it proportionately became less. Above the latter degree it was almost *nil*. The author draws attention to the fact that his experiments related only to alcohol and not to wines, some of which contain considerable quantities of tannin, which may have a deleterious effect upon the pepsin.

**Hydrate of Amylene, a New Hypnotic.**—Dr. J. De Mering ("Nouveaux remèdes," 1887, No. 21) writes of this latest hypnotic that it belongs to the group of tertiary alcohols, and that it is a colorless mobile liquid, soluble in eight parts of water and in alcohol in all proportions. It has an ethereal taste, resembling camphor slightly. In rabbits it is eliminated with the urine as a compound of glycosuric acid, but in man and in dogs it is oxidized in the economy, for the most part, as ordinary alcohol. While experimenting with the drug the author found that rabbits and dogs fell into a profound sleep after its ingestion, and this circumstance led him to make physiological experiments on animals. On injecting a small quantity ($\frac{1}{6}$ grain) under the skin of a frog, motor paralysis and loss of consciousness soon followed, and then in a short time profound anæsthesia, and finally suppression of the reflexes. After several hours the frog recovered slowly but completely. Rabbits, after having been given from 2 to 3 grammes (ɱxxx to xlv) of the hypnotic, fell into a profound sleep lasting from six to eighteen hours. On awaking, the animals seemed quite well and ate heartily. A dog was given, about mid-day, 8 grammes in 300 grammes of water (ʒ ij in aquæ ℥ vjss.) by the stomach. Half an hour afterward he fell into a deep sleep, which still continued at 11 P. M. The respirations, which were first 20 in the minute, were now 16, but they were deep and regular. The pulse was good. The dog was carried as if dead to his kennel in the laboratory. Next morning he was quite alert and had a good appetite. To compare the action of hydrate of amylene with paraldehyde, the same dog, eight days later, was given the same quantity of the latter drug. Half an hour afterward the dog appeared intoxicated, but sleep did not come on during the whole day. Unlike chloral and other hypnotics, hydrate of amylene has no effect upon the heart and the circulation. It has but a very slight influence upon respiration. In moderate doses it appears to act particularly upon the cerebrum; in very large doses it affects the spinal cord and medulla oblongata, the reflexes disappear, the respirations are arrested, and eventually the heart also is stopped.

During the past two years the author has employed the drug therapeutically in 60 cases, giving in all 350 doses, which varied from 3 to 5 grammes (ɱxlv to xc). Most of the patients suffered with nervous insomnia. It was also given in the insomnia of the aged and of convalescents, in that form associated with anæmia, in phthisical patients, and in febrile conditions, such as typhoid and articular rheumatism. In all these instances a dose varying from 3 to 5 grammes (ɱxlv to ɱlxxv) was followed by a quiet sleep of six to twelve hours without any preliminary excitement. In the insomnia resulting from painful conditions it is not so useful as hydrate of chloral. Combined, however, with morphine, it is of value. As a narcotic it stands midway between chloral and paraldehyde. One gramme of chloral is equal to two of hydrate of amylene, and the latter is equal to three of paraldehyde. It is preferable to chloral because even in the largest doses it has no injurious effect upon the heart and upon respiration. It may be administered with gum arabic in water.

**Creolin.**—Fröhner ("Fortschr. der Med."), after experimenting with creolin, says that it is a non-poisonous antiseptic and is preferable to carbolic acid. It exists as a syrupy liquid soluble in water and in alcohol in all proportions. He has found it serviceable in the following conditions: (1) in scabies, (2) as an antiseptic (3-per-cent. solution), (3) in chronic non-parasitic eczemas, (4) as an inhalation in infectious bronchitis and broncho-pneumonia, (5) in infectious or zymotic gastric and intestinal catarrh, to be given internally in doses of one to two grammes (ɱxv to ɱxxx) of a 1 per-cent. solution.

**The Physiological and Therapeutical Effects of Salol.**—Dr. Lombard ("Bull. gén. de thér.," Sept. 15, 1887), under the direction of Dubief and Nicot, in the laboratory of the Cochin hospital, has made several experiments with salol upon rabbits, dogs, and healthy human beings. One gramme (gr. xv) reduced the temperature of a rabbit from 39·6° C. to 38·3° after the lapse of three hours. The reduction of temperature does not seem to bear any relation to the quantity of the drug given. Five doses of one gramme each were given to a rabbit every quarter of an hour. After the second dose the temperature remained stationary at 37·4°, having been 39·3° before the drug was given. Salol is not a toxic, and even in considerable doses it is not followed by any untoward effects. Its action upon the respiration is rapid; it increases the number of the respiratory movements, while it diminishes their amplitude. After the lapse of an hour all effect passes off. On the heart and the circulation its effect is *nil*. From six to eight grammes (ʒ jss. to ʒ ij) were given to a healthy individual with no results. The author summarizes his experience with the drug in rheumatism as follows: (1) The pains are mitigated on the third day and disappear entirely on the sixth day; (2) the effusion into the joints disappears two days later; (3) as a specific it is inferior to salicylate of sodium; it seems to have no influence upon the course of the disease; (4) on account of its innocuity it is very useful in subacute rheumatism to relieve pain, and is also indicated in the rheumatism of infants. In pyrexia the results were negative. In typhoid fever it had no influence upon the temperature curve. The same observation was made in pneumonia, pulmonary tuberculosis, the exanthemata, erysipelas, and intermittent fever. The drug was found beneficial to relieve the pains of various spinal affections.

**Acetanilide as an Analgesic.**—Dr. O. Seifert ("Ctrlbl. f. d. ges. Ther.," Oct., 1887; "Wiener med. Woch.," 1887, No. 35) has employed the drug in the following fifteen cases: three of trigeminal neuralgia, two of migraine, six of anæmic cephalalgia, one of diffuse nervous headache, one of neuralgia resulting from a cicatrix, and two of supposed migraine. It was given as follows: One dose of 0·5 gramme (gr. vijss) in a capsule was ordered; this was repeated in one or two hours, and if the pain was not relieved a third dose was administered. As a rule, some wine was given afterward. In those cases where the pain was continuous or irregular the same quantity was given one hour after breakfast, two hours after dinner, and three hours after supper. Untoward effects were never observed when this method was followed, and the administration was kept up for eight days. The results in the trigeminal neuralgia were brilliant; in one case of migraine the drug proved efficacious after several other remedies had failed. It failed in one case of headache from an unknown cause, and in the case of neuralgia resulting from a cicatrix.

**Methylal as a Hypnotic.**—Mariet and Combemale ("Progrès médical," July 2, 1887) have studied the action of methylal with a view to determine its therapeutic value in mental disease chiefly. It is a volatile fluid, resembling ether in odor, and is soluble in water, in alcohol, and in oil. Experiments on animals show its action to be almost entirely hypnotic, the doses required being smaller and smaller as the animals tested are higher in the scale of the *Vertebrata*. In their experiments it did not accumulate in the body, and it took as much as twelve grains to the pound weight of the body to produce poisoning. In doses of ɱxv to ʒ j no bad effects followed. In sixteen cases of mania, more or less acute, the result was that in the beginning of acute attacks it produced no sleep, even in doses of ʒ ij, but in severe relapses a somewhat smaller dose at bedtime gave a quiet sleep. It was found that the patient became accustomed to the drug after five or six days and the dose had to be increased. Of twelve cases of dementia with attacks of excitement

it succeeded well in ten cases, but tolerance, as before stated, was very easily produced. In alcoholic forms of insanity it was not found of any value. The general conclusions reached are that in some of the milder cases of mania and in many cases of chronic dementia, either senile or paralytic, it is a hypnotic which is of use for five or six days, but one to which the patients very soon get accustomed. An important point in its favor seems to be that it is quite innocuous. Large doses, if they fail to produce sleep, at any rate do no harm. Its expense at present is inconvenient, but this may be remedied ere long.

**The Vermifuge Properties of Sida Floribunda.**—Dr. M. Martinet ("Nouveaux remèdes") relates how his attention was attracted to this plant by the instinct of his dog, which, after having been sick for several days, set out himself searching for a remedy. This he found in the leaves of the *Sida floribunda*, and after having eaten some of the leaves he was relieved at the same time of his sickness and of a large number of intestinal worms. This malvaceous plant is common in the neighborhood of Lima. It is rich in mucilage, but a chemical analysis failed to find anything to which anthelminthic properties could be assigned. A microscopical examination, however, showed that all the leaves of the plant were covered with minute spines, which the author thinks fail to be digested in the stomach on account of their cellulose structure, and act as a mechanical vermifuge in the intestines.

**Cocaine Locally in the Vomiting of Pregnancy.**—Dr. William Duncan ("Lancet," Oct. 15, 1887) reports three cases of vomiting in pregnancy in which a 15-per-cent. solution of cocaine painted over the vaginal vault and applied to the cervical canal for the distance of three fourths of an inch was followed by almost immediate relief. In two of the cases the cervix uteri was sensitive on pressure. The author does not build too much upon his results, but thinks that they warrant a further trial of the remedy.

**Phenacetine, a New Antipyretic.**—Dr. G. Kobler ("Wiener med. Woch.," 26 and 27, 1887; "Deut. Med.-Zeit.," 1887, No. 94) has been experimenting with this drug in Bamberger's clinic in Vienna and has found it an antipyretic which can compare favorably with other antipyretics, and is free from any untoward effects. It occurs in the form of a faint red powder, without smell or taste, rather insoluble in water, but soluble in glycerin and in alcohol. In doses of 0·5 to 0·7 gramme (gr. vijss. to gr. xiss.) it has no effect upon healthy individuals, nor does it reduce the normal temperature, but in febrile conditions, even in doses of 0·3 to 0·4 gramme (gr. ivss. to gr. vj), it never fails to have an antipyretic effect. As a result of his experience, Kobler advises a dose of 0·5 gramme (gr. vijss.) to commence with, which may be increased to 0·6 to 0·7 gramme (gr. ix to gr. xss.). He has never observed nausea or vomiting following its administration. He gave it in fifty cases of fever, and, while it always reduced the temperature, it seemed to have no influence, either for good or for bad, on the course of the disease. Its maximum effect was observed in from four to six hours. After this the temperature began to ascend again and reached its original height in from eight to ten hours. The reduction of temperature was not followed by any increase of perspiration even in predisposed persons. Neither cyanosis nor collapse was ever observed. In the majority of instances the reduction of temperature was attended with a feeling of well-being. The author sums up as follows: 1. Phenacetine is an energetic antipyretic. 2. It possesses no disagreeable or dangerous features. 3. The administration of a single large dose, from gr. viiss. to gr. xss., is more efficacious than hourly small doses.

**On the Action of Aniline and Oleum Gaultheriæ.**—Dr. S. Ischirwinski (*ibid.*), after a great number of experiments on various animals, draws the following conclusions: 1. Aniline and oleum gaultheriæ have a toxic effect whether given by the mouth or injected under the skin or directly into the blood. 2. Both drugs have a predominant effect upon the respiratory center, making the blood at the same time venous. 3. Oleum gaultheriæ in its action upon the heart and respiration resembles salicylic acid and its salts. 4. Aniline is more toxic than oleum gaultheriæ. Its action is more extensive, and, in addition to its influence upon the respiratory center and heart muscle, it affects the inhibitory apparatus of the heart, and also the spinal cord. 5. The greater volatility of oleum gaultheriæ explains also its readier action on inhalation. On the ground of these facts, the author warns against the administration of these drugs in large doses.

**Ephedrine, a New Mydriatic.**—Dr. Miura, of Tokio ("Berlin. klin. Woch.," Sept. 19, 1887), has been experimenting with a 10-per-cent. solution of this new alkaloid with the following results: 1. The instillation of one or two drops was followed by a dilatation of both pupils in eighteen patients that were experimented upon. 2. The dilatation was equal in both eyes when the refraction was the same and there was no inflammation. 3. The dilatation was not complete, but sufficient in all cases to give a full view of the retina. 4. The power of accommodation was not at all, or only to a small degree, paralyzed. 5. Young and old people were more susceptible than strong healthy adults. 6. In irritable and inflammatory conditions of the iris it was not followed by appreciable suppuration. 7. The duration of the mydriatic effect varied from five to twenty hours. 8. Conjunctivitis or any other ill effects were not observed after its use for fourteen consecutive days. 9. Neither an increase nor a decrease of intra-ocular pressure was observed.

**Bichloride of Methylene as an Anæsthetic.**—Dr. Eichholz and Professor Dr. Genther ("Deut. Med.-Zeit.," 1887, No. 67) have published an interesting article upon this anæsthetic. After giving a short historical review, they narrate the results of their experiments on guinea-pigs and rabbits, but, owing to the great susceptibility of the latter to anæsthetics, guinea-pigs principally were used. The animals were first narcotized with pure chloride of methylene, the pulse, the temperature, the respirations, and the sensibility of the skin noted, and then the same animal in a few days was narcotized with pure chloroform and note was taken of the same physiological functions. The results of these experiments may be expressed as follows: 1. Narcosis sets in at about the same time with each drug. 2. With each there is a stage of excitement. 3. With chloride of methylene there is no increase of the pulse during the stage of excitement, while with chloroform there is. 4. During narcosis a slowing of the pulse and of respiration occurs with each drug, but it is more rapid and more intense with chloroform. Total abolition of pulse and respiration and consequent death occur much sooner with chloroform. The quality of the pulse is much more unfavorably influenced by chloroform than by methylene bichloride. 5. The reduction of temperature is about equal with both drugs; the greatest reduction was noticed in chloroform narcosis (from 35·5° C. to 29° C.). 6. With chloride of methylene there is an increase of the flow of saliva, but not with chloroform. 7. With chloride of methylene contraction of the pupil is not a constant phenomenon. 8. With chloride of methylene rigidity of the neck is more marked than with chloroform, but rigidity of the extremities is more marked with chloroform. The English methylene, as it is found in commerce, is a mixture of chloroform and methylal alcohol. Experiments were made with this, and the results showed that the addition of methylal alcohol slightly improved the anæsthetic properties of chloroform.

The authors draw the following conclusions from their experiments: (1) That the preparation heretofore sold as bichloride of methylene is a mixture of chloroform and methylal alcohol; (2) that this mixture of chloroform and methylal alcohol is to be preferred to pure chloroform; (3) that the pure bichloride of methylene brings about anæsthesia as quickly and as deeply as either of the foregoing preparations, but that it is not so lasting in its action; (4) that pure bichloride of methylene is not nearly so dangerous as either of the foregoing preparations.

**Pyridine and Collidine in Respiratory Affections.**—Dr. Dandieu (*ibid.*), following G. Sée's recommendations, comes to the following conclusions regarding pyridine and its correlative, collidine: 1. Pyridine is indicated in all cases of angina pectoris. Its action is prompt and it prevents new attacks. 2. In essential and symptomatic asthma it is preferable to morphine, both as to the duration of the effect and as to the absence of any danger. 3. It is indicated in attacks of asthma due to the inhalation of noxious gases. 4. In the dyspnœa of bronchiectasis and of phthisis it has a surprising effect. There are no contraindications, and a cumulative effect is not to be feared. In accordance with Sée's recommendations, the author used four to five grammes (℥j to ℥j ℥xv) poured into a saucer, which was placed in the center of the room, and the patient was made to sit in one corner of the room. In urgent cases four or five drops may be dropped on to a handkerchief and this held up to the mouth and nose.

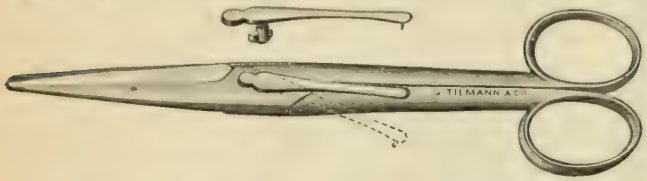
# New Inventions, etc.

## A NEW ANTISEPTIC SCISSORS AND FORCEPS LOCK.

By Charles Noah Dixon Jones, M. D.,
surgeon to the woman's hospital, brooklyn.

The objections to the ordinary separable or antiseptic lock are four: 1. It is easily broken off by careless manipulation. 2. It is not always easily cleaned. 3. In a few weeks the blades work loose, so that they do not close accurately. 4. Each time the blades of the scissors are ground the pivot must be shortened.

The new forceps lock which I introduced a few week ago (see "New York Medical Journal," Feb. 11, p. 151) is not entirely free from some of these objections. 1. The blades of the forceps or scissors are liable to become separated during the progress of an operation and cause annoyance and loss of time. 2. The pivot in time works loose. 3. It is very difficult to grind the blades of the scissors accurately, owing to the projecting arm.



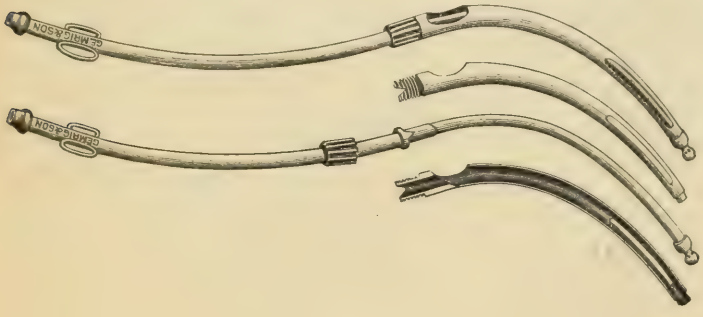

In order to overcome these difficulties, with the aid of Messrs. Tiemann & Co., I have constructed a lock after the following pattern: The pivot is attached to a spring lever, so that the scissors or forceps consist of three separate pieces, which can be easily adjusted. The blades are plain, with only an opening in each to receive the pivot, so that they can easily be ground or cleaned. The scissors are put together as follows: The blades are placed together, and the pivot is passed through the opening in each blade, and then sprung around into place.

The spring lever always serves to keep the cutting edges in apposition and to compensate for wear of the surfaces. When properly closed the blades can not by any amount of careless handling or rough manipulation become separated or twisted apart. The cut explains itself. I have recently modified the pointed catch to a Y, which grasps the handle of one blade.

163 De Kalb Avenue, Brooklyn.

## DR. HOWARD A. KELLY'S TWO-WAY CATHETER.

The accompanying cut shows the construction of the two-way catheter described by Dr. Howard A. Kelly at a recent meeting of the Obstetrical Society of Philadelphia (see the Journal, March 17th, page 295).




# Miscellany.

**The Remarkable Survival of a New-born Child.**—Dr. F. H. Lyon, of Winnipeg, Manitoba, sends us the following clipping from the "Manitoba Daily Free Press" for March 5th:

"'Minnedosa Tribune': The fact of the remarkable birth on the M. & N. W. Ry. about two years ago is at this late date a subject of dispute in a New York Medical Journal. As the readers of the 'Tribune' will remember, the birth took place between Solsgirth and Kelloe when the train was running at the rate of thirty-five miles an hour, the child in delivery being dropped through the car closet, and falling upon the rail. The train was stopped as quickly as possible, and some of the trainmen went back, expecting to find the mangled remains, but were much surprised to see the infant alive and but slightly bruised. It is living yet. A short time after the occurrence a Philadelphia physician was traveling along the M. & N. W. Ry., hearing of it, went to see the child, and on his return home published the account. His veracity is now challenged, and the New York Medical Journal, speaking of it, characterizes the man as a lunatic that would believe such an improbable story. This annoyed the Philadelphia man, and he has written to General Superintendent Baker for affidavits from the trainmen, and they have been promptly furnished. The occurrence, though seemingly outside the bounds of possibility, is strictly true, and can be vouched for by many who were on the train at the time."

We think the "Minnedosa Tribune" is in error as to our having made such a remark as it attributes to us, for we do not remember having ever heard of the story before. Nevertheless, on account of the interest of the case, we insert the substance of Dr. Lyon's letter, as follows:

"I cut the inclosed clipping from the 'Manitoba Daily Free Press' of this date. I suppose the infant referred to owes me its life, as its mother first spoke to me after the birth of the child, and I got a farmer to go back for the child on horseback from the station, about a mile. He went *alone*, and I gave him directions about tying the navel cord, etc. The child must have struck on the roof of the frame of the wheel-trucks and rolled off on to the embankment, which was my theory at the time. The train and all the hands on it went on before the return of the farmer, but I afterward learned that he found the child *alive* and without a contusion or scratch, and the same child is still living just north of Marquette Station, in Manitoba here, and Mr. E. L. Fairbanks, ex-member of Parliament, living there, will verify the facts, and give you the child's name. The temperature on the day of the child's birth was just *below* freezing, which caused me to urge the farmer to make all possible haste."

**The Association of American Medical Editors** will meet in Cincinnati on the Monday evening preceding the meeting of the American Medical Association. There will be an address by the president, Dr. William Porter, of St. Louis, editor of the "Weekly Medical Review"; and the following questions will be discussed: "Is the Multiplicity of Medical Journals an Advantage to the Profession?" and "How far do Medical Journals distributed by Drug Houses and Manufacturers interfere with Regular Medical Journalism?"

**Coming Meetings of State Societies.**—The Medical Association of Georgia will meet in Rome on April 18th, and continue in session four days. The Medical Association of Alabama will convene in Montgomery on the 10th of April, and continue in session the same number of days. The Medical Society of North Carolina will hold its annual meeting in Fayetteville on the 8th of May, and at the same time and place the Board of Health and the Board of Examiners will assemble. The annual session of the State Medical Society of Arkansas will be held at Fort Smith on April 25th, 26th, and 27th.

**The New Orleans Polyclinic.**—At last the South can boast of a polyclinic that affords advantages for instruction equal to any in this country. New Orleans, with its great Charity Hospital, and with but one medical college, and this in session only during the winter months, affords clinical advantages which can not be excelled in the United States, and it is very encouraging to note this recent move by the profession, for we need more clinical lectures and less didactic teaching.

**The late Dr. B. H. Riggs.**—Dr. Riggs, who recently died at his home in Selma, was ex-president of the State Medical Association of

Alabama, ex-vice-president of the Alabama Surgical and Gynæcological Association, an ex-member of the State Board of Censors, and a member of the Southern Surgical and Gynæcological Association. In his death Alabama lost one of her most distinguished physicians, the State association an indefatigable worker, and Selma a citizen for whom any city would have mourned.

**A Sanitary Convention** is to be held at Manistee, Michigan, on Tuesday and Wednesday, June 6th and 7th, under the auspices of the State Board of Health.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality" for February, there were 517 deaths during the month, including 1 from cholera infantum, 21 from croup and diphtheria, 4 from cerebro-spinal meningitis, 3 from dysentery, 1 from diarrhœa, 1 from erysipelas, 8 from typhoid fever, 5 from measles, 1 from mumps, 1 from pyæmia, 3 from syphilis, 6 from septicæmia, 3 from scarlet fever, and 9 from small-pox.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 16th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending February 25th corresponded to an annual rate of 21·6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Cardiff, viz., 13, and the highest in Plymouth, viz., 32·2 in a thousand. Small-pox caused 20 deaths in Sheffield, 1 in Leeds, 1 in greater London, 5 in Manchester, 1 in Liverpool, 1 in Oldham, and 1 in Blackburn.

*London.*—One thousand seven hundred and seventy-two deaths were registered during the week, including 18 from measles; scarlet fever, 32; diphtheria, 30; whooping-cough, 127; enteric fever, 16; diarrhœa and dysentery, 8; and choleraic diarrhœa, 1. Diseases of the respiratory organs caused 478 deaths; different forms of violence, 62; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 21·6 in a thousand. In greater London 2,225 deaths were registered, corresponding to an annual rate of 21 in a thousand of the population. In the "outer ring" 9 deaths from diphtheria; whooping-cough, 34; and small-pox, 1, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending February 25th in the sixteen principal town districts of Ireland was 31·2 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 10·3, and the highest in Dundalk, viz., 74·2 in a thousand. In Dublin 192 deaths were registered, including 2 from measles; whooping-cough, 4; scarlet fever, 8; and enteric fever, 3.

*Scotland.*—The deaths registered in eight principal towns during the week ending February 25th corresponded to an annual rate of 22·6 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 10·1, and the highest in Paisley, viz., 27·8 in a thousand. The aggregate number of deaths registered from all causes was 571, including 9 from measles; diphtheria, 7; scarlet fever, 3; whooping-cough, 32; fever, 1; and diarrhœa, 9.

*Havana.*—Two deaths from yellow-fever and 20 from small-pox are reported for the week ending March 3, 1888.

*Contagious Pneumonia among French Swine.*—Report by Consul Mason:

MARSEILLES, *February 4, 1888.*

During the month of June last there appeared among the swine in the vicinity of Marseilles a new and mysterious disease, which has since assumed the proportions of a general and serious epidemic. Its symptoms were coughing, diarrhœa, loss of appetite and strength, and in some cases the appearance of red blotches on the skin. A large majority of the hogs attacked died within a few days, and the farmers and swine-growers of this region, unable to resist the spread of the epidemic, attempted to escape it by selling off their hogs. On the 21st of September a large fair was held in Aubagne, a small city about ten miles from Marseilles, at which several thousand infected hogs were sold, nearly all of which have since died, and spread the epidemic throughout this department and as far north and westward as Lyons and Beziers. It is estimated that more than 30,000 swine died of the malady in this department during the last four months of 1887. The entry and sale in Marseilles of freshly killed pork from the surrounding country was prohibited in December by municipal decree, and until some effective remedy for the disease can be found, hog-raising is practically at an end in this part of France. When the epidemic became serious, two experts, MM. Conil and Chantemesse, from the Society of Biology, at Paris, were sent by the Minister of Agriculture to make a thorough study of the disease and report their conclusions to the government. Their observations are not yet concluded, but at a recent meeting of the municipal sanitary committee they presented an informal report of progress, from which, as well as from personal inquiry and observation, the following facts have been derived: They pronounce the disease "contagious pneumonia," and they believe it to be identical with the "Schweineseuche," described by Loeffler and Schutz, and the "swine plague," which has been investigated by Professor Salmon in the United States. At first they were inclined to believe it to be what has been hitherto known in France as the "rouget," but certain indications disprove this theory, and the disease is now recognized as a new and highly contagious malady, the origin of which no one has satisfactorily explained. There is no importation of swine to Marseilles from any country where this disease, or anything like it, has been previously known, and certainly no pork products, except lard, are admitted to France from the United States. Like the endemic cholera of the Mediterranean ports, it seems to have been of local origin. Thus far, as already indicated, no effective remedy for swine affected by this disease has been announced. It was soon noticed, however, that such animals as had been slightly attacked and recovered were thereby rendered impervious to further contagion. This naturally suggested the idea of vaccination with attenuated cultivations of the virus as a preventive, and experiments have been made in this direction so far as to show that rabbits, pigeons, and guinea-pigs die, almost without exception, when inoculated with the original virus at its full strength, but survive in most cases when the material used is a cultivation attenuated by successive cultivations in gelatin or juices of meat. The malady is extremely contagious, both by inhalation and absorption. If inhaled, the ulcers are found most numerous and malignant in the lungs; if the contagion be swallowed with food or drink, they appear in the stomach and intestines. A single diseased hog, unless promptly removed when the first symptoms appear, is sufficient to quickly contaminate not only an entire herd, but the premises in which they are kept. It is abundantly demonstrated that the germ of infection is a microbe or bacillus which generates rapidly and in myriads among the saliva, the fæcal matter, and other secretions of diseased animals. Experiments have shown that the microbe resists stubbornly several leading disinfectants, among which are sulphate of iron, chloride of zinc, lime-water, corrosive sublimate, and spirits of turpentine, and succumbs but slowly to sulphate of copper, oxalic acid, and pure alcohol. The only two chemicals which have been found to destroy it promptly and certainly are hydrochloric and phenic acids, and the most effective wash for contaminated sties and hog-yards is a solution of four parts of phenic acid and two parts of hydrochloric acid in one hundred parts of water. Desiccation seems to have but little effect upon this stubborn organism. A drop of virus from a diseased animal has been evaporated and the residuum kept absolutely dry for fifteen days, and then, upon being dissolved in meat-juice, has rapidly developed microbes of contagious pneumonia. The one other effective agency of destruction is heat. The germ is effectually destroyed by a temperature of 70° centigrade (158° F.), and it thus happens that the meat of a hog which had been affected by this disease is not necessarily deleterious, provided it has been thoroughly cooked, as all pork products should invariably be before being eaten. It is impossible to predict to what limits the present epidemic in southern France may extend before it can be checked. Thus far, the only remedy that has been even suggested is

vaccination, and this has reached only the experimental stage. The vaccine has undoubtedly been found and applied successfully to several species of small animals, such as guinea-pigs and rabbits, but the conditions under which it can be safely applied to swine are yet to be demonstrated, since it appears that hogs, when even slightly contaminated by contact with the disease, may live indefinitely, but can not be fattened. Even a small degree of infection is sufficient to destroy their appetite and the power to assimilate food beyond the barest actual requirements of existence. Hitherto the principal effort has been to restrict the spread of the epidemic. Traffic in hogs has practically ceased in this part of France, and there seems to be but one method by which the farmers and pork-raisers whose premises have been infected can re-establish their business. This will be to slaughter or banish all the swine now in their yards and pens, then cleanse, air, and disinfect the premises thoroughly, and re-establish their stock with clean, healthy hogs, imported from localities sufficiently remote to warrant their freedom from contamination.

The foregoing account shows clearly that the disease is the same as that known here as "swine plague" or "hog cholera."

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Paris | February 25. | 2,260,945 | 1,070 | .. | .... | 10 | .... | 17 | 5 | 46 |
| Glasgow | February 25. | 545,678 | 272 | .. | .... | .... | .... | .... | 2 | 3 |
| Warsaw | February 18. | 439,174 | 215 | .. | .... | 3 | .... | .... | 2 | 8 |
| Calcutta | January 28. | 433,219 | 227 | 16 | .... | .... | .... | .... | .... | .... |
| Amsterdam | February 25. | 389,916 | 217 | .. | .... | .... | .... | 1 | .... | 2 |
| Rome | January 14. | 382,973 | 225 | .. | .... | .... | .... | 1 | 1 | 1 |
| Rome | January 21. | 382,973 | 245 | .. | .... | 6 | .... | 6 | 1 | 5 |
| Copenhagen | February 14. | 300,000 | 171 | .. | .... | .... | .... | .... | 5 | 5 |
| Munich | February 11. | 275,000 | 135 | .. | .... | .... | .... | .... | .... | 5 |
| Edinburgh | February 18. | 262,733 | 106 | .. | .... | .... | .... | .... | 2 | 4 |
| Palermo | February 26. | 250,000 | 132 | .. | .... | .... | .... | .... | 4 | 5 |
| Bristol | February 25. | 226,510 | 83 | .. | .... | .... | .... | 1 | 1 | .... |
| Genoa | February 18. | 179,368 | 125 | .. | .... | 11 | 1 | .... | .... | 3 |
| Genoa | February 25. | 179,368 | 143 | .. | .... | 11 | 1 | .... | .... | .... |
| Leipsic | February 25. | 170,000 | 71 | .. | .... | .... | .... | .... | .... | 8 |
| Stuttgart | February 25. | 125,510 | 51 | .. | .... | .... | .... | .... | .... | 2 |
| Gibraltar | February 19. | 23,631 | 7 | .. | .. | .... | .... | 1 | .... | .... |

United States.

*Gulf Quarantine.—Removal of Quarantine Station from Ship Island.* Act approved March 5, 1888:

AN ACT to authorize the removal of the Quarantine Station from Ship Island, Miss.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the Secretary of the Treasury is hereby authorized to cause the removal of the National Quarantine Station, now located on Ship Island, in the Gulf of Mexico, to some other island in said Gulf, or in such pass in the Mississippi Delta as may be recommended by a board to be designated by him, and that the necessary quarantine buildings and appliances be established thereon; and that the sum of forty-five thousand dollars, or so much thereof as may be necessary, is hereby appropriated to carry out the purposes of this act.

*San Francisco.—Small-pox.*—One hundred and fifteen cases and 9 deaths are reported for the month of February, 1888.

## SOUTHERN NOTES.

By W. E. B. Davis, M. D., Birmingham, Ala.

**The Inadequacy of the Law Regulating the Practice of Medicine in Alabama due to its System of County Boards of Medical Examiners.**—Notwithstanding the fact that the profession of Alabama is more thoroughly organized than that of any other State in the South, and has been able to accomplish the enactment of every law it has recommended, there is not that protection from incompetency that exists in Virginia and North Carolina, and this lack of protection is due entirely to the multiplicity of its examining boards. The Medical Society of Alabama, with its branches, the county medical societies, thus forms a part of the machinery of the Government; it elects a State Board of Health, which is also the State Board of Medical Examiners, and the county societies elect county boards of health, which are also the county boards of medical examiners, and it can not be questioned that this system has much to commend it as a means of organizing the profession. But, as has been stated, its defect consists in constituting the county boards of health boards of examiners. This is very apparent when we consider that every individual proposing to practice in the State must be either a graduate of a reputable medical college and pass a creditable examination before the board of the county in which he expects to locate, or, if a non-graduate, pass an examination before the State board. At present there are some counties with no organized boards of examiners, and it is only necessary to locate in one of these and practice a few weeks when a certificate can be procured from the county officials that will admit one to practice in any portion of the State. Hence it is possible to have some admitted to the privileges of the profession without any examination whatever.

It is a fact familiar to all the profession of Alabama that a very large number of the county boards are not at all efficient, and that many applicants are admitted by these examiners who would be rejected by more efficient ones. Thus there is no uniformity in the requirements of the different counties. The standard of a county board may even be higher than that of the State board, and, as candidates rejected by the county boards have the privilege of appealing to the State board, much dissatisfaction must necessarily arise in those counties where applicants have been licensed by the State board after rejection by the county examiners, for such county boards will always be accused of having rejected the candidates either from selfish motives or from ignorance of the duties of the office. As most applicants are familiar with the defects of the law, and as the more thorough examinations can be so easily evaded, very little protection is afforded in those cases where it is most needed; for ignorant, unprincipled practitioners will always be ready to locate temporarily in counties where no societies have been organized, or, at least, in counties where the examinations are very defective. Numerous examples of such evasion could be cited did space permit.

To illustrate the want of uniformity in the application of the law, it is only necessary to refer to the last report of the State Board of Censors: Of the 64 examinations made by the county boards there were 12 rejections, and 5 of these by the Jefferson County board out of its 10 examinations. The 54 other examinations were made in about 30 counties. One county rejected one half of those who applied for certificates, and the other counties one eighth. Of three applicants who appealed from one county to the State board two were awarded diplomas.

Any legislation to regulate the practice of medicine should fix the minimum requirements for a certificate to practice, and its chief aim should be to place the administration of the law in capable hands. This can not be accomplished if it is intrusted to a multiplicity of examining faculties; for, as has been shown, there can be no uniformity or equality where examinations are conducted by examining boards of such different attainments. While some good has resulted from the present law, it is so defective that the State can never establish that high standard of medical acquirements to which the profession aspires until it is changed. "Every physician can appreciate," says Dr. Barker, "the good intention of this law, knowing as he does that charters for medical colleges can be so easily obtained from State legislatures, and that the profession alone can protect the public from ignorant, unprincipled practitioners, who not only swindle their victims but jeopardize health, and often sacrifice human life." The intention, as stated, is laudable, but with the county system of examiners the State does not rise above the standard of the poorest schools, and in the unorganized counties even this is not attained.

At the last annual session of the State society a resolution was introduced by Dr. H. N. Rosser recommending one examining board for the State, but, as this was opposed by the Board of Censors, it failed to reach the House. The Censors freely admit the charges against the county boards, but maintain that thoroughness of examination is not the only thing to be considered—nay, not even the principal thing. They contend that the chief aim of the association should be, and is, the organization and discipline of the medical profession throughout

the State, and that the most potent of all the factors that they are able to invoke in the accomplishment of this object grows out of the fact that the county societies are intrusted with the administration of the law to regulate the practice of medicine. Without this system, they think, the majority of the county medical societies would "drop to pieces," and more than half of the existing societies would never have been organized at all. There are also other reasons which they think show that the county board system is incomparably superior to the system which has been advocated instead of it. "The service on the boards of examiners contributes somewhat to the elevation, professional and personal, of the examiners themselves; a good medical police is had all over the State to see that offenders are brought to justice, and that the law is enforced in the courts, and the flexibility of the system enables it to accommodate itself to the changing wants of the people." In the language of these gentlemen, "There are many sections of the State where practitioners of the highest culture and reputation would not find sufficient inducement to settle, and the people of these sections must have doctors." It is unnecessary to discuss their arguments, for they do not consider the proper aims of a scientific profession. What does organization amount to without medical acquirement? To say that the profession of Alabama is well organized and disciplined means nothing. It does not require ability or attainments in the members of an organization to be well disciplined and organized. We have abundant evidence of this in the many labor unions, etc., in this country. A few leaders of ability can influence the most perfect unions or organizations of men of comparatively no information whatever. State medical organization without corresponding professional improvement and elevation is deception to the people and a disgrace to a scientific and conscientious profession. Possibly the present system has assisted in enabling the profession to promote the enactment of so many laws of inestimable value to the State, but when the means to attain a high object is made the chief aim of any organization, that organization is laboring under a great misconception of duty, and has lost sight of the true reason for its existence. Think of *flexible medical examinations*, admitting to some counties incompetent men because men of the highest attainments could not be induced to settle in such localities! The very idea is preposterous! Look at Germany, Austria, and Russia. In those countries every physician must be thoroughly educated and well prepared before being admitted to practice, and, although there are districts in all of them where poverty and ignorance reign supreme, every individual has plenty of medical attention, and practice is in great demand. Think of Alabama, with only a million inhabitants and two thousand doctors (?), and you can readily see that her law has been *quite flexible*—sufficiently so already to have admitted enough doctors to meet the wants of the people for the next ten years without another accession. The trouble is that the profession is so crowded, and with incompetents at that, that capable men are unable to earn more than a mere sustenance. This is not as it should be, and the medical association of the State has it in its power to secure laws which would completely stop the ingress of such to our ranks.

With the existing law there are about sixty accessions to the profession each year, and more than half who enter it are undeserving of admission. In ten years the profession will be but little in advance of the present. Therefore the law should be changed for the following reasons: It can not be enforced in the unorganized counties; the boards can not be got together long enough to conduct examinations; local prejudice may cause unfairness in some cases; the law is so easily evaded by applying for a certificate in one county and practicing in another. Knowing these statements to be true, I believe that the law, instead of excluding incompetent practitioners, encourages ignorance and quackery by elevating ignorance and degrading intelligence to one common level. It is a deception and injustice, and a disgrace to an intelligent and conscientious profession, and to a confiding public a useless insult.

I learn from an announcement, just received from the secretary of the association, that at the next session, on the evening of the second day (April 11th), it is proposed that there shall be a general discussion of the ways and means best calculated to secure the successful administration of the law to regulate the practice of medicine and the health laws of the State. It is earnestly desired that at this meeting it be decided to abolish the county examining boards and that they be retained as health boards only, and that the State board be retained as at present, with the exception that it shall not be allowed to examine non-graduates. The board should have a paid secretary, who should reside near the center of the State, and he should conduct twelve or four examinations a year (monthly or quarterly examinations) and be required to devote one week each month or quarter to examining all who might apply for certificates. At the close of each examination the papers of each department should be forwarded by the secretary to the respective examiners. After the members of the board have marked the papers in their respective branches, the valuations should be returned to the secretary, when a correct estimate could be made of the candidates' examinations. This would give uniformity to the examinations, and all applicants would be submitted to the same test. If an applicant should fail on the first he should be allowed to reapply every six months until he was thoroughly satisfied. It should be insisted that a diploma be presented by the applicant, as the experience of all countries has demonstrated the necessity of examinations by the teaching faculties, and the wisdom of requiring their assent to a license to practice, as an examination by a board would not be at all reliable. Injustice would perhaps be done to some, while a readiness in reply which can be attained in a few weeks by some, without either solid acquirements or sound judgment, would often secure success. Examiners with no personal acquaintance with the mental characteristics, the habits of study, or the personal conduct of the candidate, could not possibly in all cases render a satisfactory decision. This is the opinion of the best medical men of the day, and was so expressed by Dr. Fordyce Barker before the New York Academy of Medicine. The law here recommended would allow the State board to examine only those who had diplomas from reputable medical faculties, and hence the qualifications of the candidates would have been passed upon by two impartial boards, the one a reputable teaching faculty, the other, composed of some of the most competent men of Alabama, who would be relieved from the reproach of having rejected candidates from selfish motives, etc., as examinations would be free from the local and personal character of those of the county boards.

It is to be hoped that the State association will further the grand work it has already accomplished by taking prompt and active steps in this matter.

**Moral and Criminal Responsibilities.**—Dr. Peter Bryce, superintendent of the Alabama Hospital for the Insane, recently read a very interesting paper on this subject at a medico-legal meeting in Birmingham. He began by affirming the intimate association of the science of mind with all such questions. He maintained that great advances had lately been made in the science of psychology, the most important of which was the dependence of mind upon body. Instead of mind being, as was long supposed, an independent entity thrust in some mysterious manner, at some indefinable time, upon the organism to control its actions through the medium of the nerves, it should be regarded as a creature of the organism, a phenomenon of the advancing nervous system. He further indicated the important part that the muscular and osseous systems had played in the generation of mind by their facilitation of definite and complex movements, repeated demonstrations having established the closest assimilation of ideas and motions. The inference was, therefore, unavoidable that mind, like digestion, was a function of the organism, and that when one's intellect was impaired, as when one's digestion was disordered, a special function was impeded by some disorder of the organism. He then alluded to the interesting fact that in the myriad diverse forms of animal life there should be as many different characters of mind as forms of body—the intellectual potencies and peculiarities of bodily construction. At this point he affirmed that mind in animals and in man differed only in degree. He contended that the most overwhelming proof of the fallacy of the old metaphysical idea of mind was found in the various degrees of intellectual potency observed in animals, and the rigid conformity of their intellect to their capacity for definite sensations and movements. He next adduced the interesting phenomena of heredity as still further evidence of the correctness of these views of mind, for it had been shown by countless experiments that intellectual and moral qualities were as capable of transmission as physical peculiarities. At this point he took

occasion to inculcate the need of greater charity in our judgment of human conduct, many persons being no more deserving of reproach for their departure from the lines of strict propriety than a man with deformed legs for not walking with regular strides.

The well known influence of climate on character he further indicated as confirming all that was contended for in reference to the dependence of mind on organism. The European and African, doubtless, having their origin in the same ancestry, had been made by climate and alien influences as different in their intellectual and moral as in their integumentary characteristics. The dependence of intellectual and moral traits upon physical peculiarities he further emphasized by those glowing but evanescent traits that were developed under the influence of alcohol and other narcotics or stimulants. Reference was also made to those radical changes of character that had not infrequently resulted from changes of life in women, or from blows on the head, or changes in the state of health. He reported the following from his own practice: A man of the highest intelligence, irreproachable character, and the kindest feelings was converted by a fall upon his head, fracturing his skull, into a very demon. He became deceitful, cruel, and vicious in the extreme, and had to be committed for safe-keeping to a hospital for the insane. He remained in this condition until relieved by an operation for pressure upon the brain, after which he almost instantaneously lost his immoral traits, and regained his former unexceptionable character. The doctor contended that on the phenomena of mind vast light had been shed by the evolution theory; that, in fact, without that theory an impenetrable darkness so shrouded the whole subject that it was not remarkable that the intervention of miracle had been habitually invoked to account for them. In the light of evolution every event was an effect of antecedent causes, and each antecedent cause was, in its turn, an effect of previous causes. The effect of such a conclusion upon many interesting questions of life, both public and private, were evident. Men were good or bad according as antecedents determine, and not as a capricious will-power might elect.

The will, continued Dr. Bryce, as one of the constituents of mind, either conformed to the law of orderly growth or development, or it was a haphazard phenomenon, acknowledging no antecedents, and bound to no consequents. In conclusion, he addressed himself specially to the members of the legal profession; declared that little difficulty would be found in adapting the principles just enunciated to the laws of the land, although it was inevitable that some decided change should supervene in our present criminal codes. A great change which would follow such statutory changes would be the creation of commissions competent to determine the term of confinement and treatment in each case. In other words, the statute should not prescribe the duration of the criminal's sequestration, but in very many cases leave it to this commission to shorten or lengthen the term, according to satisfactory evidence that the criminal might give of his reform, or the reverse. To carry out such statutory provisions, prisons and reformatories would be necessary in which the various classes of criminals might be so graded as to have about them only such characters as would not, at least, have a tendency to demoralize them, or pull them still lower down the easy descent of vice and crime. These views, the speaker affirmed, were the outcome of the scientific disclosures of the last few years, and, whether or not they were accepted, were so fortified by proofs of foundation in the laws of nature that the revolution to which they pointed, and which he had endeavored to champion, was destined to occur at a very early day; for never yet had ignorance or prejudice prevailed against positive demonstration of truth in societies whose education had made the great mass of the people competent to weigh and decide upon the evidence submitted.

## ANSWERS TO CORRESPONDENTS.

*No. 162.*—The Medical Society of New Jersey is made up of delegates and honorary members. Delegates receive their appointment from the district societies, each of which is entitled to send three delegates at large and an additional delegate for every ten members. Practitioners of medicine residing anywhere in the United States may be admitted to honorary membership by ballot, provided they have been nominated by the Committee on Honorary Membership at a previous meeting. They can not exceed fifteen in number.

*No. 163.* Circumcision is practiced by the Jews as a rite, and by some individuals for hygienic or prophylactic purposes. It has been thought to lessen the sensibility of the glans. Its general adoption would probably render masturbation less extensive among boys.

*No. 164.*—Your conception of the physiology of digestion in the fowl is quite correct, and it is not to be supposed that any preparation of its gizzard can act as a digestive ferment, like pepsin, for instance. Nevertheless, there is the highest testimony to the value of ingluvin (which, we take it, is the preparation you mean) as an aid to digestion, and especially in controlling the vomiting of pregnancy. Recent investigations, says Dr. Bartholow, have shown that its remedial action is owing to a peculiar bitter principle, and not to a ferment.

*No. 165.*—1. As-et-an'il-id. 2. The product differs from most others of its class in containing vegetable matter, which may be of advantage in certain cases. We do not esteem it very highly, but yet we do not believe it to be a worthless preparation. 3. In the statement "alcohol dissolves the diphtheritic exudation," the word *dissolves* must have been used in a figurative sense; taken literally, the statement certainly is not true.

**To Contributors and Correspondents.**— *The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

### AN ABSTRACT OF A LECTURE ON THE SIGNIFICANCE AND VALUE OF PUPILLARY PHENOMENA IN NERVOUS DISEASE.

*Delivered at the New York Post-graduate Medical School and Hospital, November 21, 1887.*

BY WILLIAM M. LESZYNSKY, M. D.,

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(Reported by LOUISE FISKE-BRYSON, M. D.)

PUPILLARY phenomena in nervous troubles possess a distinct value as corroborative evidence. In certain affections they appear early and with decided regularity. Taken alone, and separated from other signs, it would be unwarrantable to consider them indicative of any pathological condition of the nervous system. Yet in connection with other symptoms they are valuable aids to diagnosis. Their importance lies in the fact that an intelligent comprehension of their real significance enables us in many instances to distinguish between organic and functional nervous disease.

A word about the nerve and blood supply to the iris. "The pupil may be considered to be under the dominion of two antagonistic mechanisms; one a contracting mechanism, reflex in nature, the third nerve serving as the efferent, and the optic as the afferent tract; the other a dilating mechanism, apparently tonic in nature, but subject to augmentation from various causes, and of this the cervical sympathetic is the efferent channel. Hence, when the optic or the third nerve is divided, not only does contraction of the pupil cease to be manifest, but active dilatation occurs on account of the tonic dilating influence of the sympathetic being left free to work. When, on the other hand, the sympathetic is divided this tonic influence falls away and contraction results. When the optic or the third nerve is stimulated, the dilating effect of the sympathetic is overcome and contraction results; and when the sympathetic is stimulated, any contracting influence of the third nerve which may be present is overcome and dilatation ensues." (M. Foster.)

The blood-supply is remotely from the internal carotid artery, and immediately from the ophthalmic and its branches. The circulation in the pia mater has the same remote source, yet only in an anastomotic sense can it be considered the same as that of the iris. Abnormities of cerebral circulation may exist without evidence of such disturbance in the eye. On the other hand, changes in the pupil may point to pathological conditions of the brain or spinal cord. Relatively, eye-symptoms offer confirmation or negation of previous provisional diagnoses.

All local diseases of the eye must be excluded before we think of some central nervous lesion or functional disorder to account for any abnormal condition that may be present. The practitioner should familiarize himself with the preliminary methods of examination for acuteness of vision and errors of refraction. A visual power of twenty twentieths excludes but one condition only—myopia. Optic neuritis or other trouble may be present. The next step is to examine the pupils carefully. They should be mobile and of the same size and shape. Place the patient in a position facing a window. Do not allow the sun to shine upon his face. Never attempt an examination of the pupils while the patient sits or stands with his back to the light, as under such circumstances the pupils are usually dilated. It is unadvisable to examine the pupils directly in front of a gas flame. The patient is likely to and generally does "fix" upon the flame, thereby causing contraction of the pupils in accommodation, which may mislead the examiner. Direct him to gaze upon some object at least twenty feet distant in order to relax accommodation. Sufficient knowledge of ophthalmology to recognize or exclude local diseases of the eye that may affect the pupil is an essential feature in the examination we are now considering. The following method of observation should be systematically adhered to:

1. As to the size of the pupils.
2. As to their shape.
3. As to their equality.
4. As to their mobility.

*Contracted pupils* are generally seen when the eyes are exposed to a bright light and in persons over fifty years of age. The existence of myosis in any one under fifty years of age is almost always pathological. Contracted pupils are found in cerebral hyperæmia or congestion, and in the early stages of meningitis. They may also be due to hypermetropia or to the effect of some drug, such as eserine, morphine, pilocarpine, etc. Irritation of the third nerve at its nucleus or in any part of its course, or paralysis of the sympathetic or its branches, produces contraction of the pupil on the same side as the lesion. Myosis is frequently seen in cases of locomotor ataxia and in paretic dementia, and occasionally in cervical myelitis.

*Dilated pupils* exist as a normal condition in darkness or subdued light. Unless due to local disease of the eye, their presence in an old person is always pathological, and may indicate some disturbance in the nervous system. In children the pupils are often dilated, as well as in grown persons of exaggerated reflex irritability. It is frequently an expression of increased excitability in cases of "nervousness," hysteria, etc. Mydriasis may result from the effect of drugs—such as atropine, duboisine, hyoscyamine, etc. In high degrees of myopia, the pupils are usually found dilated. This condition may also be due to cerebral or general anæmia. Paralysis of the third nerve, or irritation of the cervical sympathetic, produces dilatation of the pupil on the same side as the lesion. Dilatation of the pupils takes place during epileptic coma, in amaurosis, and in high grades of optic neuritis. It is also a manifestation of excessive intracranial pressure.

The *shape* of the pupils may vary, being distinctly different in each eye at times, or both may be alike, yet irregular. Sometimes one is round and the other pear-shaped, or triangular, or somewhat vertical or horizontal. An irregular

pupil may result from the adhesive bands of a former iritis. The condition known as coloboma may be congenital, or acquired through surgery. It is a deformity in which the symmetry of the iris is destroyed by an elongated gap or cleft. Irregularity of the pupil may occasionally be observed in cases of paretic dementia without a pre-existing iritis. *Unequal pupils* never occur in health, but are observed where there is marked difference in the degree of refraction in the two eyes. They are present in paretic dementia, and, if not found at one examination, will be discovered subsequently. Unless the inequality is pronounced, it is frequently difficult to determine whether one pupil should be considered dilated or the other contracted. Unilateral dilatation may be due to some local disease of the eye; to instillation of atropine or other mydriatic; to paralysis of the motor oculi, or to irritation of the cervical sympathetic on the same side; or to blindness on the affected side. Unilateral myosis may be due to an existing or a former iritis; to irritation of the third nerve, or paralysis of the sympathetic on the same side; or to the instillation of drugs. Either phenomenon may be present during an attack of migraine.

The *mobility* of the pupils should next be considered. Physiological pupillary reactions are the following:

1. Contraction to light, or direct reflex action.
2. Consensual contraction, or indirect reflex action.
3. Associated contraction in accommodation.

1. Contraction of the pupils to light, or direct reflex action, is thus investigated: Instruct the patient to gaze upon some large object at least twenty feet distant, and to keep both eyes open. The eyes are then covered or shaded. In a few moments one is suddenly uncovered and exposed to light, when, in the normal state, the pupil (which always dilates in darkness or subdued light) immediately contracts. The other eye is then tested in the same manner.

2. For consensual contraction, or indirect reflex action, the examination is conducted in the same manner as before, only both eyes are at first left uncovered. One eye is then covered, and in a moment or two is suddenly exposed, when it will be noticed that a simultaneous contraction occurs in the opposite pupil. This consensual pupillary reaction to light is owing to bilateral association of the reflex mechanism.

3. Associated contraction to accommodation is obtained with the patient in the same position. Direct him to look at some small object held within one foot of the eyes, when, in the normal state, synchronous contraction of both pupils will take place. In health the pupils dilate upon pinching, scratching, or irritating the skin over the neck or elsewhere. This is supposed to be due to excitation of the sympathetic nerve-fibers in connection with the so-called cilio-spinal center. Abnormal conditions of the pupils are not difficult to discover if their physiological action is thoroughly understood and constantly borne in mind. Reflex action to light is lost when the eyes are blind from disease of the optic nerves or retinæ. If only one eye is blind, the direct action of its pupil will be lost, but (unless there is disease of its third nerve also) the indirect or consensual action will be preserved, or may be much greater than in health. Loss of reaction to light during the epileptic paroxysm is a positive diagnostic symptom in excluding simulation.

In the condition known as the "Argyll-Robertson pupil" there is abolition of reflex action upon exposure to light, but the associated pupillary contraction in accommodation is preserved. This symptom is occasionally accompanied by myosis or inequality of the pupils, and is a valuable aid to diagnosis. It occurs in locomotor ataxia, in paretic dementia, and in some cases of disseminated sclerosis. The presence of the Argyll-Robertson pupil in conjunction with the absence of knee-jerk may be considered presumptive evidence of degeneration affecting the posterior columns of the spinal cord.

In this connection it is interesting to note that in eyes that are totally blind the pupils are generally found dilated, and fail to react upon sudden exposure to light; but at times associated pupillary contraction occurs when the patient is instructed to make an effort and act as though he were looking at an object within a few inches—by encouraging him, as it were, to indulge in a (somewhat modified) visual hallucination.

In the condition known as cycloplegia, or paralysis of the ciliary muscle—an occasional complication or sequel of diphtheria—the contraction of the pupils to light is preserved; but, as the sufferer has become temporarily presbyopic (if the expression may be allowed) and the mechanism controlling accommodation is interfered with, the pupils fail to react for the near point. This, you perceive, is the reverse of the Argyll-Robertson pupil. When the pupil is dilated by atropine, it fails to react either to light or in accommodation, as both the ciliary muscle and the fibers of the motor oculi supplying the iris are paralyzed. This failure to respond to light is from peripheral causes.

It has been my earnest endeavor in this lecture to impress upon you, and outline for your benefit, as concisely as is consistent with lucidity, the advantages of a methodical examination of the pupils and the significance of any abnormities they may present. The study of this too often neglected field of investigation will amply repay you for all the time, thought, and care bestowed upon it. It is one of the clinical features of many otherwise obscure conditions. As before stated, pupillary phenomena serve as corroborative evidence, affording confirmation or negation of a provisional diagnosis. I have purposely refrained from referring at length to the various local diseases of the eye which influence the pupil. This subject belongs to the broad domain of ophthalmology.

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**Cauterization in Malignant Pustule.**—According to the "Lancet," "Dr. Martin Ayuso considers that, for the destruction of a virus such as that existing in malignant pustule, the actual cautery is far inferior to chemical caustics, as these penetrate more deeply. The plan he adopts is first to draw a line with ink on the surface, marking out the boundary of the œdema; then to make two or three crucial incisions, and in these to place pledgets of lint soaked in nitric acid. Pressure is then made over the whole by means of the foot of a wine-glass, or in some other convenient manner, for ten or fifteen minutes, so as to express the acid and cause it to act on the tissues. The lint is then removed and a dry dressing applied. If at the end of six or eight hours the œdema has extended beyond the marked boundary, a more extensive and more energetic application of the caustic is required."

# Original Communications.

## DIABETIC AFFECTIONS OF THE EYE.*

By WILLIAM OLIVER MOORE, M. D.,
PROFESSOR OF DISEASES OF THE EYE AND EAR IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

> "What says the doctor to my water?
> "He said, sir, the water itself was a good, healthy water, but for the party that owed it, he might have more diseases than he knew for."—KING HENRY IV, PART II.

THE only excuse I can offer for presenting this subject to your attention is, that during the past ten years I have seen an unusually large number of diabetic affections of the eye as compared with the number of such cases reported in the practice of older physicians. This is to be accounted for by my especial interest in this class of patients and my solicitation of diabetics for ophthalmoscopic examination from general practice, thus having sought for the cases before they sought the ophthalmic physician. What I may say will contain nothing new, but will be rather a report of my own cases, together with a *résumé* of the subject as it at present is understood, with the hope uppermost that a full discussion will be evoked and some interesting facts brought out that have hitherto been latent.

Celsus was probably the first to clearly describe diabetes, and Galen (131 to 210 A. D.) to first call it by that name.

In 1674 Willis first associated the presence of sugar with the disease, discovered by the sweet taste of the urine. Other observers succeeded in separating the sugar, and Rollo in 1787 began the dietetic treatment by withholding vegetable food.

It is not a rare disease, is more common now than formerly. This fact is probably due to the frequent and more accurate examination of the urine. In the United States census for 1880 there are reported 1,443 deaths from diabetes, or 0·19 per cent. of deaths from all causes, against 0·17 per cent. in 1870.

*Report of Deaths from Diabetes in New York City. From the Records of the Board of Health.*†

| | DEATHS FROM DIABETES. | | DEATHS FROM ALL CAUSES. | |
|---|---|---|---|---|
| | Total. | Over 15 years | Total. | Over 15 years |
| 1878 | 42 | 41 | 27,008 | 13,174 |
| 1879 | 37 | 36 | 28,342 | 14,075 |
| 1880 | 44 | 43 | 31,937 | 15,684 |
| 1881 | 43 | 43 | 38,624 | 18,250 |
| 1882 | 46 | 43 | 37,924 | 18,264 |
| 1883 | 68 | 64 | 34,011 | 18,451 |
| 1884 | 68 | 67 | 35,034 | 18,184 |
| 1885 | 63 | 62 | 35,682 | 18,787 |
| 1886 | 82 | 78 | 37,351 | 19,566 |
| 1887 | 105 | 104 | 38,933 | 20,303 |

Total deaths in ten years from diabetes, 598.

Total deaths from all diseases in ten years, 344,846, or 1 diabetic in every 577 deaths.

In 1867–'69 the ratio of deaths from diabetes to the total number of deaths was 1 to 1,379.

In 1867–'69 there were 49 deaths from diabetes.

In 1877–'79 there were 123, an increase of 74, which is out of proportion to the population increase.

It is more common between thirty and forty years of age, but does occur, as seen, in early life, although the older writers did not so consider. Prout states that of 700 cases of diabetes, he had met with "but one instance of it in a child five years old, and only twelve in young persons between the ages of eight and twenty." Hanner has reported the case of an infant twelve months old. G. M. Smith (1), M. D., reports one twenty-three months old, and W. H. Deane (2), M. D., of Blanford, Mass., one, a female, one year and three weeks old. Of cases treated at the New York Post-graduate School and Hospital, there were only three in the first 10,000. In the Vienna Polyclinic Romberg found the same ratio to exist. I am quite sure that the disease is more prevalent in private practice than is usually conceded, and that the reason we do not find records of such in hospitals and dispensaries is on account of the carelessness of examinations and the improper signing of death certificates. That there is also a great disproportion between the diabetic affections of the eye seen in private and those seen in hospital practice, owing to the loose way of making diagnoses, I make this sweeping statement from my recent efforts to obtain evidence as to this point in the principal ophthalmic hospitals of this country. The statistics of these institutions are utterly useless.

Hirschberg (3) remarks upon the much greater frequency of diabetes in private than hospital ophthalmic practice, and reports, of 1,638 private patients, 17 suffering from diabetes, while of 10,000 at his clinic 3 only had sugar in the urine. During the past ten years I have examined 97 diabetic subjects, and of this number 21 had ocular affections.

| | |
|---|---|
| Amblyopia (without ophthalmoscopic change) | 4 |
| Cataract | 4 |
| Retinitis (glycosuric) | 5 |
| Hæmorrhages and floating bodies in vitreous | 4 |
| Paralysis of accommodation | 3 |
| Iritis (diabetic) | 1 |
| Total | 21 |

Dufresne (14), out of 162 diabetics, had 20 with various ocular affections.

In 1798 Rollo first called attention to eye trouble in diabetes, although Blankaard in 1688 mentioned a case of blindness from this disease, in which, however, it was subsequently found that both the diabetes and the blindness were due to a tumor of the brain. Dr. Prout and Mr. France long since called attention to this association. The most common ocular symptoms usually are, first, affections of the muscular system, paralysis or loss of accommodation, and paralysis of the extrinsic muscles of the eye, usually

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† I am indebted for the foregoing to Dr. Roger S. Tracy, Register of Vital Statistics.

the abducens. Then the vascular system becomes affected and we observe hæmorrhages into the vitreous, also floating bodies, the result of improper nutrition of that body. As a result of the serious changes in the vascular system, retinal hæmorrhages take place, and at the same time we find them in the vitreous usually associated. Cataract and amblyopia are found in the later stages of the disease. Iritis and keratitis are rarely seen, but have been very admirably described by Leber (16), Schirmer (17), and Wiesinger (19). It is quite natural that the first ocular symptoms noticed occur as the result of general muscular weakness. I have seen in many diabetics a temporary loss of accommodation, which would last during a few days to a few weeks, when more than the usual amount of sugar was being voided from the system, which would give way on a proper treatment being adopted.

The cases where the accommodative disturbance was but transitory I have not counted, and will relate only the three where it remained permanent.

Case I.—Male, aged thirty, lawyer, first consulted me in 1879, complaining of difficulty in reading. On examination, V. = $\frac{20}{20}$, em. No ophthalmoscopic changes; pupils normal; accommodation, however, faulty, so that newspaper type could be seen only at eighteen inches. Convex glasses were ordered for reading (+ $\frac{1}{8}$) and near vision was restored. This patient subsequently had opacities in the vitreous, and died eighteen months later from phthisis.

Case II.—Female, aged thirty-six, has had sugar in the urine for the past two years. Has never had any trouble in the eyes until three months since, when she had to put the book farther away than usual. The normal range of vision was restored only by the wearing of convex glasses. The fundus and media were normal. Any slight effort caused accommodative asthenopia. The refraction was hyperopic. This patient had V. = $\frac{20}{20}$ for distance, and after prescribing glasses was lost sight of.

Case III.—Male, aged twenty-nine, single, butcher, has had sugar in urine for the past six months, passing nine pints with ten grains of sugar to the ounce; specific gravity, 1·040. General muscular weakness; first noticed failure of sight in reading two weeks before my examination, October 15, 1886. V. = $\frac{20}{20}$, hyperopia = $\frac{1}{24}$. This patient was a friend, and I had previously examined the refraction before any diabetic symptoms had made their appearance, when emmetropia was present. Since the diabetes the hyperopia and paresis of accommodation have appeared. With the decrease in the sugar in the urine the hyperopia and accommodation also diminished. This change in the refraction of the eye is due to the change in the specific gravity of the blood. Convex glasses gave relief to this patient. He died of carbuncle of the back, March 3, 1887.

Next to failure of accommodation, the muscular system shows its weakness in the paresis of the abducens (or sixth nerve). I have never seen this affection as a result of diabetes, or, if so seen, it has not been recoginzed. Gutmann (20), in 1883, reports a case occurring in the person of a physician, aged fifty-three, thought to be suffering from tabes, but who was found to have diabetes. He was seen by Hirschberg, who found paralysis of the right abducens, with normal pupillary reaction and accommodation. The paralysis of the abducens was complete; the patient retired to Carlsbad, and after a sojourn of two months the sugar diminished and finally disappeared, and with it the diplopia produced by the affected muscle. The sixth nerve taking its deep origin from the floor of the fourth ventricle, the portion of the brain usually affected in diabetes, is supposed to be the reason why this particular muscle is paralyzed, as the other ocular muscles get their innervation from other parts more remote from this region.

*Iritis and keratitis* from diabetes have been noticed, and Leber and Wiesinger in 1885 report such cases, most of which occurred in the Gottingen Clinic.

In 1857 von Leudet, in the "Gazette médicale," relates the case of a female diabetic, aged thirty-two, with keratitis of the left eye; this patient, however, had paralysis of the third and fifth nerve of the same side, and at the autopsy a tumor, syphilitic in character, was found in the brain, so that this case was not diabetic, but neuro-paralytic in origin. In 1830 Himby speaks of keratitis in connection with diabetes, but the cases are not clearly defined. Panas (21), Galezowski (22), Bellouard, Coundouris, and others have reported cases of diabetic keratitis, and in most every case it has been of the purulent form, and the inflammation of a very passive character. One of Galezowski's cases was not diabetic, but rather due to the cerebral tumor which caused the diabetes; the two other cases reported by him were, without doubt, due to the general loss of nutrition produced by the diabetes. Most of the cases reported terminated in complete leucoma, and some in leucoma adhærens.

From what literature I have had access to, it would seem that keratitis from diabetes alone is a rare affection.

*Iritis* seems to be more common.

The first case reported, so far as I can learn, was in 1863, by Marchal de Calvi (23), that of a female diabetic, aged fifty, who had an irido-chorioiditis, and died shortly after from the general affection. In 1868, at the American Ophthalmological Society, Dr. H. D. Noyes (24) reported a case of retinitis hæmorrhagica occurring in a diabetic woman, aged sixty, who had had, some months previous to coming under his observation, double iritis, the posterior synechiæ showing this at the time of the examination for the retinitis. This case is reported by Noyes for the intra-ocular affection, and only incidentally are the results of the iritis mentioned, he evidently not at that time considering the iritis due to diabetes. It, however, belongs to that class.

Wickersheimer (25), in 1874, reports a patient, male, aged thirty-seven, with irido-chorioiditis.

Galezowski, 1879 and 1883, relates the case of a male, aged sixty, with iritis in the left eye and synechiæ in both. For two years the right eye had been the seat of iritis, he having been a diabetic since 1866. The left eye in three months improved.

Aladie, in the same year, reports a similar case.

Umman (26), 1881, reports the case of a priest, sixty-nine years old, with purulent iritis. Coundouris reports also a case of a male of a diabetic family, having iritis. Leber reports nine cases of iritis, with full and complete histories.

I have seen only one case of iritis in a diabetic, and it occurred only two months before the death of the patient.

Case IV.—Male, aged thirty-five, laborer, for two years has lost flesh and grown weaker; March 1, 1885, passing seven pints of urine daily, and eleven grains of sugar to the ounce. Has never had any trouble with his eyes; two weeks before seeking advice first noticed cloudiness of vision in R. E., followed in six days by failure of vision in the L. E. When seen by me the R. E. had V.=$\frac{20}{40}$, L.=$\frac{20}{30}$. Right iris inflamed and one or two small synechiæ showing aqueous cloudy and small amount of hypopyon, slight injection of the eyeball, and not much pain. L. E., pupil clear, though slowly responding to light; circumcorneal injection, slight pain, and no fear of light. The ophthalmoscope shows media clear in the eye. Four days later each eye has hypopyon and more marked signs of iritis. The cornea of the R. E. is slightly cloudy in the outer quadrant. A careful diet was prescribed, and the usual local measures for iritis were adopted. The patient recovered with a few adhesions remaining in the R. E. and some in the L. E. after an inflammation of six weeks' duration. The cornea remained cloudy till the time of death.

I have, in a number of diabetics, noticed a want of clearness in the vitreous where no opacity could really be determined, which would vary with the excretion of the sugar in the urine, and I suppose is to be explained by the varying conditions of the blood in these cases.

I will, however, only record cases where an actual change could be distinctly seen.

Case V.—*Floating Bodies in the Vitreous and Opacities in the Lens* in a woman aged fifty, Mrs. C. This patient first showed the signs of diabetes four years before. About six months before coming under the writer's notice she complained of dimness of vision, with "specks before her eyes." These symptoms gradually increased, and when seen by me, 1884, she had vision=$\frac{20}{40}$ each eye, pupils normal, field of vision normal; the ophthalmoscope showed very many floating bodies in the vitreous, and some small fresh hæmorrhages; the appearance was about alike in each eye; the retina and optic nerve seemed normal. The lens showed a few striæ in the peripheral portions. At this time the patient could read with correcting glasses for a short time only. Much sugar was being voided. Whenever the quantity of sugar diminished in the urine the vision improved. During the remainder of her life the eyes gave annoyance, and on two occasions—for a period of five weeks, during which time the diabetic symptoms were more pronounced than usual—vision was so bad that reading could not be indulged in. On these two occasions the opacity of the lens was much increased, and the lens, in fact, generally cloudy. On the disappearance of the severe diabetic symptoms the lens gradually cleared, the floating bodies in the vitreous remaining, but the vision improving so that she could read for a short time.

This case would seem to be one like that reported by Nettleship, where cataract disappeared on the subsidence of the severe diabetic symptoms.

The patient died in diabetic coma in December, 1887, with no increase in the opacity of lenses or vitreous. The patient was the wife of a physician of this city, and was very carefully treated.

Case VI. *Floating Bodies in the Vitreous, and a Small Opacity in the Right Lens.*—W. H. R., male, aged twenty-nine, seen by me in January, 1888. V.=$\frac{15}{30}$, Em. Seen by Dr. Satterthwaite. Reads Jaeger No. 3 with + $\frac{1}{40}$ from 8 to 18 inches. Has floating bodies very small and fine in vitreous of each eye, and opacity of the right lens, outer and lower quadrant. Has had diabetes for past year; has become emaciated and otherwise shown marked debility. Is an artist and can do work only for a short while at a time. This patient is still under observation.

Case VII.—Female, aged forty-seven, married, has had failing vision and "spots before her eyes" for the past eight months, has emaciated during the past year, and has passed large quantities of urine with a specific gravity of 1·040 to 1·045, containing sugar. Examination of eyes showed V.=$\frac{20}{30}$ each; ophthalmoscopic picture showed lens clear, but the vitreous filled with numerous fine floating bodies and ten small fresh hæmorrhages. The retina and optic nerve were normal. Each vitreous had a similar appearance except the hæmorrhages. This patient had recurring hæmorrhages until her death, January 17, 1886, from diabetic coma. At no time were there hæmorrhages into the retina.

Case VIII.—Male, aged thirty-eight, for two years before coming under observation had had diabetes, passing 8 pints of urine daily, with 20 grains of sugar to the ounce. When first seen, March, 1885, marked emaciation was noticed, with much muscular weakness. R. V.=$\frac{20}{70}$, L. V.=$\frac{20}{40}$. Ophthalmoscopic examination showed many floating bodies in the vitreous, and several small hæmorrhages. The fundus was normal. This patient, under careful and systematic treatment, improved, so that only 10 grains of sugar to the ounce was voided, and with this improvement the vision also increased. The patient, however, died soon after December, 1885, in an attack of pneumonia.

*Cataract.*—Opacity of the crystalline lens has from very early times been considered as one of the most common affections of the eye in diabetes mellitus, and it is only recently that the text-books speak of other diabetic affections of the visual apparatus.

According to Roberts, it occurs once in 45; according to Bouchardat, once in 38 diabetics; while Griesinger, out of 225, found cataract to exist in 20. In the St. George's Hospital it occurred once in 28 cases; Frerichs found 19 out of 400; and Graefe asserts that he has found them present in one quarter of all diabetics. In 858 diabetics collected from various sources already reported, together with my own, I find that diabetic cataract occurs once in every 17 whose glycogenic function is disturbed. In regard to the frequency of diabetic cataract to other forms of lenticular opacity it is difficult to say, as in the various hospitals the diagnosis is not accurately made, the special kind being rarely recorded—*e. g.*, of 8,933 cases of soft and hard cataract, non-traumatic and not congenital, recorded in the principal eye hospitals of New York, Brooklyn, Philadelphia, Boston, and Baltimore, only 4 are recorded as of diabetic origin, or 1 diabetic cataract in every 2,223 opacities of the lens. I am quite sure that this ratio is far too small. Badal, out of 20,000 patients with eye diseases, found 52 with diabetic affections of the eye, and of the latter number 13 were cataract.

It occurs in advanced cases, yet it also happens that attention is first directed to the diabetes by the disturbance of vision, more especially by the rapid formation of the cataract. As a rule, both eyes are attacked, though the maturing is not usually equal.

The origin of cataract in diabetes was formerly attributed to the withdrawal of water, from the experiments made by Kunde in 1856, who produced an opacity of the lens in

frogs by desiccation or the introduction of substances having a strong affinity for water, such as salt and sugar under the skin; these experiments were afterward confirmed by Weir Mitchell and others.

Von Graefe, on the contrary, pointed out that such lenses (diabetic) did not, like those of frogs, lose their opacity by being laid in water, and that they did not, like the latter, show any formation of vacuoles in their interior. The non-appearance of cataract in diabetes insipidus also tells against its origin in mere deprivation of water. In view of the fact that several cases of spontaneous disappearance of cataract on the improvement of the diabetic symptoms and the decrease in the sugar voided, as reported by Seegen, Nettleship, and others, and as seen in Case V of our series, it would seem more probable that the abnormal constitution of the blood, its saccharinity, as well as that of the other fluids, favored the formation of cataract. Sugar has been detected in the lens and in the aqueous and vitreous humors, as shown by Liebreich, Knapp, and Lohmeyer. In my own practice I have seen four diabetic cataracts, or 1 in 14 of the diabetics examined.

Case IX.—Male, aged forty-six, laborer, came to the New York Eye and Ear Infirmary, March 18, 1881, complaining of failure of vision in each eye, more marked in the left—R.=$\frac{20}{200}$, L.=$\frac{15}{200}$; ophthalmoscope showed a cataract in each, of a soft variety and progressive in character; fundus normal, so far as could be seen. This failure of vision came on three months before coming under observation, and has rapidly increased. Examination of the urine by Fehling's test gave evidences of sugar. Patient voiding eight pints of urine daily. The patient was put on antidiabetic diet, and the amount of the sugar diminished. The vision, however, gradually decreased, and perception of light only remained. After three months' careful treatment for the constitutional disease, the lens of the L. E. was extracted, and, save a mild form of iritis, no serious difficulty was experienced in the healing process. The patient was operated on at his home, and lived two years after the operation, dying of pneumonia on December 28, 1883.

Case X.—Female, aged forty-eight, widow, sewing-woman. First noticed failure of vision in January, 1883, and three months previously had noticed an increase in the quantity of urine voided. The increase in urine came on shortly after a severe sorrow, since which time she has lost weight and become very melancholy. Examination revealed double soft cataract, R. V. =$\frac{20}{100}$, L. V.=$\frac{20}{50}$. Fundus normal; antidiabetic treatment was directed, and rigidly adhered to for two months, when the quantity of sugar in the urine diminished, and with it a general improvement in the patient's physical and mental condition. The eyes, tested again at this time, showed R. V.=$\frac{20}{50}$, L. V.=$\frac{20}{40}$. The patient, becoming tired of the prescribed method of diet and treatment, went back to the former ways of living, and four months later the vision was as when first examined. Shortly after this the patient went to a distant Western town, and I have not since learned of the result.

Case XI.—Male, aged fifty-three. First seen by me at Burlington, Vt., in May, 1886. Previous to April, 1885, his health had been very good, but about that time he was affected with a great thirst, passed large quantities of urine, and gradually lost strength and flesh. When first seen by me he had large quantities of sugar in the urine, which had a specific gravity of 1·035. Failure of vision rapidly supervened, and, when examined, cataract of a bluish-white luster was observed in each eye, though more marked in the right. The fundus was normal. R. V.=$\frac{20}{100}$, L. V.=$\frac{20}{70}$. Constitutional treatment was prescribed and the patient advised to report in a few months. The patient, however, did not report, and after a lapse of eight months I learned, by inquiry, that the patient had died of exhaustion on December 14, 1886, the vision being so that he had only perception of light.

Case XII.—Male, aged sixty one, merchant, seen in my private practice, April 18, 1885, with the history of failing vision for the past four months, associated with increase in the quantity of urine passed, containing much sugar. Specific gravity 1·040. No gout or rheumatism, or anything of importance in the family history. Examination of the eyes revealed in R. E. incipient cataract, with striæ in many places, having the usual appearance of senile cataract; in the L. E. the lens looked more like the soft variety, and was more opalescent. The fundus was normal—R. V.=$\frac{20}{70}$, L. V.=$\frac{20}{50}$. This patient was placed on a careful diet, and iodide of potassium prescribed. This method of treatment was kept up for seven months faithfully, and with the result of improving very much the general condition, and with some effect on the opacities in the lenses. One year after the first examination the vision was, R.=$\frac{20}{100}$, L.=$\frac{20}{70}$.

The patient died of diabetic coma three years after the first appearance of the general disease without an operation for the cataract.

Besides these four cases seen by me, I know of one in the practice of Dr. E. G. Loring where he extracted a cataract in a diabetic subject with very excellent results and without any reaction; also of one case in the practice of Dr. Thomas R. Pooley.

We are to make a distinction between cataract occurring in diabetic subjects from ordinary senile changes and those coming from the loss of nutrition produced by the disturbance of the glycogenic function. For we may, I think, extract with freedom those lenses occurring in old people having sugar in the urine, whereas in the young diabetic we may have serious inflammation and necrosis of the cornea following the operations for the removal of the cataract. I should not hesitate to operate upon any case of cataract in a diabetic after a few weeks' treatment of the general disease by proper remedies, and think that the poor results previously reported were due to the infection of the parts, the lowered vitality having less power to resist the germs, and that if proper antiseptics had been employed better results would have been obtained.

The spontaneous disappearance of cataract as above mentioned gives us a point in the treatment to by all means try and diminish the quantity of urine voided, and especially to look for syphilis as a cause of the diabetes, and when it is found, iodide of potassium will be found to have most excellent effects. The use of Carlsbad waters is said to have caused diabetic cataract to disappear or to greatly diminish the opacity.

*Diabetic Retinitis.*—We next come to the deep-seated affections of the eye, in which the long-continued derangement of the glycogenic function causes changes in the vascular system generally, and when hæmorrhages are prone to occur in any part of the body, as the brain, retina, or spleen. According to Artigalas (30), whatever the symptoms associated with retinal hæmorrhages, it is always dependent upon the fibrous degeneration of the arteries, and that if the

degenerative process continues, cerebral hæmorrhage is very apt to follow.

Mauthner in 1868, in his work on ophthalmoscopy, says: Eduard Jaeger (28) found retinitis in a person with diabetes mellitus; others have since then declared it possible (Nagel, Virchow), and by Martin and Galezowski it is positively asserted. Jaeger's case was that of a male, aged twenty-two. No record is given of the quantity of the urine, or sugar in it. Bouchut (29), Desmarres, Martin, and others report similar cases, and seem to be unable to distinguish it from albuminuric retinitis.

Noyes, at the American Ophthalmological Society in 1868, reports the case of a woman, aged sixty, diabetic for several years, and who in the previous year had double iritis, resulting in posterior synechia. When seen by the reporter, R. V. = $\frac{20}{40}$, L. = $\frac{20}{60}$. In the retina of each were found specks like fatty degeneration, with a few hæmorrhages. In the right eye the vitreous was noticed to be hazy. He says the appearances are absolutely identical with what he has often seen in cases of chronic renal disease, and the case was at first so considered. Minute and careful records of the urine passed and tested were kept, and sugar only without albumin discovered. In concluding the history of the case he says: "Pure glycosuria is capable of causing retinitis, and that the ophthalmoscopic appearances can not be distinguished from those which belong to albuminuric retinitis."

I am of the opinion that retinitis occurring in diabetes before the kidneys are diseased can be diagnosticated as such, and that it has distinctive characters. That, however, when the kidneys are diseased, as so frequently happens in the latter part of diabetes, we get a mixed form of retinitis, which is indeed difficult to determine from the ophthalmoscopic picture. Lagrange (32) gives the following points in differentiation between retinitis from Bright's disease and diabetes:

| *Diabetic Retinitis.* | *Albuminuric Retinitis.* |
|---|---|
| 1. Tendency to marked atrophy of the optic nerve. | 1. Less marked, and the nerve not becoming entirely atrophic. |
| 2. Hæmorrhages multiple, disseminate, and alone. | 2. Hæmorrhages equally multiple, but mostly in posterior part of fundus. |
| 3. Extensive alterations of fundus throughout. | 3. Mostly in the macula lutea and optic nerve. |
| 4. Hæmorrhages not continuing throughout. | 4. Remaining throughout. |
| 5. Exudations small in amount and scattered. | 5. Exudations white, fatty in character, with much infiltration of retina and nerve. |
| 6. Changes frequently. | 6. Remains a long time the same. |

One symptom is, however, more characteristic—namely, hæmorrhages into the vitreous are common in diabetic retinitis, and not so in retinitis from kidney lesions. This is to me an important point in diagnosis, and is a clinical fact which has been noticed by several observers. Why they should occur in this affection and not in Bright's disease is probably due to the more marked changes in the vascular system in diabetes.

As regards the frequency of the retinal affection, Badal, in 52 diabetic affections of the eye, found retinitis 17 times, and in our 21 diabetic affections of the eye, 5 retinitis with hæmorrhages, or some over one fourth of the cases.

In the eye infirmaries of this country for the past ten years I find no recorded cases of the disease. That it does occur is certain, but the diagnosis is not made.

Case XIII.—Male, aged forty-three, clerk, first seen by me on March 18, 1883, when the following history was obtained: For two years past has had a desire for sweet things to eat, and has voided much urine; emaciation has occurred, and great muscular weakness. Ten days before first noticed a failure of vision in the R. E., which for twenty-four hours increased, then remained as at the time of examination, when vision in R. E.=$\frac{20}{70}$, L. E.=$\frac{20}{20}$; no refractive error. Ophthalmoscope showed hæmorrhages into the vitreous and into the retina, the optic nerve was not swollen, and there was no infiltration of the retina. The hæmorrhages were minute and scattered over all parts of the fundus.

*25th.*—R. E.=$\frac{20}{100}$; more retinal hæmorrhages and some signs of exudation in its tissue. Examination of the urine at this time showed sugar in the urine, seven pints being voided daily, and with a specific gravity of 1·038, and seventeen grains of sugar to the ounce. Bromide of arsenic and a careful diet prescribed, and this treatment rigorously adhered to.

April 25th, one month later, R. V.=$\frac{20}{30}$, and the ophthalmoscopic picture found to be changed. Vitreous hæmorrhages absorbed, and only a few opacities now remaining. Retinal hæmorrhages absorbing, and in some places entirely absent, a slight staining showing the site of the former extravasation. Urine and sugar diminished in quantity, voiding now only three pints daily, and only a trace of sugar.

This treatment continued for another month with good result as to the quantity of urine and sugar voided, but with no further improvement in the vision.

The patient left the city for the sea-side, and after bathing in the surf contracted pneumonia, and died, September 18, 1883, of catarrhal phthisis. The vision remained the same as at last reported, so I learned from the family.

Case XIV.—Male, aged thirty-nine, residing in Jamaica, L. I., sent to me, May 2, 1884, with the history of gradual emaciation and loss of muscular weakness for the past year, and sudden loss of vision in both eyes one week before. Examination revealed V.=$\frac{20}{70}$ in each eye. No improvement by glasses; can not read the largest test-letters of Jaeger's.

Ophthalmoscope shows hæmorrhages into each vitreous, which are fresh and abundant, and in the retina, scattered throughout, are fine punctate extravasations in the macular region and also distant from it; optic nerve hyperæmic but not infiltrated; no exudations into the substance of the retina; the blood-vessels are about normal in appearance. No albumin or casts found in the urine, although many examinations were made. Sugar by the fermentation test was present; the specific gravity was 1·034, and the quantity eight pints daily. The cause of the diabetes in this case was supposed to be due to an injury received in falling from an ice-boat the previous winter, as the health began to decline from this out. The field of vision for sight and color appeared to be normal. Bromide of arsenic, diet, and rest were ordered, and followed for six weeks, when it was found that no improvement had taken place either in

the general condition or the eyes, the latter being the same as regards vision; the interior, however, showed some differen arrangement of hæmorrhages.

Iodide of potassium was prescribed, and three weeks later specific gravity was 1·028, sugar less, and the quantity of urine also; no albumin. R. E. = $\frac{2}{3}\frac{0}{0}$, L. E. = $\frac{2}{3}\frac{0}{0}$ (as before). Vitreous and retinal hæmorrhages absorbing, and less hyperæmia of optic nerve. This treatment was continued until August, when the patient went to California, where he died, December, 1885, as I learn, from exhaustion, the eyes remaining always bad, but so that he could read large type.

Case XV.—Female, aged forty-three, seen by me while in the office of Dr. E. G. Loring. In the summer of 1885 the patient, while in the Catskills, noticed failure of sight in one eye, her attention being called to it by the annoyance of seeing objects floating in front of the eye. This gradually increased until she sought advice.

On examination, it was found that vision in R. E. = $\frac{2}{7}\frac{0}{0}$ (+), the other being normal. Ophthalmoscope revealed numerous hæmorrhages into the vitreous and also in the retina, some infiltration of the retina, and only a few exudations. The optic nerve slightly congested, the retinal hæmorrhages were scattered throughout the fundus. The appearance of the retinal picture, together with the vitreous hæmorrhage, led me to ask in reference to the quantity of urine voided, when it was brought out that the quantity was in excess, although the patient, an intelligent woman, had not given it much concern. She had also a great desire for sweetmeats. Examination of the urine revealed sugar in large quantity and no albumin. Under treatment by two different physicians, who regulated the diet, she improved, and the retinal appearance changed the vision in power to $\frac{2}{4}\frac{0}{0}$. The restricted diet prescribed being irksome, the patient relinquished it, and, on returning to ordinary diet, the diabetic symptoms reasserted themselves, the eye symptoms again becoming worse by the recurrence of fresh hæmorrhages. The patient is still living and under the care of Dr. Loring, to whom I am indebted for the use of his notes.

Case XVI.—Female, aged sixty-three, first seen by me at the Post-graduate Hospital, December, 1886. Patient a hard-working woman, coming for defective vision in each eye, R. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$, L. = $\frac{2}{2}\frac{0}{0}\frac{0}{0}$. Ophthalmoscopic examination showed well-marked hæmorrhages into each vitreous and each retina. Those in the vitreous were large and those in the retina small and scattered throughout the whole fundus, and not, as in retinitis albuminurica, in the macular region. This patient was not emaciated, and the only symptom complained of beside the dimness of vision was a strange sensation in the region of the heart. She was referred to Dr. W. H. Porter, who found albumin in the urine and a sound over the heart, which he thought to be due to an opening in the aortic valve, congenital, and not as the result of disease. Later, sugar was discovered in the urine and the albumin disappeared. She was put on the iodide of potassium treatment and she gradually improved, the sugar remaining in the urine but greatly diminished in quantity. The vision improved so that she could go to and from the hospital, where at first she had to be led. When seen by me, January, 1887, R. = $\frac{2}{5}\frac{0}{0}$, L. = $\frac{2}{3}\frac{0}{0}$, and she could read Jaeger No. 4 with correcting-glasses. The ophthalmoscope showed optic nerve of the right eye pale on the outer half, and in numerous points on the retina stainings showing the former position of the hæmorrhages. The vitreous and lens were both clear. Visual field not contracted nor any change in that for color.

The patient is still under the care of Dr. Porter for the general disease. He considers that the diabetes was the cause of the albumin in the urine when first seen, and that its disappearance is due to the less work the kidneys have to do owing to the diminished quantity of urine voided.

Case XVII.—Male, aged fifty-two, clerk, seen first October 9, 1885, when he complained of failure of vision for three weeks past, more rapidly during the past two days. Has not been in good health for one year, being weak and irritable; has lost twelve pounds in weight in as many months. Passed eight pints of urine daily and has great thirst. R. E. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$, L. = $\frac{2}{2}\frac{0}{0}$. Ophthalmoscope shows vitreous and retinal hæmorrhages, more abundant in the former, and small and punctate in the retina and scattered in all parts.

Optic nerve has red look and outline somewhat indistinct.

No exudations into the retina save one or two points near one vessel near the macular region.

Examination of the urine revealed large quantity of sugar; no albumin or casts. Specific gravity, 1·039, and ten grains of sugar to the ounce. Diet, iodide of potassium, and Windsor water were prescribed, and the patient carefully adhered to it for two months, when the R. V. = $\frac{2}{5}\frac{0}{0}$, and decrease and absorption of the intra-ocular hæmorrhages to a considerable degree, though some remained in the vitreous and retina. The restricted diet becoming unbearable, he returned to ordinary fare, and with it an increase in all the diabetic symptoms; and again failure of vision in each eye, R. = $\frac{2}{1}\frac{0}{0}\frac{0}{0}$ and L. = $\frac{2}{1}\frac{0}{0}$, thus for the first time showing vitreous and retinal hæmorrhages. While under the careful treatment the sugar and urine decreased, and he had to only follow the injunction laid down in the "Code of Health of the School of Salernum" (1), which says:

"At least six times in every fleeting day
Some tribute to the renal function pay."

This patient passed from under my observation, having returned to Ireland, and I have not been able to learn of the final issue of the case.

It will be noticed that in all these five cases reported by me vitreous hæmorrhages were present, and I consider this of much importance in arriving at the diagnosis of glycosuric retinitis from the ocular symptoms alone. I have endeavored to ascertain how frequently this affection occurs in private practice, and have asked many of my friends, and have found, as a rule, that it is exceedingly rare, or if seen it is not so recognized, but rather attributed to some other cause. Dr. Pooley has furnished me with the notes of two cases taken from his private case-book. I would urge the more careful system of indexing diseases in private practice, so that when statistics are wanted they can be had access to and thus much labor saved the compiler.

*Amblyopia in Diabetes.*—There can be no doubt, in the light of our present knowledge, that diabetes produces amblyopia, which is central, and in which the visual field is not interfered with, but in which there is usually a central scotoma for red and green, and occasionally for blue; that the defect improves with diminution of, and increases with the quantity of, sugar in the urine; that it comes on rather suddenly, and increases, then varying according to the diabetic condition; that it rarely produces blindness, but may result in partial atrophy of the optic nerves. This class of cases may very easily be mistaken for the amblyopia ex abusu, unless care is taken to examine the urine for sugar, as the symptoms are much the same, and, as most men smoke, it is very easy to conclude that that is the cause of the amblyopia. Galezowski was probably the first to point

out this resemblance, and, according to him, the diagnosis is very difficult without examination of the urine. The most important distinction drawn by him is that amblyopia ex abusu usually occurs in both eyes; that in diabetic amblyopia one eye may escape. This has not been our experience; from the cases observed by me all have been affected in each eye; this has been also the experience of Mr. Nettleship. It is my firm conviction that the amblyopia occurring in *smokers* having diabetes is due to the loss of nutrition produced by that disease, and not to the effect of tobacco on the system.

Since the invention of the ophthalmoscope much has been written on amblyopia in diabetes, without cataract, and without retinal hæmorrhages or other visible lesions. And it is this particular form of ocular affection that is extremely interesting. A very careful exposition of this subject is presented by Mr. Nettleship and Dr. Walter Edmunds, of London, in the "Transactions of the Ophthalmological Society of the United Kingdom" (4), 1882, and from this we have made frequent use:

In 1858 Desmarres (5) records the case of a woman, emaciated by diabetes, passing much sugar, with the sight so bad that she could no longer read. Also, a male, aged twenty-five, passing large quantity of sugar, with vision so bad that he can neither read nor write. After seven months' treatment, health improving; the vision was so much better that No. 8 Jaeger, with glasses, could be read.

Begbie, 1861, writing in the "Edinburgh Medical Journal," says he was familiar with a form of "diabetic amaurosis," coming on earlier than cataract, advancing gradually, and remaining permanent. He cites no cases.

The same year Lecorché, in an elaborate paper on "Diabetic Amblyopia," says the cause will probably be found to be a partial or general atrophy of the optic nerve, occurring independently of changes in any part of the brain. The suggestion that some cases of diabetic amblyopia were due to cerebral cause had been previously made by von Graefe (7), who had reported several cases of various forms of eye disease in diabetes.

Seegen, 1870, reports a case of a male, aged thirty-eight; amblyopia, with no ophthalmoscopic changes; vision improved under treatment.

Another author (9) reports the case of a male, aged forty-two; one eye nearly blind from old injury, with diabetic symptoms for six months; passing daily one pound of sugar; vision in the only eye failing for a month before coming under observation. The ophthalmoscope revealed disc somewhat pale, but no other changes. Vision and refraction not stated.

Leber (10) reports three cases, one of which, probably, does not belong to this class, but the other two may be considered.

Male, aged forty-three, passing sugar, but no albumin; amblyopia of R. E., V. $= \frac{1}{3}$; field normal for vision and colors. L. E., high amblyopia; shadows at center of field, and fingers at five feet in outer part; inner half of field absent almost. Final recovery with both, on improvement in the general symptoms. Four years later the vision is reported as being good. A scotoma for white and colors at the central and outer central part of the field was left. No ophthalmoscopic changes.

Male, aged fifty, double equal amblyopia, with central scotoma for colors, but no contraction of the visual field; V. $= \frac{2}{7}\frac{0}{0}$. No ophthalmoscopic changes. He was treated as a case of amblyopia ex abusu, and vision improved to $\frac{2}{8}\frac{0}{0}$, each eye. Two months later, R. E. again became bad; V. $= \frac{2}{2}\frac{0}{0}\frac{0}{0}$; scotoma still present in both. Urine now examined, and found to contain sugar. Under treatment for the diabetes the vision improved.

Forster (11), female, aged sixty-two, having diabetes, in whom the discs became pale, and subsequently showed signs of atrophy. The field in this case was normal.

Galezowski (12), in 1878–'79, reports the case of an officer in the French army, aged forty-eight, passing one hundred and fifty grains of sugar daily. No contraction of the visual field, but vision so imperfect that he could not discern faces at nine feet. No ophthalmoscopic changes. With diminution of sugar, some improvement in the amblyopia. Albumin, later, was found in the urine. He also reports the case of clergyman, aged forty-four, V. $= \frac{1}{6}$; nomal color perception; visual field normal; no ophthalmoscopic changes; much sugar in urine.

Eales (13), of Birmingham, England, reports a case of a diabetic with amblyopia, male, aged fifty, without ophthalmoscopic changes, having a scotoma for red, green, *and blue*. This patient died shortly after being seen.

Bresgen (13), in 1881, reports the case of a male, aged twenty-four, diabetic, with symmetrical amblyopia, V. $= \frac{2}{2}\frac{0}{0}\frac{0}{0}$, with central scotoma for red and green, and with no contraction of the visual field or ophthalmoscopic changes. With an increase in the quantity of sugar voided the amblyopia increased to $\frac{2}{2}\frac{0}{0}\frac{0}{0}$, and the color scotoma increased also in size.

Mr. Lang, Mr. Nettleship (4), Dr. S. Edmunds, and Dr. Lanford, of London, have reported similar cases. Nettleship has reported the case of a female diabetic suffering from amblyopia. In this case there was no question of smoking.

I have myself seen four cases having central amblyopia, all having each eye affected; two were males and two were females; all had perfect visual fields, and all scotomata for red and green; the men smoked moderately, and the women not.

The accompanying fields of vision are shown, giving the scotoma area, the blind spot, and the visual field.

The histories of these cases are as follows:

Case XVIII.—W. A. S., male, aged thirty-nine, sent to me by Dr. Galer, of Newtown, N. Y., in 1880; the patient had been suffering from diabetes for two years, and most of that time passing sugar. One month before his visit to me he first noticed trouble in his eyesight; this gradually increased until such time that he could not see to read. When first seen he had R. V. $= \frac{2}{2}\frac{0}{0}\frac{0}{0}$, L. V. $= \frac{2}{5}\frac{0}{0}$. No ophthalmoscopic changes. On testing the visual field, it was found to be normal; the color field showed a scotoma for red and green, as shown in the figure marked No. 1. At this time the patient was passing fifteen

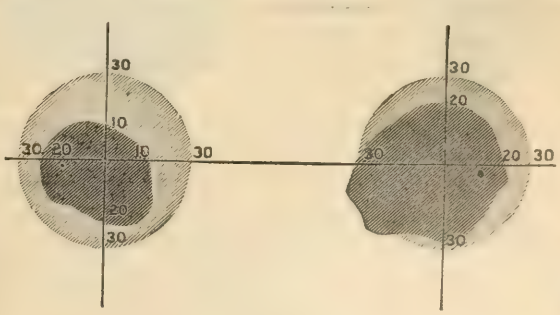



Fig. 1.

grains of sugar to the ounce of urine. The media were clear, and the eyes looked perfectly normal. Three weeks after the first examination the R. V. $= \frac{2}{2}\frac{0}{0}\frac{0}{0}$, as before, and the L. V. $= \frac{2}{7}\frac{0}{0}$. A more rigorous treatment was adopted, the sugar diminished

in quantity, and the amblyopia improved, but there was no change in the scotoma. The patient died one year later in diabetic coma. No autopsy.

Case XIX.—Female, aged forty-nine, married. Mother of three children. Sent to me by Dr. Fassit, of St. Albans, Vt., with the history of having had diabetes for the previous six months. One week before coming under my observation she noticed failure of vision, which came on suddenly, and so much so as to give her much alarm. She was at this time passing 150 ounces of urine daily, with much sugar. Vision, each eye, equal to $\frac{20}{200}$, no limitation of the visual field, but central scotoma for red and green, as seen in Fig. 2. No change in the fundus was noticed save, perhaps, a slight pale color to temporal half of the disc. The vision in this case never became worse and did not improve. The patient died two years and seven days after, from exhaustion. No autopsy.

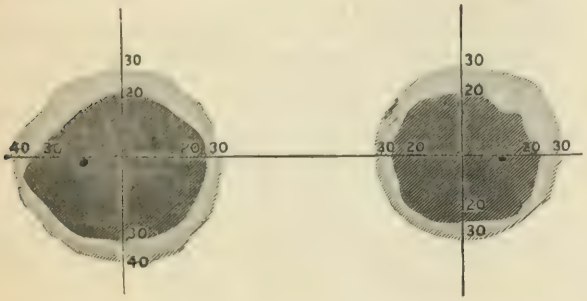



Fig. 2.

Case XX.—Male, aged forty-eight, seen by me at the Post-graduate Medical School Clinic, December 3, 1887, with the history of failing vision for the three months preceding. Examination of eyes revealed V.=$\frac{20}{70}$ each; no ophthalmoscopic change; visual fields intact, but color scotoma for red and green was found in the central part of the visual field. (See Fig. 3.) This patient was voiding nine pints of urine daily, with large quantities of sugar. The patient was treated by the administration of iodide of potassium; the sugar was diminished, yet the amblyopia continued as before. The patient died eight months later, from asthenia. The eyes were examined repeatedly, but no ophthalmoscopic change could be discerned.

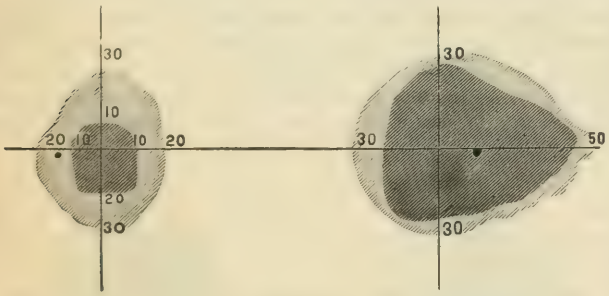



Fig. 3.

Case XXI.—Female, aged fifty-one, widow, first noticed an increase in her urine in 1882, in the early part of the year, after having received a severe fall on the back; eight months after this she noticed a failure of vision in the R. E. and then in the L. E.; it finally became so bad that she could not read. When seen by me at my office, in December, 1882, she had V.=$\frac{20}{50}$ each, not improved by glasses, and with normal pupils and no ophthalmoscopic change except, perhaps, a slight dirty look to the optic disc. No albumin in urine, but sugar in abundance. The visual fields, as usual, were normal, and green scotoma centrally placed; red was with great difficulty and inaccurately seen. Six months later the patient was examined again, and vision of each eye equal to $\frac{20}{200}$, and scotoma for red and green still present in the L. E.; ring scotoma. (See Fig. 4.) Sugar in urine more than before. Patient died December 3, 1883, of gangrene of the right foot. No autopsy.

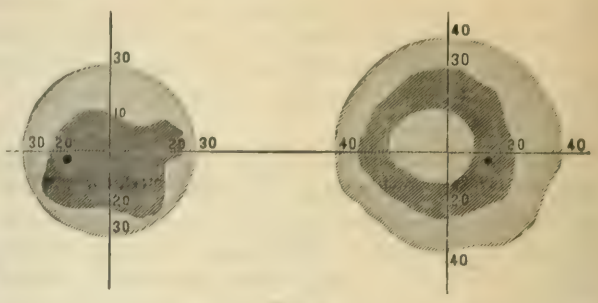



Fig. 4.

In each of these cases I regret that an autopsy was impossible, for it would have been interesting to make an examination of the optic nerves in these cases. Dr. Walter Edmunds and Dr. J. B. Lawford, of London, made such an examination in the case of a patient aged twenty-nine. The optic nerve showed marked changes throughout the whole length of the orbital part of the nerve; in the diseased area was found thickening of the trabeculæ and of the walls of the nutrient vessels; the fibers in the nerves seem to have been destroyed, and to be replaced by an irregularly granular structure, in which there is a large number of staining nuclei.

Mr. Nettleship reports, also, the post-mortem appearances of the optic nerve in a similar case:

Microscopical examination of the optic nerve showed changes in the orbital portion of the nerve; the portion posterior to the optic foramen was not examined. Longitudinal sections were made of the nerve, and transverse sections at various points. The longitudinal sections showed no changes anterior to the lamina cribrosa. Posterior to the lamina, on one side of the nerve, was a tract with well-marked pathological changes, atrophic nerve-fibers, increase of nuclei, thickening of the connective tissue, trabeculæ, and of the walls of the small vessels. The thickening of the walls of the vessels was most marked in front of the point of entrance of the central artery of the retina. On a transverse section the atrophic patch appeared wedge-shaped; and from the relation of this diseased part to the central artery, at its entrance, it was certain that the change was chiefly in the temporal half of the nerve.

In Samelsohn's case both optic nerves were examined and symmetrical changes were found.

Deutschmann (15) also reports similar appearances microscopically. These post-mortem examinations would lead us to conclude that we have a subacute retro-bulbar neuritis and a subsequent atrophy of the optic nerve-fibers. That the cause of this neuritis is the poison in the blood produced by the derangement of the glycogenic functions. That not only the optic nerves are affected, but also the sciatic and others throughout the system.

Sachs (18), in an elaborate paper on central scotoma, finds the same appearances as above described, and as shown in the accompanying diagram (Fig. 5).

From this clinical picture of the affections of the eye occurring in diabetes it will be seen how varied and how numerous are the ways the poison of the disease shows itself in the same organ, and how we may, from the eye symptoms alone, make a diagnosis of unsuspected diabetes.



Fig. 5.—Transverse section of the optic nerve, showing wedge-shaped atrophic spot to the outer side of the nerve (after Sachs). — "Archiv f. Augenheil.," Bd. xviii.

In conclusion, the following practical points may be summarized.

1. In view of the recorded facts, shall we not urge the examination of the urine for sugar in every obscure ocular affection?

2. Cataract occurring in a diabetic may be extracted without danger if the patient is previously treated for the general disease.

3. Retinitis occurring in diabetes is usually associated with vitreous hæmorrhages, and that this is a point in favor of the disease rather than retinitis from kidney affection.

4. Diabetic amblyopia is usually associated with central color scotoma for red and green, with visual fields intact, and does occur independent of amblyopia from tobacco and alcohol, as shown by our cases. And, further, diabetes can be diagnosticated by amblyopia when no diabetic symptoms exist.

5. All the diabetic affections of the eye are the result of poor nutrition produced by the disturbance of the glycogenic function, and that the more marked the disturbance, the more profound and more deep-seated the ocular affection.

6. The changes occurring in the eye are also taking place in other tissues of the body at the same time.

"To man's short reach of mind and scanty powers,
How much is dubious in the things he sees,
How much eludes his sight!"

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# LEPROSY IN THE UNITED STATES, AND ITS RELATION TO THE STATE.

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(*Concluded from page 323.*)

Danielsen and Boeck, after forty years' experience in Norway, did not believe in contagion. By the report of the East Indian medical officers published in 1867 it is not considered contagious.

The Royal College of Physicians, in order to obtain the best information on this subject, in 1867 sent inquiries to physicians throughout the world whose practice had brought them in contact with the disease, and whose opinions would, therefore, be of value. Thirteen of these had no doubt of its contagiousness, and thirty-four entertained no doubt of its non-contagiousness. Twelve regarded leprosy and syphilis as being intimately related; twenty-one believed there was no relation. Most of those to whom the inquiries were sent regarded leprosy as hereditary, and also thought that it might originate spontaneously under suitable conditions.

The committee reported in favor of non-contagion.

The questions of the relationship to syphilis and the possibility of the disease arising spontaneously I can not regard as worthy of discussing at the present time. Dr. Fitch alone in this country, so far as I can learn, maintains the identity of lepra and syphilis, but I can find no tenable ground for such a belief.

As to cases arising spontaneously, I should as much expect to find men in this audience who would maintain that an oak tree which might spring up in one of our city parks where none was ever known to grow before did not have its origin in an acorn and did not have a parent oak somewhere, because they could not trace its origin. Just as the acorn may lie for years in the soil, so I believe the bacilli lepræ may be hidden in the system for many years before the symptoms appear.

There are facts and circumstances which point to contagion as the cause of the spread of lepra. Some of the circumstances are the following:

The analogy existing between its method of spread and that of known contagious diseases.

Emigration appears to have spread it from Egypt and Syria through Persia, and from the East into the West. It has always followed in the tracks of human travel. Its appearance in the Western Hemisphere may be accounted for in the same way.

The ancient and strong popular belief in the contagious nature of the disease, extending at least as far back as biblical times, when lepers were considered unclean and separated from the clean.

The discovery of the *Bacillus lepræ* by Hansen in 1869, which has been abundantly confirmed, and which is found in leprous tissue the world over.

The analogy which exists between the neoplasms of lepra and those of other diseases in which a specific bacillus is found. The new growths in lepra are granulomata, and similar to those found in syphilis, lupus, tuberculosis, etc., supposed to depend upon micro-organisms.

The existence of such instances of suspected infection as those reported by Atkinson, Costales, and one recently by Kaurin, quoted by Leloir and Besnier,* in which a child of healthy parents, who was the favorite of a leprous great-uncle and often slept with him, contracted the disease while all the rest of the children remained well.

That those going to leprous countries there acquire the disease, in spite of the statement made in the report of the Honolulu Board of Health that "there is nothing in the history of the disease to cause the foreigners visiting our shores to be in the slightest degree apprehensive of danger."

In opposition to this statement, I will cite the cases of at least three of our own countrymen (to which I have referred), and the fact that sixteen white foreigners have been confined in the Molokai leper settlement during the past twenty years, four of whom were Americans. It will also be remembered that Dr. Van Harlingen's case, contracted in Brazil, was that of a native of Pennsylvania.

The disappearance of the disease in those localities where segregation is practiced, and its increase in India, Constantinople, and other places where the diseased are not separated.

On no other hypothesis than that of contagion can the decline of leprosy be explained in Norway, the few cases remaining at large serving to transmit the contagion and maintain the diminishing production rate. Hansen says: "More than a single beneficial influence may, indeed, be at work; but predominant *is this exclusive dealing with the individual leper as himself the source of ill to others.*"

Among recent careful investigators who believe in contagion I will mention Dr. Arning, Professor Leloir, Dr. MacNamara, who sees 3,000 cases each year in Bengal, Dr. Besnier, Dr. Brocq and Dr. Vidal in Paris, Dr. Graham, and Surgeon-General Moore, of the Government of Bombay, who says, in answer to questions sent out by Dr. W. F. McNutt, of the California State Board of Health:

"I have every reason to believe the disease to be contagious. I have seen a wife with her two children contract the disease by remaining with her husband after he had the disease, while three other children, who left him because of the disease, remained free."

Dr. H. N. Allen, of Seoul, Corea, who has had a large experience in treating leprosy there, regards it as contagious.

It was declared contagious by the governor of South Australia in 1885.

The Hawaiian Board of Health believes in contagion and treats the disease accordingly. It is considered contagious by Dr. Arning, who spent several years in the study of the disease in Hawaii. Dr. Graham says, in Wood's new "Reference Hand-book": "Either bacilli or spores find their way through some abrasion into the body, and the nodules form from the irritation of specific bacilli."

Several instances are known on the Hawaiian Islands where women, apparently healthy, have married the second and third husband after the first had died of leprosy, and their later partners, after a short time, shared the fate of the first. Dr. William J. Morton, of this city, who has seen something of lepra in Africa, says it is there considered dangerous to marry the widow of a leper. One of the strongest points for contagion in the Hawaiian reports is that found in the Sanitary Committee's report of 1878. They say "contagion is apparently remote and perhaps impossible in some cases. Father Damien is an illustration of this statement. He has been in the settlement a little over five years, and has mingled with and served the lepers under the most revolting circumstances, and yet he is as sound in health as when he first arrived." But wait. And here again, as in many other cases, the mistake has been made of looking for signs of contagion too early. Father Damien went as a missionary priest to the leper settlement of Molokai in 1873. In August, 1885 (seven years after the report referred to), outward signs of tubercular leprosy appeared, placing beyond all doubt the nature of the symptoms which the self-sacrificing priest had experienced for two years. He himself had always regarded the disease as contagious.

The following is cut from the London "Tablet" last year some time:

"We regret to hear that the Apostle of the Lepers of Molokai is beginning to pay the penalty of his heroism. Shut away from all civilized and healthy humanity, Father Damien has for years been a willing prisoner in the island, in which are collected and confined the lepers of all the neighboring Sandwich group. For a long time, though cut off from the outward world, Father Damien continued in good health, though alone among the dead. But the stroke has fallen at last. In a letter written recently he says: 'Impossible for me to go any more to Honolulu, on account of the leprosy breaking out on me. The microbes have finally settled themselves in my left leg and my ear, and one eyebrow begins to fall. I expect to have my face soon disfigured. Having no doubt myself of the true character of my disease, I feel calm, resigned, and happier among my people. Almighty God knows what is best for my sanctification, and with that conviction I say daily a good *Fiat voluntas tua.*' Where is the heroism which will vie with this?"

It was long ago thought that, to prove contagion, the disease should be capable of reproduction by inoculation

* "Bulletin de l'acad. de méd.," Oct. 11, 1887.

and experiments upon animals have been carried out by various observers. Up to the present time inoculation experiments in animals have not succeeded, though Melcher, Ortmann, Campana, and others have alleged positive results. Nor should we expect them to succeed in view of the known long incubation period of the disease, and especially in the face of inoculation experiments which have been carried out to a negative issue in the human being by Professor Profeta,* of Palermo, Sicily. This observer, a firm believer in the hereditary nature of lepra, by the way, began inoculation experiments twenty years ago. He has inoculated ten persons, including himself and Dr. Cagnina, and, although the blood and pus of ulcers has been introduced into scarified wounds, placed upon surfaces denuded by blistering, and the blood from the center of leprous tubercles has been injected beneath the skin, the results have always been negative.

Praiseworthy as these experiments are, they have not, to my mind, proved much of anything.

The blood has been shown to contain the bacilli only to a very slight degree; only acting for them as a medium of transport. It does not appear that leprous tissue containing an abundance of bacilli was employed.

The experiments show, if anything, that these particular individuals were not susceptible, and bear out in a way Vidal's belief that the danger from inoculation is slight, excepting in broken-down subjects.

To test inoculation, Dr. Arning obtained permission of the Hawaiian Government to experiment upon a condemned convict, whose death sentence was consequently commuted to penal servitude for life. Dr. Arning began his inoculation experiments on the last day of September, 1884, after eliminating any leprous taint or history, by inoculating the convict and arranging that he should not be employed outside. The microscope revealed the presence of bacilli lepræ in large numbers at the inoculated spot up to the middle of March, 1885. They have gradually diminished in number, but an excision of a small portion of the scar showed them still present at the date of the report, fourteen months after inoculation. There was nothing at this time in the convict's appearance to denote any development of lepra. Dr. Arning did not consider his experiment concluded or mature for scientific publication, nor has sufficient time yet elapsed, it seems to me, to put it down as unsuccessful.

In view of the hitherto apparent impossibility of transmitting the disease to human beings by inoculation experiments, it seems hardly credible that they should have succeeded in animals, and, indeed, in the "Münchener med. Wochenschrift," Nos. 16–18, 1887, Dr. Wesener reports a series of experiments made by himself, and, after a careful review of those made by other observers, says: "All attempts up to the present time to transmit lepra to rabbits have shown that the lepra bacillus does not produce in them either a local or a general leprous disease." From the lesions produced, the author regards these cases rather as tuberculosis.

The microscope has shown the bacilli to be more numerous in early and recent lesions, and it seems to me not improbable that the disease may be more readily transmissible in the early stages of the disease, even possibly before outward lesions appear, and that it may not be so dangerous to others in the stage at which it most frequently comes under observation and contagion is looked for, in this respect bearing a close analogy to syphilis, with its loss of infective power in the late stages. Were this true of lepra, it would explain the unsuccessful inoculation experiments.

In favor of this theory we find many instances of women, apparently healthy, who transmit the disease, and only subsequently show the first signs of it themselves.

In a paper on the contagiousness of molluscum contagiosum* I have already expressed the view that, in these questions, too much weight should not be given to negative evidence, as it is not always possible to artificially inoculate diseases which are well known to be contagious. The environment must be such as is required for the development of the disease. I have seen futile attempts to inoculate favus, tinea versicolor, and molluscum, and have never seen a positive result; still, I can conceive of the possibility of bringing the system of a person into such a condition that these diseases could be reproduced.

While intentional inoculations have, for one reason or another, failed, there appear to be well-authenticated instances of its being accidentally accomplished. Dr. Saxe, president of the California State Medical Society, in a visit to the Sandwich Islands, learned of a case of leprosy in the son of a physician, which was attributed to his sticking his leg with a pin which a leper boy had been sticking into his own skin. In the "Supplementary Report on Leprosy," California State Medical Society, 1887, Dr. Saxe relates the further case of a German, Johann Gaisen, at the Molokai settlement, who was bitten by a leper, who has since died at the settlement. The disease appeared in Gaisen seven years after the bite. This patient has three children; one, aged seven, shows signs of leprosy.

H. Charles Tries, another German, is married to a native leprous woman, who was formerly the wife of a native who abandoned her and went to Salt Lake, Utah, where he was at last accounts a leper. (Another case in this country.) Tries is sure he caught it from his wife.

Dr. Taché,† visiting physician to the lazaretto at Tracadie, reports a case of leprosy developed in a healthy young man after the discharge of a leprous ulcer had come into contact with his shoulder, the skin of which had been abraded by carrying the coffin containing the body of a deceased leper. The first manifestation occurred some three years after the exposure. "Though this patient's genealogy was traced for several generations back, there had never been any leprosy in his family. His sister developed the disease a few years after."

Dr. Mouritz (Hawaiian Reports) says: "A man tells me that, after direct contact with a female, he became aware of a small sore. This not healing, he applied to a

* "Giorn. intern. delle sc. med.," 1884, fasc. 4; "Annal. de derm. et de syph.," January, 1886.

* "Journal of Cutaneous and Venereal Diseases," August, 1886.

† "Canada Lancet," January, 1886.

physician, and was treated for syphilis. Later on spots appeared on his body, and his eyebrows began to diminish, and he learned from a third physician that he had leprosy, the female at the time not manifesting outward signs of leprosy, but afterward has done so. . . . Such cases are well known to many laymen and professional men as correct, and have laid a well-founded base on which to establish leprosy as an inoculable disease."

Leloir* has pointed out that lepra would appear to be contracted by inoculation and not by contact, from the fact that the epidermis does not, as a rule, contain bacilli, and that the epidermo-dermic basal membrane apparently constitutes a barrier to the passage of the micro-organism in either direction.

Its apparent transmission through vaccination seems to be shown by several facts. It is stated in the official Hawaiian reports that just previous to the time leprosy began to take such strides there had been an epidemic of variola, and vaccination was generally enforced. There not being sufficient medical men for the work, unskilled persons did much of it, and careless vaccination from arm to arm was common.

Dr. Suzor, of Mauritius, stated in the "Progrès médical," No. 14, that "in one instance two children of healthy parents became lepers, apparently as the result of having been vaccinated with lymph taken from a child belonging to a leprous family," and he thought the cases furnished conclusive proof of the communicability of the disease by vaccination.

Professor Gairdner, of the University of Glasgow, relates a most instructive and convincing instance of lepra following vaccination ("British Med. Journal," June 11, 1887). Six or seven years ago a boy of Scotch parentage was sent to him by a doctor in the tropics. The diagnosis of leprosy was abundantly confirmed. The history was that the doctor in the tropics had vaccinated his own son with virus derived from a native boy who subsequently showed signs of leprosy. Ignorant of the leprosy in the native, the doctor had vaccinated the boy sent to Professor Gairdner from his own son's arm. Finding, after some years, that leprosy had appeared in this patient, he sent him to Scotland. The doctor having died, his son was also sent to Scotland and placed at a school. He was examined by Professor Gairdner, Dr. Lieving, and Dr. Anderson, and a report was made to the boy's guardian that it was undoubtedly a case of lepra, but of a mild type.

In the mean time Professor Gairdner's first patient died of the disease.

In confirmation of the possibility of transferring lepra through vaccination, Dr. Arning has found bacilli lepræ in abundance both in the lymph and crusts of a case of tubercular leprosy vaccinated for the purpose of examination. Respecting the indiscriminate vaccination which has been carried on in the Hawaiian Islands he says: "There have, if my information be correct, unquestionably new centers of leprosy developed after vaccination was practiced."

The local epidemics are most instructive as regards the question of contagion.

In the outbreak in Louisiana in 1866, recorded in Dr. White's* article, already referred to, the second, third, and fourth cases observed were in sons of the women first afflicted. This surely pointed to heredity, but the fifth case was that of a nephew, and, most important, the sixth was that of the nurse who had been in constant attendance upon the first patient, and had often slept in the same bed with her.

Let us look at the epidemic of Cape Breton for the lesson it teaches.†

Betty MacCarthy was taken sick in 1852. She had five children: No. 1 died of lepra after 20 years of the disease; No. 2 after 12 years; No. 3 after 10 years; No. 4 at the age of 21; No. 5 at the age of 20.

Here, again, those who defend the theory of heredity would have a strong case were it not for the fact that No. 5 married and her husband died of lepra after having it for six years. This couple had two children, who both died of lepra.

James Cameron married another daughter, and was reported in 1881 to have the disease. John Brown nursed patient No. 2, and became a leper.

Probably the most convincing instance of direct transmission is that reported by Dr. Benson ("Dublin Jour. of Med. Sciences," June, 1877), cited by Brocq, Vidal, Leloir, Besnier, and others. In 1872 Dr. Benson presented a patient before the Medical Society of Dublin:

> He was an Irishman who had lived for twenty-two years in India, and returned with leprosy. For a year and a half this patient occupied the same bed with a brother, and then he died. In 1877 Dr. Benson presented this brother before the same society, and there was no doubt about his having leprosy. This brother had never been away from Ireland except to go to England many years before. Besides sleeping with his brother, he had worn his clothes.

It is asked why, if lepra is contagious, does it not spread among the patients and attendants in Charity Hospital for instance, or why does it not spread in California from the Chinese?

I can only answer that experience has shown that the danger from a single case in a general hospital is not great, and not nearly so likely to infect others as the individual nurse or attendant in a leper hospital is likely to become infected. About 9½ per cent. of the attendants at Molokai sooner or later get leprosy. And the report for the two years from 1884 to 1886 shows that 52 attendants and friends in the settlement became lepers out of a total census of 943 cases.

Other transmissible diseases treated in general hospitals do not of necessity spread. I have never known an attendant, physician, or patient to contract scabies in Charity Hospital since I have been connected with the institution, although there are always cases in the wards. Why, then, should a disease which we believe to be but mildly contagious spread with any great rapidity?

* Besnier, memoir presented at Academy of Medicine, Paris, October 11, 1887.

* "Am. Jour. of the Med. Sciences," October, 1882.

† Dr. Phedran, "Can. Med. Jour."

On the other hand, how do we know that one of these lepra patients is not responsible for the sporadic cases among natives referred to?

These patients frequently leave the hospital for a longer or shorter time, and go anywhere and everywhere at will.

Were the Chinese lepers allowed to go at large and associate with their fellow-countrymen, we might soon look for the development of new cases, and so soon as the race prejudice against them has disappeared and they associate with the lower classes of whites, a spread to natives may be anticipated.

If the disease is contagious it must, in the light of present science, depend upon a micro-organism. It is not, however, to be put down as necessarily contagious because a bacillus is found.

However, we know that the disease is the same in all parts of the world; we therefore argue that the cause must be the same, and when the same bacillus is found in all leprous tissue the world over, and is found nowhere else, we have, to say the least, strong presumptive evidence that the cause has been found.

Many have believed in the heredity of lepra to the exclusion of contagion. I am not prepared to deny that it may not in some cases be transmitted by heredity just as syphilis may be, and I can see no reason why this should not be so at times. The testicle is usually implicated early in leprosy, and later in the disease sterility is often marked, and the objection to lepers begetting leprous children has been raised by Leloir that the spermatic germ would probably not survive the presence of bacilli.

It is possible that the mother may infect her offspring, though remaining herself apparently free from the disease, as is seen in syphilis—latent syphilis (Law of Colles). It is certain that there is no such thing as congenital leprosy, so far as any manifestations go. The children of lepers usually show the first signs of the disease at the age of about five or seven years, and this would appear to correspond quite accurately with the now well-recognized period of inactivity, or prodromal stage, of the acquired disease.

Against the theory of heredity there are instances in which the children removed early from their parents remain free, while those remaining with them become lepers.

Even among the children born in the leper settlement of Molokai few by comparison show signs of the disease, and in those that do the first manifestations are discovered at about the age of ten.

Dr. Fitch found but two leprous children out of the twenty-six born at Molokai—one aged fourteen, the other nine. He had never seen it develop before the eruption of the permanent teeth.

Leloir believes the disease can be transmitted during conception.

Lutz says heredity is the exception in Brazil.

Even Zambaco has only found direct or indirect heredity in one fortieth of the cases. One thing is certain, and that is that heredity is not the sole cause of propagation, for we find abundant instances of adults, themselves healthy, with no possible hereditary taint, who go into a leprous country and acquire the disease.

I submit that the facts and circumstantial evidence presented are sufficient to make out a pretty strong case against lepra as a contagious disease. All that is wanting is a successful inoculation, and I do not feel at all sure that it will not be forthcoming. To be sure the contagion is not a very active one, and the danger from isolated cases is very slight, but I hold that it is the duty of the State to give its citizens all possible protection in matters of health, and if by a little timely interference it can avert from a single one such a fate as awaits the Hawaiian citizen who becomes thus afflicted, I believe it clearly the duty of the State to do so.

It may be asked, Why not then advocate State interference for syphilis, phthisis, and other diseases with similar powers of infection? If I were as thoroughly convinced that by segregating all subjects of syphilis or tuberculosis we could stamp out these diseases once and for all from this country, as I am that the same thing can be done in the matter of leprosy, I should advocate it. Especially should I do so if the number of cases were no greater than in lepra, and it would entail no greater hardships than would segregating all lepers who are now here, and preventing others from entering.

Does segregation result in decreasing the number of cases and preventing the spread of the disease?

Segregation can best be studied at the present time in Bergen (Norway), Tracadie, N. B., and Molokai, Hawaiian Islands. According to the statistics of Kaurin quoted by Leloir in 1885, it is evident that leprosy is rapidly diminishing in Norway, and Hansen said at the Congress of Copenhagen that in the various districts the decrease was proportionate to the strictness of isolation. It was in all likelihood due in great part to segregation and isolation of cases that Europe was freed from the scourge. Nineteen thousand leper houses are said to have existed in Europe during the twelfth and thirteenth centuries, and Jonathan Hutchinson tells us that there are still in Cornwall several *well endowed* institutions for lepers, but no lepers to treat.

As an endemic disease leprosy has practically ceased to exist in most parts of Europe where its ravages were so terrible during the Middle Ages, and the cruelties inflicted upon the victim of the disease were carried to such an extent that a leper died in the eyes of the law as soon as he contracted the disease, and the Church read a burial service over him before he was separated from his fellow-men. Norway alone in northern Europe has the disease in endemic form, and Spain and Sicily in the south, though it is found in parts of Russia, France, Italy, and elsewhere, Leloir having recently found it in northern Italy, where it was supposed to have wholly disappeared.

In New Brunswick the total number of lepers in 1875 was thirty-six. In 1885 it had been reduced to twenty-five. Segregation is here not enforced but voluntary, and, thanks to the efforts of the clergy, generally accepted by the sufferers as the best thing for themselves as well as for the community. Dr. Smith attributes the decrease to the improving condition of people *and the segregation of those affected.*

Danielsen and Boeck write: "It can be made harmless

to the rest of the people only by isolation; to experiment with this scourge on any other theory than this is dangerous."

Turning to Hawaii for opinions respecting segregation, Dr. Mouritz, resident physician at Molokai settlement, says: "That all lepers should be segregated I quite agree." Mr. Meyer, agent of the board of health at Molokai, believes that if segregation had been rigidly enforced when the law was first enacted the disease might have been stamped out.

Dr. Arning's plea for segregation is independent of actual contagion being definitely settled, and says: "We must look upon every single leper as a hot-bed of disease quite independently of the exact condition under which he can transmit it to others."

Piffard advocated segregation for this country in 1881 in a paper read before the Academy of Medicine, and in his article in the "Journal of Cutaneous and Venereal Diseases" in 1883 says: "This will have to be done sooner or later, and the sooner, the less difficult the undertaking."

White also advocates segregation in his article already mentioned.

Public welfare, it seems to me, demands that some law be enacted by the National Government which will prevent lepers from entering this country from any side, and that those now here be compelled to enter a suitable hospital. State legislation will not furnish the necessary relief, for if we prevent lepers from remaining at large in this State they will only be driven to some other part of the country.

Dr. Fox* says: "The banishment from home and friends of a leprous patient who is by no means likely to transmit the disease to others seems to me to be uncalled for and unjust." I agree with Dr. Fox that it is humane to keep lepers who come to us and to allow them full liberty, but I can not look upon the increasing number as devoid of danger. The subject is one of too much importance for us to deal with the question of the individual.

It is a question of national interest and must be settled on the basis of what means will prevent a national calamity. If there is no cause for fear, well and good. If there is any danger, let us not hesitate because the individual would suffer. "*Salus populi suprema lex*" is the motto which must guide us.

Although the question of therapeutics is foreign to the scope of this paper, I desire to say a word regarding treatment; and, first, I can not look upon the disease as so absolutely incurable as most authors have done. I find many instances in literature of great improvement taking place under the use of remedies. I have myself seen the good effects of treatment to a limited extent, and there are reported cases of cure.

Jonathan Hutchinson, in a lecture in November, 1885, spoke of a lady whom he had treated thirty years before and who for fifteen years had been well. He mentioned another case of a missionary who had become a leper, and lost his sight and had contraction of the fingers, but in whom there was no longer any tendency to the development of leprous symptoms.

* "Quarterly Bulletin," November, 1885.

Grönvold mentions a case in this country in which the disease had stopped for years.

Unna reported a case of cured lepra in the "Monatshefte für praktische Dermat.," 1885. He recommends the whole series of reducing agents, both internally and externally, believing that the bacillus is very greedy for oxygen, and consequently we might suppose it relatively easy to destroy by the aid of remedies greedy for oxygen. Among these reducing agents he has found as the most useful ichthyol, chrysarobin, pyrogallol, and resorcin.

Of course, before a case can be regarded as surely cured, many years must pass to make it positive that no recurrence takes place. Hansen says the macular form is often cured.

As regards surgical treatment, I think much may be done to improve the appearance of these patients, which is often so repulsive. In the case I have shown healing took place promptly by first intention after each operation, and scarification gave good results.

I think we are justified in the following conclusions:

1. Leprosy has existed to a considerable extent in this country during the past twenty years.

2. The tendency is for the disease to increase, not only from immigration, from the visits of foreign lepers seeking health, from the return of natives who have contracted the disease abroad, but also from the occurrence of sporadic cases.

3. It is a contagious disease in the sense of its being transmissible from one individual to another, and may, like syphilis, be transmitted from parent to offspring.

4. Transmission probably takes place, in some instances at least, through inoculation.

5. Segregation has been proved to be the only sure means of freeing a country from its ravages.

6. It is the duty of the government through national legislation to establish one or more central leper hospitals or isolated settlements for the segregation, care, and scientific treatment of those afflicted, and for the protection of the community at large.

102 East Fifty-seventh Street, New York.

**The Reduction of Nitrates by Micro-organisms.**—"Mr. Percy Frankland, in a paper read to the Chemical Society on the 16th ult.," says the "Lancet," "gave an account of some observations he had made on the action of thirty-two micro-organisms on nitric acid contained as nitrates in nutritive solutions. About half of the forms (all of which were obtained from air and water and cultivated in a state of purity) reduced the nitrates to a greater or less extent to nitrites. No effect was produced by the exclusion of air. The author suggested that the difference in reducing power may in certain cases be available as a means of distinguishing micro-organisms morphologically very similar."

**The Cancer Bacillus.**—"The discovery of the cancer bacillus," says the "Lancet," "threatens to have as many claimants as the authorship of Junius's Letters. In addition to Dr. Scheuerlen, who was the first before the public, two Italians announce themselves as having independently made the discovery—Dr. Barnabei, Professor of Clinical Medicine at Siena, and Dr. Sanarelli, a graduate and teacher of the same school. But, it seems, a compatriot of Scheuerlen is also in the field to claim priority in the discovery—Dr. Schill. France, too, not to be outdone, has her special claimant in Dr. Perin. And, finally, Brazil, in Dr. Domingos Freire, seeks to vindicate the honor of the discovery to the New World."

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## CREDÉ'S METHOD OF PLACENTAL EXPRESSION.

Although Mr. Dease, of Dublin, wrote, as early as 1783, "Should the detachment of the placenta not be effected in the usual time, it will be much facilitated by the operator judiciously applying his hand to the region of the uterus, which he may excite to the necessary contraction by gentle friction," and although Ramsbotham, in 1839, in his text-book, condemned pulling and jerking at the cord, and advised instead gentle pressure over the uterus, it was not until 1860 that external expression of the placenta was placed on a scientific basis, chiefly by the labors of Credé, of Leipsic. Shortly after Credé's publication, the method came to be known by his name, and it has been recommended in the obstetrical books of all languages, with the notable exception of Charpentier's classical work, in which a warm protest is entered against it. Notwithstanding the general acceptance of the method, there have not been wanting those who, from time to time, have dissented from it. Whenever the criticism has seemed to call for it, Credé has defended his method manfully. His latest defense is directed against an attack that was made at the last meeting of German naturalists and physicians, at Wiesbaden, and is published in a recent number of the "Archiv für Gynäkologie."

He discusses the objections *seriatim*. In answer to the accusation that he was guided by the watch in his procedure, he refers to his different writings, in which it is distinctly stated that the time for expressing the placenta should depend upon the circumstances of the case, and should have three different objects in view: (1) the removal of existing dangers, (2) the avoidance of threatened dangers, and (3) the saving of time. The first object calls for immediate action, as everybody agrees. To accomplish the second, an effort at placental expression should be made with the second, third, or fourth pain, but the placenta may not be expelled until the tenth pain. Usually from fifteen to thirty minutes are consumed in the process. No sane man would object to recourse to some procedure to accomplish the third object, provided the woman's safety was not endangered thereby. To the charge that the method is attended with increased loss of blood he replies that accurate weighings of the blood lost—as accurate as they could have been—by different observers have not sustained the statement.

One of the most serious objections raised was that the method favored the retention of portions of the membranes in the uterus, and thus heightened the danger of septic infection. Credé denies the premise; furthermore, granting it to be true, he contests the legitimacy of the deduction with the following facts: From January 1, 1883, to March 31, 1887, 4,969 women were delivered in the Leipsic clinic and Poliklinik without any attention being paid to retained portions of the membranes, and in not a single case did death or even severe illness ensue from such inattention. That the method requires some skill Credé does not deny; some skill is demanded in any procedure belonging to the art of medicine. The beginner must know how, and with very little practice he will acquire the necessary skill. Reliance on the action of the abdominal muscles has been recommended to supersede pressure over the uterus, but after delivery, especially in a multipara, the abdominal muscles are flaccid and incapable of powerful contraction. Stimulation of the lower part of the uterus also has been advised, but by Credé's method the whole uterus is stimulated to contraction, more especially the fundus, where the thickest muscular layers are situated. It was suggested at Wiesbaden that the body of the uterus should be drawn up over the placenta. Not only would this be contrary to nature's process, but it would involve considerable danger, inasmuch as the lower segment of the uterus is thin and easily torn. The theory that the separation of the secundines requires the accumulation of a certain amount of blood between them and the uterine wall has but few adherents, and does not appear to be well founded. Credé favors the old view that the separation is brought about by the uterine contractions. In conclusion, he sums up as follows: His method of dealing with the placenta is in accordance with the natural process; it has been tested by experience; the objections raised against it at various times have been either unfounded or directed against phantoms; of the many recent proposed modifications of the method, some are not new, and those that are new are worthless; in short, the method stands unassailed.

## *MINOR PARAGRAPHS.*

### THE MONOPOLY IN ANTIPYRINE.

According to the "Archives de pharmacie," quoted in the "Progrès médical," the *Société de médecine pratique* has lately been considering the practicability of freeing the professions of medicine and pharmacy from the monopoly in antipyrine enjoyed by Knorr and his agents. They have no right to the exclusive production of dimethyloxyquinizine, which has long been known, but they assume the sole right to make and sell it under the name of antipyrine. Hence, the member of the society who brought the question before it suggested the application of some other name to the product. This, however, the committee to which the matter was referred considers both inexpedient, since a great mass of literature has accumulated in which the substance figures only under the name of antipyrine, and unnecessary, inasmuch as the compound is used only as a medicament, and a drug can not lawfully be patented in France. The conclusion is that anybody in France is at liberty to make antipyrine and sell it under that name.

### FRENCH AND GERMAN HOG PRODUCTS.

There can be no doubt that the President is abundantly justified in his recommendation to Congress that an act be passed prohibiting the importation of French and German hog products for a time. The reports from our minister at Berlin and our consul at Marseilles show a great prevalence of trichi-

nosis in certain parts of Germany and of a disease among hogs in a portion of France that seems essentially the same as is called by us hog cholera. With far less reason than this state of things affords, the governments of both France and Germany have taken more stringent measures against the importation of American hog products than those contemplated by the President.

## VALVES IN THE PORTAL VEIN.

The announcement is made, in the shape of a dispatch to one of the newspapers from Boston, that Dr. William S. Bryant, of that city, has discovered that in the majority of young infants the portal vein and its branches are provided with valves. It is said that Dr. Bryant has not yet satisfied himself as to the age at which the valves disappear. The matter is of interest, of course, only in connection with the study of development.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending March 27, 1888:

| DISEASES. | Week ending Mar. 20. | | Week ending Mar. 27. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 11 | 4 | 13 | 3 |
| Scarlet fever | 160 | 29 | 145 | 20 |
| Cerebro-spinal meningitis | 4 | 5 | 1 | 0 |
| Measles | 57 | 7 | 59 | 1 |
| Diphtheria | 144 | 58 | 127 | 45 |
| Small-pox | 13 | 6 | 20 | 1 |

**The Health of New York City.**—During the four weeks ending Tuesday, March 27th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 36 cases and 11 deaths; scarlet fever, 600 cases and 91 deaths; cerebro-spinal meningitis, 19 cases and 15 deaths; measles, 238 cases and 13 deaths; diphtheria, 535 cases and 181 deaths; small pox, 60 cases and 8 deaths.

**The Association of the Alumni of the Long Island College Hospital** held its annual meeting on the 7th inst. Officers for the ensuing year were elected as follows: President, Dr. Charles E. De la Vergne; vice-president, Dr. F. H. Colton; secretary, Dr. H. Messenger Ayres; corresponding secretary, Dr. Robert L. Dickinson; treasurer, Dr. Charles N. Dixon Jones; councilors, Dr. John Harrigan, Dr. John A. McCorkle, Dr. Frank West, Dr. B. F. Westbrook, Dr. James W. Fleming, and Dr. C. C. Henry. The alumni prize of $100 was awarded to Dr. A. H. Buckmaster, for an essay entitled "The Galvanic Treatment of Fibro-myomata; an Experimental Research." Honorable mention was made of an essay by Dr. Charles N. Dixon Jones, entitled "The Ætiology and Pathology of Rhachitic Deformities, with a Report of a hundred and two Osteotomies without Suppuration."

**The College of Pharmacy of the City of New York** held its fifty-eighth commencement exercises at Steinway Hall, on Wednesday evening of this week.

**A Physician Fined.**—A Philadelphia physician has been fined $25 for failure to report a case of varioloid until three or four days after he had satisfied himself of the true nature of the disease. A woman who washed the clothing of the patient contracted small-pox, from which she died.

**The Rochester City Hospital.**—The sixth annual commencement exercises of the Training School for Nurses were held on Thursday evening of this week. Diplomas were awarded to a class of nine ladies.

**The Alumni Association of the Medico-chirurgical College of Philadelphia.**—We understand that Dr. John B. Hamilton, Supervising Surgeon-General of the Marine-Hospital Service, is to deliver an oration on the occasion of the annual meeting, April 5, 1888.

**The German Surgical Society.**—The seventeenth meeting of the *Deutsche Gesellschaft für Chirurgie* is to be held in Berlin, from the 4th to the 7th of April.

**The German Gynæcological Society.**—The second meeting of the *Deutsche Gesellschaft für Gynäkologie* will be held at Halle a. S., from the 24th to the 26th of May.

**The French Academy of Medicine.**—Dr. Sayre and Dr. Lusk, of New York, have been proposed as corresponding members of the Academy.

**The Death of Professor Ernst Wagner,** of Leipsic, the well-known writer on pathology, is stated by the "Progrès médical" to have taken place on the 10th of February. Professor Wagner was fifty-nine years of age.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending March 17, 1888:*

Rush, W. H., Passed Assistant Surgeon. Detached from the Navy Yard, New York, and ordered to the Naval Hospital, Philadelphia, Pa.

Steele, J. M., Passed Assistant Surgeon. Detached from the Naval Hospital, Philadelphia, and ordered to the Coast-Survey Steamer Bache.

Oberly, A. S., Medical Inspector. Detached from the Navy Yard, Portsmouth, N. H., and to await orders.

Du Bois, F. L., Surgeon. Ordered to the Navy Yard, Portsmouth, N. H.

Keeny, James, Assistant Surgeon. Ordered to the Receiving-Ship Minnesota.

Deane, C. W., Passed Assistant Surgeon. Detached from the Marine Rendezvous, San Francisco, and ordered to the Coast-Survey Steamer McArthur.

Auzal, E. W., Assistant Surgeon. Detached from the Coast-Survey Steamer McArthur, and ordered to the Marine Rendezvous, San Francisco.

Biddle, Clement, Passed Assistant Surgeon. Ordered to the Naval Academy, Annapolis, Md.

**Society Meetings for the Coming Week:**

Monday, *April 2d:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association (annual); Providence, R. I., Medical Association; Hartford, Conn., City Medical Association: Chicago Medical Society (annual).

Tuesday, *April 3d:* New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association (annual); Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Broome (quarterly) and Niagara (quarterly—Lockport), N. Y.; Essex, N. J. (annual—Newark), Hudson, N. J. (Jersey City), and Union, N. J. (annual

—Elizabeth), County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Chittenden, Vt., County Medical Society.

WEDNESDAY, *April 4th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Philadelphia County Medical Society (regular).

THURSDAY, *April 5th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua; Boston Medico-psychological Association; Washington, Vt., County Medical Society; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *April 6th:* Practitioners' Society of New York (private).

SATURDAY, *April 7th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

## OBITUARY NOTES.

**Hampden Aulick, M. D.,** of the medical corps of the navy, died last Saturday at his home, in Winchester, Virginia, at the age of forty-one years. His illness is said to have arisen during his last term of sea-service, on the Alliance.

**William B. Goldsmith, M. D.,** of Providence, R. I., superintendent of the Butler Insane Asylum, died suddenly of pneumonia on the 20th inst., at the age of thirty-five. He was graduated at Amherst College. He passed several years in the study of insanity in various European hospitals. Some seven years ago he was called to the charge of the insane asylum at Danvers, Mass., and on Dr. Sawyer's death, two years ago, he was invited to accept a similar position at the Butler Asylum. His sudden death is deeply lamented by all who came to know his sterling worth. In his specialty of insanity he was generally recognized as occupying a leading position among the younger men of the profession.

# Proceedings of Societies.

## NEW YORK NEUROLOGICAL SOCIETY.

*Meeting of March 5, 1888.*

The President, Dr. C. L. DANA, in the Chair.

**Thomsen's Disease.**—The PRESIDENT reported a case, in some respects atypical, and showed a specimen of muscle. The patient was a man, thirty-five years of age, single. He had been delicate as a child, and at the age of fifteen or sixteen years had masturbated, but not to excess. At the age of fourteen years he had been affected with talipes varus in the left leg, but it was cured by tenotomy. The symptoms of the disease in question had not appeared until the twentieth year, when the patient began to notice stiffness of the hands and difficulty in opening them when they were closed; also stiffness of the leg and of the muscles of mastication. He tired easily, especially in the arms. Until recently he had had a high-pitched child's voice and a child's larynx. Erections were incomplete, and there was mental difficulty in concentrating his thoughts. The muscular development was good. Measurement around the biceps gave ten inches in each arm. The dynamometer showed 40° in the right hand and 38° in the left, the normal measurement by the president's dynamometer being 43° to 50°. There were tonic contractions of the calf muscles and of the pillars of the fauces. Striking the muscles of the arm or forearm caused tonic contractions in those muscles. Striking the biceps with the percussion hammer would cause a welt and a myoid tumor as well. There was no increase of irritability to mechanical stimulation in the nerves. By galvanism Erb's reaction was obtained. There was increased muscular irritability, also a closure tonic contraction which persisted as long as the current continued to be passed. There was closure tetanus both to the cathode and to the anode. There was no opening contraction to either pole. A peculiarity of the reaction to faradaism was that in the arm the contractions persisted after the current ceased to be passed. There was no ankle clonus, no increase of the reflexes, and no spastic condition. In the eye the fundus was normal, but there was a fibrillary contraction of the muscles of the lid. There was vaso-motor weakness; the hands and feet were red, and easily became cold.

A piece of the supinator longus had been removed; also, for comparison, a piece of the same muscle from the president's own arm. These specimens had been placed in weak alcohol, and stained with picro-carmine and Bismarck brown. The specimen taken from the patient showed an increase of the nuclei of the sarcolemma, an increased number of fibers, and, in addition, a dichotomous division of the fibers such as was found in the muscle of the heart. This was characteristic of Thomsen's disease, and was supposed to indicate reversion to an earlier type. The tonic contractions of this disease, too, were characteristic of unstriped muscle fiber.

Dr. GEORGE W. JACOBY had examined the specimens, and compared them with those from his own case. He did not consider this the typical case which Erb's monograph had described. Erb had excluded all of the published cases but eight. Erb's typical case showed no disease of the central nervous system. In the president's case there was at least a suspicion of such disease. The reactions of the muscles, too, were incomplete, or failed to fulfill the requirements given by Erb. The speaker did not, however, believe in Erb's lines. He thought they were too close. While this case did not come under the heading as limited by Erb, it did come under the name as understood by others. Erb's theory was that of a disorder of the muscles themselves, a congenital malformation of the muscular system. If the fissuring of the muscles and the increase of nuclei in the case under discussion were dependent upon a central affection, this alone was an interesting fact. It would demonstrate that, microscopically alone, a diagnosis of myotonia congenita could not be made. Our knowledge of primary muscle affections was not yet on a solid basis. It was possible that there was first trouble in the central nervous system, from which the other proceeded.

Dr. C. HEITZMAN had examined the specimens with a low power, and had been impressed with the belief that this was not a genuine case of Thomsen's disease. In a typical case the nuclei of the muscles were augmented. The president had made Erb's mistake when he spoke of the nuclei of the sarcolemma. The sarcolemma was a structureless membrane. There was also augmentation of the sarcoplasts, or muscle-corpuscles. There was too much muscle substance from the earliest period; hence the name myotonia congenita. The president's case, on the contrary, could not be called congenital, as the disease had not developed until the twentieth year. Moreover, the muscle-fibers were not distinctly augmented in size; compared with those in Dr. Jacoby's case the difference was marked. Besides, the fissuring was not prominent. For these reasons he was loath to accept the diagnosis. He was, on the other hand, unable to tell what else the condition could be.

Dr. J. B. Emerson had examined the patient's eyes. There was no insufficiency of the muscles, and the pupils had reacted normally.

Dr. M. A. Starr realized that we could not yet lay down any positive deductions in regard to electrical reactions. In degeneration we observed the pure reaction of degeneration, an intermediate reaction of degeneration, and the normal muscle reaction. Erb had given the reactions for three cases only. Other cases might not substantiate those results. He considered the president's case valuable and one to be put on record. For reliable data a large number of cases were required. Even Dr. Heitzman's objection of muscular anomalies was not fatal to the theory of its being a case of Thomsen's disease.

The President explained that he had not called the case one of myotonia congenita, but an atypical case of Thomsen's disease. It remained to be proved whether myotonia was always congenital. He had recently seen a case which commenced at the eighth or tenth year. Since the appearance of Erb's book four additional cases had been reported besides his. He agreed with Dr. Heitzman that the enlargement of the fibers was not positive. He had measured the fibers with a stage micrometer in the specimen from Dr. Jacoby's case, in that from the case under discussion, and in that from his own arm. He had found the fibers in the first $\frac{1}{400}$ to $\frac{1}{800}$ of an inch broad; in the second, $\frac{1}{250}$ to $\frac{1}{400}$; and in his own, $\frac{1}{450}$ of an inch. Thus, in the case under discussion, some of the fibers were larger and some smaller than the normal. The increase of the nuclei, however, was shown in some of the specimens as typically as in Erb's plate. He acknowledged that the fissuring might have been produced artificially by tearing. Electrically, there was greatly increased irritability of the muscles both to galvanism and to faradaism. The contractions were tonic with closure tetanus. There was normal excitability of the nerves. Clinically, the patient presented the phenomena of Thomsen's disease. It remained to be proved whether the phenomena of Thomsen's disease could be produced by disorders in which the central nervous system was involved.

**Tumor of the Brain.**—Dr. Starr presented a specimen. The patient was a woman, fifty-six years of age at the time of her death, who for two years had presented the general symptoms of tumor of the brain—vertigo, projectile vomiting, dullness of the mental faculties, and optic neuritis. During the last five months she had been examined carefully, but without revealing any evidence as to the locality of the tumor, except on one occasion, when during an attack of vertigo she fell forward and to the right. This was not a prominent symptom, and it was the only evidence pointing to cerebellar disease. The tumor was of the size of a hen's egg. It was found on the lower surface of the tentorium, simply resting upon and compressing one lobe of the cerebellum. There were no adhesions and it was unfortunate that no symptoms had pointed to its location, as it might have been removed easily. In 1878 Nothnagel had remarked that tumors of the lateral lobes of the cerebellum did not give rise to the symptoms of inco-ordination common to other cerebellar tumors.

**Basedow's Disease.**—Dr. J. West Roosevelt presented the report of a case, with that of the autopsy. The patient had been admitted into the Roosevelt Hospital on May 25, 1887. She was a widow, forty-seven years of age, a housekeeper. Both the personal and the family history were good. Two years before, she had begun to complain of palpitation, dyspnœa upon exertion, and swelling of the throat, which was largest upon the right side. She could not lie upon that side. In the course of a year the eyes began to protrude, and at the time she entered the hospital she had a profuse watery diarrhœa. The pupils were found to be equal, and the reaction to light and the accommodation were good. The lids did not follow the eyeballs. The neck measured thirteen inches around the lower thyreoid region and ten inches and a half around the upper thyreoid region. There was dysphagia to solid food. The pulse was from 100 to 120 and the respiration 38. The apex-beat was found in the fifth space, in the nipple line. There was epigastric pulsation and the area of dullness was slightly increased. There was a short systolic murmur at the apex. There was a systolic thrill over the jugulars, also a continuous venous hum. The pulmonary resonance was exaggerated. The veins of the retina pulsated, but the arteries did not. There was no tremor. The patient lived until May 31st. She suffered from watery diarrhœa and restlessness, but was not otherwise sick. In walking to the bath-room one evening she fell dead on the floor. The autopsy showed the thyreoid reduced in size, but still moderately enlarged and of a pink color. The kidneys showed a trace of fibrous tissue, but otherwise the organs were normal. There was apparently nothing abnormal in the medulla nor in the sympathetic or vagus nerves. Microscopic examination of these parts also showed nothing.

Dr. W. O. Moore had seen twelve cases, all in women of the average age of forty years, the youngest being thirty-one and the oldest forty-five. Ophthalmoscopic examination had simply shown enlargement and tortuosity of the blood-vessels. Great relaxation of the bowels had been present in one of the cases, as many as ten evacuations taking place in the day, which it was impossible to control. Electricity had been of no avail in these cases. All had presented the three characteristic symptoms, exophthalmia, thyreoid enlargement, and rapid action of the heart. All had shown the symptom to which von Graefe had first called attention, namely, a disturbance of the usual co-ordination of the movements of the eyeball and the upper lid, so that when the patient looked downward below the horizontal meridian the lid no longer followed the eyeball in its motion, but halted in its course. This fault in the action of the lid was supposed to be due to some defect in the orbicularis, and was not present in patients having prominent eyes from other causes. Occasionally the prominence was so great as to cause the eye to be exposed at all times, whether the patient was awake or asleep. In one case in his experience suppuration had occurred and the eye had been lost. The patient, aged forty-five years, stated that when a child she had lost the sight of the right eye by an accident, and that one year before coming under observation she had noticed commencing enlargement of the neck, dyspnœa upon exertion, and prominence of the left eye. Six months later, vision for near objects began to fail, and four weeks before coming under notice the left eye had become painful and inflamed. An examination, December 13, 1886, showed in the right eye phthisis of the bulb, total corneal leucoma, and exophthalmia so marked that, although the eyeball was atrophied, the lids were as full as in the usual healthy state. The eyelids on this side covered the globe fully when shut. In the left eye the exophthalmia was so great that the lids were retracted to their full extent and the eyeball was dislocated through the commissure of the lids. The ocular conjunctiva was chemotic and the cornea was cloudy through its whole extent. At the upper border of the cornea there was a serpiginous ulcer; in other words, there was a keratitis from loss of nutrition and exposure to the air. The pulse was irregular at 110. The patient was admitted into the Post-graduate Hospital, the outer canthus was cut, hot-water applications were made, and the parts were protected by lanolin. In spite of treatment, perforation took place, with escape of the vitreous and lens. The eye began to recede and phthisis bulbi developed. Had this case been seen earlier the speaker would have united the upper and lower lids, thus covering the eyeball. At the

end of a few weeks the lids would have been reopened, when, as a rule, the exophthalmia would be found improved and the corneal trouble removed. For constitutional treatment the patient should receive digitalis, ergot, and tonics. This case was remarkable from the facts that an eye was lost by suppuration and that this loss was associated with phthisis in the other eye. The loss of an eye from exposure was so rare that the speaker knew of but ten reported cases in this country, while Wells had reported only one case.

Dr. STARR said that the fact that no lesion had been found in the sympathetic in Dr. Roosevelt's case did not, of course, prove anything conclusive. Ross had reported eight cases in which such lesion had been found out of twelve cases, as far back as 1882. The pathology, however, was not clear. It was difficult to understand how any one lesion could produce all the phenomena of this disease. The hypothesis accepted by Gowers was that of lesion of the vagus nucleus in the medulla. The rapid pulse would be accounted for by the loss of the inhibitory power of the vagus. It was known, too, that vaso-motor disturbances were produced by irritation of the medulla in this region. The speaker had some time since collected twenty-one cases of lesion of the medulla, in eight of which the lesion was in its upper part, in the region of the nucleus of the tenth nerve. In all those cases there were subjective flushings and objective increase of perspiration, while in the thirteen in which the lesion was in the lower part of the medulla there were no vaso-motor symptoms whatever, thus substantiating the hypothesis of the physiologists that there was a vaso-motor center in the medulla and that this center was in the neighborhood of the nucleus of the tenth nerve.

The speaker had personally observed seven cases, five in the female and two in the male. In all but one palpitation of the heart had been the first symptom. This disproved the theory that the goître was primary, and that the other symptoms were due to the pressure of the tumor upon the pneumogastric nerve. The pulse had ranged between 90 and 155. In all but one the eyes had been prominent. In six there had been nerve symptoms, in four tremors, in four von Graefe's symptom, and in six flushes. Mental disturbance had been present in one case, in which there had been delirium every night for several months, and subacute mania for several weeks. The first symptom in this case had been insomnia, which resisted treatment. The speaker supposed it to have had its origin in a condition of the vessels of the brain similar to that in the back of the eye and the thyreoid gland. Digitalis had done no good in his experience. Ergot and bromide had quieted the tremor, but no drug which he had tried had reduced the action of the heart. He had used electricity according to Benedict's recommendation, but without result. He had himself, when in Vienna, watched the treatment of three cases in which Benedict had given a good prognosis, but had failed to find any reduction of the pulse while the galvanism was being used. In his own cases he had tried every method described as galvanization of the sympathetic; he had placed the poles upon either side in front of the sterno-cleido-mastoid, behind the sterno-cleido-mastoid, and at the back of the neck and at the epigastrium, carrying the current as high as 9 milliampères, which was as strong as could be borne with a small electrode, and he had never been able to produce any retardation of the pulse. Dr. Janeway had expressed himself as having had the same experience.

Dr. A. D. ROCKWELL had met with about thirty cases of this disease, and in nine cases he had observed an approximate cure. He had employed diet, galvanism, and very full doses of digitalis, bromide of zinc, ergot, and iron. He had authentic records of his results. He believed that the cases not benefited by treatment were organic, and that those benefited were functional in origin. Those having all the cardinal symptoms were more often responsive to treatment than those in which the symptoms were more incomplete. He recalled a case in which there was a pulse of 110 reduced to 80. There was puffiness of the eyelids in that case. In the galvanic applications one pole had been placed over the eyelid, and the other behind the sterno-cleido-mastoid muscle at its upper third. In another case the pulse had ranged from 130 to 150 for several years. There was dilatation of both pupils, and there was a pulsating swelling over the solar plexus. This patient was placed upon the use of a milk diet and persistently treated for many months, when the pulse fell to below 100, and the swelling of the thyreoid and the exophthalmia had become less.

Dr. STARR asked whether Dr. Rockwell had observed a reduction of the number of the heart-beats while the current was being used, also whether he had ever seen paling of the face and dilatation of the pupils—phenomena which followed galvanization of the sympathetic when needles are used.

Dr. ROCKWELL replied that he had not made his observations during the application, but that subsequently such slowing had been demonstrated. Lowering of the pulse was also a very common result of general faradization.

Dr. JACOBY considered exophthalmic goître a rare disease. For eight or nine years he had seen in his dispensary from six to seven hundred neurological cases a year. Not more than twelve of them had been cases of exophthalmic goître. The patients had been regular in attendance and the treatment had been persistent, but he had tried every means heralded without result. Subaural galvanization had been without effect upon the color or the pulse. He considered the disease a hopeless condition. Bodily and mental rest constituted about all that could be done. He had tried faradization according to the recommendation of Vigouroux, but also without result. He thought the exophthalmia the least constant symptom. Where goître was present, one side of the neck was usually larger than the other. Some said that the right was always the larger. This he could contradict, as in a case which he had recently seen with Dr. Birdsall the enlargement had been equal upon both sides. Von Graefe's symptom was not always present. Tremor was often the first symptom. In one case in his experience tremor had existed for a year before the development of the other symptoms. At the end of the second year these had become well developed, and bronzing of the skin also was present. Vigouroux had stated that the electric resistance was diminished in all cases, and even in the commencement of the disease. This, if true, would be an important diagnostic point. In twenty cases Wolfenden had also found this lowered electrical resistance. Histories of two of these cases had been published in full. In one of the latter the resistance was only 300 ohms. It was mentioned that there was profuse sweating in this case. In the second, the resistance was 200 ohms. Of this case it was said that there were clamminess of the surface and sweating. In the other eighteen cases the resistance was from 500 to 1,300 ohms. The speaker said that the standard of resistance, however, varied according to the method used. It had been given as 300,000 to 400,000 ohms by Jolly; Gärtner gave it as 30,000 to 40,000; and here we estimated it at a third or a quarter. He had recently tested the resistance in three cases, his method having been to place the body in the circuit, the electrodes being equal in size and wet. When the galvanometer needle ceased to be deflected, the body was taken out of the circuit and a resistance coil inserted until the deflection of the needle was again brought to the same point. The amount required equaled the resistance of the body. Comparative observations were at the same time taken upon himself. The first case was that of a woman, twenty-eight years of age, with exophthalmia

palpitation, and sweats. The resistances obtained were as follows:

| | | |
|---|---|---|
| Through the palms | Patient, | 6,000 ohms; |
| | Self, | 8,000 " |
| Through the goitre | Patient, | 1,200 " |
| | Self, | 2,400 " |
| Through the posterior part of the neck | Patient, | 1,400 " |
| | Self, | 2,400 " |

The second case, Dr. Birdsall's, presented goitre with palpitations and exophthalmia, and the comparative observations were taken upon Dr. Birdsall and himself. The resistances obtained were as follows:

Patient, through the hands, 5,000 ohms; through the goitre, 800 ohms; through the posterior part of the neck, 1,000 ohms. The measurements in himself were respectively, 5,500, 2,400, and 2,000 ohms, and in Dr. Birdsall, 8,000, 1,000, and 1,000 ohms.

In the third case the resistances were:

| | Patient. | Two control subjects. |
|---|---|---|
| Through the hands | 5,000 ohms. | 11,000 and 10,000 ohms. |
| Through the thyreoid | 1,000 ohms. | 4,000 and 3,000 ohms. |
| Through the neck, antero-posteriorly | 1,500 ohms. | 3,000 and 3,000 ohms. |

The reduction was thus scarcely a quarter, certainly not a half, and not more than would be accounted for by the maceration of the skin due to the abundant perspiration in these cases, or, as in the goître, to the fluxion of blood. The speaker failed to see how any importance could be attached to the test as a symptom.

The President was surprised to hear that there was any dispute in regard to the possibility of lowering the pulse by galvanism. In a case of Basedow's disease in Bellevue Hospital a pulse of 140 was found lowered fifteen or twenty beats after the current had been applied. The sedative effect of galvanism was generally admitted, though we could not say whether it was produced through the pneumogastric or through the sympathetic nerve. Dr. Starr's theory he thought incorrect. Lesion of the nucleus of the pneumogastric should give the same symptoms as division of its trunk, and this never gave rise to the phenomena of Basedow's disease. It might perhaps be said that this disease was due to lesion of the nucleus of the pneumogastric and neighboring parts. He thought that the resistance was diminished in these cases—at least slightly, perhaps 1,200 ohms. In testing he placed one electrode on the region of the seventh vertebra and the other on the sternum.

Dr. Roosevelt had had the same experience as Dr. Starr and Dr. Jacoby. He had used both strong and weak currents without any influence on the sympathetic nerve. He was surprised to hear digitalis recommended. He believed that digitalis was without value for heart failure except from organic disease. He had had five cases of exophthalmic goître under observation. Two of the patients had improved, but both were young anæmic girls. The measurement of electrical resistance he thought a difficult problem, because the factors varied.

## MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

*Meeting of January 24, 1888.*

The President, Dr. Laurence Johnson, in the Chair.

**External Perineal Urethrotomy as a Preventive of Complications after Operations upon the Urethra.**—Dr. Charles McBurney read a paper on this subject. Some years ago he had become convinced that so-called urethral fever was in almost or quite all cases nothing but septicæmia. Of course, he did not include under the term urethral fever the symptoms of shock. When division of a stricture was performed the best conditions were present in certain portions of the canal for rapid absorption and poisoning by septic material. It was evident from a diagram shown that in the pendulous portion of the urethra opportunity was offered for almost perfect drainage; the urine and blood, with any septic or foreign matter which they might contain, gravitated toward the meatus. At some distance from the meatus, drainage took place in the opposite direction, and, as the bladder offered resistance to the entrance of fluid from the urethra, the blood and whatever other foreign matter it might contain would bathe the deeper portion of the canal. If the operation wound was situated above the lowest portion of the canal as the patient lay upon his back, it would not be bathed with the contained fluids until they reached that level. From personal experience and observation of the practice of others, the author felt convinced that the good results following internal urethrotomy on the pendulous portion of the urethra, and of external urethrotomy on the deeper portion, were due to free drainage. He had become convinced, further, that the frequent bad results following internal urethrotomy on the deeper portion of the canal were due to want of drainage and consequent infection from urine or other infectious material. Moreover, internal urethrotomy on the deep portion of the urethra was apt to be followed by serious hæmorrhage, which, owing to its location, the surgeon was unable to control. It was very easy to open the membranous portion of the urethra on a guide, and any strictures posterior to this point could be cut with a small knife, while those anterior to it could be readily divided with the urethrotome introduced through the meatus. This was the procedure which he recommended in order to afford perfect drainage and avoid septic infection. Care should be taken not to allow closure of the small opening to take place immediately after the operation. The bladder should be completely emptied and washed out; the wound should be packed with iodoform gauze; a soft catheter should be used for two days, and in case of plastic operations for a much longer period. The author had reached the conclusion that, at all points not more than four inches and three quarters from the meatus, internal cutting operations were best, and would drain sufficiently well for safety; that, at all points back of this, cutting operations were also best, but the wounds here could not be properly drained, and were not safe without a perineal opening; and that external perineal urethrotomy was indicated in all cases in which such conditions were present in the deep urethra as might result in hæmorrhage, septicæmia, urethro-perineal abscess, or infiltration of urine.

Dr. L. B. Bangs said the paper expressed in many respects the views which he had himself held for some time. He attributed his success in operations on the urethra largely to securing drainage. It seemed to him, however, that there were certain cases of urethral fever which could not be explained on the supposition of sepsis. He thought there was another element to be taken into consideration—namely, the nerve element. There might, for instance, be a reflex influence communicated from the urethra to the kidneys which would so interfere with their eliminative action as to lead, so to speak, to self-poisoning. Perhaps such a condition could hardly be explained at present on a physiological basis, but further knowledge of leucomaines and ptomaines might throw additional light on it. At any rate, there were, he thought, certain cases of urethral fever which could not be explained except on the supposition of a reflex nerve influence.

Dr. Robert Abbe thought there was a nerve element in cases of urethral fever, for the mucous membrane lining the urethra,

as everybody knew, was very sensitive. Urine was poisonous when it entered the circulation, and in some cases this might be the cause of urethral fever. He did not believe, however, that there was usually much absorption of urine after cutting operations on the urethra. That this was not the cause of urethral fever in all cases was proved by the fact that in some no urine came in contact with the operation wound between the time of operating and the development of the fever. He believed the large majority of cases of urethral contamination arose from dirty instruments. It was particularly difficult to cleanse the urethrotome thoroughly.

The PRESIDENT asked whether the effects of urinary infiltration following external traumatism to the urethra were not milder than those resulting from the sepsis of internal urethrotomy. If the reply was affirmative, he thought it supported Dr. Abbe's view that the sepsis of internal urethrotomy resulted from dirt carried from without.

Dr. MCBURNEY agreed entirely with Dr. Abbe that the origin of urethral fever or the various septic complications following operations on the urethra and bladder was dirt, but the question was, How did the dirt get there? He could not help looking upon the mixture of urine, mucus, and pus found in the neighborhood of all strictures as one of the most obvious and most prolific sources of urethral fever or septicæmia. He regarded a case narrated by Dr. Bangs as evidence of a nerve element in the production of urethral fever as also one due to septic poison entering at points where the mucous membrane had been deprived of its epithelium.

Dr. F. N. OTIS thought urethral fever was more the result of irritation than of septic infection. The freer operation wounds were kept from septic matter the better would be the results; yet he did not believe sepsis was the cause of urethral fever. He was disposed to think there was a predisposition to such fever, and that this predisposition had more to do with the case than anything else. In a large proportion of cases patients could be operated upon by internal urethrotomy without any special precautions, and have no chills or urethral fever whatever. Continued contact of urine with the wound tended to produce fever, and consequently he believed in thorough drainage. This was favored by dividing the stricture on the superior wall of the urethra and by complete division of the stricture tissue. He saw urethral fever not oftener than once in fifty cases of urethrotomy. When the stricture was situated more than five inches from the meatus, external urethrotomy should be done in order to secure drainage, and also to control hæmorrhage. The operation was almost free from danger. He had never lost a patient from internal urethrotomy on the anterior portion of the urethra.

*Meeting of February 27, 1888.*

**The Pauper Insane.**—The meeting adopted a resolution, offered by Dr. SAMUEL SEXTON, approving of the bill presented to the State Legislature by the State Charities Aid Association, referring to State care of the pauper insane.

**Leprosy in the United States, and its Relation to the State.**—Dr. CHARLES W. ALLEN read a paper on this subject (see pages 318 and 347).

Dr. G. H. FOX believed, from what he had seen of leprosy, that it was contagious, although he could not prove it; he also believed that it was hereditary in many instances, yet this was difficult to establish. It was his opinion, although he would not attempt to prove the fact, that leprosy was much like syphilis; that it was not alone contagious, but also hereditary. The question arose, Were we justified in allowing the fear of leprosy to spread throughout the country? He did not believe there was any basis for such fear. If the disease was contagious, it was so only in very slight degree, and the segregation of the few patients we had here he believed to be uncalled for. But he would prevent the landing of immigrants affected with leprosy. There were probably more lepers in New York than was generally supposed. He did not regard leprosy as an incurable disease. A letter just received from one of his patients, who had taken chaulmoogra oil, reported that he was still well, except for a feeling of numbness in the hands. But the treatment would be rendered practically hopeless by putting all lepers together and depriving them of their liberty.

Dr. P. A. MORROW said that, while modern science had discovered the pathogenetic agent of leprosy, we had scarcely advanced at all regarding the method of its propagation beyond what had been known in olden times. We did not know how the germs gained access to the system, whether through contact with abraded surfaces, whether the germs were in the air, in articles of clothing, in the soil, or in the water. His own impression was that leprosy was contagious and also transmissible by inheritance. Dr. Allen had presented many cases in proof of the contagiousness of leprosy, but there were also many cases which some would accept as proof of its non-contagiousness. Persons who had associated with lepers most intimately for many years, even in married life, had escaped the disease. There had not been a single case of spread of the disease in Charity Hospital, where other patients had associated freely with the lepers who had entered that institution. But these and other facts did not prove to his mind that leprosy was not contagious; they proved simply that it was not readily contagious; that the contagion operated in a very mild way. For this reason he did not believe we need fear the disease in this country, and he was opposed to segregating these patients. The manner in which leprosy had behaved in the Sandwich Islands could not be taken as a basis of comparison for this country, for the conditions were very different. The segregation of lepers in some countries, such as Norway, had led to the belief that its decrease had been due to this cause alone, but the fact was that in Norway isolation of these patients had not been rigorously practiced. Those in institutions had been allowed to go out and mingle with the healthy. While we should not have a false sense of security, it was equally important that no alarm should be sounded when there was no occasion for it. In this country he thought sanitary police regulations were not necessary in order to check what the reader of the paper thought to be a growing evil.

Dr. D. B. DELAVAN thought leprosy was not so harmless a disease as some of the speakers and others had implied. In discussing the question of segregation, three questions might be asked: 1. Was leprosy communicable? 2. If it was communicable, was it so in equal degree at all times? 3. What had been the result of segregation? While in general it might not be very contagious, yet its history in Europe during the middle ages was very instructive. The disease then broke out in some corner and swept over the whole of Europe. Had we, he asked, proof that at some time a similar epidemic would not occur in this country? History went to show that where leprosy had existed segregation had been found desirable. There were enough lepers in the United States to fully justify calling the attention of the Government to the disease. Regarding treatment, there was no question of the benefit derived from chaulmoogra oil.

Dr. KOPLIK queried whether opening up the lymph channels in a surgical operation for cosmetic effects might not be followed by a more rapid progress of the disease.

**A Communication from the Georgia Medical Society** was read, which led to the introduction and adoption of the following: *Resolved*, That the Medical Society of the County of New York would urge upon Congress that in the cause of humanity

the import duty should be removed from all medicines, medical and surgical appliances, and everything used in the treatment and diagnosis of disease.

## Book Notices.

*Doctor and Patient.* By S. Weir Mitchell, M. D., LL. D. Harv., Member of the United States National Academy of Sciences, President of the College of Physicians of Philadelphia, etc. Philadelphia: J. B. Lippincott Company, 1888. Pp. 5 to 177. [Price, $1.50.]

Whatever Dr. Mitchell writes is worth the reading, and the present example of his pleasant way of propounding serious truths is no exception to the rule which has hitherto guided his pen. It hardly falls within our province to review a book avowedly written for the laity rather than for professional readers, but we can at least cordially commend his lessons to those for whom they are intended, and we may add that not a few in our own ranks will derive instruction as well as entertainment from his chapters on the deportment of the ideal doctor in sickness and convalescence, and on the management of "nervousness." The mother who fails to mark and inwardly digest the author's excellent advice touching the moral prophylaxis of functional nervous disorders neglects that which may be of infinite importance to the future career of her children, especially if they are daughters.

*Practical Lessons in Nursing.* Fever Nursing: Designed for the Use of Professional and other Nurses, and especially as a Text-book for Nurses in Training. By J. C. Wilson, A. M., M. D., Visiting Physician to the Philadelphia Hospital and to the Hospital of the Jefferson College, etc. Philadelphia: J. B. Lippincott Company, 1888. Pp. viii–11 to 210. [Price, $1.]

This book may be said to contain either too much or too little, according to the point of view from which it is regarded. If it is deemed desirable to teach nurses to undertake for themselves the diagnosis and treatment of disease, or to criticise the opinions and practice of the physician in attendance, the "Lessons" are hardly elaborate enough; if, on the other hand, the nurse's function is to carry out skillfully the directions of the doctor under whom she is employed, much superfluous matter is added to the good instruction given her in the latter capacity. It seems to us of doubtful propriety, in the present state of our knowledge, to give her dogmatic comparisons of the germicidal value of different disinfectants, or of methods of fumigating rooms or purifying privy-vaults. The author's personal opinions concerning the pathogeny and proper treatment of various febrile affections (including, among others, relapsing fever, dengue, yellow fever, and influenza), however interesting for discussion before a medical society, appear calculated to put the medical attendant in a position subordinate to that of the nurse, and to stimulate her conceit to override his decisions. On the whole, although the work may be all that could be desired for the tuition of nurses who are to serve under the author himself, it is not unlikely to detract from the usefulness of those who may be ancillary to physicians who are unfortunate enough to differ with him in therapeutic tenets.

It is probably by a typographical error that the christening of diphtheria (p. 193) is dated thirty years too late, as the author is undoubtedly familiar with Bretonneau's memoirs on the subject.

### BOOKS AND PAMPHLETS RECEIVED.

Prescription Writing. Designed for the Use of Medical Students who have never studied Latin. By Frederic Henry Gerrish, A. M., M. D., Professor of Anatomy, and formerly Professor of Materia Medica and Therapeutics, in Bowdoin College, etc. Seventh and Revised Edition. Portland: Loring, Short, and Harmon, 1888. Pp. 6–7 to 55. [Price, 50 cents.]

The Medical Jurisprudence of Inebriety. By Joseph Parrish, M. D., Burlington, N. J. [Reprinted from the "Journal of Inebriety."]

Seventy fourth Annual Report of the Trustees of the Massachusetts General Hospital and McLean Asylum, 1887.

Obstetric Synopsis. By John S. Stewart, M. D., Demonstrator of Obstetrics and Chief Assistant in the Gynæcological Clinic of the Medico-chirurgical College of Philadelphia. Illustrated. Philadelphia: F. A. Davis, 1888. Pp. x–202. [Physicians' and Students' Ready Reference Series.]

Comparative Data from 2,000 Indian Crania in the United States Army Medical Museum. By R. W. Shufeldt, M. D., C. M. Z. S., Captain, Medical Corps, U. S. Army, etc. [Reprinted from the "Journal of Anatomy and Physiology."]

The Hygiene of the Skin, or the Art of Preventing Skin Diseases. By A. Ravogli, M. D. Cincinnati: Central Medical Publishing Co., 1888. Pp. 12–13 to 399.

Congenital Club-foot: Its Treatment by Open Incision and Immediate Rectification. By Charles N. Dixon Jones, M. D., etc. [Reprinted from the "Medical News."]

Proceedings of the National Conference of State Boards of Health at the Fourth Annual Meeting held at Washington, D. C., September 7, 1887. [Published by the State Board of Health of Michigan.]

Lyssa and the Pasteur Fiasco. By N. E. Brill, A. M., M. D., New York. [Reprinted from the "Journal of Comparative Medicine and Surgery."]

The Lomb Prize Essays: No. 1—Healthy Homes and Foods for the Working Classes. By Victor C. Vaughan, M. D., Ph. D., Ann Arbor, Mich. No. 2—The Sanitary Conditions and Necessities of Schoolhouses and School Life. By D. F. Lincoln, M. D., Boston, Mass. No. 3—Disinfection and Individual Prophylaxis against Infectious Diseases. By George M. Sternberg, M. D., Surgeon, U. S. Army. No. 4—The Preventable Causes of Disease, Injury, and Death in American Manufactories and Workshops, and the best Means and Appliances for preventing and avoiding them. By George H. Ireland, Springfield, Mass. [Published by the American Public Health Association.]

## Reports on the Progress of Medicine.

### SURGERY.

By MATTHIAS L. FOSTER, M. D.

**Œsophagotomy for Foreign Bodies.** — Fischer ("Deutsche Zeitschrift f. Chir."; "Ctrlbl. f. Chir.," 1887, No. 52) furnishes a table of eighty cases in which œsophagotomy has been performed for the removal of foreign bodies. According to this table, the mortality of the operation is 20 per cent., but the statistics of the causes of death show that the fatal issue is oftener due to too great delay in operating than to the operation. Thus, in the sixteen fatal cases, seven patients died from ulceration of the œsophagus and secondary septic infection, six from exhaustion, one from acute sepsis, one from hæmorrhage, and one from pulmonary phthisis. The ulceration from pressure and the gangrene of the œsophagus may appear within four days after the swallowing of the foreign body and may cause emphysema of the neck, inflammatory swellings of the neck, mediastinal abscess, or pleuritis. The fast enforced by the presence of the foreign body in the œsophagus and its hindrance to swallowing may render children very feeble and almost pulseless in forty-eight hours. A man, forty-four years old, was so exhausted at the end of an eight days' enforced fast that the face was

cyanotic, the extremities were cold, and the pulse was small and thread-like. Therefore the indication is, after failure of milder means to remove the foreign body, to perform œsophagotomy before the end of the following day. It should be performed immediately if the foreign body has been in the œsophagus several days before the patient comes under observation and ordinary means of removal fail, and also when the nature of the foreign body is such as to make its extraction or its passage into the stomach dangerous. Recovery is usually complete. In only two cases did stricture with communication between the œsophagus and trachea result. In very few cases did changes in the voice, hoarseness and cough, or symptoms of injury of the branches of the recurrent laryngeal appear.

After the first integumental incision, Fischer tears through the tissues and separates the parts with broad blunt retractors until he exposes the lateral border of the thyreoid gland, which he employs as his chief landmark. If the gland is swollen, it may render the exposure of the œsophagus quite difficult. If the foreign body can not be felt so as to be used as a guide, he introduces an œsophageal bougie of gum or metal upon which to make the incision through the wall of the œsophagus. Sometimes it is impossible to remove the foreign body through the wound. In these cases it is usually necessary to push the foreign body down into the stomach. Alsberg records a case in which the foreign body could be shoved upward and extracted through the mouth. In uncomplicated cases he sutures the mucous membrane and then closes the wound in the wall of the œsophagus by sutures passing through its entire thickness. In cases of perforation or gangrene of the œsophagus with suppuration and infiltration, the wound is left open. In either case the patient can swallow small quantities of fluid nourishment within a few hours after the operation, so Fischer does not ordinarily employ the stomach-tube for feeding purposes in these cases, but restricts its use to those in which the act of swallowing is difficult or painful.

**Intussusception.**—Schmidt ("Ctrlbl. f. Chir.," No. 1, 1888) urges that in cases of intussusception irreducible by other means, laparotomy should be performed within the first forty-eight hours, even though marked symptoms of intestinal obstruction have not appeared. In a large proportion of cases these severe symptoms are nearly or quite absent, although the case passes on to a fatal termination. Schmidt illustrates this by citing a case from his own practice: A girl, ten years old, was seized one evening, after eating fruit, with pain in the abdomen and vomiting. She had copious evacuations of the bowels on the first, third, fourth, and fifth days. Vomiting was only occasional and not stercoraceous until the fifth day. At the same time the other symptoms caused the diagnosis of intussusception to be made on the second day. Operative interference was delayed on account of the copious stools until it was of no value, and the patient died on the seventh day.

**Resection of the Wrist Joint.**—Gangolphe ("Revue de chir.," Sept., 1887) reports fifteen cases of resection for fungous osteo-arthritis with excellent results. He removes the mass, applies the actual cautery to the surface, dresses it with iodoform gauze, and fixes it with a plaster-of-Paris splint. In children, scraping and cauterization may suffice. Resection should not be attempted if the patient's general condition is not tolerably good, as amputation is less severe, and is preferable in cases where there is profound cachexia or persistent fever.

**Fæcal Accumulation.**—Worrall ("Australasian Med. Gaz.," Dec., 1887) reports a case of fæcal accumulation, in a girl thirteen years of age, which presented the appearance of a solid tumor, hard and nodulated, distending and nearly filling the abdomen. The rapid growth and stony hardness of the tumor, together with the cachectic appearance of the patient, seemed to indicate a malignant growth, but laparotomy revealed the true condition of affairs. The patient recovered.

**Cancer of the Stomach.**—Bernays ("Ann. of Surg.," Dec., 1887) suggests, as a substitute for Wölfler's operation of gastro-enterostomy in cases of pyloric cancer with stenosis which come under observation too late for the successful performance of pylorectomy, the simpler operation of curetting the cancer through an opening made for the purpose in the stomach. It is only palliative, but in this respect Wölfler's operation is open to the same objection while it is more difficult to perform. Great relief and general improvement are reported in the two patients upon whom Bernays has operated.

The first incision is made parallel to the border of the ribs, beginning an inch and a half to the left of the linea alba and an inch below the ensiform appendix, and extending three inches and a half to the left, down to the muscles. These are torn through rather than cut, in order to leave intact as much muscular tissue as possible, down to the peritonæum, which is then incised. The external surface of the stomach is then explored with the hand, and a careful choice is made of that part of the stomach-wall which will most easily adapt itself to the incision. This portion is drawn up into the wound, after suturing the parietal peritonæum to the lips, secured, and opened in the usual manner. Before incising the wall of the stomach he washes the wound with a five-per-cent. solution of carbolic acid for its slightly cauterizing effect. The stomach is then washed out and the growth curetted away. Cold water poured into the stomach contracts it when necessary, so as to bring all parts within reach of the finger, and controls the hæmorrhage, which is considerable during the operation. As several operations will probably be required, the opening is left patent, but if a benign tumor were found, it could be removed, and the stomach closed in the usual manner after gastrotomy.

**The Antibacterial Action of Iodoform.**—Jeffries ("Am. Jour. of the Med. Sci.," Jan., 1888) briefly reviews the literature which has appeared on this subject since the publication of the investigations of Heyn and Roosing, a brief review of which appeared in the Journal for June 25, 1887, confirms their observations and those of Lübbert, and advances the point that iodoform, though not a germicide, does retard the growth of bacteria. The experiments of Lübbert consisted in injecting into rabbits mixtures of *Staphylococcus pyogenes aureus* and iodoform, the results being the same as in the control experiments in which iodoform was omitted. Sattler saturated silk threads with *Staphylococcus pyogenes aureus*, dusted them with iodoform, and then laid them on gelatin-plates. The growth of the coccus was slower than from threads not dusted with iodoform. This appears to be due to the physical action of iodoform in repelling moisture, keeping the threads dry, and separating the bacteria from the nutritive material.

That iodoform retards the growth of bacteria Jeffries has shown by infecting tubes of bouillon, some containing five per cent of iodoform, with *Staphylococcus pyogenes aureus*, or the fluorescing, putrefying bacillus. Agar-agar plate cultivations made from dilute solutions of these showed that the number of bacteria in the tubes containing the iodoform was decidedly less than in the others. Comparison of cultivations made from ulcers of the leg before and after the use of iodoform showed a diminished number after its use. This result was probably due partly to the direct action of the iodoform and partly to the drying of the surface of the wound.

**The Radical Cure of Hernia.**—At the fifty-fifth annual meeting of the British Medical Association papers were read by Banks, Macewen, and Ball on the subject of hernia, each describing and advocating his own peculiar method of operating for the radical cure ("Brit. Med. Jour.," Dec. 10, 1887). The methods of Banks and Macewen have been so frequently described that details are unnecessary. Banks ligatures the sac as high up the canal as possible and removes it, and, in inguinal hernia, brings the pillars of the ring together with silver wire. This he does not with the intention of closing the inguinal ring, attempts to do which he pronounces theoretical and useless, but only to hold the parts together temporarily, while the wound heals, to prevent danger from coughing or straining. From a table of 106 cases we find that he has had two deaths after operations on fifty-two moderate-sized non-strangulated hernias, four deaths in sixteen cases of very large non-strangulated hernias, and three deaths in thirty-eight cases of strangulation. Of sixty-six cases of moderate-sized and strangulated hernias which could be traced after operation, forty-four were successful, seven partially successful, or probably successful, and fourteen failures. Nine cases of the very large hernias could be traced, six being successes and three failures. He considers that operative procedures are seldom required in children, that no person should be subjected to operation who can comfortably wear a truss which keeps the bowels in position, and that after the operation a support should be worn.

Macewen exhibited a table of eighty-one cases in which he had performed the operation which bears his name, with no deaths and only one failure. The principle of the operation is to convert the sac into a

pad, placed on the peritoneal surface of the internal ring, to act as a boss to turn away the intestinal wave from the opening. He then closes the internal ring by a double suture, inserted in such a manner as to imitate, as far as possible, the valvular form of the normal canal. For this purpose he deems his hernia needles indispensable. Very few of his patients needed to wear a support, which usually he does not recommend. He considers that a plug left in the canal tends to widen rather than obliterate it.

On the contrary, Ball employs torsion of the sac, and its retention in the canal to act as a plug. He isolates the sac from the cord up to the internal ring, and loosens the peritonæum from its attachments for a little distance from the opening. After determining the sac to be empty, he grasps the neck with a broad forceps, and twists it until it is felt to be quite tight, the left forefinger being employed to keep the upper portion of the neck free. Usually four or five complete revolutions suffice. A stout catgut ligature is then tied tightly about the twisted sac as high up as possible. Two silk sutures are then passed through the skin, about an inch from the outer margin of the wound, through the outer pillar of the ring, through the twisted sac in front of the ligature, through the inner pillar of the ring, and out through the skin. The sac is then cut off in front of the sutures. This torsion throws the peritonæum into folds, radiating from the internal ring, at which there is a prominence rather than a depression. During the last four years he has performed this operation twenty-two times, with no deaths. In three cases a support had to be worn on account of bulging at the inguinal ring. He deprecates the use of a truss after the operation, unless symptoms of recurrence appear.

**Suture of a Divided Ulnar Nerve.**—Jencken (*ibid.*) reports a case of unusually rapid restoration of function after suture of the ulnar nerve seven months after its division. Trophic changes had taken place in the parts supplied by the nerve, and anæsthesia was complete when the patient came under observation. The divided ends were found an inch apart, and could be secured in apposition only by forcibly flexing the wrist. Sensation had in great part returned four days afterward, and was perfect in a fortnight. The skin and muscles immediately began to recuperate, and the case resulted in a perfect cure.

[This very rapid return of function recalls the suggestion of Mr. Bowlby last year that the degeneration of the peripheral portion of a divided nerve is followed by a regeneration which progresses slowly as long as the ends are separated, to terminate, probably, in a final degeneration. But if during this period of slow regeneration the ends of the nerve are brought in apposition, the peripheral portion is united to the centers of nutrition, and regeneration may become very rapid.]

**Hydrocele in the Female.**—Osborn ("Brit. Med. Jour.," Dec. 24, 1887) describes hydrocele as occurring in the female in two situations, in the femoral canal and in the canal of Nuck, the latter being the more common. The diagnosis is not easy and the condition may be mistaken for irreducible, and, when inflamed, for strangulated hernia. The only trustworthy diagnostic point is transparency by transmitted light, which is frequently not easily determined. In doubtful cases a small portion of the fluid should be aspirated with a hypodermic syringe. The fluid is pale-yellow serum. The treatment advised is the application of a truss. When more active measures are indicated the hydrocele should be tapped, the walls of the cyst rubbed together, and pressure maintained by means of a truss or a pad and bandage. When this does not suffice a cure is usually obtained by injecting iodine into the sac. Tapping of the hydrocele should always be done at the patient's home.

[This treatment does not seem devoid of danger when we consider the difficulty with which a diagnosis from hernia is attended, and that, if by mistake a truss should be applied to the latter, great and irremediable mischief might ensue. The simultaneous presence of a hydrocele and hernia seems to be a possible condition, though not mentioned, and one which might present even more difficulties in the way of diagnosis. But in such a case the application of the treatment advocated might act disastrously to the patient. While treatment by incision is subject to the objections that it will confine the patient to her bed for a few days and that it is "treatment by the knife," it has the advantages of making the diagnosis certain and of being correct whether the original diagnosis was correct or not.]

**Vesical Calculus.**—Freyer (*ibid.*) contributes to the literature on this subject a series of one hundred cases of operation for stone in the bladder without a death. This includes sixteen cases of lithola-paxy in children from three and a half to fifteen years of age, an operation which he considers preferable to lithotomy when practicable. He notes that the capacity of the urethra in patients of the same age varies more in children than in adults; that there is more danger of leaving a fragment in children than in adults, because the stream passing through a small cannula has not the same force as when sent through a larger one, and therefore the fragments are not carried with the same certainty toward the eye of the cannula; that in children after division of the meatus the first two inches are the narrowest and the most difficult part through which to pass the lithotrite; that reintroduction of instruments tightly fitti. g the urethra at first may be difficult on account of congestion in the urethral mucous membrane near the meatus, a condition he has noticed to a slight extent in young adults, but never in old patients; that a lithotrite sometimes can not be introduced, although a larger sound may be, because of the curve approaching too nearly a right angle; and that no force should be employed during the introduction of the instrument.

**Excision of the Tongue.**—Barwell ("Lancet," Dec. 31, 1887) describes the following method of excision of the tongue, which he recommends as almost bloodless and leaving a painless stump:

"Strictly in and along the middle line an opening is made about one third of an inch long, immediately in front of the hyoid bone through the raphe of the mylo-hyoid. The genio-hyoid and genio-hyoglossus muscles are separated with the handle of the scalpel until the deep surface of the mucous membrane forming the floor of the mouth is reached. By means of Liston's needles carried under the mucous membrane to, or even beyond, the last molar teeth, threads are passed on each side into the buccal cavity, which in their turn draw flexible wire twist, first into then out of the mouth, in such wise as to surround the base of the tongue as far back as one will. An écraseur working with this wire severs that part of the organ. Then the loop of another écraseur is passed between the teeth, pressed well down on the first incision, and divides the structures beneath the tongue."

## Miscellany.

**The Carnegie Laboratory.**—Mr. Andrew Carnegie has just given additionally six thousand dollars to the Carnegie laboratory for the purchase of scientific instruments and apparatus to meet the requirements of the institution for the coming year. This sum, together with the income derived from third-year students, who are now obliged to take a course in the laboratory as a requirement for graduation, will amply provide for all the current expenses of this institution, and at the same time afford excellent advantages to any who may desire to pursue any special work in experimental pathology or bacteriology. The result of the work accomplished during the past scholastic year is most gratifying to those interested in the elevation of the standard of medical education. The entire graduating class has been taught normal histology, and as much of pathological anatomy as the limited time at the disposal of the three instructors permitted. There have been mounted nearly three thousand microscopical specimens for the permanent use of the section classes, besides a large number which have been mounted by special students in the laboratory. There have been also arranged, classified, and mounted nearly five hundred specimens in alcohol for the purpose of illustrating disease in the didactic lectures upon internal medicine and surgical pathology. A most interesting and unique collection of tumors has been placed in the museum connected with the laboratory for class demonstration. All this work accomplished during the past year is permanent in its character, and is a valuable contribution to the laboratory with a view to extending its wide field of usefulness.

A systematic series of experiments have been set on foot in regard to the value of disinfectants for the benefit of the Board of Health of New York. A most striking illustration of the usefulness of such a

laboratory to the community was manifested during the past year when a steamer landed at quarantine with supposed cases of cholera on board. At the request of the Board of Health there were made in the Carnegie laboratory experiments which proved beyond all doubt that the disease was genuine Asiatic cholera. It was in this way by the scientific discovery of the Koch bacillus of cholera that the true nature of the disease was disclosed. It is not at all an exaggeration to state that this work in bacteriology on the cholera germ enabled the Board of Health to appreciate the real danger of the situation and thereby prevent an epidemic of cholera in this city and country that might have involved untold suffering and loss of life. The like experiments conducted in reference to cases of sporadic cholera during the past year are also of great importance to the city. With such scientific institutions the country is protected from the visitations of pestilence and epidemics which in former times caused such great loss of human life. The Carnegie Laboratory, the Alumni Laboratory of the College of Physicians and Surgeons, and the Loomis Laboratory are institutions founded upon right principles, and the great advances which in the future will characterize American medicine must take place as a result of the researches conducted in these workshops of science.

**The New York Academy of Medicine.**—To aid in completing the fund necessary for the erection of a new building, the Subscription Committee has issued the following circular:

"The New York Academy of Medicine is an incorporated institution, forty years old. Its object is the cultivation of medical science. This is accomplisbed by lectures and discussions in the stated meetings of the Academy and its numerous sections; by maintaining reading-rooms, which furnish nearly all the medical journals of the world, and by collecting a library containing at present 37,000 volumes and 20,000 pamphlets, which are free both to the medical profession and to the public.

"The number of its Fellows is at present over five hundred. They are elected from among those who have practiced medicine in New York city, or its vicinity, three or more years.

"By careful management and voluntary contributions of its members and others, the Academy has accumulated some property. It owns its building, No. 12 West Thirty-first Street, free of debt. That, however, is too small for its membership, its many and various meetings, and its steadily increasing library. The house not being fire-proof, the library is in constant danger.

"A large, fire-proof building is, therefore, an immediate necessity. In recognition of this fact, Mrs. Anna Woerishoffer has given to the Academy the sum of $25,000, Dr. Edward L. Beadle bequeathed $5,000, and Mrs. Celine B. Hosack, widow of Dr. Alexander Hosack, $70,000, for the purpose of erecting a new building. More funds, however, are required, and therefore we appeal to both the profession and the public to aid us.

"Some of the grounds on which we base this request are the following:

"The Academy is not connected with any school or college. It is self-supporting, and carried on in the interest of the whole profession. There are no fees nor emoluments of a private or individual nature. It is not supported nor subsidized by the State or municipality. Its aim is the elevation of the profession to a higher scientific standard.

"On the knowledge, wisdom, and public spirit of the medical profession, the hygienic and sanitary safety of the country is dependent. If our great city and the republic will be better protected in future than heretofore against the inroads of cholera and other infectious diseases, that result will be due in great part to the efforts of the New York Academy of Medicine.

"Thus we appeal to the wise generosity of the public, and request contributions large enough to enable us to accomplish the purposes for which the Academy was founded. The sum required in addition to our present means is $250,000.

"Will not generous and patriotic New Yorkers feel a just pride in seeing our city possess another monument devoted to science; established on a firm and liberal foundation; a protection, an honor, and a credit to its citizens, emulating, if not surpassing, the great institutions of a like character in the old capitals of Europe?

"In this conviction we confidently hope that a fund will soon be raised sufficient to purchase a proper site and to erect upon it a building specially adapted to our society, and which, for generations to come, will be sufficient for its purposes. This building once paid for, there will be no further occasion for us or our successors to call upon the liberality of our fellow-citizens.

"Contributions and correspondence may be addressed to members of the Committee at their residences, or to the care of the New York Academy of Medicine, 12 West Thirty-first Street, New York."

The Committee consists of Dr. Abraham Jacobi, Chairman; Dr. Joseph E. Janvrin, Treasurer; Dr. Arthur M. Jacobus, Secretary; Dr. Cornelius R. Agnew, Dr. Fordyce Barker, Dr. Joseph D. Bryant, Dr. Thomas H. Burchard, Dr. Frederick A. Castle, Dr. William H. Draper, Dr. Everett Herrick, Dr. Alexander S. Hunter, Dr. Andrew H. Smith, Dr. T. Gaillard Thomas, Dr. Laurence Johnson, Dr. Herman Knapp, Dr. Charles Carroll Lee, Dr. Malcolm McLean, Dr. Willard Parker, Dr. Edward Sprague Peck, Dr. George A. Peters, Dr. William M. Polk, Dr. D. B. St. John Roosa, Dr. George F. Shrady, Dr. Alexander J. C. Skene, Dr. Gouverneur M. Smith, Dr. Alfred L. Loomis, Dr. Leonard Weber, Dr. Robert F. Weir, and Dr. W. Gill Wylie.

The following-named gentlemen fully agree with the objects of the foregoing circular, and have expressed their willingness to serve on the Subscription Committee: Mr. James C. Bayles, Mr. James M. Brown, Mr. Charles Coudert, Mr. Andrew H. Green, Mr. Abram S. Hewitt, Mr. D. Willis James, Mr. John S. Kennedy, Mr. Robert Maclay, Mr. Jacob H. Schiff, Mr. Henry Villard, and Mr. J. Pierpont Morgan.

**Rhachitis.**—Schwarz ("Medizinische Jahrbücher," 1887) has demonstrated, by an examination of 500 children within an hour after birth at the lying-in hospital in Vienna, that the signs of rhachitis can usually be found at that early period, showing the disease to be, at least usually, intra-uterine in its commencement. To a very large extent he confirms the usual impressions regarding ætiology and pathology. Of the 500 children examined, 97 were without sign of this disease, 188 had well-marked rhachitic rosaries together with rhachitic changes of the cranial bones, varying from an abnormal weakness along the borders of the sagittal suture to an almost complete defect of ossification of the cranium, 155 had well-marked rhachitic rosaries without the changes in the cranial bones, 36 had the changes in the cranial bones alone, and 24 presented only slight swellings at the union of the bones and cartilages of the ribs. Of the children born in the seventh lunar month, 14 were rhachitic, 1 normal; in the eighth lunar month, 27 rhachitic, 4 normal; in the ninth lunar month, 50 rhachitic, 12 normal. Fifteen of the mothers of rhachitic children presented signs of having suffered from a high grade of rhachitis. Of 6 cases of twins, in 3 one child was normal, while the other was rhachitic; in the others both children were rhachitic. His conclusion is that every child should be examined as soon after birth as practicable, and, if any signs of rhachitis are found to be present, active treatment should be immediately instituted.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 23d:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 3d corresponded to an annual rate of 21·5 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Sunderland, viz., 13·4, and the highest in Blackburn, viz., 34·2 in a thousand. Small-pox caused 21 deaths in Sheffield, 1 in Leeds, 1 in Nottingham, 1 in Manchester, and 1 in Bristol.

*London.*—One thousand seven hundred and ninety-four deaths were registered during the week, including 15 from measles; scarlet fever, 27; diphtheria, 24; whooping-cough, 94; enteric fever, 15; diarrhœa and dysentery, 10. Diseases of the respiratory organs caused 488 deaths; different forms of violence, 65; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 21·9 in a thousand. In greater London 1,905 deaths were registered, corresponding to an annual rate of 18 in a thousand of the

population. In the "outer ring" 9 deaths from diphtheria; whooping-cough, 13; and fever, 3, were registered.

*Ireland.*—The average annual death rate represented by the deaths registered during the week ending March 3d in the sixteen principal town districts of Ireland was 35·3 in a thousand of the population. The lowest rate was recorded in Londonderry, viz., 21·4, and the highest in Limerick, viz., 44·5 in a thousand. In Dublin 230 deaths were registered, including 1 from small-pox; diphtheria, 3; measles, 3; whooping cough, 6; scarlet fever, 5; and enteric fever, 5.

*Scotland.*—The deaths registered in eight principal towns during the week ending March 3d corresponded to an annual rate of 23·4 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12·2, and the highest in Glasgow, viz., 27·5 in a thousand. The aggregate number of deaths registered from all causes was 592, including 14 from measles; diphtheria, 9; scarlet fever, 6; whooping-cough, 28; fever, 2; and diarrhœa, 7.

*Santiago de Cuba.*—The sanitary inspector reports for the week ending March 10, 1888, that yellow fever has totally disappeared from the military hospital, and no cases of it are reported in the town. Small-pox also has completely disappeared.

*Havana.*—One death from yellow fever and 29 from small-pox are reported for the week ending March 10, 1888.

*Callao.*—The United States consul, in his dispatch dated February 21, 1888, states that "the last official report respecting cholera in Chili, dated at Valparaiso, the 18th instant, is not encouraging. It states 'cholera north and south does not decline. Cases reported at Pisagua. Valparaiso, new cases, 21; deaths, 4; Santiago, new cases, 38; deaths, 10.' Pisagua is a port just north of Iquique, and dangerously near to Arica, from whence the distance to the Peruvian boundary at Ilo is insignificant. At Ilo a sanitary cordon is established, but no confidence is entertained regarding its efficiency. The sanitary board here is now called upon to renew its endeavors to prevent all communication with the infected districts. The public health of Lima and Callao continues to be satisfactory. A cable message has just been received by the Government at Lima from the consul at Iquique, stating that no cases of cholera have appeared in the department of Tarapaca, in which are comprised Iquique and Pisagua."

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | March 3. | 2,260,945 | 1,200 | .. | ... | 6 | .... | 13 | 5 | 48 |
| Glasgow | March 3. | 545,678 | 278 | .. | .... | .... | .... | .... | 4 | 4 |
| Warsaw | February 25. | 439,174 | 175 | .. | .... | 9 | .... | ... | 2 | 2 |
| Calcutta | February 4. | 433,219 | 262 | 29 | .... | 1 | .... | .... | .... | .... |
| Rome | January 28. | 382,973 | 250 | .. | .... | 5 | .... | 3 | .... | 2 |
| Copenhagen | February 21. | 300,000 | 114 | .. | .... | .... | .... | 1 | 11 | ... |
| Munich | February 18. | 275,000 | 153 | .. | .... | 1 | .... | .... | 2 | 4 |
| Edinburgh | February 25. | 262,733 | 106 | .. | .... | .... | .... | .... | .... | 2 |
| Edinburgh | March 3. | 262,733 | 106 | .. | .... | .... | .... | 1 | 1 | 1 |
| Palermo | March 3. | 250,000 | 95 | .. | .... | .... | .... | 1 | 2 | .... |
| Belfast | February 25. | 224,422 | 153 | .. | .... | .... | 1 | 1 | 2 | .... |
| Belfast | March 3. | 224,422 | 170 | .. | .... | .... | .... | .... | 1 | 2 |
| Genoa | March 3. | 179,337 | 117 | .. | ... | 5 | .... | .... | .... | 3 |
| Leipsic | March 3. | 170,000 | 83 | .. | .... | .... | .... | 2 | 4 | 6 |
| Trieste | February 25. | 154,500 | 95 | .. | .... | 5 | .... | .... | 2 | .... |
| Toronto | March 10. | 180,000 | 42 | .. | .... | .... | .... | 2 | .... | .... |
| Stuttgart | March 3. | 125,510 | 48 | .. | .... | .... | .... | .... | .... | 3 |
| Havre | February 25. | 112,074 | 92 | .. | .... | 5 | .... | 1 | .... | 1 |
| Havre | March 3. | 112,074 | 116 | .. | .... | 8 | .... | 3 | .... | 1 |
| Barmen | February 25. | 109,000 | 34 | .. | .. | .... | 1 | .... | .... | 1 |
| Barmen | March 3. | 109,000 | 45 | .. | .... | .... | 1 | .... | .... | 3 |
| Mayence | February 25. | 65,701 | 30 | .. | .... | .... | .... | .... | .... | 1 |
| Merida | February 29. | 48,711 | 39 | .. | .... | .... | 1 | .... | .... | .... |
| Cienfuegos | March 5. | 35,464 | 30 | .. | .... | 14 | ... | 1 | .... | .... |
| Cienfuegos | March 12. | 35,464 | 37 | .. | 1 | 24 | .... | .... | .... | .... |
| Gibraltar | February 26. | 23,681 | 8 | .. | .... | .... | .... | .... | 1 | 1 |
| Sagua la Grande. | March 3. | 15,605 | 14 | .. | .... | 7 | .... | .... | .... | .... |

UNITED STATES.

*Key West.*—The medical officer in charge of the Marine-Hospital Service reports, under date of March 15th, that "there are no cases of small-pox upon the island at this date, and, as no new cases have developed for the past week, it is hoped the disease has been eradicated."

*San Francisco—Small-pox.*—The board of health, under date of the 15th instant, declared small pox to be no longer epidemic in this city, only 16 cases and 1 death having been reported since March 1st.

**The Health of Boston.**—During the week ending Saturday, March 24th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 22 cases and 6 deaths; scarlet fever, 16 cases and 2 deaths; typhoid fever, 2 cases and 2 deaths; measles, 49 cases and 1 death. There were also 24 deaths from consumption, 22 from pneumonia, 1 from whooping-cough, 8 from heart disease, 18 from bronchitis, and 2 from marasmus. The total number of deaths was 182, against 189 in the corresponding week last year.

## ANSWERS TO CORRESPONDENTS.

*No. 166.*—See the account of Dr. Dana's case, and the discussion, in the proceedings of the New York Neurological Society, meeting of March 5th.

*No. 167.*—The correct spelling is erythrophlœine (not erythrophlæine).

*No. 168.*—They are distinguished by the different temperatures at which they melt.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

# THE CARTWRIGHT LECTURES
ON
# THE GENERAL PATHOLOGY OF FEVER.

*DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.*

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### Lecture I.

*Thursday, March 29, 1888.*

There is no subject in medicine of more general and varied interest than fever. The practitioner in every department of medicine, the pathologist, and the physiologist are equally interested in the investigation of the nature and effects of fever. Even the physicist and the chemist, who are not directly concerned with medical science, have lent their aid to the study of animal heat and its disorders. The history of opinion regarding fever is in great part the history of medicine itself, for no feature of the great systems of medicine from Hippocrates and Galen to the present century so characterizes these systems as the views held concerning the nature of fever. In consequence of the importance of the subject and of the number and ability of those engaged in its investigation, it might be supposed that no chapter in medical science would be better understood than that pertaining to fever. That such is not the case is due to the fact which is becoming more and more evident that the reaction of the animal system which we call fever is dependent upon the most fundamental and essential properties of protoplasm and of nerve energy. In proportion as our knowledge of these properties increases and becomes more accurate, we gain a clearer insight into the complicated processes involved in the production of fever.

I should hardly have selected for this course of lectures a subject where so many problems remain unsolved and which must necessarily be presented in so fragmentary a form, were it not that in all ages the opinions held concerning the nature of fever have controlled measures employed in its treatment. In proof of this, one need not go back to the time when fever was regarded as an almost conscious struggle of an *anima* with a noxious principle, in which struggle the physician was to interfere as little as possible, or to the time when fever was supposed to result from morbid humors which the physician should aim to eliminate by the production of a critical discharge, or to the period when the treatment hinged upon the belief in either the sthenic or the asthenic nature of fever. In our own time the treatment of fever is intimately connected with the answers variously given to such questions as whether fever aids in the elimination or destruction of infectious agents concerned in its production; whether increased waste of tissue is a constant condition and a source of danger in fever; what part is played by infection and what part by elevation of temperature in causing the grave symptoms of fever; what, in addition to lowering of temperature, are the effects of so-called antipyretic measures of treatment.

I need hardly say that the subject of these lectures relates to fever as a condition common to all febrile diseases. Some writers understand by the term fever used in this sense merely abnormal elevation of temperature, others elevation of temperature and the symptoms directly caused by this, and still others a complex of symptoms of which increased temperature is the most prominent symptom but not necessarily the cause of the others. In considering the general pathology of fever it is convenient to adopt the last meaning, although it would doubtless be less confusing if the word fever were applied only to abnormal elevation of temperature.

Increased temperature being the dominant and essential symptom of fever, all discussions as to the nature of fever center around the question, How is febrile rise of temperature produced? It is to the consideration of this question that I first invite your attention. As there are other aspects of fever which I wish to discuss, it will be necessary to present the matter belonging to this division of the subject in as succinct a form as is compatible with clearness. Twelve years ago Burdon Sanderson brought together in an admirable critical review the results of investigations upon this subject up to that period. Since that time important additions have been made to our knowledge of the mode of production of fever.

In the wonderful preservation of a nearly constant temperature which characterizes in health the warm-blooded animals three factors are concerned—viz.: the production of heat within the body, the loss of heat from the body, and the regulating mechanism by which the varying heat-production and heat-loss are so balanced that the internal temperature remains practically constant. It is theoretically possible that the rise of temperature in fever may be due to the disturbance of any one or more of these factors. It becomes necessary, therefore, to consider the behavior of heat-production, of heat-loss, and of the regulating mechanism in fever.

We will begin with a consideration of the production of heat in fever. The amount of heat produced by the body is estimated by two methods, one known as direct calorimetry, the other as indirect calorimetry. In the method of direct calorimetry the animal is placed in a closed ventilated box surrounded on all sides by a compartment containing water or air, and the amount of heat discharged from the body is determined by the quantity of heat imparted to the surrounding water or air. If the temperature of the animal remains unchanged during the period of observation, the heat-production is equal to the heat-loss; if the temperature rises or falls, the amount of heat corresponding to this change of temperature—an amount determined by multiplying the weight of the animal by its specific heat and by the number of degrees of altered temperature—is added to or subtracted from the quantity of heat imparted to the calorimeter. Time will not permit me to enter into experimental details in this connection; it must suffice to say that the method of direct calorimetry necessitates the introduc-

tion of a number of corrections which can not be determined with absolute accuracy, so that the results obtained are of relative rather than of absolute value.

Hitherto the estimation of heat production in fever by determining the entire amount of heat liberated from the body has been made only upon animals in which fever has been artificially produced. The most elaborate researches of this nature are those of Senator and of Wood.* The experiments of Wood are of the greater value because he extended his observations over longer periods of time.

In four of the seven calorimetrical experiments of Wood on different fevered dogs comparison can be made of the amount of heat produced hourly in fever with that produced by the same animal when fed and when in a state of hunger. During the period of fever the animal was also in a condition of hunger. I have computed from Wood's tables that the average hourly heat-production during seven days described as first and second fever days is a little over 23 per cent. greater than that produced by the healthy animal during a state of hunger, the minimum excess being 1 per cent. and the maximum 55·5 per cent. If a comparison is made of different periods during the existence of fever there are found to be even greater fluctuations in the amount of heat-production than these figures would indicate, this amount being sometimes more than double that in hunger, and sometimes considerably less than the average production in hunger. Moreover, these experiments show no definite relation between the height of the temperature and the amount of heat produced, nor is it possible to deduce from them any relation between heat-production and the different stages of fever, such as the more recent calorimetrical experiments of Wood, Reichert, and Hare appear to show, and which will be described farther on. An important outcome of these, as well as of all similar calorimetrical experiments, is that, although the heat-production of an animal in fever is greater than that of one under like conditions of nourishment, it is, as a rule, less than that of the same animal upon a full diet.

There are many reasons which make it important to control the experimental results obtained from animals in fever by corresponding observations of human beings. The agents used in producing experimental fever have generally been putrid fluids or pus, the injection of which causes sometimes diminution instead of elevation of temperature. When fever is thus produced it is usually of short duration and of only moderate intensity, the rise of temperature being rarely more than four degrees, and sometimes not more than one degree Fahrenheit. Moreover, a large part of the important rôle played by the skin in the regulation of the bodily temperature in man is assumed by the lungs in these animals.

Complete calorimetrical observations of human beings in fever encounter difficulties which have not yet been overcome. The imperfect or incomplete methods employed by Liebermeister and by Leyden* in determining the heat-production of human beings in fever justify the inference that this production is increased, and apparently, as a rule, to a greater extent than in animals, but they do not warrant positive conclusions as to the quantity of heat produced.

We turn now to the results regarding febrile production of heat obtained by what has sometimes been called indirect calorimetry. Inasmuch as the heat-energy of the body is the result of chemical changes of its proteids, fats, and carbohydrates, it is evident that, if we know the kind and the amount and the heat value of the substances consumed in a given time within the body, we can compute their heat-production. These chemical changes, so far as their final products are concerned, are processes of oxidation. The heat-values of the substances consumed in the body were determined first by Frankland, and more recently, with greater accuracy, by von Rechenberg, Danilewsky, and Rubner. The investigations of Pettenkofer and Voit have shown that in hunger almost exclusively fats and proteids are oxidized, and that in this condition, by determining the amount of oxygen absorbed and of nitrogen and of carbon excreted, we can estimate the quantity of fat and of proteid substance oxidized during the period of observation.

Physicians of past centuries regarded increased consumption of the material of the body in fever as so evident that it needed no special demonstration, and after Lavoisier made apparent the sources of animal heat it was accepted almost unquestioningly until the last quarter of a century that fever was essentially a process of increased combustion or oxidation. The immense historical importance of the promulgation, in 1863, of Traube's theory, which denied the dependence of fever upon increased production of heat, is that this theory has led to a careful inquiry into the grounds of beliefs hitherto generally accepted and to the demonstration of the unsatisfactory nature of the evidence hitherto thought to be conclusive.

The striking loss of weight of most fever-patients is, as is well known, a fact of great clinical importance. Weber and Finkler have demonstrated that animals in fever lose weight more rapidly than healthy animals in hunger, and, although observations on human beings with reference to this point are not concordant in their results, there can be little doubt that the tendency of fever is to cause a greater loss of weight than can be explained simply by insufficient nutriment. This tendency, however, may be masked by the retention of water within the body, as the investigations of Leyden and others have shown. While, therefore, the studies of the loss of weight in fever leave no doubt that there is increased destruction of tissue in this condition, we can not consider this loss as an accurate measure of the increased destruction nor, without further knowledge, as an indication of increased oxidation, still less as proof of excessive production of heat.

It was for a long time believed that the excessive excretion of urea in fever afforded satisfactory evidence of increased oxidation and of greater production of heat. We

* Senator, "Untersuch. üb. d. fieberhaften Process," Berlin, 1873. Wood, "Fever; a Study in Morbid and Normal Physiology," Philadelphia, 1880.

* Liebermeister, "Handb. d. Path. u. Therap. d. Fiebers," Leipsic, 1875. Leyden, "Deutsches Arch. f. klin. Med.," Bd. v.

now know, especially from the researches of A. Fraenkel, that this is so far from being true that we can explain the excessive elimination of urea better upon the assumption of diminished than of increased oxidation of tissue. In certain pathological conditions, notably phosphorous poisoning, the amount of urea excreted may be increased more than threefold, notwithstanding, or, as Fraenkel believes, in consequence of, diminished absorption of oxygen and elimination of carbonic acid. It can, moreover, be computed that even without any diminution of the respiratory gases the discharge of urea may be increased without greater production of heat. While, therefore, the enormous increase in the discharge of urea in fever sheds valuable light upon a most obscure subject, the nature of febrile metabolism, it does not, regarded by itself, afford us any information as to the production of heat.

Failing to find satisfactory proof of increased oxidation in the loss of weight of the body, or the excessive excretion of urea in fever, attention was then directed to the elimination of carbonic acid, an excretory product which bears a much closer relation than urea to the production of heat. Immense importance has been justly attached to the determination of the amount of carbonic acid excreted by an individual in fever. No point in the whole battle-ground of fever pathology has been more hotly contested than whether increased production of carbonic acid is an essential part of the febrile process. The first investigators of this question—Leyden, Liebermeister, Senator—contented themselves with the determination of the amount of carbonic acid eliminated by an individual in fever and in apyrexia. There are several considerations which greatly diminish the value to be attached to the mere estimation of carbonic acid excreted without simultaneous determination of the amount of oxygen absorbed. As has been urged by Senator and with special clearness by Pflüger, increased discharge of carbonic acid does not necessarily imply increased production of the same. The discharge of carbonic acid varies, independently of its production, with the rhythm and depth of respiration, and with the temperature and the alkalinity of the blood, all factors which are altered in fever in such a manner as to favor increased liberation of carbonic acid. It is true that the influence of these factors would cause increased discharge of carbonic acid out of proportion to its production only for a limited period, and that the prolonged increase in the amount of carbonic acid discharged in fever which has been found by several observers can hardly be interpreted otherwise than in favor of increased production. There is another point which detracts still further from the value of exclusive determinations of the quantity of carbonic acid discharged, and this is that it makes a great difference, so far as the production of heat is concerned, whether the carbonic acid is the result of oxidation of carbohydrates, of fats, or of proteids, a difference amounting, according to Rubner, to 29·5 per cent., or, if only the proteids and fats are considered, to over 20 per cent. In investigations of nutrition, it is now known to be of the utmost importance to determine the so-called respiratory quotient—that is, the ratio between the amount of carbonic acid discharged and that of oxygen absorbed. This quotient varies in a definite way with the kind of material oxidized in the body, and an accurate knowledge of it would enable us to draw conclusions as to the substances consumed in fever.

The investigations which have been published within the last few years upon the absorption of oxygen, as well as the discharge of carbonic acid, in fever are to be ranked as most valuable contributions to our knowledge of fever. The first estimation by trustworthy methods of the amount of oxygen absorbed, and of carbonic acid excreted in fever, was made in Pflüger's laboratory by Colasanti upon a guinea-pig, and was published in 1877. Since that time two careful and elaborate researches upon this subject have been made, the one by Finkler and the other by Lilienfeld.*

These experimenters found that in fever there was increase of the amount both of oxygen absorbed and of carbonic acid excreted. Making comparison with healthy animals, under the same conditions of nutrition, Colasanti found that the increase in the absorption of oxygen amounted to 18 per cent., and in the excretion of carbonic acid to 24 per cent. Finkler, whose experiments were made also upon guinea-pigs, found, under varying conditions of external temperature, the average febrile increase of oxygen to be 13·8 per cent., and of carbonic acid 13·3 per cent., and Lilienfeld, who experimented on rabbits, found the average increase of oxygen to be 15·9 per cent. The statement of these averages gives an incomplete conception of the oxidation in fever, as they are derived from all stages of fever and varying elevations of temperature. No constant proportion was found to exist between the height of the temperature and the amount of oxidation. On the other hand, a relation was observed between the oxidation and the stages of fever, viz.: the initial stage with rising temperature, the acme with constant high temperature, and the defervescence with falling temperature. During the period of rising temperature oxidation was increased, and in this stage Finkler found the highest percentages, amounting to 36·6 per cent. in the increase of oxygen and 37·6 in that of carbonic acid. There were, however, marked fluctuations in this stage both in the temperature and in the amount of oxidation. In the stage of constant high temperature such high percentages were not noticed and the fluctuations were less marked. The processes of oxidation, according to Lilienfeld, are increased on the average less in the acme than in the initial stage of fever.† During defervescence of the fever the increased oxidation falls and may sink below the normal. Taking a broad view of these stages, we may say, therefore, that the periods of rising, constant, and falling temperatures in fever correspond to the periods of rising, constant, and falling oxidation, but we must bear in mind that the fluctuations in oxidation are much greater than and bear no constant relation to those of temperature, so that in each period there are times when oxidation may rise or fall most decidedly without corresponding changes of temperature.

* Colasanti, Pfluger's "Archiv," Bd. xiv; Finkler, *ibid.*, Bd. xxix; Lilienfeld, *ibid.*, Bd. xxxii.

† In the period of rising temperature there was an increase of oxygen absorbed of 27 per cent., in the acme of 14·9 per cent.

Inasmuch as these experiments have shown that the increased excretion of carbonic acid in fever is accompanied by increased absorption of oxygen, and, as will be explained presently, that the respiratory quotient, if it changes at all, sinks, it is evident that we need not discard experiments in which only the amount of carbonic acid excreted has been estimated by good methods. The most accurate of these experiments are those of Leyden and Fraenkel upon fevered dogs.* They found that, without exception, carbonic acid was excreted in larger amount in fever than in health under the same nutritive conditions, the excess amounting sometimes to 70 per cent., and in general being larger than in the experiments which have been previously considered. The earlier and meritorious experiments of Senator upon this point did not give uniform results, and he felt justified in concluding that there was no evidence of increased production of carbonic acid in fever. Subsequent experiments with far more accurate methods have demonstrated the incorrectness of Senator's conclusions. It may be well to call to mind that Burdon Sanderson's deductions, which have naturally had great influence among physicians here and abroad, were based in great part upon the data derived from Senator's experiments.

Hitherto the methods employed in studying the respiratory gases of human beings in fever have not approached in accuracy those used in the experiments described. If the discordant results of Wertheim, which were obtained by methods manifestly very inaccurate, are discarded, all other investigators have observed augmented discharge of carbonic acid in fever of human beings. Leyden found an excess of 50 per cent. in the febrile discharge of carbonic acid, and Liebermeister, whose observations were made chiefly on cases of intermittent fever, found an excess of 30 to 40 per cent. in the period with rising temperature, and of 19 to 31 per cent. in the acme of the fever. During the defervescence of the fever the excess of carbonic acid discharged diminished and sometimes wholly disappeared. In one instance in which the determination was made during the rigor of intermittent fever the carbonic acid excreted was two and a half times the normal amount, an excess so enormous that it was undoubtedly due in great part to the muscular movements which attended the chill.

Although we can not consider these figures as absolutely accurate, they indicate clearly that in human beings as well as in animals fever is characterized by increased oxidation, and apparently that as a rule in man the excess of oxidation is greater than in the experimental fever of animals. This was to be expected, as it is difficult to produce experimentally in animals anything approaching in intensity the well-marked fevers of human beings.

As the result of these laborious researches we may consider it established that increased oxidation is a part of the fever process. It has been maintained that this augmented oxidation is simply the result of the elevation of temperature, but it can be proved that this is not true. Pflüger has demonstrated that the processes of oxidation are more active at high than at low temperatures of the body, and he has also established the increment of oxidation which corresponds to each degree of rise of temperature. By means of these data Finkler has computed that in guinea-pigs the febrile elevation of temperature of 1° C. could cause an increase of the absorption of oxygen of only 3·3 per cent. Moreover, Lilienfeld found decided increase in the processes of oxidation before there was any marked elevation of temperature, and all the experiments have rendered it quite evident that there is no such relation in fever between the height of the temperature and the energy of oxidation as would be expected if the augmented oxidation were merely the result of the increased temperature.

There is no reasonable doubt that the more energetic oxidation which we find to be an essential part of the process of fever indicates increased production of heat. Exactly what amount of heat-production corresponds to the increased oxidation we can not know until the kind and the quantity of substances oxidized in fever have been determined. It is to be regretted that no experiments have been made in which the amount of nitrogen excreted has been determined at the same time with the estimation of the oxygen absorbed and of the carbonic acid discharged. These data would enable us to form some estimate, although not an accurate one, of the amount of heat-production corresponding to the oxygen absorbed, unless very different laws from those in health control the oxidation processes of fever.

Mention has already been made of the importance of determining in fever the respiratory quotient, or the ratio between the carbonic acid discharged and the oxygen consumed. A few words will make this clear. It is well known that under ordinary circumstances in health not all of the oxygen consumed reappears in the carbonic acid discharged. This indicates that a part of the oxygen absorbed is used in other oxidations than those resulting in the production of carbonic acid. According to the extent of these other oxidations, therefore, the respiratory quotient must vary. It is probable that these oxidations of which carbonic acid is not a product result, at least in part, in the formation of water, which is therefore one of the excretory products of the body, as has been urged especially by Professor Austin Flint. The influence of various circumstances upon the respiratory quotient has been studied, but what especially concerns us here is that in hunger this quotient sinks, which is to be expected from the fact that in this condition almost exclusively fats and proteids are oxidized.

We evidently possess in the determination of the ratio of carbonic acid discharged to the oxygen consumed a means of reaching a conclusion as to a cardinal point in the pathology of fever—viz., whether the processes of oxidation in fever conform to the laws which govern them in health, and particularly whether, as has often been asserted, unusual or incomplete products of oxidation are formed to any considerable extent in fever. Colasanti and Lilienfeld found that the respiratory quotient in their fevered animals did not vary from that of healthy animals under similar nutritive conditions. Finkler observed that the respiratory quotient fell in fever somewhat more rapidly than in hunger, and this he explains by the more active oxidation in fever.

* Leyden and Fraenkel, Virchow's "Archiv," Bd. lxxvi.

All three experimenters reached the conclusion that the substances oxidized were the same in fever as in health, and that other than the normal products of combustion were not formed in fever in any considerable amount. That the metabolism in fever does differ in at least one important respect from that in hunger is evident from the excessive amount of urea excreted in fever, but considerable variations in the disintegration of albuminous material may occur without much change in the respiratory quotient.

The only determinations of the febrile consumption of oxygen and discharge of carbonic acid in man are those of Wertheim and of Regnard. Both investigators found a decided diminution of the respiratory quotient. The method employed by Wertheim was so defective that no confidence can be placed in his results. The experiments of Regnard * are presented with great neatness, but his results on other points differ so much from those obtained by trustworthy physiologists and by better methods that we can not accept his conclusions as to the respiratory quotient in fever without confirmation. Regnard found in all fevers which he studied a most marked diminution of the respiratory quotient. If this were true, it would follow that in fever a much larger part than in health of the oxygen consumed is employed in other oxidations than those yielding carbonic acid. This would confirm the widely accepted belief that water and products of incomplete oxidation are formed in excessive amount in fever.

From the unfortunate discrepancy of these results it is evident that the knowledge which we now possess of the processes of oxidation in fever is not sufficient to enable us to form an accurate estimate of the heat-production. In hunger, from one fourth to one third of the absorbed oxygen is available for combination with hydrogen to form water, the remainder uniting with carbon to form carbonic acid (Regnault and Reiset). If in fever the same ratio existed, then the excess of heat-production would be proportionate to the excess of oxygen absorbed, assuming that the substances oxidized were the same in both conditions; if, however, as Regnard's experiments indicate, a larger proportion of oxygen was available in fever for the oxidation of hydrogen, then the increment of heat-production would be still greater, for the same amount of oxygen produces more heat when employed in the oxidation of hydrogen than in that of carbon. It is also to be considered that the same quantities of hydrogen and of carbon in their oxidation yield varying amounts of heat, according to the chemical compounds in which they are contained, and we can not say positively whether the compounds oxidized are the same in fever as in health under like conditions of nutrition. Upon the whole, the weight of evidence is in favor of the view that the excess of heat-production in fever is approximately proportionate to the increase in the consumption of oxygen, but it would be rash to assert this positively. It is evident that in fever ordinarily a much smaller amount than in health of the energy resulting from chemical processes is transformed into external mechanical work, so that relatively more remains in the form of heat.

* Regnard, "Recherches exp. sur les variations pathologiques des combustions respiratoires," Paris, 1878.

In connection with this discussion of the possibility of unusual sources of heat in fever may be mentioned an hypothesis which has been advanced with much ingenuity by Dr. Ord.* This hypothesis is based upon the assumption, which is probable enough, that there are in the body chemical processes in which heat-energy is transformed or rendered latent. These processes are thought to be chiefly those concerned in the building up of tissue. It is argued that, inasmuch as the construction of tissue is manifestly in abeyance in fever, the amount of heat in the body may be increased not only by disintegrative processes, but also by "the persistence in the form of heat of energy which should have taken another form." That these building-up processes influence decidedly the amount of heat produced in the developing ovum has been demonstrated by d'Arsonval's calorimetrical determination that the egg during incubation absorbs heat, notwithstanding the consumption of oxygen and the excretion of carbonic acid. This fact, which might have been predicted, certainly does not justify us in refusing to attach calorimetrical value to the determination of the respiratory gases and the urinary nitrogen. From the little we know of these constructive processes in human beings, we should infer that the amount of energy in the form of heat which they appropriate bears only a very small ratio to the total heat-energy set free by heat-producing processes, so that their cessation would not bring a large increment to the heat of the body. Moreover, these constructive processes are also in abeyance, although doubtless to a less extent, in starvation, with which experimental fever is usually contrasted as regards heat-production and heat-loss. It is not probable that any extraordinary difference in the behavior of the processes of tissue-building in fever and in starvation can occur without affecting the respiratory quotient. For the present, therefore, we can not attach any great importance, so far as the increase of heat-energy in fever is concerned, to the inactivity of heat-absorbing processes.

We have gone over now the evidence which, in my judgment, establishes the fact that there is increased production of heat in fever. The same conclusion is reached also by the study of the loss of heat from the body in fever. That fever is accompanied by increased production of heat and by more active combustion has been in all ages the belief of the majority of physicians. This belief, however, has been rather instinctive than based upon actual demonstration. It has been contested by investigators of great ability and on the ground of scientific observations. For these reasons and on account of the importance of the subject it has seemed to me desirable to present to you the exact evidence, although many of its details, I fear, may have wearied you. We have learned, moreover, certain facts concerning febrile thermogenesis which the mere observation of fever patients does not render so apparent. We have found that there is no definite relation between heat-production and the height of the temperature, so that we may have excessive thermogenesis with low as well as with high temperatures. There appears to be, however, a relation between the stages of fever and heat-production, this being

* Ord, "British Med. Journal," 1885, vol. ii.

in spite of remarkable fluctuations, greatest in the initial stage and least in defervescence. Although, for reasons which have been mentioned, and others that might have been adduced, we can attach hardly an approximative value to figures which purport to give the actual heat-production in fever, still, unless far more serious errors than seems possible inhere in the methods of direct and of indirect calorimetry, we can draw one important conclusion. This is that, while an individual in fever produces more heat than he would in health under similar conditions as to food and muscular movement, he does not produce necessarily in fever more heat than he would in health on a full diet. And it is certain that he usually produces far less heat in fever than he often does under circumstances which normally increase heat-production, such as a cool environment and muscular exercise. That one in health with little or no change of temperature may produce twice or more the quantity of heat which he produces in fever makes it plain that it is impossible to explain febrile rise of temperature simply on the basis of increased thermogenesis or, what probably comes to the same thing, of increased oxidation. That in health vastly increased heat-production may occur with comparatively little change of temperature is, of course, due to the fact that the dissipation of heat is proportionately increased. It is self-evident and, so far as I know, has never been disputed that in fever the equilibrium is so disturbed that heat-loss does not correspond to heat-production as it should in health. This disturbance of equilibrium can be brought about in various ways, and it is only by the determination of the actual heat-production and heat-loss in fever that we can say in what direction the balance is disturbed.

We have found that the production of heat is increased in fever when the comparison is made with like conditions of nourishment and of environment. It is obvious that the total loss of heat can not equal the total production of heat during the period of febrile rise of temperature.

As is well known, most of the heat of the body is liberated from the skin and from the lungs; from the former by radiation and conduction and by the evaporation of moisture, and from the latter by evaporation of moisture and warming the respired air. It has been estimated that in man about 80 per cent. of the total heat-dissipation is from the skin.

The method of direct calorimetry already described has been applied only to animals for the determination of the total heat loss in fever. Here Wood's experiments are the best which we possess. Leyden and Liebermeister have furnished calorimetrical data which, although unsatisfactory in many respects, indicate the general direction of febrile heat-loss in human beings. All of these experiments show that more heat is dissipated in fever than under like conditions in health. The fluctuations of heat-loss during a febrile paroxysm are so great that the statement of an average for the entire period has little significance. Such an average, according to Wood's results on fevered dogs, would fall between 20 and 30 per cent. excess of heat-loss as compared with the loss in health under like conditions of food. The dissipation of heat in fever, however, may be at times more than double the normal amount, and again may sink below the normal. We have not sufficiently accurate estimates either of the total amount of heat produced or of that dissipated during a febrile attack to enable us to strike a balance between the two. Some persons have been so impressed with the large amount of heat lost during certain periods of fever that they have concluded that there must be far greater excess of heat production than previous investigations had shown to be probable. They suggest that there are sources of febrile heat of which at present we have no idea. Such conclusions seem to me quite unwarranted when we consider the behavior of heat-loss not for a limited time, but throughout the different stages of a paroxysm of fever. We have already seen that we obtain no satisfactory conception of febrile production of heat unless we follow it during the stages of fever, and this is no less true of heat-dissipation. The observation of the condition of the skin as regards temperature and moisture must in all ages have afforded an insight into the general behavior of heat-dissipation during the different periods of fever. It does not require any instruments of precision to make plain the fact that a cold, dry skin, such as we observe during a febrile chill, liberates less heat than normal, or that a hot, moist skin, such as we are likely to find at the defervescence, loses more heat than normal. Not quite so transparent is the direction of heat-loss during the hot stage or acme of a febrile paroxysm or the fastigium of a continued fever. Here the skin usually appears hot and dry. The ordinary impression that more heat than normal is dissipated during this stage is supported by calorimetrical experiments. There can be no doubt that the elevation of the cutaneous temperature which we observe in the hot stage of fever causes an increase in the amount of heat lost by radiation and conduction. Similar elevations of cutaneous temperature in health, such as those caused by muscular exercise, are accompanied by increased moisture of the surface. Not only is visible perspiration usually absent during the hot stage of fever, but the invisible perspiration is, as a rule, relatively, although not absolutely, diminished, as Leyden has shown. The dryness of the skin, therefore, is a factor which in the hot stage of a fever tends to lessen heat-dissipation. Clinical observation, however, shows that fevers differ markedly from each other as regards perspiration during the hot stage, the skin being sometimes bathed in perspiration without any depression of temperature. It would undoubtedly be of great interest to possess trustworthy data as to the exact loss of water from the surface of the body in different fevers and at different stages of fever. We can not place much reliance upon the indications afforded by Weyrich's hygrometer, which has been repeatedly used for this purpose. More is to be expected from the method employed by Peiper* in studying insensible perspiration under physiological conditions.

The general impressions regarding febrile loss of heat derived from clinical observations are supported by calorimetrical experiments. The dissipation of heat is least during the initial stage of fever, and greatest during the period

* Peiper, "Zeitschrift f. klin. Med.," Bd. xii.

of defervescence. During the hot stage, or fastigium, heat-dissipation exceeds the normal, but usually, on account of the dryness of the skin, not so much as one might infer simply from the impression of heat received by the hand when placed upon the skin.

During the initial period the loss of heat, although on the average less than in the following stages, is usually greater than normal. If, however, the rise of temperature is rapid, the heat-loss falls below the normal amount. As there is now increased production of heat, there is evidently a glaring disproportion between the two factors, heat-production and heat-loss, and under these circumstances the febrile attack is likely to be ushered in by a chill. During the febrile chill all the efforts of Nature combine to produce in the shortest time the greatest possible elevation of temperature. Not only is heat-loss reduced to a minimum, but heat-production is excited to the utmost.

During the period of defervescence, on the other hand, the relation between heat-loss and heat-production is reversed. This is, of course, most apparent when the fever terminates by crisis with rapid fall of temperature. Then the loss of heat is excessive, being sometimes threefold that in the normal state, and heat-production is relatively and often absolutely diminished.

It is of importance to remember that there are continual and irregular fluctuations in the dissipation of heat during the different stages of fever. These fluctuations bear no definite relation either to the momentary production of heat or to the height of the internal temperature. We deal in ordinary life so much more with units of temperature than with units of heat that it is difficult for us to keep constantly in mind the fact that no inference can be drawn as to the height of the internal temperature from the knowledge of the momentary heat-production and heat-loss. If the heat-loss falls behind heat-production, the temperature of the body rises, and it can remain at this elevated point with either diminished or increased heat-production so long as the heat-loss equals the heat-production.

No correct conception of the condition of the heat-regulating mechanism in fever can be obtained without taking into consideration these irregular variations in the discharge of heat, and it is a merit of Senator and his pupils to have emphasized this point particularly. These variations are made apparent, not only by calorimetric measurements and direct observation, but also by the studies which have been made of the cutaneous temperature in comparison with the internal temperature in fever. Hankel's law that the difference between the temperature in the axilla and that of the surface of the body in the febrile condition is less than in the normal condition manifestly does not hold for the chill, in which it has been proved that the superficial temperature falls while the internal temperature rises. Jacobson, Wegscheider, and Schulein* find that there constantly occur in the course of most fevers changes of the superficial temperature which stand in no relation whatever to alterations of the internal temperature. Schulein thinks that he has discovered some facts in this regard which are available in diagnosis. However this may be, these observations indicate that contraction and dilatation of the cutaneous vessels are constantly occurring, and without any regularity, in fever. These irregular variations in the caliber of the blood-vessels are also apparent to the eye in the vessels of the rabbit's ear during fever. When it is considered, furthermore, that these irregularities of cutaneous circulation vary decidedly in different situations, no further proof is needed that the mechanism which regulates the discharge of heat from the surface of the body is profoundly disturbed in fever.

These alterations in cutaneous circulation are such striking phenomena that it is perhaps not surprising that two great medical authorities should have based upon them exclusively theories of fever, Traube assuming excitation and Mayer paralysis of vaso-motor nerves as the primal element in fever. We need not discuss these theories, now generally abandoned in their exclusive form. From what has been said concerning the loss of heat in fever it is evident that we can not explain febrile rise of temperature solely by the behavior of heat-dissipation any more than we can explain it solely on the basis of increased heat-production. In rejecting Traube's theory that fever is the result solely of retention of heat, we must still recognize the fact that decrease in the dissipation of heat, at times absolute, at other periods relative, is a factor of the utmost importance in the febrile process.

From whatever point of view we consider the question, we can not avoid the conclusion that it is the mechanism which controls the relation of heat-production to heat-loss which is primarily disturbed in fever.

Heat-production is increased in fever, but, if the regulating mechanism were normal, then the discharge of heat would be proportionately increased and the temperature would not be materially affected. Nor would the force of this argument be changed if febrile thermogenesis were twice as energetic as we suppose it to be.

The loss of heat is increased in fever, so that on this ground alone we should be obliged to assume increased heat-production. But, even if it were proved that heat-dissipation was diminished, as has recently been maintained again by Rosenthal,* and that fever was the result of heat-retention alone, it would still be necessary to admit that the regulating mechanism was at fault, for Pflüger has demonstrated that when this is normal changes in the temperature of the skin are attended by such changes in heat-production that the internal temperature remains within wide limits unaltered.

I repeat, then, that the conclusion is forced upon us that the fever-producing agents must act either directly or indirectly upon the mechanism regulating the harmonious relation of heat-loss to heat-production. That the heat-regulating mechanism, although profoundly disturbed, is not entirely paralyzed in fever is proved by the effect of heat and cold upon fevered individuals. Although Colasanti believed that his fevered guinea-pig had lost all power

* Jacobson, Virchow's "Archiv," Bd. lxv; Schulein, *ibid.*, Bd. lxvi; Wegscheider, *ibid.*, Bd. lxix.

* Rosenthal, "Deutsche med. Wochenschrift," 1888.

of heat-regulation under varying external temperatures, a similar conclusion has not been reached by others who have investigated this question. We can best describe the condition of heat-regulation in fever as unstable or ataxic. External cold stimulates to some extent the heat production of an individual in fever, but by no means so much as it does in health. A person in fever is not able to retain his bodily temperature under the influence of heat and cold to the same degree that he can under normal conditions. Liebermeister, as is well known, held that heat regulation in fever was simply adjusted for a higher point, although, he admits, not perfectly adjusted. Experience shows that this so-called adjustment is so unstable that it does not seem proper to compare it with that to normal temperatures in health, so that it is not clear what deep meaning lies in Liebermeister's idea.

We can not imagine the heat-regulating mechanism to be other than a nervous one. Some years ago this was about as far as the theory of the mechanism of fever could be carried. All paths led to this mysterious nervous apparatus, and beyond this nearly all was speculation. As has been said, we stood before imposing processes veiled in the deepest obscurity. Since then the veil has been lifted here and there, and we have caught glimpses of the nature of these processes. I refer particularly to the results of researches which have brought to light a more immediate and direct dependence upon nerve energy than had been supposed of chemical processes concerned in the disintegration and construction of tissue, and therefore in the production of heat.

With one side of the nervous mechanism concerned in temperature-regulation the classical investigations of Claude Bernard have made us tolerably familiar. This is the vasomotor nervous apparatus presiding over the circulation of blood in the superficial parts of the body and thereby controlling in great measure the discharge of heat. That the important part taken by the perspiration in the dissipation of heat is likewise under nervous influence has been demonstrated by Luchsinger. The facts concerning this side of the regulation of heat are too well known to require elucidation on this occasion.

Heat-regulation, however, is effected not only by variations in the elimination of heat, but also by changes in the production of heat. Familiar as the fact is, it can never cease to arouse our admiration that the temperature of the body remains the same in cold and in warm atmospheres. Man has become so dependent upon clothing that in the naked condition his capacity of preserving his normal temperature in a cold environment is much less than that of most animals. Pflüger has demonstrated that the heat-regulation under varying external temperatures is accomplished by changes both in heat-production and in heat-loss, so that in a cold atmosphere more heat is produced and in a warm atmosphere less heat, provided the external temperature is not so high or so low as to make it physically impossible to preserve the body temperature. It is evident that this is the most rational and economical method of retaining the internal temperature of the body. To regulate the body temperature simply by variations in the discharge of heat, as was formerly supposed to be the method, would be, as has been said, like regulating the temperature of our rooms summer and winter by opening and shutting the windows without controlling the source of heat.

A heat-producing, or thermogenic, apparatus, therefore, is no less a part of the heat-regulating mechanism than the heat-discharging or thermolytic apparatus, to use the terms employed by Foster. As the thermogenic apparatus is less generally understood, it is not permissible to dismiss its physiology in this connection so briefly as I have the thermolytic, although our knowledge of the former is very imperfect.

I can assume that the convincing reasons are known to you which have led physiologists to conclude that most of the animal heat is produced in the muscles and the glands, and that the muscles have the larger share in this function. It is also well known that stimulation of secretory and motor nerves causes not only visible physical alterations in the glands and muscles, but also production of heat. This sort of dependence of heat-production upon innervation has long been admitted. It may, however, not be so generally known that there are reasons to believe that nervous impulses control chemical changes which result in the production of heat independently of visible physical alterations of the tissues; in other words, that heat-production, or thermogenesis, is at least in considerable part under the immediate and direct control of the nervous system. The idea is not a new one, and was advocated especially by Claude Bernard. Recent discoveries, however, have given it unexpected support.

This subject of the relation of innervation to thermogenesis is most pertinent to the pathology of fever, but it is essentially a physiological one, and, as I wish to confine to a single lecture what I have to say concerning the theory of fever, it is impossible for me to do more than summarize the most essential points belonging here. This I can do the more readily as Dr. MacAlister,* in his admirable "Gulstonian Lectures on the Nature of Fever" which were delivered last year, has clearly and forcibly presented the main facts.

The larger part of these facts relates to the chemical changes and heat-production of muscles under varying conditions. That a large part of the chemical changes in a muscle in the condition which we call repose is under the influence of the nervous system is made apparent by the great diminution in its consumption of oxygen and formation of carbonic acid which follows the separation of the muscle from all connection with the central nervous system. This is conclusively shown by the experiments of Bernard, Pflüger, von Frey, and others. It is, of course, possible, and it has generally been supposed that under these circumstances it is simply the withdrawal of motor impulses which lowers the heat-producing energy of the muscle. Far more suggestive as regards the point under consideration are the results of investigations which have been carried on in Ludwig's laboratory by Meade Smith, MacAlister, and Lukjanow. These experimenters have shown that heat-production and contraction are in a measure independent properties of the muscle.

* MacAlister, "Lancet," 1887, vol. i.

By various influences the thermogenic property may be so impaired that a stimulus causes contraction with scarcely any development of heat. The laws governing the restoration and the fatigue of the thermogenic function differ from those controlling the mechanical function. These researches, upon which I here only touch, have made it extremely probable that there are in the muscle chemical processes resulting mainly in the production of heat and chemical processes causing mainly contraction, and that these processes, although co-ordinate, are not identical. A new light is shed upon the meaning of the term chemical tonus of muscle, which has for some time been used by some physiologists. Great caution is properly exercised by Ludwig and his pupils in the interpretation of these interesting results. They do not infer from them necessarily the existence of so-called thermic or calorific nerves. They suggest that it is possible to explain the phenomena upon the supposition that there are in the muscle two kinds of material, thermogenic and contractile, and that the nervous impulses acting upon these may pass through the same set of nerves. Proof of the existence in connection with muscles of thermic in distinction from motor nerves would be afforded if we could succeed, after paralysis of the motor nerves, in exciting by nerve stimulation the thermogenic function of the muscle. We possess in curare a drug which paralyzes the terminations of the motor nerves. Meade Smith attempted by its aid to determine whether possible thermic nerves might be differentiated from motor, but he reached no positive conclusion on this point. There are, however, on record some observations which suggest the possibility that, in moderate doses, curare may leave thermic nerves intact after the suspension of the function of motor nerves. When an animal is profoundly under the influence of curare, the internal temperature falls, and the processes of oxidation are greatly reduced. The animal is no longer able to resist the changes of external temperature, its own temperature rising and falling like that of a cold-blooded animal when exposed to heat or cold. This effect of curare poisoning is another proof of the dependence of heat-production upon nervous influences. Claude Bernard, in his early researches on the action of curare, noted elevation of temperature soon after its administration. Recently U. Mosso * maintains that an animal may be placed so far under the influence of curare as to paralyze the voluntary muscles completely and the internal temperature either remain normal or rise. He infers that these moderate doses of curare, although sufficient to paralyze the motor nerves, must have left the thermic nerves intact. That rise of internal temperature is not due to retention of heat he thinks is evident from the normal or elevated temperature of the skin. Mosso is strengthened still further in his conclusion as to the existence of thermic nerves by finding that, after complete paralysis of the motor nerves by curare, injections of strychnine cause an elevation of rectal temperature which may amount to three degrees centigrade. Under these circumstances strychnine produces no spasms or other visible mechanical effect upon the muscles. Mosso brings forward a number of other experiments (decidedly open to criticism) intended to demonstrate the existence of nerves directly controlling heat-production, but those which I have mentioned are by far the most striking. It seems to me that the natural interpretation of these experiments is in favor of the view that there are nerves controlling heat-production in the muscle distinct from motor nerves. Far more conclusive as to this point than thermometric observations would be calorimetric experiments determining the heat-production of animals under varying doses of curare.

This whole line of experimentation directed toward the differentiation of the mechanical and the chemical functions of muscle is certainly most suggestive, but, so long as the interpretation of the results is not perfectly clear, we should be very guarded in drawing far-reaching conclusions. I can not refrain, however, from pointing out that, as mentioned by MacAlister, all of these thermogenic phenomena may be found eventually to depend upon nerves whose chief function on the one hand is the disintegration, the katabolism, of tissue, and on the other hand the restoration, the anabolism, of tissue. From the study of the electrical changes which stimulation of the pneumogastric nerve produces in the heart muscle, Gaskell concludes that this nerve puts the heart in a condition of relative rest, during which the energy of the muscle is increased. During this period there is reason to believe that the material of the muscle which, when disintegrated, gives rise to heat and mechanical work, is in the process of restoration. Hence Gaskell speaks of the pneumogastric or inhibitory nerve of the heart as anabolic—that is, it directs the restorative, formative, anabolic processes in the muscle. On the other hand, the accelerator nerve of the heart induces the opposite electrical changes in the heart muscle. Gaskell describes this nerve as katabolic—that is, its stimulation causes disintegration of the muscle materials, and liberates energy in the form of heat and of mechanical work. If it is found that similar inhibitory and accelerator nerves preside over the chemical changes in the voluntary muscles and other tissues of the body, then Gaskell's induction as to the existence of anabolic and katabolic nerves must be regarded as one of the most important and profound in modern physiology. Thermo-excitory nerves we should then rank as katabolic, thermo-inhibitory as anabolic.

These investigations, tending to demonstrate the independent existence of thermogenic properties in the muscles, and possibly of nerves directly controlling thermogenesis, have prepared us for the consideration of the relation of the central nervous system to the heat-producing properties of the body. Here you will willingly permit me to confine my remarks to the more essential and best-established facts, without entering into a full discussion of one of the most perplexing subjects in the physiology of the nervous system.

The clinical basis of the doctrine that lesions of the central nervous system influence the temperature of the body directly was laid by Sir Benjamin Brodie, who reported the well-known case of fracture of the cervical vertebræ and injury of the spinal cord followed within a few

* Mosso, Virchow's "Archiv," Bd. cvi.

hours by a rise of temperature to 111° F., measured between the scrotum and the thigh. Since then many similar instances have been reported. It is well to remember, in framing theories on the basis of these cases, that there are also on record not a few instances in which apparently similar injuries of the same parts of the spinal cord have been followed by an equally striking fall of temperature.

The experimental basis for the acceptance of an influence of the nervous system on temperature was laid by Bernard in his celebrated experiments on the effects of division of the sympathetic nerve in the neck. Bernard interpreted the increased temperature of the ear following this operation as referable not only to the larger amount of blood in the part, but also to increased tissue-metamorphosis and consequent heightened heat-production. The latter part of this interpretation is not generally accepted. It may be said here that the common idea that an organ or tissue, simply because it receives a larger supply of blood, indulges in more active metabolism, is opposed by the investigations of Pflüger, who finds that the amount of oxygen taken up by the cells depends in a far higher degree upon the state of their innervation at the time than it does upon the supply of oxygen. The demand of the tissues for oxygen is not increased simply because the supply is greater. The arguments upon which Pflüger bases this line of reasoning, although not without opposition, would dispose of the idea that when any considerable increase of heat-production in the muscles occurs this can be explained simply by vaso-motor changes. I mention this here because the opinion has been advanced that a large part of the increased production of heat in fever and after certain injuries to the nervous system is referable simply to vaso-motor changes in the muscles.

In 1866 Tscheschichin * published experiments which he interpreted as indicating the existence in the brain of centers which when irritated moderate the production of heat, and which he called heat-moderating, or heat-inhibitory, centers, and in the spinal cord of centers which when stimulated excite the production of heat, heat-excitor centers. These conclusions were not justified by the experiments, but they have been widely accepted.

I may say here that in this connection I use the term heat centers as a convenient and generally adopted one. There is a proper reaction against the prevailing misuse of the word center for all sorts of little-understood localization of nervous functions. It would undoubtedly be more accurate to use some such expression as thermically active region, instead of heat center.

It is not easy to reconcile the clinical fact that in human beings lesions of the spinal cord may be followed at once or in a very short time by extraordinary elevations of temperature with the results of experiments on animals. That the rise of temperature in human beings is not due to inflammatory fever is apparent from the rapidity with which it follows the injury. It can not be explained by vaso-motor lesions, for the paralysis of the vaso-motor nerves accelerates the discharge of heat from the surface of the body. The high temperature can be explained on Tscheschichin's assumption. The lesion either directly stimulates the spinal thermogenic centers or removes the influence of the thermo-inhibitory centers. These clinical observations are the strongest support which has been found for the belief in the existence of centers in the spinal cord which accelerate heat-production. Section of the cervical part of the spinal cord in a dog or a rabbit is, under ordinary conditions, always followed by a rapid fall of the internal temperature and diminished oxidation. These varying results in man and in animals have been explained by supposing that after section of the cervical cord, on the one hand, the discharge of heat is increased by dilatation of the superficial blood-vessels in consequence of vaso-motor paralysis, and, on the other hand, the production of heat is increased by withdrawal of thermo-inhibitory cerebral impulses. If, as ordinarily happens in dogs and smaller animals, the first factor predominates, then, in consequence of sinking of the internal temperature, the heat-producing processes are so reduced that the influence of the second factor is not manifest. The attempt has been made to test this explanation by placing the animal in a warm atmosphere. If thereby the heat discharge is reduced to a minimum, it is found that the internal temperature of the animal rises more rapidly than that of a normal one under the same external conditions. Here thermometric observations are not conclusive as to the point to be tested, for the more rapid rise can be explained simply by failure of the heat-regulating mechanism. Wood's calorimetric experiments, however, seem to show that there is greater heat production under these circumstances in the animal with a cut cord. These experiments admit of various interpretations, but, if they are regarded as establishing the assumption from which we started, then it is evident that in man and in large animals the increased heat-production after injury of the cord would not be so readily overcome by the increased discharge of heat from the surface, for in proportion to its volume a large animal has less surface than a small one. The interplay, therefore, of these opposing tendencies might cause different results according to the size of the animal.

Tscheschichin found that a transverse section made at the junctions of the pons and medulla oblongata was followed in a short time by rise of internal temperature. As the superficial temperature is also elevated, he concludes that there is no retention of heat; moreover, the section is made above the dominant vaso-motor center. Wood has shown by means of the calorimeter that after this operation there is actual increase in the production of heat. He, as well as Tscheschichin, interprets the experiment as indicating thermo-inhibitory centers above the lower border of the pons. Bruck and Gunter * repeated and modified these experiments under Heidenhain's direction. Out of seven cases in which they separated the pons from the medulla, they observed rise of temperature only in two; of eleven cases in which they punctured the pons with a needle, in five they noticed increased temperature. Heidenhain thinks these experiments indicate heat-exciting rather than

* Tscheschichin, "Reichert u. Du Bois-Reymond's Archiv," 1866.

* Bruck and Gunter, Pflüger's "Archiv," Bd. iii.

heat-moderating centers, and it must be admitted that the evidence is not conclusive in support of either view.

By far the most interesting and conclusive experiments showing the influence of the central nervous system on thermogenesis are those of Isaac Ott, followed by Richet, Aronsohn and Sachs, Baginsky, and Girard.* The observations of Ott, Richet, and Aronsohn and Sachs were made independently and at about the same time, but Ott was the pioneer. The experiments of Aronsohn and Sachs are reported with special fullness and detail. These investigators find that if the skull of a rabbit is trephined at the junction of the coronal and sagittal suture, and a needle passed vertically down so as to puncture the anterior part of the caudate nucleus near its median convexity, there follows a rise of body temperature which may amount to three degrees or more, and which may persist for two or three days. The rapidity and the duration of this elevation of temperature vary somewhat with the depth of the puncture, parts immediately beneath the caudate nucleus being also thermically active. Puncture of the overlying cortex or medullary substance has no such effect upon temperature. With the exception of some increase in the frequency of the respiration and of the pulse, the animal, after puncture of the anterior median part of the caudate nucleus, presents no abnormal symptom other than the rise of temperature. I have several times repeated this experiment, and always with the result described. That the pyrexia induced by puncture of the caudate nucleus is not due to vaso-motor changes causing retention of heat is proved by Richet's and Ott's calorimetric experiments and by the determination by Aronsohn and Sachs that the consumption of oxygen and the elimination of carbonic acid and urinary nitrogen are increased. Aronsohn and Sachs and Girard find that electrical stimulation of the anterior median part of the caudate nucleus causes the same thermic phenomena as the puncture, and they therefore conclude that this region contains a thermo-excitor heat center. This is the natural interpretation of their experiment, although Baginsky and Ott regard the center as thermo-inhibitory on grounds which can not be considered convincing.

Ott maintains that there are four cerebral heat centers —one about the corpus striatum, the second in the caudate nucleus, the third in the anterior inner end of the optic thalamus, and the fourth near the median line between the optic thalamus and the corpus striatum. The greatest rise of temperature he found after injury of the thalamic center.

No adequate demonstration has been afforded of any influence of the cerebral hemispheres upon thermogenesis. Corin and van Beneden† find that pigeons, after removal of their cerebral hemispheres, exhibit no change of temperature, no failure of the heat-regulating mechanism, and no alteration in the excretion of carbonic acid.

I have endeavored to present to you the main physiological facts bearing upon the relation of the nervous system to thermogenesis. It must be admitted that we are left to surmises as to the interpretation of many of the facts, and particularly as to their connection with each other. But certain important points come out clearly. We have found evidence of the existence in the body of chemical processes resulting chiefly in the production of heat-energy. We have learned that these processes are under the direct control of the nervous system, and possibly of nerves distinct from those now recognized as motor or secretory. We have seen that there are regions in the central nervous system which are doubtless in some way connected with these nerves, and through them control the chemical processes resulting in the production of heat.

The bearing of these facts upon the theory of fever is evident. The study of heat-production and of heat-loss in fever has led us, by arguments which need not be repeated, to the conclusion that the pyrogenic agent must in some way act upon the heat-regulating mechanism. The study of this mechanism, more particularly of its thermogenic side, affords some insight into the manner in which the fever-producing agent may affect the regulation of heat. The main difficulty in the neurotic theory of fever has been to understand how by any action of the fever-producing agent directly upon the nervous system the chemical processes leading to heat-production could be stimulated. I have dwelt thus at length upon the innervation of thermogenesis to show that this difficulty has been overcome. To some it seems more reasonable to suppose that the pyrogenic agent circulating in the blood acts directly upon the tissues, altering and stimulating their chemical changes. This is the hæmic theory which in some form has always stood over against the neurotic theory of fever. Although it may at first glance appear simpler, the hæmic theory is really the more complicated, for it has already been set forth that we can not explain fever simply by increased heat-production, so that, even if the primary effect of the fever agent were upon the heat-producing processes, there must be a secondary influence upon the nervous system, for heat-dissipation is no less disturbed than heat-production.

If an animal is thoroughly curarized, so that no impulses from the nervous centers can reach the muscles, the great heat-producers, then it is found to be impossible to produce febrile elevation of temperature by the injection of pyrogenic agents. This fact, first demonstrated by Zuntz, is justly held to weigh heavily in favor of the neurotic theory of fever.

Contrary to the results of Murri,* I have not been able to induce rise of temperature or check its fall by the injection of pyrogenic agents into the jugular veins of dogs whose spinal cords had been cut in the lower cervical region. In these experiments I have employed various pyrogenic agents, and especially pepsin and papoid. One specimen of the latter which I used possessed very striking pyrogenic properties.

The pyrexia produced by puncture of the caudate nucleus in the manner already described possesses all of the

* Ott, "Journal of Nervous and Mental Disease," April, 1884; "Medical News," July, 1885; "Therapeutic Gazette," Sept., 1887; Richet, "Arch. de phys.," 1884; Aronsohn u. Sachs, Pflüger's "Archiv," Bd. xxxvii; Baginsky u. Lehmann, Virchow's "Archiv," Bd. cvi; Girard, "Arch. de phys.," 1886.

† Corin et van Beneden, "Arch. de biologie," 1887.

* Murri, "Teoria della febbre," Fermo, 1874.

essential properties of fever, regarded as abnormal elevation of temperature. In this experimental condition there are increased production of heat, increased dissipation of heat, excessive elimination of urea and of carbonic acid, and excessive absorption of oxygen. The breathing and the pulse are increased in frequency. The elevation of temprature (usually after a brief fall) begins within half an hour after the puncture, attains a febrile height, and persists sometimes for days. As no observations exist as to the heat-regulation of these animals, I have made experiments on rabbits after puncture of the caudate nucleus by placing them in a cold environment and in a box heated to various temperatures, and I find that their power of temperature-regulation is less than that of normal animals. These animals, in a word, present all of the essential symptoms of fever, and I do not know why we should not call the condition fever. If so, we must admit that injury to a circumscribed, definite region of the brain is capable of causing fever. This experiment, therefore, is of the greatest importance in support of the neurotic doctrine of fever. It indicates, of course, that we may have fever of purely nervous origin without any pyrogenic agent in the blood. This experimental evidence is supported by the clinical cases collected by White in "Guy's Hospital Reports" (1884). It is to be hoped that by careful thermometric study of focal brain and cord lesions a more accurate idea may be reached than is now possible of the topography of the thermically active regions in the central nervous system of man.

Admitting the dependence of fever upon the nervous system, I do not regard as particularly profitable with our present knowledge the discussion as to whether febrile thermogenesis is excited by the withdrawal of thermo-inhibitory impulses or by the stimulation of thermo-excitory nerves or nerve-centers. If we regard, and there are forcible arguments for doing so, the heat-inhibitory nerves as anabolic and the heat-exciting nerves as katabolic, then, inasmuch as the formative, or anabolic, processes are manifestly in abeyance in fever, we can reasonably infer that the function of the heat-inhibitory nerves is impaired. The phenomena of the febrile chill, in which both the contractile and the thermogenic properties of muscle are stimulated, speak strongly in favor of direct irritation of the heat-exciting nerves in fever. We might infer, therefore, that both sets of nerves were affected.

But my aim in this lecture has been not so much to construct a theory of fever—a theory which, although it may be useful, must necessarily be largely speculative if it is coherent and rounded—but to bring before you the main facts concerning heat-production, heat-loss, and heat-regulation in fever, and to point out the physiological basis on which their solution is to be expected.

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**Hyoscine in Convulsive Affections.**—Erb ("Therapeut. Monatsheft") has employed this alkaloid in a variety of convulsive disorders, notably in paralysis agitans. The average dose employed was a quarter of a milligramme, given by the mouth or hypodermically. In several severe cases of paralysis agitans he was able to suppress the trembling for several hours, and in some cases for half a day. In other convulsive diseases, such as tetanus and hemiplegic chorea, good effects were observed.

# Original Communications.

## SALOL IN DIARRHŒA.*

By O. T. OSBORNE, M. D.,
NEW HAVEN, CONN.

Once more I bring this drug to your notice because I have more largely experimented with it, and because I believe it to be of real value for a class of cases in which, perhaps, only a few physicians have tried it.

I will first briefly sketch the properties and history of salol as they are so well compiled and set forth in a pamphlet issued by W. H. Schieffelin & Co. "Salol," or "salicylate of phenol"—or "Salicylsäurephenyläther," as Bielschowski, of Breslau, recklessly named it—was discovered by Professor von Nencki, of Berne, and was first brought before the profession as an aid in the cure of disease by Dr. Sahli, of Berne, in April, 1886. In the above-mentioned pamphlet appears the translation of the valuable notes of F. Ed. Georgi, M. D., of Goerlitz, Silesia, who has largely experimented with this drug. He describes salol as "a white crystalline powder, almost insoluble in water, nearly tasteless, and having a faint aromatic odor. It is soluble in ether, petroleum-ether, alcohol, fatty oils, etc. At about 43° C. (110° F.) it melts, and has then the appearance of a colorless, oily substance, which soon congeals. Its composition is such that it may be said to consist of 40 per cent. of phenol (carbolic acid) and 60 per cent. of salicylic acid. In the gastric juice salol is nearly insoluble, but it is decomposed into its two constituents after having passed into the intestine; it is eliminated from the body as sulphocarbolic acid and urosalicylic acid."

That salol is almost tasteless is due to its insolubility in the saliva. Salol is not irritant to the mucous membrane of the mouth or stomach.

Dr. Lombard, in the "London Medical Record" (November 15, 1887), reports a series of experiments with this drug upon animals. These experiments show positively that the principal solution and absorption of salol takes place in the duodenum, due to the action of the pancreatic juice. Large doses were not toxic. The phenomena noted were lowering of the temperature and increase of the rapidity of the respiration. There seemed to be no action on the circulation.

The advantages of salol as a drug, then, are the following: 1. It is tasteless. 2. It does not irritate the stomach. 3. It is not toxic. 4. It never produces dangerous symptoms, even with as much as one hundred and eighty grains per diem (Sahli), and it rarely produces even disagreeable symptoms.

Salol was first proposed as a substitute for salicylic acid in rheumatism, and as such has been most largely used.

Like all new drugs, however, salol has been tried and *consequently* (I use the word with all due thought, for who does not recommend the drug he has tried?) recommended for a large share of the ills to which flesh is heir, but I will not weary you with the list.

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* Read before the New Haven Medical Association, March 7, 1888.

In the "Therapeutic Gazette" for April, 1887, appeared a very complete review of the results of the principal experimenters with salol up to that date.

Three clinical observers—Dr. Bielschowski, Dr. Rosenberg, and Dr. Feilchenfeld—obtained marked benefit from salol in rheumatism, especially in acute rheumatism, although their results appear no better than when salicylic acid or salicylate of sodium is used.

There is this advantage, however: salol does not affect or irritate the stomach in any way, nor is it so likely to produce heart weakness as the sodium salicylate or the salicylic acid. "Still Dr. Bielschowski noted four cases," I quote from the "Gazette," "in which the action of the heart was slightly disturbed, disappearing, however, on the cessation of the administration of the drug." According to Dr. Rosenberg, salol is as little able to prevent cardiac complications of rheumatism as salicylic acid is.

In this review it is stated that occasionally salol produces ringing in the ears, sweating, nausea, and vomiting, as salicylic acid does, and if it is pushed it causes the characteristic dark-colored urine of carbolic-acid poisoning. The latter fact is spoken of by almost all observers, but none mention the quantity of salol required to produce such urine, or whether the quantity varies in different individuals.

In my own experiments I have found ten grains to be the smallest single dose that would produce the slightest darkening of the urine, and that dose but rarely.

The dose of salol for acute inflammatory rheumatism varies from ten to fifteen grains every two hours until the fever ceases, and, according to Georgi, in every case of this large dosage carbol-urine appears.

Sahli finds a strong salicylic-acid reaction in the urine two hours after the ingestion of the dose.

I have endeavored to ascertain if this reaction was constant after the ingestion of salol, and with what doses it was obtained. To this end I have given single doses to perfectly healthy subjects, and have then examined the urine passed at various intervals after the ingestion.

I will not go into the details of the many experiments, but will give a summation of my results, and I desire here to express my thanks to Dr. H. E. Smith (professor of chemistry and dean of the faculty of the Medical Department of Yale University) for his assistance in the technique of the urine examination.

I found the strongest reaction of salicylic acid in the urine to appear in that passed about four hours after a dose of ten grains, and then to gradually disappear from the urine. The shortest interval at which I have obtained even a faint reaction after a dose of ten grains was one hour, and the longest period that I have still obtained traces of salicylic acid after one dose of ten grains was eighteen hours. I have obtained a distinct reaction in the urine after only one grain was taken, showing the positiveness of salol breaking up in the intestine into its constituents, and distributing its salicylic acid through the organism.

The outcome of the experiments of Georgi, Sahli, Bielschowski, Rosenberg, Feilchenfeld, Herrlich, and others seems to be that salol is of great benefit in acute rheumatism in relieving the pain and reducing the swelling, but it does not prevent relapses or heart complications, although Georgi, at least, professes to have prevented recurrence by continuing the salol for some time in reduced doses.

According to Georgi and Sahli, the antipyretic dose of salol is from fifteen to thirty grains, the reduction of the temperature beginning two or three hours after the ingestion. It is a useful antipyretic in all fevers.

Bielschowski highly lauds salol for muscular rheumatism, and Peiper ("Therapeutic Gazette," December, 1887), in the "Centralblatt für klinische Medicin," also recommends it for that purpose, having used it in the Leyden clinic. Peiper also says it was given as an antipyretic for fevers of all kinds, but where there was diarrhœa, that was not at all affected. In this latter statement he certainly does not coincide with the majority of observers.

Is salol an antiseptic?

This question is answered in the affirmative by many observers, and as such salol is recommended as a mouth-wash in all diseases of the mouth and as a deodorizer of the breath for ozæna, etc. (Georgi). It has also been recommended as a dressing for wounds (Mr. A. Norman Tate, "Pharmaceutical Record," March 15, 1887), and for simple and syphilitic ulcers, and it is even suggested as a substitute for iodoform.

On the other hand, Professor Dujardin-Beaumetz ("Therapeutic Gazette," October, 1887) declares salol not to be an antiseptic, and Miguel has shown by his researches that it does not prevent bacteria from developing in cultivation broths even when large doses are added.

If salol is an antiseptic, it has the advantage of being non-irritating. Although I have experimented somewhat toward that end, I have not yet proved to my own satisfaction that salol is an antiseptic.

As the solution recommended by Georgi as a mouth-wash is a solution of salol in alcohol, perhaps the deodorizing and disinfectant properties are entirely due to the alcohol.

I used a solution of salol in alcohol as a wash for a neglected suppurating wound with no other application whatever, and the wound healed very rapidly, but I am inclined to think a simple alcoholic wash would have done as well. Whatever may be said of salol *per se*, there can be no doubt that, after it breaks up in the intestine into its constituents, carbolic acid and salicylic acid, it is antiseptic to the contents of the bowels. For this purpose it has been used for bowel troubles of all kinds, and by Georgi is especially recommended for typhoid fever.

In a recent letter to the editor of the "New York Medical Journal" (December 10, 1887), Dr. Barnsfather professes to have had good results with salol in typhoid fever in three-grain doses every three hours.

My attention was first strongly directed to salol as an antiseptic and a cure for bowel troubles by the paper of A. H. Goelet, M. D., in the "New York Medical Journal" of August 6, 1887.

Dr. Goelet's strong assertion of its benefit in diarrhœal diseases, and the laconic ending of his article with "Try it and see for yourself," caused me to use salol in these troubles.

So far as I am aware, Dr. Goelet is correct in stating that he is the first writer to give formulated doses for children. I have tried his doses, and have found them to be correct, although I have not varied as greatly as he does with the difference of only a few months of age, and I have not found it necessary to give quite as large doses as he does. To a child of any age up to 2 years I give ·050 gramme; from 2 years to 5 years, ·100 gramme; 5 years to 12 years, ·200 gramme; and to all above 12 years I have found ·300 gramme a sufficient dose.

As Dr. Goelet urges, so have I found it to be necessary for immediate success in every case of acute diarrhœa to repeat the dose every two hours until the stools cease.

The indications for salol in bowel troubles are vomiting, purging, cramps, all so-called "summer diarrhœas" of children, and I have even found it successful in prolonged diarrhœas and in one case of dysentery.

I have used it the most largely in the diarrhœa and vomiting of children, and in every case with success, the stools immediately becoming infrequent, assuming their natural color, and losing their offensive odor.

I have used salol for diarrhœas of all kinds in twenty-two cases occurring in August and September of last year without a single failure, so far as I know. Three patients did not report to me after the first office visit, but I am confident, had they not been immediately cured, they would have returned on the next day. The remaining nineteen patients all reported cured.

I will briefly mention a few cases which present points of interest:

A woman, aged thirty-six, had had dysenteric bloody stools for a week. Treatment, ·300 grm. (4·6296 grains) of salol every two hours. Cured in one day.

A man, aged twenty-three, had had diarrhœa for six weeks, averaging five to six stools a day. Treatment, ·300 grm. of salol four times a day. Cured on the third day.

The youngest case in which I have used salol was a child, aged six months, with vomiting and purging. Treatment, ·050 grm. every two hours. Cured in one day.

The least number of doses that caused a cure was in a child, one year old, with purging that was cured with two doses of ·050 grm. (·7716 grain) each.

The case of acute dysentery before referred to was in a man aged forty. He had bloody and mucous stools for one week when he came under my care, having, he asserted, as many as sixty movements a day for the last two days, and, as a natural consequence, it was a very unfavorable case to treat. He has had attacks of dysentery every autumn for a number of years, but never so severe as this one. The treatment was ·250 grm. (3·858 grains) of salol, internally, every two hours (the patient was too weak to give large doses), morphine, whisky, and ice-water injections into the rectum. This treatment caused amelioration of the symptoms, but did not stop the tenesmus and the bloody stools. After using the ice-water injections for two days unsuccessfully, on the third day I ordered a four-per-cent. solution of salol in alcohol; to inject two teaspoonfuls in water as often as he felt the tenesmus coming on. My theory of this injection was founded on the fact that such salol washes had been found of service in ulcers of the mucous membrane of the mouth, and they might prove of service in the ulcers of the bowel.

The patient professed to have immediate relief from the tenesmus after the injection, and the *next day* he passed no blood, and fæcal matter appeared in the stools. On the fifth day of the treatment the salol internally was stopped; on the sixth day I stopped the injection, and reduced the morphine and whisky. On the eighth day of treatment I renewed the salol internally, which had not been used for three days, as he had a slight diarrhœa, and gave it for three days.

On the fourteenth day after treatment began I surprised him out-doors eating bananas, with a history of having eaten raw beef, and a pretty generous diet for the last four or five days, with no complaint from the bowels.

I regret that I have had no case of acute dysentery since, in which to try the salol injections, but, although the salol may have had nothing to do with the cure, it appeared to relieve the tenesmus and to stop the loss of blood, and certainly deserves a further trial.

I will cite one more case:

A boy, aged sixteen, had had diarrhœa and cramps for two days. I gave him ·300 grm. (4·6296 grains) of salol four times a day. The next day there was no improvement, and the salol was increased to ·300 grm. every two hours. He was immediately cured of both cramps and diarrhœa, showing the necessity of the frequent repetition of the dose, which I have many times demonstrated. On the same day that the stools ceased, his face and body were covered with an eruption of erythema. Was the erythema due to the intestinal irritation, or to the salol? As his previous diarrhœa should have removed an irritating substance in the bowels, and as I could not trace it to the ingestion of any food-stuff, it may have been due to the salol. At all events, the salol was stopped, and the eruption rapidly disappeared.

Except in the case just mentioned, perhaps, I have seen unpleasant symptoms positively due to salol in only two instances.

In one case there was a simple headache after ·600 grm. (9·3592 grains) had been taken. The other case was that of a woman, aged thirty-seven, who had had diarrhœa and abdominal pain for a week. She misunderstood the directions, and took ·300 grm. (4·6296 grains) every hour, until she had taken 2·400 grm. (37·0368 grains) in eight hours. She showed symptoms of intoxication—such as muscular weakness, faintness, and dizziness. These symptoms rapidly disappeared on the cessation of the salol.

I have not given my experience with salol in rheumatism, because so much has already been written upon that subject, but when I give it for that disease I never omit the alkalies.

As to salol in these diarrhœal troubles, I can not better end my paper than Dr. Goelet ended his, with, "Try it, and see for yourself."

I must emphasize the fact that all of my patients, except the one with dysentery, were cured without opium in any form, and with no other medication than the salol. As you have seen, salol allays vomiting, although it is insoluble in the gastric juice; it may be due to an antiseptic action of the salol *per se*.

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**Alum in Typhoid Fever.**—"Dr. Paoletti," says the "British Medical Journal," "has treated sixty cases of typhoid fever, with excellent results, with crude alum alone. He remarks that this drug had formerly been used only as a styptic and an astringent, but now that its antiseptic properties had been recognized it was clearly indicated as a remedy for abnormal fermentations in the intestinal canal."

## A CASE OF HYDATID CYST OF THE LIVER.

By PEARCE KINTZING, M. D., and J. W. LORD, M. D.,
RESIDENT PHYSICIANS TO THE PRESBYTERIAN HOSPITAL, PHILADELPHIA.

The rarity of the following case, the peculiarity of the symptoms, and the kindly interest manifested by some of the most prominent scientists of this city, are the writer's excuses for bringing it before the medical profession.

On December 9, 1887, Thomas H., an Englishman, aged twenty-one years, who had been in America three months, during which time he had worked on the Pennsylvania Railroad, was admitted to the house. He complained of sharp pain in the right costal and hypochondriac regions, and attributed it to a cold, the result of a severe wetting which he had received three days previous to admission. He had a hard, dry cough, pain on deep inspiration, and a temperature of 100·6° F.; pulse, 80; respirations, 30.

On auscultation, a moderately rough friction sound, synchronous with respiration, could be detected over a considerable area on the right side, and the area of dullness extended from the lower border of the ribs to the fourth intercostal space. Bulging was observed over the area indicated, but was most prominent from the fourth to the seventh ribs. No fremitus, skin and conjunctiva clear, constipation obstinate. Calomel in quarter-grain doses was administered hourly. A blister was applied, and by the evening of the second day the temperature had fallen to normal, where it remained until the sixth day, by which time pulse and respiration had also returned to normal. Between the sixth and the fourteenth days fever of intermittent type was present, and the 101° line was passed upon three evenings. On the fourteenth day aspiration was decided upon, and a hypodermic-syringeful of clear serum was removed, but two thrusts of a three-inch trocar failed to bring any liquid. The points selected were at the angle of the scapula. During this febrile period the pulse and respiration remained about normal, and after the fourteenth day the temperature fell to 97°, and ranged between 97° and 98° until the twenty-seventh day, when observations were discontinued for twelve days following. The patient then became moderately jaundiced; the urine contained bile-acids but no pigment. The temperature rose to 102·5° and respirations to 40, but, as each fell to normal on the following day, tapping was not resorted to, although dullness now extended from a hand's breadth below the lowest rib to the third interspace, and even to the second when the patient inclined forward. Constipation during this period was extreme, and the stools were exceedingly fœtid. On the forty-seventh day after admission the temperature rose from 98° to 101·5°, and aspiration was again resorted to, at the seventh interspace in the mid-axillary line. Nine fluidounces of pus were removed, when the flow suddenly stopped. A four-inch trocar was reinserted, but failed to find any more liquid. After this operation both pulse and respiration fell to normal, and the temperature fell to 100°. Microscopic examination of pus removed revealed hooklets of Tænia echinococcus, pus-cells, compound granule cells, large cells containing oil globules, cholesterin crystals, and pigment granules. A diagnosis of echinococcus cyst was now evident, but before surgical interference could be resorted to the patient died.

At the post mortem it was found that the liver was firmly attached to the diaphragm over its entire right lateral surface, by reason of perihepatitis, and the apex of the right lobe reached to the third interspace in the axillary line. There were no adhesions to the peritonæum elsewhere. The entire right lobe of the liver was converted into a purulent cyst, and was absolutely devoid of liver structure, only the much-thickened capsule remaining. The cyst was lined with an elastic, gelatinous membrane, four lines in thickness, striated, and studded with opaque dots. It was not adherent to the capsule of the liver, and, when a trocar was thrust through the liver capsule, the elastic cyst-wall was pushed before it, instead of being penetrated. From the interior of the cyst one hundred and seven fluidounces of liquid which had undergone purulent degeneration were removed. Upon standing, the fluid separated into a supernatant liquid, greenish yellow in color, turbid and partially coagulable, and a sediment which has already been described. Three daughter-cysts were also found floating free in the liquid, of about the size of pigeon's eggs. These contained the clear liquid filled with scolices—no hooklets and no pus-cells—and these were pronounced by Dr. Joseph Leidy, Sr., the eminent authority upon parasites, after microscopic examination, to be acephalocysts. The gall-bladder was filled with the same clear liquid, and was much distended; its duct was occluded. The stomach was pushed to the left parietal wall, and its axis was vertical. The two lower lobes of the right lung were collapsed and carnified. The upper lobe was crepitant. The pleural sac contained a pint of serous effusion. The specimens were exhibited before the College of Physicians of Philadelphia and the Philadelphia Pathological Society, and commented upon, as to the rarity, the unusual size, and the diagnosis, by Professor Leidy, Professor Osler, Dr. Formad, and others present.

## Correspondence.

### LETTER FROM PARIS.

*Phosphorus and Salt-water Baths in the Treatment of Rhachitis.—The Hereditary Effects of the Alcoholic Habit.—Chloride of Methyl as a Local Refrigerant.—Carbonic-acid Gas in Dyspnœa.—A Proposed Plan for furnishing Infants with Pure Milk.—The Prevention of Syphilis.*

Paris, *March 12, 1888.*

As considerable mention had been made of a new treatment of rickets by phosphorus, first proposed by Kassowitz, of Vienna, Dr. Comby, one of our hospital physicians, has been trying the plan for some fifteen months past. He gave cod-liver oil which contained ten centigrammes (1·5432 grains) of phosphorus to the quart. This was administered to forty children, aged from ten to thirty months, who were suffering from rickets. The youngest took from one to two teaspoonfuls of the phosphorized oil, and the larger children had up to four teaspoonfuls in the twenty-four hours, so that a milligramme (·015432 grain) of phosphorus was given each day, on an average. This treatment was kept up for from three to six months, and in one or two cases for a year. All the cases were very severe ones, care being taken to throw out those simple ones that often are cured under any treatment. No trouble came from the remedy itself, and the results in the forty cases so treated were as follows: Twenty-one patients were somewhat improved, or at least there was some slight amelioration, varying according to the case; eighteen remained about the same; and one grew worse. In the most favorable cases the curved bones did not straighten in any way. In order to compare this form of treatment, forty other children with rickets were kept under treatment principally by salt-water baths, to which in a few cases some cod-liver oil was added, and in one or two cases phosphate of lime was

given as well. This second lot of forty children gave the following results: Thirty-four of them were very much improved, two were completely cured, and in four there was no change; none died. It will be seen from these results that the opinion is confirmed that the use of the salt water baths is the best treatment for rickets, and all other forms of medication must take the second place. The French Government has recognized this important fact, and it is now extending the system of sending such children to sea-side hospitals for treatment. The splendid results obtained at the first hospital of this kind established, at Berck-sur Mer, has led to the erection of new ones at Arcachon, and also on the Mediterranean coast. If some of your New York millionaires would erect such buildings on Coney Island or out on Fire Island, it would save the lives of many children.

Some experimental researches made by M. Mairet and M. Combemale, and just communicated to the Academy of Sciences, on the degenerative influence of the use of alcoholic liquors on descendants, are very interesting. It may perhaps be a little premature to draw conclusions from animals to man, but the facts given are very striking as to the hereditary effect of alcoholic habits. A male dog was first experimented upon, and he was kept intoxicated with absinthe for a long time until he was in a chronic state of alcoholism; he was then permitted to have connection with a perfectly healthy young bitch. She gave birth to twelve puppies, two of which were born dead, and the rest died from various pathological troubles within two months of their birth. Some had epileptic attacks, others had intestinal troubles, and several had pulmonary or peritoneal tuberculosis. Careful autopsies were made, and in all the cases lesions were found showing alcoholic degeneration, thickening of the cranial bones, adhesions between the dura mater and the skull bones, difference in weight between the two cerebral hemispheres, and fatty degeneration of the liver.

The second trial was made on a vigorous female dog, which, during the last three weeks of gestation, was kept in a state of intoxication with alcohol. She gave birth to six puppies, three of which were dead. The three living ones were not badly formed, but were not at all intelligent. The third one of them was a female, and great difficulty was found in raising her. This showed the influence of alcohol on the first generation. In order to show its effect on the second generation this same slut was kept, and in due course was impregnated by a healthy male dog, by which she had three puppies only. One of them had club-foot and an atrophy of several toes; another died of atrepsy, and had patency of the foramen ovale of the heart; the third had atrophy of the hind legs and tabes mesenterica. Strong arguments might be drawn from these experiments for temperance societies and hygienic use, but it may be well to await the final results of this form of study, which is to be followed up.

It will be remembered that Dr. Debove recommended the chloride of methyl in sciatica some two years ago, and since that time the little iron and brass jars containing that gaseous substance, condensed, have been a familiar sight in the hospitals; but it was remarked that, besides the bad smell of the product, it was not always easy to apply the local refrigeration to all painful parts. This trouble has now been remedied by Dr. Bailly, who has invented a very good pad made of rough silk refuse, which is covered with silk gauze. The little pad is attached to a handle, and it is made now in all sizes. Professor Dieulafoy, in a lecture given at the faculty of medicine, said that with these pads we had now a most effective means of applying refrigeration to any part of the body. He showed a number of the pads, and they were held for a moment before the chloride of methyl to impregnate them with that body (which boils at 23° C. [=73·4° F.]), and then passed among the audience, with directions not to press hard, but to lightly touch the back of the hand. The cold feeling was intense, and it remained on the pad for a long time. The effects are variable, of course, according to the time that the pad is held in contact. If it is only for a second or two, a feeling of cold is produced that is followed by a local stimulation; on pressing harder, a local anæsthesia is produced, the part is pale, and the reaction that follows is much stronger, as it produces a congestion. Wherever local refrigeration is of service these little round pads are coming into use. Although they have only been placed on sale in this market during the present week, the demand for them is already great.

Dr. Weill proposes to use carbonic acid gas to combat dyspnœa. He says it was suggested to him when observing the experiments of M. Brown-Séquard on the inhibitory effect of a current of that gas on the larynx. He gives the gas pure, for from two to five minutes at a time, using from two to five litres, once or twice a day. No bad effects are noticed, and the patients are all improved by the action of this gas, which we have all thought so dangerous. The patients treated were mostly tuberculous ones, who had an attack of laryngitis and serious lesions of the lungs. They had a slight oppression, but continuous, with attacks of coughing, lasting from twenty minutes to half an hour, followed by severe dyspnœa. The inhalation of carbonic-acid gas cut short these attacks, and, when given between the attacks, it seemed to prevent their occurrence, and certainly diminished their frequency and intensity. The same favorable effect was noticed in cases of emphysema.

The *Société de médecine pratique*, while recognizing that mother's milk is the best for children, can not, however, overlook the fact that an immense majority of babies are nowadays brought up on cows' milk, and, as they are of the poorer classes, who can not pay enough to secure pure milk, it begs the city government to take the matter in hand, and to construct and maintain model dairies, as is the practice in the towns of Stuttgart and Hamburg. A call is made upon the patriotism of the French Government to adopt this plan of securing pure milk for the babies, whose numbers are being diminished by thousands every year, and the hope is expressed that the city will undertake the important work of supplying pure milk at a low price for all the poor babies of Paris. It is not a bad idea if it could be carried out without making a job of it, as would be the result in some countries if it was a government affair.

The *Académie de médecine* is discussing the question of preventing syphilis by a law making it a criminal offense for a woman to solicit custom in the streets publicly by what they call "provocation," but here they come in conflict with the lawyers, who can not admit that it is possible to define what constitutes such a provocation to vice as can be punished by law. The question of individual liberty is so closely allied to the matter that it is difficult to repress what is certainly public vice, and thus prevent syphilis as much as possible, and at the same time not interfere with the rights of citizens. It is thought that some restricted form of examination and registration of public women will follow the discussion now going on, and certainly it will have the effect of stopping the practice of imprisoning women with syphilis, as is now done, instead of treating them in a hospital as ordinary patients.

**Poisoning by Artificial Selters Water.**—"Over thirty cases of poisoning," says the "British Medical Journal," "were reported recently in Rendsburg, in Germany. Inquiry showed that only those were poisoned who drank freely of Selters water, and an examination of this water revealed the fact that it contained a very appreciable amount of arsenic. The water was a manufactured product, and had been imported from another city."

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## THE NEW YORK ACADEMY OF MEDICINE.

LAST week we published the text of a circular issued by the Subscription Committee appointed to solicit funds to provide for the purchase of land and the erection of a new building for the Academy. In that circular the facts of the case were so cogently set forth that there is little to be said in addition. The public may fear, however, that before many years have passed the Academy may outgrow any building that may be provided for it, as it has already outgrown the house which it acquired but a few years ago. This fear, we think, is groundless. The membership is not likely to go on increasing *ad infinitum*, certainly not in the ratio in which it has grown during the presidencies of Dr. Jacobi and Dr. Barker; so that there is not much danger that such a building as it may be expected to erect would within a generation or more prove insufficient for the meetings. But the library is probably destined to grow out of proportion to the increase of membership, and it is chiefly for the sake of the library that ampler accommodations are now needed. The Academy's library, however, is of a character to admit before long of a weeding-out process that will for many years restrict its absolute growth, while it will improve its quality. The value of a public library is not to be measured by linear yards of shelves; in proportion as libraries grow old and really valuable the need of additional shelf-room is apt to be felt in a decreasing ratio. Indeed, in the history of a well-managed library there comes a time when it may almost be said to cease to grow and begin to ripen. Twenty years hence—and, we hope, sooner—the Academy will have ceased to add to its library the miscellaneous collections of deceased members and to gorge its shelves with the good, bad, and indifferent text-books and pamphlets issued by contemporary writers, and become what it ought to be, a repository of rare and ordinarily inaccessible books and complete sets of journals. It is important, of course, that its files of journals should be kept up, but we may hope that by that time it will have acquired all the old ones that it can be expected ever to get, and therefore to be rid of the necessity of storing duplicate and triplicate copies for purposes of exchange. It is not to be doubted that such considerations will eventually govern the management of the Academy's library, and, that being the case, the Subscription Committee's statement that, "this building once paid for, there will be no further occasion for us or our successors to call upon the liberality of our fellow-citizens" seems perfectly justified.

Medical men throughout the country, and indirectly the community at large, will profit by the prosperity and heightened capacity of the Academy. It is justified, therefore, in its appeal to the public for funds, and we hope that our readers will not fail to represent its needs and its worthiness to the men of wealth to whom they may have access. There ought to be little difficulty in its acquiring within a reasonable length of time the additional quarter of a million dollars needed to enable it to provide itself with suitable quarters.

## THE USE OF RHAMNUS IN HABITUAL CONSTIPATION.

AT the last revision of the United States Pharmacopœia this remedy was added to the already large list of cathartics. The *Rhamnus frangula* is a member of the buckthorn family, and is found in Europe and Central Asia, but not in the extreme northern portions. It is found in hedges and bushy places, and attains a height of ten or fifteen feet. The bark, which is the part of the shrub used, is about one twenty-fifth of an inch in thickness; the outer surface is grayish-brown, with numerous small whitish warts upon it, and the inner surface smooth and of a pale brownish-yellow. It is inodorous, and has a sweetish bitter taste. According to the "Ephemeris" for October, 1887, the supply comes from Germany, where the branches, after having been stripped of the bark, are used in making charcoal for the production of gunpowder. The bark is peeled off easily when the "sap is flowing," which is in June and July. These circumstances are very advantageous to its use in the materia medica, for they insure the collecting and drying of the bark of only the branches, and also at the best time of the year.

Frangula has been official in Germany for several years, and has been admitted into the United States and British Pharmacopœias recently. If the bark is used when first collected from the branches, it acts as a drastic cathartic, causing nausea, vomiting, and violent purging. On this account the Pharmacopœia says that the bark is to be at least a year old, for after drying for this length of time it loses its irritating properties and acts as a mild aperient. Its action is sure, although slow, and is easily regulated according to the results obtained. It does not disturb digestion, but, on the contrary, acts as a tonic to the stomach and bowels. It has no secondary constipating effect like some remedies, and does not cause anorexia, but rather increases the appetite. The stools caused by frangula are soft, but not watery, if it is used in proper doses.

It is not suitable simply for an evacuant, not having so good an effect as rhubarb or senna. It is in habitual constipation that it is of special value. In cases of hæmorrhoids it causes a soft movement and soothes the irritated condition of the parts. In the severe constipation occurring in many paralytics it is said to act like a charm, and to be one of the best remedies in gynæcological cases.

The dose of the fluid extract is from fifteen to thirty minims. In cases of habitual constipation in women it is better to give ten minims four or five times a day, and then increase or diminish each dose according to the results obtained. It is found to have a better effect to vary the size of each dose than to vary the number of doses taken during the day. After the right amount has been ascertained, the use of this quantity

should be kept up for a week or more, and then the amount of each dose gradually diminished until its use is stopped. After this, in most cases the bowels will remain soluble. If the constipation returns, the remedy can be used again in the same manner. In the case of men the dose should be larger than for women. In the use of the remedy the principal thing is to find the proper dose. Dr. Jacob Bigelow once said that a great deal of the success of a physician depended on his understanding the constitution of his patient; in other words, how large a dose of cathartic medicine it took to move his bowels.

The *Rhamnus purshiana* (*Cascara sagrada*) has been more used in this country than frangula. In our issue for March 3d we published an account of recent investigations of its properties, summarized from the "American Journal of Pharmacy," and mentioned certain tests that were being carried on in Messrs. Parke, Davis, & Co.'s laboratory, which they expected would finally demonstrate its superiority over *Rhamnus frangula*. In the "Deutsche Medizinal-Zeitung" for March 5th a contributor (apparently a member of the staff) remarks that, while *Rhamnus frangula* is holding its own in the esteem of the German profession, it can not be denied that *Cascara sagrada* seems to have some advantages, and that it is likely to come into use in Germany.

## *MINOR PARAGRAPHS.*

### THE IMPORTANCE OF LACERATIONS OF THE UTERINE CERVIX.

Commenting lately on some very remarkable propositions embodied in a paper read at a recent meeting of German naturalists and physicians, by Dr. Noeggerath, formerly of New York, belittling the importance of lacerations of the cervix uteri, we expressed our expectation that some American gynæcologist would before long bring forward a convincing controversion of that gentleman's inferences. In the March number of the "American Journal of Obstetrics and Diseases of Women and Children," Dr. Brooks H. Wells, of New York, does this most effectually. He considers Dr. Noeggerath's conclusions *seriatim*, and opposes them with well-observed facts. Whoever is inclined to doubt the seriousness of these injuries will do well to read Dr. Wells's article.

### PEPPER'S "SYSTEM OF MEDICINE."

We are gratified to note the appreciation which this excellent work is meeting with abroad, not the least significant token of which is the announcement of its forthcoming publication in Italian by the well-known house of Dr. Francesco Vallardi, of Milan, Rome, Naples, Bologna, Florence, Padua, Turin, Palermo, and Catania.

### THE NEW YORK QUARANTINE.

What, if anything, is to be done to remedy the present disgraceful state of the quarantine station, or to reform the methods of its administration, it is impossible to say. The State Legislature seems to view the matter in no other light than as affording an opportunity for one political boss or gang to get the better of another, utterly oblivious that the nation is looking on with disgust. The Mayor of New York has written a letter to the chairman of the Finance Committee of the State Senate, urging the appropriation of $200,000 for the work of putting the station in order, and he suggests that the city Board of Health is capable of taking charge of the establishment for the present, in case the Legislature should see fit to give it over into the control of the municipality. The idea is not a bad one, although it is something of a novelty for the city to be looked to to save the State from disgrace.

### FORCED RHYTHMICAL BREATHING AS A REMEDY FOR SEA SICKNESS.

Dr. J. J. Leiser, having pondered upon the well-known impulse felt by many persons to breathe irregularly, as the result of the sensations induced by a ship's motions, and, in particular, to hold the breath as the vessel rises or falls, has come to the conclusion that this disturbance of the respiratory rhythm amounts in many cases to such an insufficiency of respiration as to involve inadequate aeration of the blood to a degree great enough to poison the brain for the time being. In a communication to the "British Medical Journal," he supports his theory with a letter signed by Dr. G. C. Stockman and Dr. C. W. C. Prentice, in which those gentlemen give an account of certain very satisfactory tests to which they put it on a recent trip across the Atlantic in the steamship Etruria. The remedy is simple—to take full and rhythmical respirations, not fewer than twenty to the minute, breathing as one would perform a piece of music, by count.

### THE "INDEX MEDICUS."

We regret to learn that this most creditable publication is not yet self-supporting, and we would again urge upon the profession that sufficient support should be given it to insure its continued existence. Its publishers, past and present, have shown an amount of self-sacrifice that can not be expected to be kept up for ever. According to a statement published in the "Therapeutic Gazette," it had in January only 363 subscribers, more than half of whom were residents of foreign countries. It ought to be a matter of national pride with us to sustain a publication of such unique character and value.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 3, 1888:

| DISEASES. | Week ending Mar. 27. | | Week ending Apr. 3. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 13 | 3 | 11 | 4 |
| Scarlet fever | 145 | 20 | 177 | 23 |
| Cerebro-spinal meningitis | 1 | 0 | 3 | 2 |
| Measles | 59 | 1 | 49 | 4 |
| Diphtheria | 127 | 45 | 119 | 36 |
| Small-pox | 20 | 1 | 28 | 4 |

**The Health of Brooklyn.**—During the three months ending Saturday, March 31st, the following numbers of cases and deaths from infectious diseases have been reported to the Board of Health: 1,057 cases of scarlet fever and 189 deaths; 808 cases of diphtheria and 326 deaths; 259 cases of small-pox and 46 deaths; 127 cases of measles and 8 deaths; 34 cases of typhoid fever and 14 deaths.

**The New York Neurological Society.**—At the annual meeting held on the 3d inst., officers were elected as follows:

President, Dr. George W. Jacoby; first vice-president, Dr. C. L. Dana; second vice-president, Dr. M. A. Starr; recording secretary, Dr. B. Sachs; corresponding secretary, Dr. E. D. Fisher; treasurer, Dr. G. M. Hammond; councilors, Dr. L. Weber, Dr. E. C. Seguin, Dr. J. C. Shaw, Dr. W. R. Birdsall, and Dr. E. C. Harwood.

**The Clinical Society of the New York Post-graduate Medical School and Hospital.**—At the meeting to be held this (Saturday) evening, at the college building, No. 226 East Twentieth Street, there will be a discussion on "Rational Methods of Treating Stricture of the Male Urethra," to be opened by Dr. J. H. Girdner. We are asked to state that members of the profession are invited to be present.

**The Rush Medical College, of Chicago.**—It is announced that Dr. Nicholas Senn has been appointed professor of the principles of surgery and surgical pathology.

**The Medico-chirurgical College of Philadelphia** held its seventh annual commencement exercises on Friday evening, the 6th inst., at Association Hall. On the preceding evening Surgeon-General Hamilton, of the Marine-Hospital Service, delivered the annual oration before the Alumni Association, in the college building, after which a dinner was given by the association in Dr. Hamilton's honor.

**The Middleton Goldsmith Lecture of the New York Pathological Society** will be delivered at the Academy of Medicine on Wednesday evening, the 18th inst., at 8 o'clock, by Dr. J. M. Da Costa, of Philadelphia, on "The Relation of the Renal and Heart Affections." We are asked to state that the profession is cordially invited to attend.

**The Boston Medical Library.**—It is announced that Dr. Oliver Wendell Holmes has given his medical books to the library.

**The Death of Dr. Martineau, of Paris,** the well-known physician to the Lourcine, is announced in our French exchanges. M. Martineau was fifty-two years of age. The "Progrès médical" states that he bequeathed his property, after the death of his mother, to the *Association générale des médecins de France.*

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**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from March 18 to March 31, 1888:*

Forwood, W. H., Major and Surgeon. Granted one month's leave. S. O. 20, Department of Dakota, March 10, 1888.

Baxter, J. H., Colonel and Chief Medical Purveyor. Will proceed to Augusta Arsenal, Ga., on public business. S. O. 62, A. G. O., March 16, 1888.

Greenleaf, Charles R., Major and Surgeon. Will proceed to Cambridge, Mass., on official business. S. O. 62, A. G. O., March 16, 1888.

O'Reilly, R. M., Major and Surgeon. Will proceed to York, Pa., and make an examination of Captain Edw. B. Rheem, Twenty-first Infantry. S. O. 62, A. G. O., March 16, 1888.

Wyeth, M. C., Captain and Assistant Surgeon. Granted leave of absence for two months, to take effect about April 1st. S. O. 65, A. G. O., March 20, 1888.

Brown, H. E., Major and Surgeon. Assigned to temporary duty at Fort Barrancas, Fla., during the absence on leave of Assistant Surgeon M. C. Wyeth. On the return to duty of Captain Wyeth, Major Brown will rejoin his proper station. S. O. 65, A. G. O., March 20, 1888.

Worthington, J. C., Captain and Assistant Surgeon. Granted leave of absence for four months, to take effect May 15th, or as soon thereafter as his services can be spared. S. O. 65, A. G. O., March 20, 1888.

Kimball, J. P., Major and Surgeon. Granted leave of absence for two months, to take effect about April 10, 1888. S. O. 68, A. G. O., March 23, 1888.

Crosby, W. D., First Lieutenant and Assistant Surgeon. Granted leave of absence for two weeks. S. O. 29, Department of Arizona, March 16, 1888.

*Died.*

Azpell, Thomas F., Captain and Assistant Surgeon (retired). Died March 12, 1888, at Fort Lee, N. J.

Spencer, William C., Major and Surgeon. Died March 22, 1888, at Fort Trumbull, Conn.

**Society Meetings for the Coming Week:**

Monday, *April 9th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

Tuesday, *April 10th:* Medical Association of Alabama (first day—Montgomery); Medical Society of the State of Tennessee (Knoxville); New York Medical Union (private); Medical Societies of the Counties of Jefferson (quarterly—Watertown), Oneida (quarterly—Utica), Ontario (quarterly), Rensselaer, and Tioga (quarterly—Owego), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Medical Societies of Bergen (annual—Hackensack) and Cumberland (annual) Counties, N. J.; Fairfield, Conn., County Medical Association (annual).

Wednesday, *April 11th:* Medical Association of Alabama (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Tri-States Medical Association (Port Jervis, N. Y.); Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society (conversational).

Thursday, *April 12th:* Medical Association of Alabama (third day); New York Laryngological Society; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Societies of the Counties of Cayuga and Fulton (quarterly), N. Y.; South Boston, Mass., Medical Club (private); New London, Conn., County Medical Society (annual); Pathological Society of Philadelphia.

Friday, *April 13th:* Medical Association of Alabama (fourth day); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *April 14th:* Obstetrical Society of Boston (private).

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OBITUARY NOTES.

**Benjamin Frederick Dawson, M. D.,** died on Tuesday, the 3d inst., at his home, in East Fifteenth Street. For a number of months it had been known that his health was seriously undermined by diabetes. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1865. He was a member of the Academy of Medicine and of the Medical Society of the County of New York. For many years Dr. Dawson had been active in promoting the cultivation of gynæcology and pædiatrics in New York. Until within a short time before

his death he occupied the position of an assistant surgeon to the Woman's Hospital, in which his work was always faithful and earnest; he founded a dispensary for sick children, to the sustaining of which he gave not only his professional services, but also much pecuniary aid; he was one of the original members of the Obstetrical Society; and he was the founder, and for several years the owner and editor, of the "American Journal of Obstetrics and Diseases of Women and Children." He was esteemed no less for his genial and chivalrous qualities than for his professional energy and ability.

# Proceedings of Societies.

## COLLEGE OF PHYSICIANS OF PHILADELPHIA.

*Meeting of March 7, 1888.*

The President, Dr. S. Weir Mitchell, in the Chair.

**Successful Simultaneous Triple Amputation for Railway Injury, with Remarks on the Technique of Multiple Amputation.**—Dr. John Ashhurst, Jr., showed a patient and spoke as follows:

This patient is brought before the college largely on account of the rareness of simultaneous triple major amputations. It is quite possible that some of the Fellows may not have had an opportunity of seeing such a case.

The patient is a Moor, twenty years of age. He was admitted to the University Hospital, November 28, 1887, having been run over on the Pennsylvania Railroad. I saw him within two hours after his admission. I found a compound comminuted fracture of the right leg, the laceration extending above the knee; complete avulsion of the left leg, the limb having been torn off in its lower third; and a compound fracture of a severe character of the right hand and wrist. There was also a compound fracture of the skull, involving the frontal bone. This, however, was an impacted fracture, of course without much depression, and did not require interference. In addition to these injuries, there were numerous brush-burns and contusions, some of a grave character. One upon the left buttock was so severe that the separation of the slough left a cavity fully two inches in depth. Notwithstanding these serious injuries, the patient's general condition was very good; he had reacted thoroughly, and his axillary temperature was 99° F. Under these circumstances, I felt justified in proceeding to the immediate removal of the injured limbs, and amputated successively the right thigh by the anterior-posterior flap method; the left leg, about its middle, by a modified Sédillot's external flap operation, the modification consisting in making both flaps from without inward, instead of cutting the external flap by transfixion; and the right forearm by an oval incision, making use of the uninjured skin of the back of the hand and wrist. Certain variations from the ordinary procedure in amputations I shall refer to when I come to speak of what I have ventured to term the technique of multiple amputations. After the operations were completed, the temperature had fallen only to 98° F. The patient had no bad symptom and rapidly recovered, and as you see him now all his wounds are perfectly healed, and he is entirely well.

I have collected some statistics of synchronous multiple amputations. I am able to find but one instance of *quadruple* synchronous amputations—a case in which the operations were done for frost-bite by Dr. George E. Jackson, of Dakota. There are several cases recorded of quadruple amputations, not synchronous, the one which approaches nearest to a synchronous operation being that of Champenois, a French surgeon, who amputated three limbs on one day and the fourth a few days later.

Of synchronous triple amputation there have been reported four successful cases, not including that presented to night; one by Dr. Köhler, of Schuylkill Haven, Pa.; one by Dr. Lowman, of Johnstown, Pa.; and two referred to by Professor Agnew, in his "Surgery," one occurring in the practice of Dr. Stone, of New Orleans, and the other in York, the name of the surgeon not being given. There are reported four or five triple amputations not synchronous. I have myself resorted to synchronous triple amputation in two cases. Several years ago I had occasion to perform this operation, removing both legs and the right forearm of a man, aged forty-five years, of intemperate habits. The patient died on the tenth day, the fatal result being due rather to the visceral lesions resulting from alcoholism than to the operation.

Double amputations are comparatively numerous. I have personally performed fifteen such operations, this number not including two successful cases of double partial amputation of the feet. I have done fifteen double major amputations, of which five have ended in recovery. One of the patients who recovered I had the honor of exhibiting to the college some years ago; the amputations in his case were through the right hip joint and through the left leg. In the fatal cases, seven of the deaths occurred within less than one day, and were therefore the immediate result of the shock of the injury and of the operation. Three patients died, one in three days, one in four days, and the third in eighteen days. The latter would probably have recovered, but that he also had suppurative disease of the middle ear, which appeared to be the cause of the pyæmia which proved fatal; for when the stumps were examined, after death, they were found to be in good condition.

With regard to what I have termed the technique of multiple amputations, there are some points which my experience justifies me in urging upon surgeons as of importance in promoting success. In the first place, it is very important that the time occupied by the operations should be brief; that the operations should be done systematically, so as to keep the patient under the anæsthetic as short a time as possible. The next point, perhaps of even more importance, is to keep up the temperature of the patient during the operations. I have been led to think that this is, perhaps, of more importance than anything else. Of course, loss of blood must be scrupulously guarded against, and loss of blood directly causes loss of temperature. In this case hot cans were kept around the patient during the entire operation; and, in order to save time, I operated systematically, the tourniquet and Esmarch bandage being both employed to prevent any loss of blood. I began with the most serious injury, and this is, I think, a point of importance. It may happen that, after the removal of one limb, it will be found that further operation must be postponed on account of the patient's condition, and then it is, of course, better to leave him with the less severe injuries. In this case I began with the thigh. After amputating the limb, I secured the main vessels, which were readily found. I attempted to tie the arteries with catgut, but, as the ligatures broke, I substituted silk, and, in order to save time, left both ends uncut. I next amputated the right leg, securing the vessels in the same manner, and then passed to the forearm. I then came back to the right thigh, screwed up the tourniquet and removed the Esmarch bandage, and secured all the vessels that required ligature, then passing to the other limbs in the same order as before. After the vessels had been secured in each case, a towel dipped in a hot antiseptic solution was placed

between the flaps. The wounds were then dressed in the same order, and in this way the operation was completed in a comparatively short time.

The points which I have mentioned I believe to be of great importance, and I think that much of the disappointment of surgeons from these operations is due to a want of attention to these matters.

I should also say that, in order to preserve the bodily heat, I did not use irrigation during the amputations. I think that this often seriously reduces the temperature; and even in comparatively slight operations where it has been used, I have seen the temperature fall to 97° and even 95° F. I think that in any grave case it is better to omit it and to rely upon washing with hot antiseptic solutions before and after the operation. Also, the packing of wet towels around the seat of operation, as is very commonly done, tends to depress the temperature, and in grave cases should be omitted.

I think that it is to an observance of these precautions that I have owed success in this case, and in many other serious operations of various character.

Dr. William Hunt said that Dr. Ashhurst had dwelt upon the importance of saving time. There was one way in which time might be saved, and that was by more than one surgeon operating at the same time. Dr. Morton and he had done that on two occasions, each taking a limb and operating at the same time. He did not know how it would work with three.

Dr. H. C. Wood said, with reference to keeping up the animal heat, that many people died in acute disease, in acute poisoning, and after severe operations, because the temperature was not maintained. He had proved by experiment that, if two animals were subjected to severe injury, and one was kept in a moderately cool room, and the other in a hot room, the one would die, and the other recover. In this connection he would repeat a suggestion made to him by Dr. Dercum, which would afford one of the most efficient measures for maintaining temperature—to fill the ordinary water-bed with hot water, and allow the patient to lie on it.

Dr. Carr, of Washington, said that he had performed a quadruple amputation for frost-bite. The patient was brought into the hospital in a condition of collapse with the four extremities frozen. He reacted well, and remained in the hospital a week, when his constitutional condition became serious, and after consultation it was decided that amputation of the four extremities was desirable. The speaker operated, removing one foot above the ankle, the other foot through the metatarsal joint, one forearm about its middle, and one hand, leaving a small stump of the thumb, disarticulating it at the metacarpo-phalangeal articulation. The patient did very well. In operating he secured the vessels with hæmostatic forceps, and left the stump in that condition while he proceeded to amputate another limb.

Dr. J. William White said that he had understood from Dr. Ashhurst's paper that in his classification of triple amputations partial amputations were not included. He had last year, at the University Hospital, done a double knee-joint amputation, with amputation of a portion of one hand, leaving the thumb and one finger, and would have been glad to present the patient at the meeting. In reference to the technique, he had only one or two suggestions to make. If the irrigation was done with warm or hot water, it did not necessarily reduce the temperature, and, in fact, might aid in keeping up the bodily heat. The same was true with reference to the use of wet towels, which could be wrung out of hot water and frequently renewed. Bramann, assistant to von Bergmann, had recently detailed the results obtained at the latter's clinic by packing wounds with iodoform gauze. This prevented the formation of a blood-clot, which was, perhaps, next to a failure to secure asepsis, the most important cause of the failure to obtain primary union. Where there was danger of oozing, he packed the wound with iodoform gauze, which was allowed to remain from forty-eight to seventy-two hours. It was then removed and the sutures were applied; in the vast majority of cases union by first intention was secured. Even when the gauze was left *in situ* for from four to six days such union occurred after suturing. In a case of double or triple amputation time might be saved by packing the first operative wound with iodoform gauze as soon as the vessels were secured, and then dressing it. This could be done by an assistant, and the patient removed to the ward much sooner than if time were taken to introduce stitches. The suturing could be done at any time during the next two or three days.

The President would like to ask what some of the gynæcological operators would say. In their cases the abdomen was sometimes largely opened, and the intestines were exposed; if irrigation lowered the temperature in ordinary surgical cases, how much more should it do so in these! He thought it would be advisable to have a series of experiments and observations as to the effects of ether, chloroform, and perhaps other anæsthetics, upon the temperature, when used for long periods. As concerned the interesting case of triple amputation in the patient shown by Professor Ashhurst, he would like to say that no physiological statement had been made, so far as he knew, as to the effect of large losses of tissue upon the pulse, temperature, nutrition, blood-pressure, amount of urine, etc. A tempting subject here awaited some industrious observer.

Dr. White said that experiments were now being made at the University of Pennsylvania, upon animals and clinical subjects, to determine the effect of the administration of ether on the bodily temperature, and seemed clearly to indicate that a drop of from one to three degrees might be expected, not only in cases where no irrigation was used, but even where no operation of any sort had been performed. The note of a case had just been handed to him in which the temperature fell four degrees. The temperature before the operation was 99·5°, and after the operation (which was the removal of a tubercular testicle) it was 95·5°. No irrigation was employed. No general symptoms of shock, such as weakness or failure of the pulse, leakage of the skin, or shallowness of respiration, were observed in this case. A series of nine cases of all sorts of operations gave similar results, though the average reduction of temperature was not more than two or three degrees.

Dr. William Goodell said that in removing the ovaries one had to be very cautious on account of the collapse that might occur if the ovary was pinched or roughly handled. Something similar, he fancied, would occur in the removal of the testicle, and this, he thought, had had a good deal to do with the fall of the temperature noted.

Dr. Ashhurst said that the suggestion made by Dr. Hunt was an old one. Before the days of anæsthesia it was thought that the patient might suffer less pain by having both operations done at once; but, when the patient was insensible, there would certainly be less confusion by having only one done at a time. With reference to irrigation, as he had already mentioned, he had seen the temperature fall as low as 97° after a simple operation, and in operations not usually considered capital, such as the removal of the breast, the temperature had gone even lower, and the patient had remained in an extremely critical condition for hours. This had occurred where there had been no loss of blood, and no condition other than the irrigation to account for it. In cases where antiseptic measures had not been employed, he had not seen this depression, except when there had been great loss of blood or unnecessary exposure of

the patient. In his list he had not included any but synchronous major operations. The cases reported to night seemed to have been instances of minor amputation, as regarded some of the parts removed, and could, therefore, technically be looked upon as only double, not triple or quadruple amputations. With reference to irrigation, even if warm solutions were employed, they would tend to cool the body by evaporation, and the same was true with regard to wet towels; even if hot when applied, they would reduce the temperature unless covered with oiled silk to prevent evaporation. He did not think that the administration of ether alone had much effect upon the temperature, but under any circumstances we could better dispense with irrigation and wet towels than with anæsthetics. In regard to the case of excision of the testis which had been mentioned, it might be said that operations on the testicle necessarily required considerable exposure of the lower part of the abdomen. It was also a well-known fact that division of the spermatic cord was often followed by profound shock. This observation had been made by Mr. Erichsen, at the University College Hospital, London, and the speaker's own experience confirmed it. The moment that the cord was divided, the pulse failed decidedly, and there was more shock from removal of the testicle than from any other operation of equal gravity in the whole range of surgery. He had no objections to the antiseptic method of treatment, and he was in the habit of employing it, but he thought that we should not close our eyes to the fact that it might have some disadvantages. He thought that the maintenance of the patient's temperature was of more importance than the exclusion of a few microbes. All that could be accomplished by irrigation could be equally accomplished by washing the part before and after the operation, care being taken to keep the patient warm and dry. The ordinary antiseptic dressings had been employed in this case after the operations; he considered that their chief advantage was that they permitted infrequent dressing of the wound.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of February 2, 1888.*

The President, Dr. A. Jacobi, in the Chair.

**Xeroderma Pigmentosum and its relation to Malignant New Growths of the Skin.**—Dr. R. W. Taylor read a paper with this title. Xeroderma pigmentosum had first been described in 1870, by Hebra and Kaposi. In 1877 he (Dr. Taylor) read a paper at the meeting of the American Dermatological Association, in which he reported seven cases of the disease. In 1878 he read a second paper, including additional observations. The present paper was based upon the continued observation of those seven patients, or of such of them as were still living, the entire period now being fifteen years since the first one had come under his observation; and it was intended to show the relation of such disease to the development of new growths. In it he had collected brief histories of all the cases yet published, thirty-nine in number. One other had been reported so imperfectly that it had had to be rejected. The title xeroderma was far from perfect, but because of its brevity it would probably be accepted in preference to others which had been proposed. The author then gave the histories of his seven cases from their beginning.

Three patients were sisters, all of dark complexion. Their parents were cousins, Hebrews, of dark complexion, but healthy. Seven other children were not so affected. Two other patients were cousins of these, brother and sister, both also having a dark complexion. Their parents were second cousins. The seventh case was also in a Hebrew child. In all the seven cases the clinical history of the disease was clearly portrayed. The various lesions presented admitted of sharp division for descriptive purposes. The disease consisted in teleangiectatic, pigmentous, and atrophic changes, all of which had most intimate pathological relations. Superadded to these polymorphous lesions were secondary new growths, which were at first benign and might remain so, but which might degenerate into malignant growths. In his seven cases the disease began, according to reliable testimony, in six at about the fifth or sixth month, and in one at the fourteenth month. In twenty-five of the recorded cases it was stated that the disease began between the third and twelfth months in ten, and between the first and second years in thirteen. There was reliable evidence that in several others it began very early. In great contrast with the age at which the disease developed in these cases was the age at which it developed in three cases reported by Kaposi, Heitzmann, and Videl—namely, sixteen, nine, and nine years respectively. While he was not in a position to say that these cases of late evolution were not xeroderma proper, yet he was very skeptical about them from the fact that they were very exceptional in their course. It should be borne distinctly in mind that the existence of epitheliomatous and other malignant growths on the face of persons subject to deep or light pigmentations did not necessarily constitute xeroderma pigmentosum. The weight of evidence, therefore, stamped this disease as one of very early childhood. Its invasion was almost constantly the same, beginning about the face and under the eyes as a well-marked smooth superficial erythema, which was often regarded by parents as the result of sunburn. In spite of this blemish there was no impairment of the health. The erythematous patches extended, gradually creeping over the face and neck, usually stopping at about the third rib by an abrupt margin. This condition on the face, neck, and trunk was of variable duration, from one to seven months, during which time the erythema might become less vivid. As the hyperæmia disappeared pigmentous spots developed, scattered over the surface. They were first of a light brown, and might become blackish or black. They varied in size from that of a pin-head to that of a lentil. Usually they were not much elevated. Scattered among them with great irregularity, and less numerous, were the teleangiectatic spots. They were smaller and rather more salient and had an irregular outline, and on close examination a congeries of capillaries could be made out. In most cases thorough pigmentation of the face and neck took place in about six months. It was less marked on the hands. With the evolution of these lesions there were no marked local subjective symptoms. The pigmented spots followed exactly upon the pre-existing red spots, and were, it seemed obvious, their sequelæ. The microscope demonstrated this intimate relationship. The two orders of lesions were erratic in their course; they had periods of exacerbation and remission, but their hold was never lost. If one disappeared it was soon replaced by another. Thus as the child grew older its disfigurement became greater. There was no record of a case in which a permanent amelioration had occurred. A very few escaped with disfiguring pigmentation or slight atrophy, but they too might be attacked later on by severer lesions. The teleangiectasis and pigmentation were peculiar to what might be called the stage of hypertrophy. In some cases atrophic changes were soon superadded; their course was subject to marked exacerbations and remissions. Although the disease occurred on both sides of the body, it was not symmetrical. In some cases it progressed and produced hideous deformities by reason of the size and situation of the patches; in others it was limited in extent. It reduced the skin to the thinness of parchment, and destroyed nearly all the follicles. Vessels could often be seen beneath. On the hands, arms, feet,

and legs, atrophy was not so well marked as upon the face. The atrophy of the skin was proportionate to the growth or atrophy of the blood-vessels which formed the teleangiectatic spots. Atrophic changes were prone to occur upon the forehead, scalp, nose, eyes, ears, and mouth. Incomplete stenosis of the nasal and oral apertures was apt to occur. It was an interesting fact that when the atrophic process was at an end no further pigmentation took place. Epithelial new growths in their simplest and most rudimentary forms were to be found. These growths, at first simple and seemingly harmless, were often more terrible in their consequences than the hypertrophic or atrophic disfigurements, since their development produced the leaven upon which malignancy might subsequently be ingrafted. They were border-line lesions between benign and malignant new formations. Their surface might be termed fungating and oozing, at first of a deep-red or purple-blue color, soft and compressible, and reminding one of erectile tumors. They frequently fell off, leaving a surface which healed spontaneously or an ulcer which might prove intractable, leading eventually to a malignant process.

Of the thirty-nine reported cases, malignant growths had developed in sixteen, and non-malignant growths in six. In nine, in which no new growths had developed, the patients were yet too young to warrant a prognosis of future exemption. Out of the author's seven cases, epithelioma had developed in three. The statistics would seem to indicate that the period of greatest malignancy was under the tenth year, nearly as great until the twentieth year, and not great after the twentieth year.

No metastasis had been found.

The pathology of the disease had been well studied by Kaposi and others, whom the author quoted. With those facts before him, he thought Kaposi's explanation of the occurrence of epithelioma at so early an age was very satisfactory—namely, that it was due to rapid changes going on in the epithelial layers in the production and rapid disappearance of new papillæ, epithelium, and pigment.

Every conceivable external remedy had been tried without success. Measures should be directed to placing the skin at rest, and removing every possible source of irritation of the morbid parts. Special care should be given to the eyes, nose, and ears, as at these points the disease expended its malignancy. Tumors should be removed, and, if necessary, the tissues should be scraped to the bone.

The PRESIDENT said he had had the impression that in xeroderma pigmentosum there was from some cause a decided absence of connective tissue, and a good deal of cell formation, embryonic cells remaining; moreover, the best examples of the disease were found in children, and this pointed to its congenital origin. It was also a fact that in these cases malignant tumors developed at a very early age. He thought that in these things might be found a confirmation of the theory of Cohnheim, who believed that all pseudoplasms occurring in infancy, youth, and later life were the result of embryonic cells not undergoing their usual change into connective or other tissue, but remaining ready, under favorable conditions, to proliferate and form a malignant tumor. This want of change in the embryonic cells might account for the abnormal state of the blood-vessels in xeroderma, constituting a nævus which covered the face. The appearance and disappearance of the red spots, or nævi, might be accounted for by spontaneous thrombosis. If these views had any foundation in fact, one might find in them some suggestion for treatment. He thought surgery could do nothing to cure the patients. It might for the time improve the deformity, but that was all. Arsenic and phosphorus, in minute doses, had the power of causing nutritive irritation in tissues. The beneficial effect of phosphorus in chronic and subacute bone affections had been demonstrated by experiments upon animals, and by its administration in rhachitis and other osseous diseases. Might these remedies not have the power of causing nutritive irritation in the cellular tissue in xeroderma pigmentosum, and thus cure the disease?

Dr. TAYLOR thought that, inasmuch as other methods had failed, the president's suggestion as to curative treatment should be tried. Regarding the surgical treatment, which had been carried out in some of his cases, he and the operators, Dr. Gerster and Dr. Gruening, thought it had been fully justified by the results. It would have been undertaken earlier, at the time when the microscopical examination of the tissue showed angeio-myxoma, but for fear of hæmorrhage.

## Book Notices.

*A Manual of Practical Hygiene.* By EDMUND A. PARKES, M. D., F. R. S., etc. Edited by F. S. B. FRANÇOIS DE CHAUMONT, M. D., F. R. S., etc. Seventh Edition. Philadelphia: P. Blakiston, Son, & Co., 1887. Pp. xx–766.

IT can rarely be said of any treatise upon a special branch of scientific research that it is *par excellence* the best of its class; yet such high meed of praise is not misplaced in relation to a work which in its original issue speedily assumed a foremost position, and which in successive editions has been kept abreast of the advance of technical knowledge by the author's accomplished successor in the British Army Medical School.

Apart from a rearrangement of the sequence of some of the chapters, for better convenience of reading and reference, the editor's touch has been so judicious that, although many alterations and additions are noticeable, the size of the volume is not rendered unwieldy, the increment of sixteen years of revisal being less than 100 pages. The important subjects of the effects of impure water and the various methods of purification and filtration, disposal of excreta, ventilation, and food are brought fully up to date, as are also the processes of chemical and microscopic examination. But, while attaching provisional weight to microbiological investigations (including even the recommendation of "plate-culture"), it is evident that Dr. de Chaumont holds a conservative, if not skeptical, attitude as regards the dogmata of the bacteriologists, some of the most positive of which he considers as, to say the least, not proved. For this reason it is possible that the section on disinfection will fail to satisfy those readers whose views have been fixed by laboratory experiments or bounded by immersion lenses. There is an apparent inconsistency in separating by more than a hundred pages the author's suggestions for the examination of house pipes and drains and Mr. Eassie's instructions for the sanitary inspection of a house, and in neither section is there any mention of the test by peppermint, ether, paraffin smoke, or other methods familiar to American inspectors. Book II, comprising 180 pages, is devoted, as in the earlier editions, to military hygiene; and the directions for chemical and microscopical analyses, formerly scattered through the text, are relegated to a separate Third Book, a great part of which has been rewritten.

Whether for civil or military sanitary administration, we know of no work in any language which so concisely yet completely fulfills its purpose; and, while bearing in mind the classical caution against "the man of one book," still, to him who has but the time or inclination to gain authentic hygienic information from a single tome this may be conscientiously commended as the one book to be chosen.

## BOOKS AND PAMPHLETS RECEIVED.

The Treatment of Hæmorrhoids by Injections of Carbolic Acid and Other Substances. By Silas T. Yount, M. D., Physician to St. Elizabeth's Hospital, etc. Second Edition. Lafayette, Ind.: The Echo Music Co., 1888. Pp. xiii–17 to 102.

La phthisie pulmonaire. Par H. Hérard, Président de l'Académie de médecine, V. Cornil, Professeur d'anatomie pathologique à la Faculté de médecine de Paris, et V. Hanot, Professeur agrégé à la Faculté de médecine de Paris. Deuxième édition, revue et augmentée. Avec 65 figures en noir et en couleurs intercalées dans le texte, et 2 planches en chromolithographie. Paris: Felix Alcan, 1888. Pp. iii–841.

Die Rolle der Suggestion bei gewissen Erscheinungen der Hysterie und des Hypnotismus. Kritisches und experimentelles. Von Dr. Armand Hückel, früher I. Assistenzarzt an der medicinischen Klinik zu Tübingen. Jena: Gustav Fischer, 1888. Pp. 72.

Dermepenthesis: Animal Skin-Grafting. By C. F. Cadogan-Masterman, M. D., Medical Officer of Health, Stourport, etc.

Di un nuovo sfigmomanometro. Pel Dott. Antonio Boccolari, Primo assistente, clinica medica della R. Università di Modena, diretta dal prof. E. Galvagni.

Questions and Answers on the Essentials of Physiology. Prepared especially for Students of Medicine. By H. A. Hare, B. Sc., M. D. (Univ. of Pa.), Demonstrator of Therapeutics and Instructor in Physical Diagnosis in the Medical Department of the University of Pennsylvania, etc. With Illustrations. Philadelphia: W. B. Saunders, 1888. Pp. viii–17 to 170.

Second Annual Report of the Allegheny General Hospital, Allegheny City, Pa. Charter, Rules, and Regulations, January, 1888.

Essays on Hysteria, Brain Tumor, and other Cases of Nervous Disease. By Mary Putnam Jacobi, M. D., etc. New York and London: G. P. Putnam's Sons, 1888. Pp. 216. [Price, $2.]

Essentials of Chemistry and Toxicology for the Use of Students in Medicine. By R. A. Witthaus, A. M., M. D., Professor of Chemistry and Physics in the University of New York, etc. Second Edition. New York: William Wood & Co., 1888. Pp. vi–294. [Wood's Pocket Manuals.]

The Surgical Diseases of the Genito-urinary Organs, including Syphilis. By E. L. Keyes, A. M., M. D., Professor of Genito-urinary Surgery, Syphilology, and Dermatology in Bellevue Hospital Medical College, etc. A Revision of Van Buren and Keyes's Text-book upon the same subjects. New York: D. Appleton & Co., 1888. Pp. xv–704. [Price, $5.]

Transactions of the Academy of Medicine in Ireland. Vol. V. Edited by William Thomson, M. A., F. R. C. S., General Secretary, etc. Dublin: Fannin & Co., 1887. Pp. xxxv–367.

Atlas of Venereal and Skin Diseases: Comprising Original Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York; and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculi i, ii, and iii. New York: William Wood & Co., 1888.

Report of Ten Consecutive Cases of Abdominal Section. By Dr. R. B. Maury, Memphis, Tenn. [Reprinted from the "Memphis Medical Monthly."]

# Miscellany.

**Fairchild's Pepsin.**—Dr. William Murrell, of London, the well-known therapeutist, is reported to have said, in a recent lecture given at the Westminster Hospital, that pepsin was of great value in the treatment of dyspepsia, if certain points were attended to in prescribing it. It would not do to simply write down "pepsin." Pepsin by itself, unqualified, had no meaning, and it was essential to indicate distinctly what brand of pepsin was required. During the last two years he had carefully tested all the pepsins of which he had been able to obtain specimens. The results had been simply startling. Of two different kinds of pepsin, equally popular and equally well known, one had been found to be five or six times as active as the other. The best pepsin was Fairchild's. Bullock's came next, and then Squire's. The French and German pepsins were a long way down in the list, and could not be compared for one moment with either the English or the American. Of late years a great deal had been written about *Carica papaya* as a digestive agent; but, as a matter of fact, papaw-juice could not compare in activity with the best pepsin. The best papain examined had about half the activity of the best pepsin, as shown by experiments made both in acid and in alkaline solutions. The plan of predigesting milk and other articles of food with pancreatic extract answered admirably, and should always be resorted to in intractable cases.

**Gelatin Casts of Anatomical Specimens.**—The "Scientific American" says that some time ago Mr. C. W. Cathcart, M. B., of the Edinburgh Infirmary, proposed a new basis for making casts of anatomical specimens. The basis is made as follows: Take of "No. 1" gelatin, say 6 oz., soak it till quite soft and swelled, afterward dry it slowly until just pliable. As it has now the minimum of water necessary, melt it in a water bath, and add 6 oz. (measure) of clear glycerin. When the two are thoroughly mixed, the material is ready. To render it opaque, add while it is still hot, and therefore fluid, small quantities of a thick paint made by rubbing up oxide of zinc in glycerin. When a skin color is wanted, a little vermilion is required to give a warm, life-like hue. Should other things be cast, the prevailing color can be given with water color as required (tubes of moist water color sold at 2*d.* each will be found convenient). Several pounds of this mixture may be made at once, and portions used as required.

**The Western Pennsylvania Medical College,** of Pittsburgh, held its second annual commencement exercises in the Grand Opera House on the 24th of March. Diplomas were awarded to thirty-four candidates, showing an increase of fifty per cent. over the graduating class of the previous year. In the evening the faculty, the alumni, and a number of guests dined at the Seventh Avenue Hotel. We are glad to note the successful progress of this new institution.

**"Scotch Oats Essence."**—In the April number of the "Druggist's Circular and Chemical Gazette," for advance sheets of which we are indebted to the manager of that excellent journal, Dr. R. G. Eccles, of Brooklyn, gives an account of his analysis of a nostrum known as "Scotch Oats Essence." He declares that the preparation is about one third alcohol, and that each ounce of it contains nearly half a grain of morphine, notwithstanding the fact that it is "pledged to destroy the morphine craving and 'free the victim from his terrible bondage.'"

Commenting on the matter, our contemporary says editorially:

"For many years oats have enjoyed an excellent reputation as an article of food. There has been a run, so to speak, on the oat idea, and the bowl of porridge is systematically eaten, not so much perhaps from strictly hygienic reasoning as to its diet value as from a notion that it is a sort of special tonic or reconstructive. From this pleasant idea of a food that serves as a medicine in ordinary cases, the transition is easy to a belief in the efficacy of a medicine derived from food when the case becomes extraordinary. If the oat-grains are good in ordinary cases to prevent disease, why should not their 'essence' be potent as a restorer when disease has already made a beginning? It is not difficult to develop so taking an idea, and an essence or extract of oats has been more or less talked of as a therapeutic novelty by a certain school of practitioners. With the value of such a preparation, or the want of it, we have nothing to do at present. Our concern is with another utilization of the oat idea. For some time past public attention has been called by persistent advertising to a nostrum named 'Scotch Oats Essence.' Its extravagant claims have at last secured for it scientific attention with a result that is most alarming. From the report of an analysis of this essence by Dr. Eccles, which appears in another part of the 'Circular,' it will be seen that the inventor is possessed of more than common ingenuity, but ingenuity, unfortunately, of a most

diabolical character. Under the guise of a preparation which from its name might be expected to be nothing worse than a harmless humbug, he is furnishing an insidious poison. With a refinement of cruelty he lays a trap for the unwary, and under the bait of oats places the bane of opium. The dissemination of such a vile concoction is a manifest menace to the public health, and naturally the question at once arises, Have we no law which will prevent such attacks on the people? Whether our present sanitary regulations are sufficient for the purpose is for the authorities to determine. If they are not, the sooner we have stricter ones the better. Meanwhile, the only immediate protection the public can have is from the pharmacist. He ought to be able to easily confirm the analysis of Dr. Eccles, which, we might add, has already been verified by another prominent chemist, and, knowing the character of the 'Scotch Oats Essence,' it will be his duty to inform any intending purchaser of its real and dangerous nature."

**The Lomb Prizes for 1888.**—The secretary of the American Public Health Association, Dr. Irving A. Watson, of Concord, N. H., gives notice that Mr. Henry Lomb, of Rochester, N. Y., offers, through the association, two prizes for the current year for essays on the subject of "Practical Sanitary and Economic Cooking adapted to Persons of Moderate and Small Means." The first prize is $500, the second, $200. The judges are Dr. Charles A. Lindsley, of New Haven, Conn.; Dr. George H. Rohé, of Baltimore; Dr. Victor C. Vaughan, of Ann Arbor, Mich.; Mrs. B. H. Richards, of Boston; and Miss Emma C. G. Polson, of New Haven. The arrangement of the essays will be left to the discretion of the author. They are, however, expected to cover, in the broadest and most specific manner, methods of cooking, as well as carefully prepared receipts, for three classes: (1) Those of moderate means; (2) those of small means; (3) those who may be called poor. For each of these classes, receipts for three meals a day for several days in succession should be given, each meal to meet the requirements of the body, and to vary as much as possible from day to day. Formulas for at least twelve dinners, to be carried to the place of work and mostly eaten cold, are to be given. Healthfulness, practical arrangement, low cost, and palatableness should be considered. The object is the information of the housewife, to whose requirements the average cook-book is ill adapted, as well as to bring to her attention healthful and economic methods and receipts. All essays written for these prizes must be in the hands of Dr. Watson on or before September 15, 1888. Each essay must bear a motto, and have accompanying it a securely sealed envelope containing the author's name and address, with the same motto upon the outside of the envelope. After the prize essays have been determined upon, the envelopes bearing the mottoes corresponding to the prize essays will be opened, and the awards made to the persons whose names are found within them. The remaining envelopes, unless the corresponding essays are reclaimed by authors or their representatives within thirty days after the announcement of the awards, will be destroyed, unopened, by the secretary. None of the judges will be allowed to compete for a prize. The judges will announce the awards at the annual meeting of the association in 1888. It is intended that the essays shall be essentially American in their character and application, and this will be considered by the judges as a special merit. Competition is open to authors of any nationality, but all the papers must be in the English language.

**The Medical Association of the State of Alabama** will hold its annual meeting in Montgomery on Tuesday, Wednesday, Thursday, and Friday, the 10th, 11th, 12th, and 13th inst., under the presidency of Dr. Edward H. Sholl, of Birmingham. The programme includes an address of welcome in the name of the Medical and Surgical Society of Montgomery County, by Dr. W. G. Bibb; the president's annual message; the annual reports of the senior and junior vice-presidents, Dr. Thaddeus L. Robertson, of Birmingham, and Dr. John Paul Jones, of Camden; the annual oration, by Dr. B. J. Baldwin, of Montgomery (to be followed by an entertainment consisting of recitations, readings, and music); "The Value of Exploratory Incisions," by Dr. William Locke Chew, of Birmingham; "The Radical Cure of Hernia," by Dr. Luther Leonidas Hill, of Montgomery; "Practical Investigation as to the Therapeutic Value of Salicylate of Hydrargyrum," by Henry Tutwiler Inge, of Mobile; "Studies in Eczema," by Dr. Arnold Jolly, of Linden; "Electricity in Uterine Diseases," by Dr. Mortimer Harvey Jordan, of Birmingham; "Physiological and Pathological Heredity," by Dr. James Thomas Searcy, of Tuscaloosa; "Diarrhœal Diseases of Children in Western and Middle Alabama," by Dr. William Henry Sledge, of Livingston; "The Medical Topography of Walker County and its Prevailing Diseases," by Dr. Alexander McAdams Stovall, of Jasper; "Color-blindness and Defective Vision in relation to the Traveling Public and the Railroads," by Dr. Robert Dickens Webb, of Birmingham; "Studies in Rectal Surgery," by Dr. Benjamin Leon Wyman, of Birmingham; a discussion of the best methods of administering the health laws and the law to regulate the practice of medicine; and an omnibus discussion (on "Typho-malarial Fever"; "Hereditary Diseases"; "Influenza"; "Pain as a Symptom of Disease"; "The Knife in Uterine Surgery—its Uses and Abuses"; "The Medical Treatment of Old Age"; and "Rheumatism and Gout"), to be led by Dr. Milton Columbus Baldridge, of Huntsville. From this programme and from the announcements of business matters and social entertainments it may be inferred that the meeting will be both profitable and enjoyable.

**Professor Kussmaul.**—The New York "Evening Post" speaks of a public banquet lately given by the medical faculty of the University of Strassburg in honor of Geheimrath Professor Kussmaul. "Dr. Goltz, as dean of the faculty, whose gifts as an after-dinner speaker are famous through Germany," says the "Post," "outshone himself in doing justice to the toast of the evening, emphasizing each witty allusion and humorous sally with a gigantic percussion hammer and pleximeter which, in honor of the guest, he had substituted for the usual mallet of the toast-master. He concluded by predicting that Kussmaul, though abdicating the professor's chair, would yet speak with authority in the medical councils of Europe, and that humanity would owe him an ever-increasing debt so long as his opinion and practice could be appealed to. Dr. Freund, professor of gynæcology, was the next speaker, and, after referring in humorous strain to the accident that had made Kussmaul a physician—to wit, an accident to his foot which induced temporary lameness, and with it an interval of sage reflection—he evoked peals of laughter from his audience by hinting that, their names being identical in meaning, the Oribasius of the fourth century was no other than the Kussmaul of the nineteenth, but that the clinical teacher of Strassburg had greatly improved on his *alter ego*, the body-physician to the Emperor Julian, the Apostate. This was a highly effective sally, 'Oribasius' being an exact equivalent in Latin for the German 'Kussmaul' (literally *kiss-mouth*)."

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending March 30th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 10th corresponded to an annual rate of 23·3 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Halifax, viz., 15, and the highest in Manchester, viz., 31·3 in a thousand. Small-pox caused 29 deaths in Sheffield, 3 in Oldham, 2 in Manchester, and 2 in Blackburn.

*London.*—One thousand eight hundred and eighty-six deaths were registered during the week, including 2 from small-pox; measles, 21; scarlet fever, 29; diphtheria, 24; whooping-cough, 101; enteric fever, 20; diarrhœa and dysentery, 17. Diseases of the respiratory organs caused 490 deaths; different forms of violence, 51; and 6 suicides were registered. The deaths from all causes corresponded to an annual rate of 23 in a thousand. In greater London 2,385 deaths were registered, corresponding to an annual rate of 22·5 in a thousand of the population. In the "outer ring" 38 deaths from whooping-cough were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending March 10th in the sixteen principal town districts of Ireland was 32·3 in a thousand of the population. The lowest rate was recorded in Drogheda, viz., 0, and the highest in Wexford, viz., 47 in a thousand. In Dublin 224 deaths were registered,

including 2 from diphtheria; measles, 4; whooping cough, 7; scarlet fever, 5; typhus, 1; and enteric fever, 1.

*Marseilles.*—One thousand and thirty deaths were registered during the month of February, 1888, including small pox, 12, enteric fever, 21, scarlet fever, 2; diphtheria and croup, 16; and measles, 18.

*Denmark.*—The quarantine order issued by the Danish Government, under date of February 24, 1888, includes the following: Quarantine measures are to be enforced with regard to ports on the Swedish coast between Malmo and Landskrona; all ports of Chili, Florida, Jamaica, Martinique, Guadeloupe, Cuba, East Indies, Tonkin, and Cochin China; Trieste; all ports of Egypt; Red Sea ports; Rio Janeiro; and Havana. The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bed-clothes—providing the articles named do not constitute the personal effects of travelers—rags, waste cotton and wool, refuse paper, hair, and hides, remains in force. In addition thereto, special attention is to be paid to the cleansing, under official inspection, of linen, clothing, and bed-clothing brought from Rio Janeiro and Havana as the effects of travelers.

*Martinique.*—The United States consul, in his dispatch under date of March 3, 1888, states that "small-pox in an epidemic form has been spreading here, and while it is difficult to arrive at the exact number of cases, there are presumed to be in this island nearly three thousand persons affected, there being forty deaths or more during the last week. Fortunately the disease seems to be a mild form, and it is here hoped that it will speedily run its course, many persons having been vaccinated."

*Santiago, Chili.*—The United States *charge d'affaires ad interim*, in his dispatch dated January 31, 1888, with reference to cholera, states that "the disease has not increased, but rather gradually diminished here. The average number of deaths from it daily, which at the latter date was about 20, has declined to from 10 to 12. This in a population of 200,000 inhabitants is not alarming. About the middle of December the disease appeared in Valparaiso, spreading with unusual rapidity, causing the number of deaths to exceed 30 a day in a population a little more than half that of the capital. Happily the disease has diminished there too, so that the number of deaths of cholera as published in the bulletins average from 8 to 12 daily at present. There is more or less cholera through the provinces, especially to the south, and the number of deaths from it may approximately be estimated from 30 to 40 daily. Wherever it appears it is promptly met by medical aid. There is no unusual excitement or fear manifested by the public, and business and amusements are going on as usual. Many of the well-to-do people have gone to their estates or to the sea-side to escape the hot days at the capital. Congress will adjourn in a few day, and the president, with most of the cabinet and other officials, will remove to Valparaiso and Viña del Mar, to remain until about the 1st of April."

*Havana.*—Three deaths from yellow fever and 21 from small-pox are reported for the week ending March 17, 1888.

### Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Paris | March 10. | 2,260,945 | 1,253 | .. | .... | 11 | .... | 14 | 3 | 34 |
| Glasgow | March 10. | 545,678 | 297 | .. | .... | .... | .... | 7 | 3 | 5 |
| Warsaw | March 3. | 439,174 | 202 | .. | .... | 8 | .... | .... | .... | 5 |
| Calcutta | February 11. | 433,219 | 235 | 31 | .... | .... | .... | .... | .... | 1 |
| Amsterdam | March 3. | 389,916 | 198 | .. | .... | .... | .... | 1 | .... | 1 |
| Amsterdam | March 10. | 389,916 | 213 | .. | .. | .... | 1 | .... | .... | 8 |
| Rome | February 4. | 382,973 | 279 | .. | .... | 2 | .... | .... | .... | 2 |
| Munich | February 25. | 275,000 | 144 | .. | .... | .... | .... | 1 | 1 | 1 |
| Palermo | March 12. | 250,000 | 127 | .. | .... | .... | 1 | 3 | 2 | 1 |
| Belfast | March 10. | 227,022 | 148 | .. | .... | .... | .... | 2 | 2 | .... |
| Genoa | March 10. | 179,329 | 132 | .. | .... | 6 | .... | .... | .... | 3 |
| Leipsic | March 10. | 170,000 | 92 | .. | .... | .... | .... | .... | 1 | 9 |
| Trieste | March 3. | 154,500 | 119 | .. | .... | 7 | .... | .... | 1 | 3 |
| Toronto | March 17. | 130,000 | 24 | .. | .... | .... | .... | .... | 1 | 4 |
| Stuttgart | March 10. | 125,510 | 43 | .. | .... | .... | .... | .... | .... | 1 |
| Bremen | March 3. | 122,000 | 58 | .. | .... | .... | .... | 1 | .... | 1 |
| Barmen | March 10. | 109,000 | 47 | .. | .... | .... | .... | .... | .... | 1 |
| Merida | March 13. | 48,711 | 44 | .. | .... | .... | .... | 3 | .... | .... |
| Guayaquil | February 19. | 30,000 | 89 | .. | 6 | 10 | .... | 31 | .... | .... |
| Guayaquil | February 26. | 30,000 | 74 | .. | 3 | 13 | .... | 29 | .... | .... |
| Gibraltar | March 4. | 23,631 | 18 | .. | .... | .... | .... | .... | .... | 1 |
| Sagua la Grande | March 10. | 15,605 | 10 | .. | .... | 7 | .... | .... | .... | .... |

### United States.

The following report by the Senate Committee on Epidemic Diseases, in relation to seaboard quarantines, is republished for the information of quarantine authorities:

Mr. Harris, from the Committee on Epidemic Diseases, submitted the following

REPORT:

[To accompany bill S. 2493.]

The Committee on Epidemic Diseases has had under consideration several bills, resolutions, and memorials, as follows:

Senate bill 665, "To establish a quarantine station at the port of San Francisco";

Senate bill, 1641, "To establish a permanent quarantine station at or near Cape Charles, Virginia";

Resolutions of the Legislature of the State of Virginia in the nature of a memorial, asking the establishment of a quarantine station at Cape Charles;

Resolutions of the Board of Trade of Chester, Pa.;

Petition of the Board of Health of Rockford, Ill.;

Resolutions of the Board of Health of Charleston, S. C.;

Petition of the Medical Society of San Diego, Cal.; and

Resolutions of the American Public Health Association;

all urging the establishment of national quarantine at the points of danger upon the Gulf and sea-coast.

The committee reports an original bill, providing for the establishment of seven quarantine stations upon the coast, in addition to the one already provided for at the mouth of the Mississippi River by special act of the present session. The two bills above referred to are therefore reported back with the recommendation that they be indefinitely postponed.

The Public Health Association of America, at its annual meeting in November, 1887, by resolutions, earnestly urge the establishment, thorough equipment, and maintenance of a system of coast quarantine.

Many other sanitary organizations have earnestly urged the same policy, and, so far as the committee is advised, every sanitary organization in the country appreciates its importance and earnestly recommends its adoption.

These bills, resolutions, and memorials were referred by the committee to the Surgeon-General of the Marine-Hospital Service, for such suggestions as in his opinion the subject merits, and the following communication was addressed to the committee by that officer:

The time has come when the judgment of sanitarians has passed beyond the realm of speculation in the matter of quarantine. That word no longer means the detention on board of a vessel for a period of "forty days" of the ill-fated passengers and crew of a suspected vessel. It means the speedy removal of the sick to a comfortable hospital, the disinfection and cleansing of the vessel, and her restoration to the commercial fleet at the earliest possible date, the lightering and removal of the cargo and the cleansing of the bilge. Clean ships are not *per se* carriers of infection, foul ones are; and the time will doubtless come when enlightened sanitary legislation will enact a penalty for maintaining a foul vessel as a pestilence breeder, and when the time shall come when we shall have only clean ships sailing from clean ports, then our quarantine stations may be made inspection stations only, but for many years it will be necessary to rigidly enforce quarantine measures as now practiced and outlined above.

Those most interested being agreed that the maintenance of the seaboard quarantines is of the first necessity, it therefore follows that those establishments should be well built and kept supplied with the latest and most improved sanitary appliances for the work. To that end the accompanying bill has been framed, and attached to this report are detailed reasons for the establishment of each quarantine named in the bill, together with an estimate of the cost of the same. Included in the estimate is the amount considered necessary for the maintenance of the stations for the first year. Moreover, the season is now rapidly approaching when epidemic diseases will again increase, and what is done to be of avail this year should be done quickly.

*Estimated Cost and Annual Expense of National Quarantine Stations on the Atlantic, Gulf, and Pacific Coasts, recommended to be established and properly equipped.*

The stations starred are in temporary use by the Government, but are not properly equipped, the expenses thereof being borne out of the contingent fund at the disposal of the President for the prevention of the spread of epidemic diseases and the maintenance of quarantine at points of danger.

* DELAWARE BREAKWATER.

(Site owned by the Government.)

| | |
|---|---|
| Disinfecting machinery | $20,000 |
| Steam-tug | 30,000 |
| Warehouse and additional buildings | 10,000 |
| Annual expenses | 10,000 |
| Total | $70,000 |

There is at present at this station a small hospital and boat-house, which will answer for the present. This quarantine station is necessary for the quarantine service of the populous States bordering on the Delaware River.

Pennsylvania, Delaware, and New Jersey are each interested in its maintenance. The Lazaretto, just below Philadelphia, is not located at a safe distance from the shore, nor is it possible in the Delaware River to find a site for a quarantine station free from objection. The Philadelphia Board of Health and the State boards of health of Pennsylvania and New Jersey and the Delaware health authorities have recommended and urged the proper equipment of this station. There is an iron pier inside the breakwater owned by the Government that could be utilized when required. A steam-tug is necessary, not only for boarding purposes, but for the removal of the sick and for the maintenance of a patrol to prevent communication between vessels in quarantine and vessels at anchor. This breakwater is a port of call, where vessels from foreign ports lie to await orders to destination.

The "disinfecting machine" estimated for this and other quarantines is a machine on a tug-boat as is now used by the Louisiana Board of Health. It is believed by most sanitary authorities to be the best in the world. Its use admits of the most speedy disinfection and restoration of the vessel to the commercial fleet. Drying chambers for ships' bedding, sailors' luggage, etc., can be provided for when the warehouses are built.

* CAPE CHARLES, VIRGINIA.

| | |
|---|---|
| Purchase of site | $5,000 |
| Construction of wharf | 3,000 |
| Hospital buildings and officers' quarters | 37,000 |
| Floating disinfecting machinery | 25,000 |
| Steam-tug | 30,000 |
| Annual expenses | 12,000 |
| Total | $112,000 |

This station is necessary for the quarantine service of the District of Columbia, Virginia, and Maryland. In the latter State there is a small, poorly equipped station at Hawkins's Point, on the Patapsco, seven miles below Baltimore, but no protection is afforded the eastern shore of Maryland, nor the point between the bay and the Potomac. All points on the Potomac, Rappahannock, and James rivers are now without quarantine facilities other than the present temporary station at the Capes. Fisherman's Island, which has been offered to the Government for $5,000, has been chosen as the best site for the quarantine. The character of the shifting sands and difficult foundation makes it necessary to ask for more money for buildings than at some other places. Like the Breakwater, Hampton Roads is also a place of call.

* SAPELO, SOUTH ATLANTIC STATION.

(Site owned by the Government.)

| | |
|---|---|
| Disinfecting machinery | $20,000 |
| Warehouse and wharf | 10,000 |
| Small boats | 500 |
| Annual expenses | 8,000 |
| Total | $38,500 |

This station is intended as a refuge station for the South Carolina, Georgia, and Florida coasts. The business of first boarding is done by the local health inspectors at Charleston, Savannah, Brunswick, Fernandina, and other ports interested, and when a vessel is to be quarantined she is ordered to Sapelo Station for that purpose. No steam-tug is deemed necessary at this station. The island (Blackbeard) on which the quarantine is located is owned by the Government. The estimated annual expenses are less than either the Breakwater or Cape Charles Station, because the business will be less and no steamboat will be required. The boards of health on the South Atlantic now use this station as above indicated, although imperfectly equipped, and all attempts to suspend it have been met by repeated protests.

* GULF QUARANTINE (FORMERLY SHIP ISLAND).

| | |
|---|---|
| Appropriation for hospital and appliances already made, and site provided for by special act | $45,000 |
| Annual running expenses to be appropriated | 15,000 |
| Total | $60,000 |

This station is the refuge station for the entire Gulf coast west of Pensacola. A board has been detailed to select the site under the recent act of Congress directing the removal of the station, and the general expenses are provided for under that act. Government land will doubtless be chosen for the site.

NEAR KEY WEST, FLORIDA.

| | |
|---|---|
| Disinfecting machinery | $20,000 |
| Purchase of site (contingent) | 5,000 |
| Warehouse and wharf | 10,000 |
| Small boats | 500 |
| Annual expenses | 10,000 |
| Steam-tug | 30,000 |
| Hospital buildings and officers' quarters | 12,500 |
| Total | $88,000 |

This station is required on account of the rapidly growing commerce with Cuba, the West Indies, and the Central American ports, nearly all of which are more or less constantly afflicted with yellow fever. The recent disastrous epidemic of yellow fever at Tampa and Key West is an evidence of what may be expected if prompt measures are not at once taken to establish a quarantine station at this point. The Mississippi Delta Station is too far away to properly serve the west coast of Florida, and when it is remembered that at present a person in the incubative stage of yellow fever may pass from Havana to any of the interior cities, the necessity for a careful inspection at this outpost during the dangerous season is apparent. The estimate for the site is made contingent, because inquiry may show that there are already sites owned by the Government. A steam-tug is necessary here for boarding purposes, and to carry supplies to the key that may be selected for the station.

SAN DIEGO, CAL.

| | |
|---|---|
| Purchase of site | $5,000 |
| Disinfecting machinery | 20,000 |
| Warehouse and wharf | 10,000 |
| Small boats | 500 |
| Annual expenses | 10,000 |
| Hospital buildings and officers' quarters | 10,000 |
| Total | $55,500 |

This station is necessary on account of the steadily increasing commerce with the Mexican, South American, and Central American coasts. Great alarm has been felt recently on account of the severe and widespread epidemic of cholera now existing in Chili, which disease has shown its usually high mortality. During the yellow-fever epidemic, which prevailed recently on the Mexican coast, this port was repeatedly threatened, and the danger is likely to increase rather than diminish. The harbor, the only natural one belonging to the United States south of San Francisco, is the first American port of refuge for American vessels in South Pacific waters, and on this account receives a proportionately large shipping, and since the establishment of interior railway connections the shipping at this port has largely increased.

SAN FRANCISCO, CAL.

(Site owned by the Government.)

| | |
|---|---|
| Disinfecting machinery | $20,000 |
| Warehouse and wharf | 10,000 |
| Steam tug | 30,000 |
| Small boats | 1,000 |
| Hospital buildings and officers' quarters | 24,000 |
| Annual expenses | 18,000 |
| Total | $103,000 |

The necessity of this station has long been recognized, and has been frequently recommended by the Department, and a special report on this station has recently been made to the committee. A site was selected by a board consisting of one medical officer each from the Army, Navy, and Marine-Hospital Service. The board considered a certain portion of Angel Island, now owned by the Government, to be the most suitable place for its establishment. Owing to the great amount of work required to be done, the annual expenses will be greater than at most of the other quarantines. There is no local quarantine, and a vessel must lie in the harbor with the sick on board. The local authorities are unanimous in urging the establishment of this station.

PORT TOWNSEND, WASHINGTON TERRITORY.

| | |
|---|---|
| Purchase of site | $5,000 |
| Disinfecting machinery | 20,000 |
| Warehouse and wharf | 10,000 |
| Small boats | 500 |
| Annual expenses | 10,000 |
| Hospital buildings and officers' quarters | 10,000 |
| Total | $55,500 |

This station is necessary on account of its great distance from San Francisco, and the fact of its being the entrepôt to the populous Puget Sound country and the already great and increasing commerce. With the development of Alaska, and the increasing business of the North Pacific Railway, the necessity for the establishment of this station will increase each year.

From this statement it appears that Dr. Hamilton recommends the erection and thorough equipment of seven quarantine stations in addition to the one already provided for at the mouth of the Mississippi River, as follows:

Delaware Breakwater; Cape Charles, Va.; Sapelo Sound; Key West, Fla.; San Diego, Cal.; San Francisco, Cal.; and Port Townsend, Oregon.

The estimated aggregate cost of construction and equipment of these quarantine stations, including the one at the mouth of the Mississippi River, is $489,500, and the estimated aggregate annual cost of maintaining them is $93,000.

Believing, as the committee does, that it is the duty of Congress to so regulate commerce as to prevent the introduction of contagion from foreign countries into the United States, the accompanying bill is reported, with the recommendation that it pass.

*Nantucket.*—A dispatch in the New York "Herald," of March 30th, reports the occurrence of a suspected sporadic case of cholera at the Island of Nantucket, from the wrecked British steamer Canonbury.

**The New York Academy of Medicine.**—At the next meeting of the Section in Surgery, on Monday evening, the 9th inst., Dr. J. J. Garmany will read a paper on "Dislocations of the Astragalus, etc."; and Dr. Willy Meyer will read on "Cystoscopy and the New Cystoscope of Leiter and Nietze, with a Demonstration of the same."

At the next meeting of the Section in Neurology, on Friday evening, the 13th inst., Dr. M. Allen Starr will report cases of partial ophthalmoplegia externa, acute myelitis, and cerebellar tumor; and Dr. D. B. St. John Roosa will read a paper on "The Differential Diagnosis of Peripheric and Central Aural Disease."

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 16th inst., Dr. Gorham Bacon will read a paper entitled "A Case of Carcinoma of the Ear having its Origin probably in the Tympanum or Mastoid Cells"; and Dr. Frank W. Ring, one entitled "Four Cases of Acute Inflammation of the Middle Ear from the Abuse of Roosa's Bulb Nasal Inhaler" and one on "The Disastrous Results of a New Artificial Drum Membrane."

## ANSWERS TO CORRESPONDENTS.

*No. 169.*—Your opponent is right.

*No. 170.*—It is all but impossible for a person injured in the way you describe to recover. Balls do sometimes remain in bony tissue in a condition which might be called encysted, but such an occurrence it is beyond the power of surgery to bring about. In the case you describe, the ball could not have been removed without laparotomy, and perhaps not with it; and in such a case the difficulties in carrying out efficient antiseptic treatment would be almost insuperable.

*No. 171.*—1. The character of the growth seems to us very doubtful, but we should fear that it was a sarcoma. We think exploratory laparotomy might be proper if it should begin to increase again, but that point could hardly be determined otherwise than by examination of the patient. 2. Ichthyol may be had of almost any of the principal New York druggists, and probably of those in other places. At present the wholesale price here is $4.50 a pound.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

# THE CARTWRIGHT LECTURES
ON
# THE GENERAL PATHOLOGY OF FEVER.

*DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.*

BY WILLIAM H. WELCH, M. D., BALTIMORE,
PROFESSOR OF PATHOLOGY IN THE JOHNS HOPKINS UNIVERSITY.

### LECTURE II.

### THE EFFECTS OF INCREASED TEMPERATURE OF THE BODY.

*Thursday, April 5, 1888.*

IN the last lecture I endeavored to bring before you the main facts which we possess bearing upon the explanation of febrile rise of temperature. After a review of our knowledge concerning heat-production, heat-dissipation, and heat-regulation in fever, we were led to the conclusion that neither the changes hitherto observed in the production of heat nor those in the loss of heat sufficed to explain febrile temperatures. Such an explanation seemed possible only upon the assumption that the fever-producing agents act either directly or indirectly upon the nervous mechanism controlling the relations to each other of the production and the discharge of heat. We then turned our attention to the relations of the nervous system to these processes, and found that the investigations of recent years had enabled us to obtain a much clearer conception than was formerly possible of the manner in which the complicated heat relations in fever may be brought about by an action upon the nervous system. We found even substantial experimental basis in support of clinical facts which show that circumscribed lesions of certain parts of the central nervous system may induce directly febrile disturbances of animal heat.

To carry the subject further, to consider whether pyrogenic agents act primarily or only secondarily upon the processes concerned in heat-production, or upon those concerned in heat-dissipation, or upon the apparatus regulating the relations to each other of these two sets of processes; to discuss whether these agents act directly upon the central nervous system, and, if so, upon what part, or upon the peripheral nerves or their terminations, or upon the tissues; to follow out more fully than we have done hitherto the themes here suggested—would lead us with our present knowledge into a sea of speculation. We should find only here and there a faint light of fact to guide us. Even upon foundations as insecure as this, speculations have their legitimate uses. A good hypothesis is a most valuable incentive to scientific work. It is not my purpose, however, to carry you with me further in this direction, although I realize that a single lecture has been far from sufficient for a satisfactory exposition of the subject.

After dismissing the considerations bearing upon the so-called theory of fever, there still remain a host of questions properly belonging to our subject. It is evidently impossible, even if it were desirable, that these lectures should include a discussion of all these questions. I have therefore selected certain ones, partly because they seem to me of immediate interest, and partly because I have given some attention to their study.

In the present lecture I wish to present to you some observations concerning the relation of elevation of temperature to other disorders of fever, and as to the question how far increased temperature is a source of danger in fevers.

Here I may repeat that the word fever is used as a convenient name for a group of symptoms commonly associated together in febrile diseases. The association of these symptoms, however, is so loose that we regard only the dominant one—the increased temperature—as the essential criterion of the existence of fever. It saves circumlocution to adopt this somewhat vague and common signification of the term fever, although I think it would be an improvement to confine the term to abnormal elevation of temperature. The literature of fever is full of misapprehensions resulting from the various meanings attached to the word by different authors.

All of the bodily functions may be disordered in fevers. The various symptoms or classes of symptoms which are so commonly associated as to be regarded by many as belonging to the febrile process are, in addition to heightened temperature, increased frequency of the pulse and other circulatory disturbances, increased rapidity of respiration, muscular weakness, lessened secretions, disordered nutrition and digestion, and nervous symptoms.

What is the connection, if any, between these symptoms and the elevation of temperature? What degrees of elevated temperature are dangerous to life, and in what does the danger consist? This subject can at least claim the interest that attaches to the questions of the day. The various opinions which have been held by clinicians on these points are too well known to you to require an historical review. I need only remind you that until within a few years the views advocated with especial force for nearly thirty years by Liebermeister have prevailed, although not without considerable opposition. According to these views, the chief source of danger in uncomplicated essential fevers is the elevation of temperature, and the main indication for treatment is the reduction of temperature. Above all, it was urged, with apparently convincing arguments, that the weakness of the heart, which is undoubtedly one of the gravest dangers of fevers, is the direct effect of prolonged high temperature, and is manifested anatomically by parenchymatous or fatty degeneration of the cardiac muscle. Liebermeister sharply defined his position when he said: "A man whose temperature measures continuously 104° F. (40° C.) or more, surely dies in consequence of the elevation of temperature, one in a few days, another after a somewhat longer time, according to the resistance of the individual." "If his temperature reaches 108·5° F. (42·5 C.) or more, then is he irrevocably lost."*

At the present moment there is a decided reaction against these views, a reaction which in some quarters goes to the extent not only of denying that there is danger in

* Liebermeister, Volkmann's "Sammlung," No. 31, p. 240.

febrile temperatures which do not exceed a very high point, but of asserting that the elevation of temperature is a beneficent provision, a most important vis medicatrix naturæ, which should not be checked by the interference of the physician. This reaction of opinion is plainly due in great part to the disappointment which has followed the high hopes raised by the discovery of a number of drugs which are admirable antithermic agents, and nevertheless do not exert over febrile diseases that controlling influence which had been anticipated.

These questions, you may say, are clinical ones, and not much edification is to be expected from their discussion by a pathologist. So far as the propriety of the use of antipyretic agents or of any other mode of treatment in fever is concerned, it is true that the decision must be reached at the bedside and can not and never should be controlled by the results of experimental pathology. But an appeal has properly been made to experimental pathology to shed light upon such questions as the effects of heat upon the functions of the whole body and of its various organs and upon the causes of parenchymatous and fatty degenerations. The arguments advanced in support of the view that all of the characteristic symptoms of fever are directly dependent upon the increase of temperature, and that high temperature is the chief source of danger, are derived no less from experimental pathology than from clinical observations.

Three methods have been employed to determine the effects of increased temperature in fever: one is to study the effects of heat upon animals; the second is to examine in different fevers and in different cases of the same fever the relation of the temperature to the other symptoms and to the general condition of the patient; and the third is to note the influence of reduction of temperature upon these symptoms.

Each method has its limitations. The condition produced by exposure to external heat, even if it be called thermic fever, is something quite different from ordinary fevers, and we can not transfer the results obtained by this method directly to the explanation of febrile phenomena. On the other hand, in the clinical study of fevers it is very difficult and often an arbitrary matter to separate the effects of increased temperature from those of other factors nearly always present. Hence, we find no agreement of opinion among physicians as to what symptoms or lesions in fever are referable to the heightened temperature and what are due to infectious or other conditions often present. Even the frequent or constant association of certain symptoms with elevated temperatures and their subsidence or disappearance by reduction of temperature do not justify us in inferring that the high temperature is the cause of the symptoms, for both may be co-ordinate effects of the same cause, and the so-called antipyretic treatment may influence other conditions as well as the temperature. As has been frequently said of late, the high temperature may be rather an index of the severity of the disease than a source of danger in itself.*

The most direct way of determining the influence of heat upon the body is to raise the internal temperature by external application of heat. Here we are not disturbed by the presence of other factors, such as infection, which render doubtful so many of the conclusions derived from clinical observations as to the effects of high temperatures. For the solution of many problems it is evidently irrelevant whether the source of heat is within or without the body. These experiments, if properly conducted, are calculated to shed much light upon many questions relating to the effects of febrile temperatures.

According to the testimony of all experimenters, a mammalian animal artificially heated dies when its internal temperature has reached 111·2° F. (44° C.) to 113° F. (45° C.). Death is preceded by convulsions, and immediately or soon after death, rigor mortis appears. At the moment of death the irritability of the heart and muscles ceases. Death seems to be due to heart paralysis, and the cause of this is usually set down as heat rigor, but this is not probable, as death generally occurs at a temperature several degrees below that at which rigor of the heart muscle appears.

It is generally argued that temperatures several degrees below those which are fatal must exert toxic effects, and this conclusion seemed to be substantiated by the majority of experimenters, who found that animals whose temperatures were artificially raised to 105° F. (40·6° C.) to 107° F. (41·7° C.), or even to a lower point, manifested signs of illness. These latter results, however, are opposed by those obtained by Rosenthal, and especially by Naunyn,* who points out that the conditions in most previous experiments were not favorable, as the animals were generally placed in small, dark, poorly ventilated metallic boxes. Naunyn succeeded in keeping a rabbit alive for thirteen days with an average temperature of 106·7° F. (41·5° C.).

Following Naunyn's example, I have had constructed a wooden box 3 feet long, 2 feet high, and 2 feet broad, which fits closely within a double-walled galvanized-iron box. The wooden box is provided with a perforated, movable bottom which allows the urine to escape. The space between the two walls of the iron box measures 3 inches across, and is filled with water, which therefore surrounds the inner box on all sides, except at the top, which is left open. The dimensions of this apparatus are somewhat larger than those of Naunyn's heating-box. A folded woolen blanket was drawn over each end of the box so as to leave uncovered at least one third and generally more of the top. A rose burner, placed underneath, served to heat the box. At first a thermo-regulator was employed, but this was found unnecessary, as the temperature of the room

* In hyperpyrexia, and in many cases of insolation, there can be no doubt that the high temperatures as such are the main elements of danger. But both of these conditions have important points of distinction from ordinary febrile processes. In hyperpyrexia there is probably almost complete paralysis of heat regulation, and we shall find that an analogous condition with similar dangers sometimes develops in animals artificially heated. The cases of insolation in which the high temperature is so dangerous are analogous to the condition which may be produced in animals by brusque elevation of the bodily temperature through exposure to heat, and which differs from that resulting from more gradual increase of temperature.

* Rosenthal, "Zur Kenntniss d. Wärmeregulirung," u. s. w., Erlangen, 1872; Naunyn, "Archiv f. exp. Path. u. Pharm.," Bd. xviii.

varied but little, and there was no difficulty in keeping a sufficiently constant temperature in the box. The experiments were made upon rabbits, and only a single one was placed in the box at a time. Corrected thermometers were used. The temperature of the box was taken a short distance above the bottom, and that of the rabbit at a depth of three to four inches in the rectum. This occasion does not seem an appropriate one to describe these experiments in detail with their protocols. I shall take another opportunity for that, and at present give only a general account of those results which relate to the subject before us.

In the box described I have succeeded in keeping for three weeks two large black rabbits, the one with an average rectal temperature of 107·3° F. (41·8° C.), the other with an average temperature of 106·6° F. (41·4° C.). The rectal temperature fluctuated usually between 105·5° F. (40·8° C.) and 108° F. (42·2° C.), scarcely ever sinking below 105° F. (40·5° C.), but occasionally rising as high as 109·5° F. (43·1° C.). The temperature of the box varied between 96° F. (35·5° C.) and 106° F. (41·1° C.). The rabbits lay most of the time stretched out, breathing very rapidly. They took their food greedily and did not appear ill. At the end of the experiment the first animal was removed from the box, and, appearing perfectly well for ten days afterward, it was used for another experiment; the second animal was killed at the end of the experiment, and presented marked fatty degeneration of the heart, liver, and kidneys. Both animals lost weight while in the box.

In these and similar experiments the rabbits were given only moist, green fodder, and were allowed to drink plenty of water, which they took eagerly. It is important for the success of the experiment that the temperature should be gradually and not suddenly raised.

Different animals offer varying degrees of resistance to the effects of high external temperatures. It has seemed to me that black and gray rabbits surpass in this respect white rabbits. The same temperature of the box does not produce in all cases the same rectal temperature in different animals, or in the same animal at different times. No factor is of more importance in determining the effects of external heat than the animal's power of temperature-regulation. Failure of this power is manifested by a sudden rise of internal temperature, which may quickly attain a point incompatible with life. This event may take place without any alteration in the box temperature. The degree of internal temperature at which this paralysis of heat-regulation occurs varies in different animals. One may be able to hold his temperature from further rise at as high a point as 109·5° F. (43·1° C.); in another, after the temperature has reached 107·6° F. (41·5° C.), there may occur, without any change in the box temperature, a sudden and often fatal elevation of temperature. In general, temperatures between 108° F. (42·2° C.) and 109° F. (42·8° C.) may be regarded as critical temperatures for these animals. One is forcibly reminded by these sudden and dangerous elevations of temperature of the occurrence of hyperpyrexia in certain fevers of human beings, and there is reason to believe that this, too, is caused by paralysis of heat-regulation.

It seemed to me of some practical interest to determine what effect upon the rabbit's power of resisting high temperatures was exerted by exhaustive influences, particularly by anæmia. For this purpose rabbits which had been moderately bled and others which had been used for some other experiments were placed in the hot box. It was found that these animals were, although not without occasional exceptions, unmistakably less resistant to the effects of high temperatures than robust animals. They succumb sooner and at lower box temperatures.

We may now consider what inferences may be drawn from these and similar experiments as to the effects of high temperatures. It seems clear that a considerable part of the current arguments based upon experiments concerning the injurious effects of high temperatures must be revised in the light of Naunyn's experiments and of those which I have briefly related. Because an animal may be killed by raising its temperature to 111° F. (43·9° C.) to 113° F. (45° C.), it does not follow that an increase of temperature of four or five degrees above the normal involves danger to life, or even any serious disturbance of the functions of the body. Although experiments in hot-air chambers show that in man brusque elevations of the temperature by only a few degrees give rise to serious symptoms, Krishaber * found that by habituation his temperature could be raised to 106·5° F. (41·4° C.) to 107·2° F. (41·8° C.) without much discomfort. As small animals generally succumb more readily than large ones to artificial heating, it is not likely that the power of resistance in human beings is less than that found to exist in rabbits, and there is reason to believe that it is greater.

We can not transfer directly to human beings the highest temperatures at which we found rabbits could exist without serious discomfort, save increased respiration. A rabbit's temperature is normally considerably higher than that of man, and apparently slight causes suffice to produce marked fluctuations. The normal rectal temperature of the rabbits used in my experiments was generally between 102° F. (38·9° C.) and 103° F. (39·4° C.). The highest average temperature at which a rabbit was kept for three weeks in the hot box exceeded, therefore, by from four to five degrees F., the average normal temperature. Such an increase would not correspond to a high febrile temperature in man. We can, however, with equal and probably greater propriety, compare this temperature with that at which death surely occurs in a condition bordering on heat rigor. This temperature (111° to 113°) is probably about the same for man as for rabbits and other mammalians. From this point of view the inference may be drawn, although, of course, with much reserve, that human beings may tolerate temperatures of 107° F. (41·7° C.), or even higher, for a considerable time. This inference is supported by clinical observations, especially in cases of relapsing fever.

As already pointed out, the condition produced by artificial heating is not directly comparable with that in fever. In the former the loss of heat from the body is reduced to a minimum; the superficial temperature is three or more

* Krishaber, "Gaz. méd. de Paris," 1877.

degrees higher than the internal, so that the average temperature of the whole body is higher than in fever with the same internal temperature. We can not say, therefore, but that man may tolerate considerably higher internal temperatures when the elevation is brought about under conditions in which the discharge of heat is not checked than when the temperature is forced up by stopping heat-dissipation. This would be proved if confidence could be placed in the enormous elevations of temperature reported by Teale and others. In these cases, however, even if authenticated, it is probable that heat is abnormally distributed in the body, and we can not infer that the internal temperature is uniformly raised to such paradoxical heights.

It is of the utmost importance to bear in mind that, as my experiments have shown, not only do animals differ in their power of tolerating high temperatures of the body, but this resistance may be weakened by various depressing causes. Nothing would be more irrational than to conclude, because one individual in a certain condition can tolerate very high temperatures, another in a different condition possesses the same power. In fevers we have various factors, particularly infection, which we may well believe can lower the tolerance of high temperatures. That in some fevers, particularly relapsing fever, this does not appear, or only partially, does not disprove that in another fever, such as typhoid or pneumonia, the system may be placed by other factors of the disease in such a condition that even moderately high temperatures are injurious. It does not seem to me proper in these cases to lay, as some seem inclined to do, the sole stress upon the element of infection. This is in all likelihood the determining factor, but the practitioner can not shut his eyes to the possibility that under its influence the high temperature as such is a source of danger to his patient.

With these restrictions I shall surely not be misunderstood when I assert that temperatures which are ranked as high febrile temperatures do not in themselves, independently of other factors, exert any such injurious influence as has been usually attributed to them.

Our attention up to this point has been directed to the effects of high temperatures upon the general condition of the body. It is of importance for the proper understanding of fever to determine the influence of heat upon the structure and functions of the various organs. To what extent can the febrile disorders of respiration, of circulation, of secretion, of nutrition, of innervation, be attributed directly to the elevated temperature? These are questions which can be answered better by experimental methods than by clinical observation, for the latter has to deal with the effects of heat complicated by other circumstances whose influence can not be accurately determined. The one method, however, should be made to control the other.

The most striking immediate effect of heat upon an animal is increased frequency of respiration. When a dog or a rabbit is placed in an atmosphere of 100° F. (37·8° C.), it at once begins to pant, and the respirations may run up to 150 or more. The causation of this increased respiration, to which the name heat dyspnœa has been applied by Ackermann,* has been repeatedly investigated. Goldstein,† in Fick's laboratory, found that, by applying to the carotid arteries tubes through which hot water was flowing, the respirations might be greatly increased in frequency. Goldstein's experiment is usually cited as the crucial one showing that the increased breathing is due to the effect of the heated blood upon the respiratory centers in the medulla oblongata. Sihler,‡ working in the Biological Laboratory of the Johns Hopkins University, however, has demonstrated that the increased respiration of an animal exposed to heat is due to two causes, warmed blood and stimulation of the skin by the heat, and that probably skin stimulation is the more important factor. Some of Sihler's criticisms of Goldstein's experiments have been met by Gad and von Mertschinsky,# who have made it evident that increased temperature of the blood stimulates the respiratory centers or increases their irritability. Section of the vagi does not check heat dyspnœa, so that this does not result primarily from the action of the increased temperature upon the terminal pulmonary expansion of these nerves. The removal of afferent impulses from the skin by section of the spinal cord does, however, exert so marked an influence that it can not be doubted that heat stimulation of the skin is an important element in the causation. I have convinced myself of the correctness of Sihler's explanation by observing that in the hot box at temperatures of 90° F. (32·2° C.) to 95° F. (35° C.) rabbits often preserve their normal temperature and still their breathing is markedly increased, and that, on the other hand, upon taking them out of the box the respirations may sink before the internal temperature begins to fall. In one striking experiment the respirations fell immediately to about normal upon removing from the hot box a rabbit whose skull had been trephined on each side of the median line and the optic thalami punctured with a needle.

We can not transfer directly to human beings the results of experiments on heat dyspnœa in animals, because in the latter respiration has a far more important function in temperature-regulation than in the former. To keep cool, a dog pants under circumstances when a man sweats. As heat-regulation is largely influenced by the cutaneous temperature, it is not improbable that in man heat stimulation of the skin is less prominent than the warmed blood acting upon the respiratory centers in increasing the frequency of respiration in fever.

Inasmuch as disturbances of the heart and of the circulation in general are among the most important symptoms of fever, it is natural that much attention should have been given to the study of the effects of heat upon the organs of circulation. The supposed injurious effects of prolonged high temperatures in fever have been usually attributed especially to some toxic action of heat upon the heart.

That the pulse-rate is quickened by artificially heating rabbits and dogs has long been known. The positive dem-

* Ackermann, "Deutsches Arch. f. klin. Med.," Bd. ii.

† Goldstein, "Würzburger Verhandl.," 1871.

‡ Sihler, "Journal of Physiology," vol. ii, and "Studies from the Biological Laboratory, Johns Hopkins University," Baltimore, vol. ii.

# Gad and von Mertschinsky, Virchow u. Hirsch's "Jahresbericht," 1881, i, p. 197.

onstration that this acceleration is due to the direct action of the heated blood upon the mammalian heart itself was first given by my colleague, Professor Martin.* By conducting through the dog's heart, isolated physiologically by the ingenious method which he devised, Martin proved that the heart "beats quicker when supplied with warm blood and slower when cold blood is supplied to it; also that the rate of beat depends much more upon the temperature of the blood in the coronary arteries than on its temperature in the right auricle or ventricle." These experiments make it unnecessary to recur to any action of the heated blood upon extrinsic cardiac nerves or nerve-centers in order to explain the quickened pulse of fever. Moreover, Fick † found that the nervous centers of the heart and blood-vessels were unaffected by heating the blood flowing through the carotid arteries in the manner adopted by Goldstein in his experiments on heat dyspnœa.

Professor Martin has kindly permitted me, in this connection, to mention certain unpublished results of experiments which he is now conducting upon the effects of heat and cold on the isolated heart. As these results are pertinent to our subject, I gladly avail myself of this privilege. The table of an experiment which I have examined shows that the isolated cat's heart beats regularly and more and more rapidly as the temperature of the blood is gradually raised to 111·2° F. (44° C.). At this point the beats become irregular, but are restored to their normal rhythm by feeding the heart with cooler blood. The temperature of about 111° F. (43·9° C.) appears to be a critical one for the isolated heart. Above 111·2° F. (44° C.) to 113° F. (45° C.) the pulsations become slower instead of quicker as the temperature is raised. At 122° F. (50° C.) the heart's action ceased, but it was made to beat again by supplying it with cooler blood, showing that the cessation was not due to heat rigor. This interesting experiment teaches, among other things, that very high temperatures may produce results differing not only in degree but also in kind from those of temperatures only a degree or two lower.

We may consider it, then, established that increased frequency of the pulse in fever is referable to the direct action of the warmer blood on the nervo-muscular substance of the heart itself. Clinical observation of cases of fever makes it evident that there may be and often are present other circumstances which influence the rapidity of the heart's pulsations, circumstances which in themselves may slow or may quicken the pulse. Large series of statistics, therefore, are required to bring out the ratio between the pulse-rate and the temperature in fever, and even then for any given temperature the maximum and the minimum pulse-rates lie so far apart that the statement of the average increase in the frequency of the pulse for each degree of rise of temperature, such as has been computed by Liebermeister, has very little value.

Not only is the pulse-rate quickened in fever, but there are often other and more serious circulatory disturbances. In the fever produced in rabbits by injection of the swine-plague bacillus I find a reduction of the blood-pressure measured in the carotid artery, and others have obtained similar results in the artificial fevers of animals. The determination of the blood-pressure in fevers of human beings by means of Basch's sphygmomanometer has given in the hands of different experimenters such contradictory results that no conclusion can be drawn, unless it be the very probable one that the blood-pressure varies, being sometimes high, sometimes low, and sometimes normal in fever. That the arterial tension is often reduced is made evident by the marked dicrotism of the pulse-wave. This dicrotism, however, characterizes particularly septic and typhoid types of fever, and is absent during the chill of intermittent fever and often in exanthematous and some other fevers, so that we can not consider the blood-pressure and arterial tension as having any such definite relation to fever as the pulse-rate has.

It has been observed by Paschutin, Senator, and Mendelson * that the blood-pressure rises with increasing bodily temperature produced by exposure to heat. Mendelson found that the pressure began to sink as the temperature approached a point incompatible with life. In these experiments the animals were subjected to rapid elevations of temperature. I find that when a rabbit is gradually and cautiously heated in the hot box used in my experiments, the rise of temperature is less marked and may not surpass, even for temperatures of 107° F. (41·7 C.), the normal limits of variation which may be found in the blood-pressure of the same animal examined at different times. These measurements, however, are not very conclusive, for, as has been already remarked, rabbits which have been operated upon do not stand artificial heating well.

I have observed that the rhythmical contractions of the blood-vessels of the rabbit's ear are feeble or absent when the temperature is much elevated by artificial heating, whereas it will be remembered that in experimental septic fever these contractions are irregular and exaggerated.

Upon the whole, I think that we are justified in concluding that the variations of arterial tension in fever are much less dependent upon increased temperature than upon other factors, such as infection.

But the corner-stone of the doctrine which teaches that a chief source of danger in fever is the elevation of temperature is not the effect of increased temperature upon the pulse rate or the arterial pressure, but is the belief that prolonged high temperature exerts a directly paralyzing influence upon the heart. The main support of this belief is not the admitted fact that extremely high temperatures paralyze the heart, for these critical temperatures lie far above the ordinary high temperatures of fever and in a region where all admit the dangers of the excessive internal heat. The stately superstructure has been built up chiefly on the basis of experiments showing that, when the internal temperature of animals has been maintained for some time

* Martin, "The Direct Influence of Gradual Variations of Temperature upon the Rate of Beat of the Dog's Heart," "Philosophical Transactions of the Royal Society," Part ii, 1883.

† Fick, Pflüger's "Archiv," Bd. v.

* Paschutin, Ludwig's "Arbeiten," 1873; Senator, Du Bois-Reymond's "Archiv," 1883, Supplement. Band; Mendelson, "On the Renal Circulation during Fever," "Am. Jour. of the Med. Sciences," Oct., 1883.

at a high point by exposure to external heat, parenchymatous or fatty degeneration of the heart muscle ensues. It is true that all experiments are not in accord upon this point, and that, as a rule, pathological anatomists have not given adherence to the doctrine that parenchymatous degenerations are chiefly dependent upon high temperature; still, this doctrine has gained a wide acceptance among clinical men, and is advocated with special force by Liebermeister. I have therefore thought it desirable in my experiments to give special attention to this question.

Among previous experimenters on artificial heating of animals, Iwaschkewitsch, Wickham Legg, and Litten may be mentioned as finding parenchymatous or fatty degeneration of the heart, liver, and kidneys, and Walther, Obernier, and Naunyn as obtaining only negative results. It is not necessary here to enter into a criticism of these different experiments, which are of very unequal value. Litten's* experiments on the one side, and Naunyn's† on the other, appear to have been the most carefully conducted. Litten, whose experiments are those usually cited, kept guinea-pigs in a double-walled metallic box, which was at a constant temperature of 98·8° F. (37° C.) with dry air, or of 96·6° F. (36° C.) with moist air. He never failed to find fatty degeneration at the end of from thirty-six to forty-eight hours. The liver was first affected and then the heart and kidneys, which became fatty by the second or third day. The animals did not survive longer than five or six days, and by that time the fatty degenerations had reached an extreme degree. Von Recklinghausen‡ urges with apparent justice against these experiments that the enforced inactivity of the muscles and the imperfect ventilation may have had as much to do in causing the degenerations as the high temperature had. These objections find support in the experiments of Naunyn, who, making use of a much larger and better-ventilated heating box than Litten, failed to find any parenchymatous or fatty degeneration in his rabbits after they had been exposed for two weeks to higher temperatures than Litten employed.

As my experiments confirmed in other respects Naunyn's results, I was quite unprepared to find that my rabbits, after a variable period of artificial heating, quite constantly presented fatty degeneration of the heart, liver, and kidneys, and sometimes of the diaphragmatic and intercostal muscles. I never found the degeneration at so early a period as Litten did. It was not until the rabbit had been kept for at least a week with an average rectal temperature of 106° F. (41·1° C.) that the degeneration was noticed, and then only in moderate degree. The higher and the less fluctuating the internal temperature, the more certain was the degeneration to appear. I could reckon upon obtaining rabbits with well-marked fatty degeneration of the heart by keeping them for ten days with a rectal temperature between 107° F. (41·7° C.) and 108° F. (42·2° C.). I am not prepared to account for the discrepancy in this respect between Naunyn's and my experiments. The box used was larger than that employed by him, and every care was taken to keep it well ventilated by leaving at least one third and often one half of the top open.

I do not think that my experiments altogether do away with the force of von Recklinghausen's criticisms. The fact that in these experiments the degeneration made its appearance at the end of a week or ten days, and in Litten's in forty-eight hours, to say nothing of Wickham Legg finding it at the end of twelve hours, would suggest that if the rabbits were heated in a still larger and better-ventilated apartment, the degeneration might not occur at all, or might be deferred to a much later period. In my opinion, however, even if full allowance is made for this line of argument, we must still admit that prolonged high temperature is an important factor in the causation of fatty degeneration.

That it is not the sole factor no one can doubt. As is well known, fatty degeneration is produced by anæmia and by a variety of poisons, and even in fevers most pathologists are convinced that it bears a closer relation to the kind and the degree of infection than it does to the height of the temperature. It is more frequently absent than present in pneumonia, even where there have been symptoms of heart failure.

The kind of degeneration present in my rabbits was fatty and not parenchymatous. Probably all who make many post-mortem examinations will agree with von Recklinghausen that altogether too liberal use has been made of the diagnosis of parenchymatous degeneration, and not sufficient account has been taken of the anatomical changes of the parenchyma produced by post-mortem chemical changes, such as acid formation, etc.

In order to determine what influence is exerted by infection combined with high temperature, I inoculated a rabbit, which had been in the hot box for four days, with the bacilli of swine plague. These bacilli, if not identical with, are closely allied to those of rabbit septicæmia and are extraordinarily virulent for rabbits. In thirty-six hours the animal, which had remained at a high temperature in the box, was dead, and the most extreme fatty degeneration of the heart and other organs was found. As in other experiments the degeneration had not made its appearance at this early date, there can be no doubt that the infection was an important element in the causation. That it received powerful support in the high temperature, however, is proved by the fact that little or no degeneration of the heart is observed after infection with this organism when the animal is kept at ordinary temperatures.

Admitting, then, that high temperature aids in the causation of fatty degeneration of the heart in fever, the question arises: What do we know of the effects of this degeneration upon the functions of the heart? I will say nothing of the growing tendency to transfer a large part of the classical symptomatology of Quain's fatty heart to other conditions, particularly to disease of the coronary arteries and chronic myocarditis; we are concerned at present only with the occurrence of this degeneration in fever. Have we not been somewhat hasty in assigning to degenerations of the heart muscle so large a share in the production of heart-failure in fevers? One can not look at a muscular fiber in which the

* Litten, Virchow's "Archiv," Bd. lxx.

† Naunyn, *op. cit.*

‡ Von Recklinghausen, "Handb. d. allg. Pathologie d. Kreislaufs u. d. Ernährung," p. 512, Stuttgart, 1883.

striated substance is all replaced by fatty globules and suppose that its functional activity was unimpaired, but into what serious error should we fall if we attempted to deduce from the anatomical changes in the liver-cells or the renal epithelium the corresponding functional disturbances! Certain it is that symptoms which are usually considered those of heart-failure are often enough present in fevers without finding at the autopsy any degeneration of the heart, and, on the other hand, such degeneration may be discovered without any history of these symptoms, although, of course, the two are often associated.

In the face of these doubts it seemed desirable to determine, if possible, experimentally the damage inflicted upon the cardiac functions by the presence of fatty degeneration of the heart muscle. That this degeneration may exist without apparent injury is rendered probable by the fact that a rabbit which has been kept for three weeks in the hot box at a high temperature, and in which there is every reason to suppose that fatty degeneration has occurred, may present no symptoms of heart paralysis, and when removed from the box appear and remain perfectly normal. An instance has already been mentioned where one rabbit at the end of three weeks was killed and presented marked fatty degeneration of the heart, and another, which had possessed a higher average rectal temperature, was removed from the box at the end of the same period and appeared for ten days perfectly normal, when it was used for another purpose. That this degeneration can be recovered from is, moreover, rendered probable by clinical experience, and is universally admitted.

Once, in teasing out a bit of fatty heart muscle from one of the rabbits, I made a curious observation. Near the edge of the cover-glass, where there was a slight current in the physiological salt solution, rhythmical contraction was observed in a group of muscle-fibers. This interesting spectacle could be watched under the microscope for ten minutes. These contracting fibers were filled with fatty globules, and only here and there, and then indistinctly, could any trace of striation be detected. This observation teaches that a fatty-degenerated muscular fiber is capable of contraction, but of course warrants no further conclusions.

Far more important than any inferences which can be drawn from such observations is the measurement of the actual blood-pressure in animals whose hearts have undergone fatty degeneration. This I have done in three instances. The rabbit was removed from the box at the end of from ten days to two weeks, and the pressure in the carotid artery was measured by a mercury manometer attached to Ludwig's kymograph. In no instance was the blood-pressure found to be lower than that normally present in rabbits. In an experiment recently performed, the average pressure was 125 mm. of mercury; the pulsations were regular; the heart responded to stimulation of the vagi in an entirely normal manner. After such stimulation the pressure in one case rose to 176 mm. of mercury. Immediately after the measurement of the blood-pressure the rabbit, as in the previous instances, was killed, and marked fatty degeneration of the muscular fibers was found. In many of the fibers the striation could not be made out, and only fatty globules were visible; in others, which also contained fatty granules, the striation was distinct. The degeneration involved the whole muscular structure of the heart. A similar appearance in a human heart would be considered to indicate well-marked fatty degeneration.

These experiments show that a rabbit's heart, which has undergone marked fatty degeneration from exposure to heat, may perform its functions, to all appearances, and for the time being, in a perfectly normal manner. There is at least one consideration which should make us cautious in drawing far-reaching conclusions from these experiments. There are diseases of the heart (I need only refer to lesions of the coronary arteries) in which the functions of the organ are performed for a longer or shorter time apparently in a perfectly normal way, and then heart-failure suddenly appears. It is probable that here, too, the blood-pressure would be found normal at a certain period of the disease, and still it would be an error to suppose that the lesion did not damage the heart. Whatever force there may be in this analogy, I still think that these experiments, as well as careful pathological and clinical observations, necessitate some revision of the current opinions concerning the significance of fatty degeneration of the heart in fever.

So much time has been devoted to a consideration of the effects of heat upon the respiration and the heart that the limits of the present lecture will permit hardly more than a summary of the effects exerted by heat upon other functions and organs of the body. On account of the great clinical importance of the subject, it seemed desirable to treat with special fullness the influence of increased temperature on the heart.

What part has increased temperature in producing febrile consumption of tissue? In the first lecture mention was made of Pflüger's experiments, showing that animals with elevated temperature produced by exposure to heat absorb more oxygen and excrete more carbonic acid than at the normal temperature. This is in conformity with the general law that within certain limits cell activity is more energetic at high than at low temperatures. It was also shown in the first lecture that only a comparatively small part of the increased oxygen absorption and carbonic acid elimination in fever could be referred to the immediate effects of high temperature. It has not been demonstrated that the respiratory gases in human beings are increased by artificial elevation of temperature. Indeed, Voit* was unable to find any such effect of increased temperature in human beings on the respiratory gases as both he and Pflüger observed in animals.

Inasmuch as increased disintegration of nitrogenous material is such a prominent disorder in fever, much attention has naturally been given to determining how far this can be explained by elevated temperature. That it can not all be so explained is proved by the interesting observation of Sydney Ringer that excessive elimination of urea antedates the rise of temperature in intermittent fever, and Naunyn has found the same to be true of the septic fever of dogs.

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* Voit, "Zeitschrift für Biologie," Bd. xiv.

The experiments which have been made to determine the influence of artificial heating on the amount of urea excreted by man and by animals have yielded contradictory results. A number of these experiments are of little or no value because no attention was given to establishing beforehand nitrogen equilibrium. Schleich's * experiments may be mentioned as perhaps the most accurate of those showing an increase in the urea excreted under the influence of exposure to heat. The more recent experiments of Simanowsky † were made in Voit's laboratory, with special precautions as to the establishment of nitrogen equilibrium. He failed to find any increase in the excretion of urea as the result of exposure to external heat. While, then, this question must be left at present *sub judice*, there can be no doubt that only a part at least of the excessive disintegration of nitrogenous substance in fever can be assigned to the influence of the increased temperature.

The loss of weight exhibited by animals kept for a long time in a hot atmosphere is usually explained by the excessive evaporation of water from the body. In many of my experiments the rabbits were freely supplied with food and water, and still the loss of weight was very noticeable. I am inclined, therefore, to attribute to the increased temperature under these conditions a decided influence upon the consumption of tissue.

Senator ‡ found the urine of rabbits artificially heated to contain more albumin than is found occasionally in the urine of healthy rabbits. This observation I have not been able to confirm on the rabbits in my experiments, and probably this difference is to be explained by the more rapid and intense heating employed in Senator's experiments. Senator explains the heat albuminuria by the rise of arterial pressure in the renal vessels, but this is not in conformity with the interesting experiments of Mendelson,# who found, by means of Roy's oncometer, that both in thermic and septic fevers of dogs the kidney was anæmic, while the general blood pressure was elevated.

No satisfactory explanation has yet been offered of the diminution of perspiration which distinguishes fever so strikingly from the condition produced by exposure to high external temperatures. Luchsinger's assertion that this is the result of lessened irritability of the sweat centers in the spinal cord remains to be proved, and at the best is not a satisfying explanation.

Bokai, ‖ in a recent experimental research on intestinal peristalsis in thermic and in septic fevers, comes to the conclusion that the constipation of fever is to be explained by the heated blood stimulating the nerves inhibiting intestinal peristalsis. If this should be confirmed, then it would be proved that at least three symptoms of fever, the quickened respiration and pulse and the constipation, were direct effects of elevated temperature.

When we consider the important nutritive changes in the muscles accompanying increased thermogenesis we shall be inclined to attribute to these alterations and the associated abnormal innervation, rather than to increased temperature, the muscular pains and weakness which form such an early and frequent complaint in many fevers.

The investigations hitherto published of changes in the blood produced by increased temperature within febrile limits are not of a sufficiently definite and satisfactory nature to warrant any consideration on the present occasion. Nor am I acquainted with any positive experimental evidence (save Bokai's work, already mentioned) that increased temperature is concerned in the production of the digestive disorders of fever. It has already been said that the rabbits with high internal temperatures in the hot box ate greedily, but these voracious animals can not be considered favorable subjects to test this question.

Special emphasis has been laid by Liebermeister and those who accept his teachings upon the dependence of the nervous symptoms of fever, particularly the so-called typhoid symptoms, on the elevation of temperature. There is, however, abundant clinical evidence to disprove this doctrine. Reference need be made only to relapsing fever, and especially to the aseptic fever described by Genzmer and Volkmann, in which there is entire absence of the whole group of so-called nervous symptoms. Moreover, Liebermeister's opinion in this respect is not supported by adequate experimental evidence. Unless the temperature of the brain or of the entire animal is brusquely raised to a high point by coarse methods, no disturbance of the cerebral functions is noticed until the temperature reaches a critical point, beyond which further increase is likely to prove rapidly fatal. At this critical point the animal, which before has lain quiet, becomes very uneasy, and if the temperature rises higher it has convulsions and coma and dies.

I have endeavored to bring before you in this lecture the experimental evidence relating to the effects of increased temperature upon the general condition of the body and upon the functions of its various organs. I have given account as briefly as possible of some experiments which perhaps shed additional light upon this important subject. In the course of this lecture emphasis has repeatedly been laid upon the necessity of controlling the results of the experimental method by clinical observation, and here and there I have endeavored to institute this control. Further than this I shall not attempt to set before you the clinical evidence regarding the effects of increased temperature in fever. There are those here more competent than I to deal with this side of the question. We may feel assured that when all the facts are before us and are properly interpreted there can be no lack of harmony between the results of experimental and those of clinical investigations.

* Schleich, "Arch. f. exp. Path. u. Pharm.," Bd. iv.

† Simanowsky, "Zeitschrift f. Biologie," Bd. xxi.

‡ Senator, Du Bois-Reymond's "Archiv," 1883, Supplement. Band.

# Mendelson, *op. cit.*

‖ Bokai, "Archiv f. exp. Path. u. Pharm.," Bd. xxiii.

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**The Hæmoglobin in Chlorosis.**—"Dr. O. Barbacci, of Berlin," says the "Lancet," "found by using Fleischl's hæmometer in a number of chlorotic patients that the hæmoglobin varied from 39 to 50 per cent. of its amount in health. After from two to four weeks' treatment with iron the patients all exhibited a marked improvement in their general condition, and at the same time the hæmoglobin was found to have increased from 10 to 30 per cent. It then appeared to remain stationary, the normal amount not being reached even after a long course of treatment and a very great improvement in general health."

# Original Communications.

## ON DOUBTFUL FRACTURES OF THE NECK OF THE FEMUR, AND THEIR IDENTITY WITH AN ALLEGED FORM OF ARTHRITIS DEFORMANS.*

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It is a fact well known to all that certain fractures of the neck of the femur fail to present during the first week or two the usual symptoms by which in other cases the diagnosis is so easily made; but these exceptions are so rare, both actually and relatively, that the possibility of their occurrence is likely to be overlooked or dismissed when a case of injury to the hip presents itself, and a fracture can not clearly be made out. The oversight may result in serious consequences to the patient and possibly to the physician. The former, after having been assured of the unimportant and transitory nature of the injury which he is thought to have received, is encouraged to leave his bed and perhaps to try to overcome his disability by such use of the limb as is within his power. But the pain and disability persist, and after a longer or shorter interval the unmistakable symptoms of fracture appear. The delay and the failure to take timely measures to favor union without deformity may not only work actual injury to the patient, but may also inspire the feeling that he has not received the care and attention to which he was entitled. Usually the diagnosis becomes clear while the physician is still in attendance, within the first two or three weeks, but sometimes the patient's circumstances are such or his pain so moderate that regular and frequent visits are not made, and then the recognition of the deformity may be long delayed, perhaps until after other advice has been sought. With this tardy recognition comes the temptation to seek another explanation of the deformity and disability than that of an overlooked fracture, and the one commonly resorted to is a supposed absorption of the head and neck of the femur excited by the contusion. It is to these two points that I ask the attention of the society to-night—the means by which the diagnosis of probable fracture of the neck of the femur may be made when shortening and deformity are absent and the functional disability incomplete, and, secondly, the alleged occurrence of rapid absorption of the head and neck of the femur after a simple contusion.

Of the nine cases in which a fracture has not been early recognized that have come under my observation, and of which I have preserved notes, the age of the youngest patient was twenty-three, of the oldest sixty-four, and in six it was less than forty-two years, a striking contrast to the average age of patients suffering from this injury, and one that is probably not foreign to the character of the fracture and the cause of the difficulty of recognition. In five cases the cause was marked violence, as the overturning of a carriage, collision with a horse-car, or falling from a considerable height; in two, those of a man of sixty-two and a woman of sixty-four years, it was a simple fall to the ground while walking. Of one case, that of a man forty-two years old, I present the specimen, obtained at his death six months after the accident. It shows an ununited fracture extending from the junction of the neck and great trochanter at the digital fossa downward and forward nearly to the junction of the head and neck below and a little in front. The portion of the femur above the lower trochanter is inclosed in an irregular mass of spongy bone convex exteriorly, and presenting on its mesial aspect a cavity in which the portion of the neck still attached to the head closely fits, and into which the upper end of the shaft projects and supports the broken surface of the neck. Apparently the trochanter was broken at the time of the accident, and only its posterior part seems to have preserved its normal relations with the shaft. The interlocking of the neck and shaft is such that the patient for some months previous to his death was able to walk without crutch or cane. The shortening recorded in the history of his case at the time of his discharge was half an inch, but during the progress of the case, six weeks after the accident, shortening of one inch and an eighth had been found, and the positive diagnosis of fracture was then for the first time made.

In connection with this specimen, and as furnishing proof by direct examination that an individual who has just sustained a fracture of the neck of the femur may not only present no deformity, but may even be able to walk and bear his weight upon that limb, I will briefly quote the reports of a few other cases:

1.* A woman, fifty-six years, old was admitted with redness and swelling of the thigh, and fluctuation at its outer upper portion. Three months previously she had fallen on her left side, and from that time had had a slight halt in walking, but the injury had not kept her from her usual occupations. Because of pain, measurements were not made. The abscess was opened, and she died on the eleventh day. The neck of the femur was found to be broken within the capsule, and the abscess communicated with the joint through a laceration in the capsule.

2.† A man, twenty-six years old, was struck across the upper portion of the left thigh and groin by a heavy piece of timber. He came the next day to the hospital, traveling some distance in the cars and walking from the station to the hospital, a distance of more than a furlong, with the aid of a stick. Pain, eversion, half-inch shortening, deep crepitus. An abscess formed, and he died on the twenty-seventh day. The neck of the femur was broken directly across, immediately behind the head.

3.‡ A patient of my own, sixty-five years old, fell down a flight of stairs, rose without assistance, walked to and down the next flight, and then suddenly found his left leg powerless. Eversion and half-inch shortening two days later. He died in the third week of erysipelas. The fracture was almost directly transverse and close to the head; a strip of periosteum half an inch wide on the under side of the neck remained untorn.

* Read before the New York Surgical Society, March 14, 1888.

* McTyer, "Glasgow Med. Journal," 1831, p. 52.

† Hunt, "Philadelphia Med. Times," Oct. 26, 1872, p. 49.

‡ Stimson, "Fractures," p. 498.

4. R. W. Smith* reported the case of a man fifty-two years old who had been injured by a fall while walking, and had been able to walk a few yards after the accident. Eversion, half-inch shortening. Death by bronchitis on the sixteenth day. The fracture was irregular, and ran from the junction of the head and neck in front downward, backward, and outward, with a wedge-shaped prolongation that overlapped the lower fragment.

A number of cases have been reported in which the patients walked for a longer or shorter time after receiving the injury, and in which the later clinical evidence of the presence of fracture seemed clear. I shall refer to them again in connection with the second question—that of a possible interstitial absorption.

The circumstances under which a doubtful fracture of the neck of the femur presents itself are, in general terms, as follows: The patient has received a blow upon the hip, and this blow, if the patient is elderly, may have been slight; if he is young, it was probably violent. He complains of pain at and below the hip, both spontaneous and on motion, and additional pain is excited by pressure in front of or behind the junction of the neck and trochanter. He is able to raise the knee, perhaps even the foot, from the bed, and, exceptionally, may even be able to walk. There is no recognizable shortening, no change in the position of the trochanter, and but slight eversion, if any. Communicated movements of the limb are restricted in all directions, presumably by muscular opposition aroused by pain or the fear of it. Pressure upward against the foot or knee, or inward against the trochanter, gives no pain; in two cases I have noted that the trochanter could be grasped and the body forcibly shaken without pain.

I will quote two cases in illustration:

A large, fleshy woman, sixty-four years old, fell while walking, and found herself unable to rise or to walk without help. She was brought to the Presbyterian Hospital, January 31, 1888. When examined on the following day she complained of pain at the hip and along the outer and upper part of the thigh; was able to raise the knee, but not the foot, from the bed. There was no eversion of the limb; all communicated movements, including inversion and eversion, were restricted and painful. No deformity was recognizable on inspection, palpation, or measurement, except that the tissues in front of the neck of the femur seemed less depressible than upon the other side. Forcible pressure of the whole limb upward or of its upper part inward caused but little, if any, pain; pressure in front of the neck near the trochanter was painful, and also pressure over a small area at the corresponding point behind. The diagnosis of probable fracture of the cervix femoris was made, and Buck's extension with about ten pounds applied. After four weeks, when all pain except a little on deep pressure in front had disappeared, the dressing was removed; measurement failed to show any shortening; communicated movements were restricted and painful. After another week the patient was allowed to sit up, and attempted to walk a few steps. Three days later she complained of pain, and measurement showed half an inch shortening; there was distinct eversion, marked tenderness on pressure in front of and behind the neck, and spontaneous pain along the upper and outer part of the thigh. The extension was reapplied, and the patient is still (March 10th) in bed and comfortable.

* "Fractures and Dislocations," p. 106.

The second case was that of a man aged forty, who fell on the ice in January, 1887, and was able to walk with help part of the way home. The record shows only that there was no deformity or shortening, and that he was able to raise the heel from the bed. The diagnosis was "probable fracture of the neck," and an extension apparatus was applied. In the third week he was free of pain and could move the limb so freely that he insisted upon being allowed to leave his bed. Two days afterward one inch shortening and marked eversion appeared, and the case thenceforward followed the usual course of fracture.

The symptoms which seem to me specially worthy of attention are the tenderness on deep pressure in front of and behind the outer part of the neck and lack of depressibility at the outer side of Scarpa's space. The latter sign was pointed out a few years ago by Hennequin, and I have found it constant in all well-marked cases of fracture and frequent in the doubtful ones, and have learned to look upon it as an important aid to diagnosis. Localized tenderness on pressure in front and behind seems to me to have the same significance and value as in injuries of other bones—that is, to be strongly suggestive, but not demonstrative, of fracture. Spontaneous pain referred to the outer, anterior, and upper portion of the thigh has been so prominent a feature in four of my cases that it seems proper to ask your attention to it in the future. In none of the four did it appear to be the result of direct violence inflicted upon the region.

These are the only signs that point toward fracture, and they would probably, in most cases, be sufficient to put the surgeon upon his guard were it not for the absence of other signs upon which an unbroken experience has brought him to rely perhaps too implicitly. Shortening is so constant a symptom that, when absent in undoubted cases, it is sometimes thought necessary to invoke a possible asymmetry as an explanation, and in doubtful cases its absence is often deemed an almost certain proof of the non-existence of fracture. And yet a little reflection will show that it is in doubtful cases that shortening is not to be expected—cases in which there is a transverse fracture of the narrow part of the neck without separation, and with preservation of the continuity of more or less of the periosteum, the "cervical ligament" of R. W. Smith, or those in which the line of fracture is irregular and oblique at the base of the neck without splintering or crushing, and with close interlocking of the fragments. Furthermore, the chance of error in measuring is great, and the precautions necessary to escape it are, I believe, not generally appreciated as fully as they should be, for a slight difference in the abduction or flexion of the limbs is sufficient to conceal a difference of half an inch in length.

Eversion, or loss of inversion, when absolute, depends upon the same change in the relations of the neck and shaft which produces shortening, and consequently its presence or absence has the same value and significance as that of the latter. As a matter of detail, eversion due to muscular relaxation and the unopposed action of the weight of the limb is often present in simple contusion as well as in fracture.

Two other signs upon which much reliance is placed in

other fractures—crepitus and abnormal mobility—are commonly sought for in fracture of the neck, and, as they are frequently absent or unrecognizable, their absence is used as an argument against the existence of fracture. Concerning crepitus, it is sufficient to say that it is commonly not to be obtained by such manipulations as are justifiable in the examination, that it is not necessary to the diagnosis, that it should not be sought for, and that no inference should be drawn from its absence. Abnormal mobility is to be found only in the rotation of the limb, and is manifested when present either by the movement of the trochanter along the arc of a circle whose radius is less than normal, because of the shortening of the neck, or, in a more marked degree, by the rotation of the trochanter about the long axis of the shaft without change of place. I shall not spend any time upon the difficulties of the recognition of the first form; it is, in my opinion, a symptom of the study, not of the bedside; one owed more to deductive reasoning than to observation; it is sufficient for the present purpose to note that it can not exist without the association of a deformity that is in itself sufficient to remove the case from the class of doubtful ones.

Loss of ability to use or even to move the limb is so common that the absence of total loss, or, in other words, the preservation of the ability voluntarily to flex the thigh in some degree, to raise the knee from the bed, is by some deemed sufficient evidence of the non-existence of fracture. Not only are the cases above quoted proof that this view is an exaggerated one, but abundant clinical evidence in opposition to it could be produced, and, not to spend further time upon this point, it may be categorically stated that even the patient's ability to walk is not an absolute proof of the non-existence of fracture, however improbable it may make it.

To sum it up, in any given case of injury to the hip the absence of shortening, eversion, crepitation, and abnormal mobility, and the preservation of function even to such an extent that the patient can still walk, do not constitute absolute proof of the non-existence of fracture of the neck of the femur; and, on the contrary, if there be present tenderness on pressure in front of and behind the neck, the probability of fracture is sufficient to justify the treatment of the case as such for at least two or three weeks, or until that tenderness shall have disappeared. Lack of depressibility in Scarpa's space, and possibly persistent spontaneous pain referred to the outer and upper portion of the thigh, are strongly confirmatory of this probability.

Practically, therefore, all such doubtful cases should be treated as though fracture were certainly present. The patient should be confined to the bed, upon his back, and with sufficient extension efficiently to oppose the contraction of the muscles that attach the limb to the trunk. And if the tenderness on pressure persists for more than three weeks, or long enough to confirm its significance as an evidence of fracture, this confinement to the bed should be maintained for five or six weeks, and the patient should not attempt to bear his weight upon the limb for two or three weeks more.

The second question to which I propose to ask your attention is one that is very closely connected with the question of diagnosis in doubtful cases of fracture, and its consideration will not now long detain us. It is, Can a traumatism of the hip that is not a fracture of the neck of the femur give rise to a destructive or absorptive process in the head and neck which will, within a few weeks or months, produce a permanent deformity and disability identical with, or at least closely resembling, those of fracture of the neck? The question is here strictly limited to cases in which the interval between the traumatism and the appearance of the deformity is a short one—say two or three months—for of course there can be no question of the existence of the affection variously known as osteo-arthritis, arthritis deformans, dry arthritis, and, at the hip, morbus coxæ senilis, of which the course is essentially chronic and slow, and which may or may not be preceded by a traumatism.

This affection, deforming arthritis of the hip, is of rather infrequent occurrence, is almost restricted to people more than forty or even fifty years of age, and is much more common in men than in women. It begins with stiffness at the hip, and pain sometimes closely resembling sciatica, and in the course of many months or even years produces marked changes in the form of the limb and great disability. The muscles of the thigh become shrunken, the limb is shortened and almost immovable, in a position usually of moderate flexion and adduction.

Most systematic writers upon the subject speak of a form in which the changes follow more rapidly upon a traumatism, and some even speak of the importance of recognizing this variety because of the danger of confounding it with the results of an unrecognized fracture of the neck of the femur, a statement which I believe should be exactly reversed—that is, the commoner error is to suppose an unrecognized fracture to be a case of arthritis deformans. But few cases have been reported in support of this view, and I think it may fairly be said that a half-dozen such published by George Gulliver* in 1836 have now done duty for more than fifty years, with but little additional support, as the basis for the opinion. Examination of his cases shows, I think, that in only one of them can this argument be fairly drawn; in some a long interval elapsed between the alleged causative traumatism and the appearance of the deformity, and in others the traumatism appears to have been a fracture. In the one case which may perhaps be accepted the patient was a weak-minded boy fifteen years old who fell into a pit and injured his hip; he complained of pain about the joint, but continued to work for a month, when he became so lame that he was obliged to desist; the pain then gradually diminished, and nine weeks after the accident he could stand upon the limb and walk with only so much of a limp as was occasioned by the shortening—half an inch. The trochanter was approximated to the median line, the motions at the joint were easy and natural, and no pain was caused by pressing the limb upward or inward, but forcible traction upon the limb was painful. He continued to suffer

* "Edinburgh Med. Jour.," vol. xlvi, p. 97.

with nocturnal pains, and some months later the shortening had increased.

Howard Marsh,* in his paragraph on this subject, refers to these cases, and further quotes the following one as a "typical example":

A lady, fifty two years old, fell upon her hip, and, although conscious of having received a severe bruise, went about for the next three days, though with gradually increasing pain and lameness, and was then compelled to remain in bed. The pain was severe, and the joint stiff and tender. Six weeks later Marsh found the limb an inch and a half shorter than its fellow and everted, the trochanter much less prominent than natural, and considerably above Nélaton's line; movement of the joint was very limited and painful and gave rise to distinct grating. He adds: "That this was a case of osteo-arthritis and not of fracture was, I consider, clearly proved by the fact that for two days after the accident the patient was able to go up and down stairs without help, and that the symptoms gradually increased in intensity, having at first been those simply of a severe bruise."

How insufficient this fact is to prove that the injury was not a fracture is shown by the cases cited in the first part of this article, and I quote this one only as the most plausible example within my knowledge of the alleged form of the affection. So far as I know, there is no autopsy of such a case on record, and the alleged cases, therefore, must be judged by the clinical evidence and by general pathological data and those derived from cases of fracture. The histories would support the diagnosis of fracture at least equally well, and indeed, I think, much more plausibly; and if this is conceded there appears to be hardly an iota of evidence to indicate that the changes were ever produced in this manner. There are no facts in the general pathology of bone to show that a blow, a contusion, unaccompanied by a gross lesion of the bone, can set this series of changes in motion, although, of course, it is perfectly well known that a gross lesion, such as a crush or fracture, can do so. The theory appears to have gained its present footing in the following manner: All writers upon arthritis deformans state that it sometimes follows and is induced by a slight traumatism, and the statement is habitually received and quoted without apparent attention to the question whether the relation may not be merely a coincidence and not causal. Then, when a case of doubtful character has occurred—one in which similar clinical features have followed promptly and without an intermediate period of well-being upon a traumatism—this unproved allegation of the existence of a causal traumatism in some of the undoubted cases is used as an argument to prove that the doubtful one belongs in the same class; and, finally, this questionable interpretation of several such cases is quoted and requoted as an established fact, is used as an incontrovertible argument in similar cases as they arise, and is made the basis for the categorical statement in systematic writings that such a class of cases does actually exist. The original defect in the proof, which persists and invalidates the argument in each successive case, is overlooked, and an interpretation which is possibly—yes, probably—incorrect, is accepted without further question and made the corner-stone of a new structure. During the last year I have seen two cases in which this diagnosis of interstitial absorption was made, and the history of a third was sent to me for an opinion. In the two patients I saw the accidents had occurred a year and a half and two years previously, and each was the overturning of a carriage. In one, a man sixty-one years old, there was three quarters of an inch shortening and marked eversion; flexion of the hip was free and painless, abduction and rotation restricted; the patient had suffered with much dull aching pain in the thigh for several months after the accident, but considered himself well, except for a slight limp, when he consulted me. He said the limb had been measured several times during the first few months by the physician who treated him, and no shortening had been found. Nevertheless, I felt confident the case was one of fracture. The second patient was a man forty-one years old, the shortening was more than an inch, the motions at the hip quite restricted, the muscles of the thigh and leg wasted, and there was still (two years after the accident) considerable dull pain in the limb. He, too, had been several times told that there was no shortening. While I think this also was probably a fracture, I must admit that the diagnosis is not beyond question.

The patient whose history was reported to me was a woman, thirty-five years old, four months pregnant, who had fallen while walking. On examination, three hours later, no shortening or crepitus was found; the patient could flex and extend the limb at will and raise the heel from the bed: passive movements were free and painless; the only pain complained of was along the course of the anterior crural nerve, especially in the middle third of the thigh. She remained in bed three days, and then, to relieve the pain in the thigh, got up and walked about on crutches, which she continued to do daily, and occasionally at night. She was seen again sixty days later, "when the conditions were materially the same, except the advancing pregnancy." It is not stated that measurements were then made. Seven months after the accident, two months after delivery, she was examined by two physicians, who "found what they supposed to be true crepitus, and about one half inch shortening." In the third year after the accident, two examinations gave the one seven eighths, the other a half-inch shortening; no eversion; free motion at the hip, accompanied by a "rough rubbing sensation akin to crepitation," which was thought by one examiner to be produced under the tendon of the glutæus maximus, and atrophy of the muscles.

It will be noticed that there is no mention of measurements having been made between the day of the accident and seven months later, when shortening of half an inch was found, and that it is questionable whether this shortening increased during the next two years; certainly the evidence is not sufficient to exclude fracture.

Re-examination of the evidence heretofore advanced in support of the theory that such changes can be produced by a traumatism other than fracture or rupture of the ligaments is difficult and unsatisfactory, because of the incompleteness of the records and our ignorance of the observers, of the care taken on the examination, and, possibly, of their preconceived notions. And yet the whole question seems to need and to deserve fresh study. For that it is also

* "Diseases of Joints," p. 65.

necessary to have a new series of cases, carefully observed from beginning to end, and with full appreciation of the points in question.

## CASES ILLUSTRATING THE DEPENDENCE OF SOME FORMS OF EYE-INFLAMMATION UPON IRRITATIVE LESIONS OF THE DENTAL BRANCHES OF THE FIFTH NERVE.

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The following cases may possibly be of interest to some of your readers, as illustrating the dependence of some forms of eye inflammation upon irritative lesions situated in another portion of the area of distribution of the fifth nerve:

Case I.—Female, aged twenty-six, single, came under observation in January, 1887. She gave a history of a slight blow upon the left eye with an umbrella eight months previously, which seems to have produced no immediate serious effect, inasmuch as the next day she went fishing on a neighboring lake. On the following day the eye was red when she awoke, and she at once attributed this condition to the combined effect of the blow and the exposure to bright reflected light from the water. Since then the eye has never been completely well, although the condition has varied a good deal from time to time. Once it appeared to be nearly well, but she "went to work too soon" and the symptoms returned. During September and October, 1886, two small ulcers formed on the "outer side of the eye," which healed under the use of "Pond's extract." She was under the treatment of an oculist most of the time, whose diagnosis was iritis, and who had prescribed at first atropine and afterward eserine. The chief symptoms from which she suffered were photophobia, lacrymation, congestion of the eyeball, and occasional neuralgic pains in the temples. There was no evidence of syphilis, congenital or acquired.

*January 17, 1887.*—Right, normal. Left, considerable pink ciliary congestion; one posterior synechia, lower-inner; some haze of cornea at outer part (probably the result of the above-mentioned ulceration). Tension slightly subnormal. She was ordered potassic iodide and salicylate of sodium internally. Atropine three times daily, and a series of small blisters to the temple.

*20th.*—Congestion much diminished.

*25th.*—Commencing haze at upper-inner margin of cornea.

*February 1st.*—More congestion; haze at inner margin of cornea more definite.

*9th.*—Less congestion; a fresh patch of haze at the lower margin of the cornea. Has been suffering from headache for the last day or two.

Treatment had so far resulted in no permanent improvement; there had been a varying degree of congestion, but the subjective symptoms were as marked as when she first came to me.

She now drew my attention to a carious tooth on the right side, and a supernumerary molar on the left, and asked whether they might not have something to do with the eye trouble. I replied that they certainly might, and urged their removal. A week later this advice was repeated by another physician in my absence, and was followed. I did not see her again until March 15th. She then told me that the eye began to improve within two days after the extraction of the teeth, and had not become inflamed since, in spite of the discontinuance of all treatment. When I last saw her the eye was perfectly free from congestion, the pupil round, and its action normal. There was still some haze at the lower and inner margins of the cornea.

Case II.—Female, single, about twenty-two years of age, was first seen by me on January 28, 1887. Both eyes had been inflamed since November, 1886, the symptoms having been photophobia, pain, and lacrymation; there had been no discharge of matter. She had had many such attacks previously, usually during the winter.

I found considerable swelling of both upper lids; the palpebral conjunctivæ much congested and rough; numerous minute elevations at the margins of the corneæ, somewhat resembling phlyctænulæ, but more numerous and smaller than these usually are, and showing no tendency to break down; no ulceration of the cornea. There was intense photophobia, making examination difficult. I prescribed atropine and a shade, and a few days later a saturated solution of boric acid.

After a few weeks the left eye got well and has remained so since, and the right improved to some extent. This improvement of the right eye was only temporary, however. In a few days the congestion increased, the cornea became hazy in the upper and outer portion, and no change of treatment produced more than temporary improvement. In the light of Case I, I finally suggested that an examination of the teeth should be made by a dentist. This was done, and it was found that eight required filling, and that the third right upper molar was on the point of coming through. An incision was made into the gum covering this tooth, and followed by rapid and permanent improvement in the eye symptoms. The incision had to be repeated four or five times before the eruption of the tooth was complete. The eye was practically well one week after the first incision was made, and no recurrence has taken place up to the present time.

Case III.—A boy, fifteen years of age, came under observation on November 16, 1887. Two years ago he had an attack of inflammation of the eye similar to the present one. The present attack commenced about five weeks before I saw him, and had varied in severity from time to time, once having improved considerably with insufflation of calomel. Boric-acid lotion had been tried without benefit, and atropine had been used for a few days before I saw him, without definite improvement.

*November 16th.*—Right eye: moderate swelling of lids, considerable photophobia, and congestion of the conjunctiva, most marked near the lower and inner margin of the cornea, where the limbus of the conjunctiva is moderately swollen; there are, however, no definite phlyctænulæ. Adjoining the swollen patch there is superficial haze and roughening of the cornea, scarcely amounting to ulceration. No conjunctival discharge. Pupil fully dilated. Left eye normal.

On examining the teeth, the crown of a temporary tooth could be seen projecting inward between the first and second right upper molars, the gum around it being slightly congested. No pain in the tooth was complained of or admitted to be felt, but cleaning with the brush was stated to produce bleeding as a rule. The removal of the temporary tooth was advised, the local treatment, atropine, and a compress being continued. The tooth was removed on the same day.

*17th.*—Eye feels better; there is less congestion and photophobia.

*18th.*—Eye feels more comfortable than since commencement of inflammation.

*19th.*—Atropine and compress discontinued; to wear a shade.

2d (one week after tooth extraction).—Slight swelling of upper lid remains; no congestion or photophobia. The eye is normal, with the exception of slight haze of the lower and inner part of the cornea, and feels perfectly well. (March 10, 1888.—There has been no relapse.)

In the first case there was, while under my observation, no evidence of active iritis; the color, texture, and mobility of the iris were normal. The posterior synechia dated from the earlier period of the inflammation, if not indeed from a period anterior to this.

The three cases present several features in common:

1. The inflammation was most marked at the margin of the cornea.

2. The conjunctival affection was limited to congestion and slight swelling, there being no discharge of matter. It would thus seem probable that the conjunctival symptoms were simply secondary to the corneal.

3. The corneal affection was quite superficial, but extended over a considerable area. In the first case it much resembled that seen in inherited syphilis. In the two last cases there was a tendency to loss of epithelium. Thus it differed from the ordinary phlyctenular type of keratitis, which tends to be more definitely localized in one or more spots, and to be accompanied by well-marked ulceration and the development of blood-vessels on the cornea.

4. In all the cases there were variations in the condition from time to time, the symptoms never entirely disappearing (with the exception of those of the left eye in Case II), in spite of the long-continued use of the usual local and general treatment.

5. When the dental irritation was removed the eye-symptoms disappeared rapidly and completely in each case, and so far without relapse.

There can be little doubt that the removal of the dental irritation and the disappearance of the eye-symptoms stood to one another in the relation of cause and effect, and it may fairly be said that the dental irritation aggravated and prolonged the eye-inflammation, if it did not, as indeed seems very probable, constitute the original exciting cause of the trouble. If we admit that the condition of the teeth influenced the eye trouble in any way in these cases, it becomes evident that a dental lesion too slight or at any rate not of a nature to call attention by symptoms to itself may yet be sufficient to exert such an influence.

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## NEPHRO-LITHOTOMY.*

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Nephro-lithotomy is a comparatively new operation. Scarcely eight years have elapsed since Morris, of London, first introduced this surgical procedure, and demonstrated successfully that the kidney could be incised and a calculus removed without damage to its future usefulness. Ten years ago it would have been considered foolhardy to cut into an apparently healthy kidney in order to remove a stone. The surgeon would have waited until Nature had destroyed the affected kidney by a suppurative process, or, had he been forced to interfere before an abscess had formed, the entire organ would have been extirpated. By resorting to nephro-lithotomy the surgeon is now enabled to preserve a kidney which otherwise would have been sacrificed, and, apart from this conservative advantage, the operation has the additional merit of being much less dangerous to the life of the patient than either nephrectomy or nephrotomy for calculous pyelitis.

Morris confined the term to operations for the extraction of a stone from a kidney the secreting substance of which had not become disorganized, and prior to the conversion of its pelvis into an abscess cavity. This limitation has been generally accepted

The following successful case of nephro-lithotomy is of additional interest on account of the malposition of the affected kidney:

M. B., an unmarried female, twenty-eight years of age, has complained since her childhood of pain in her right loin. During the past few years it has become much more severe, though she states that she can not remember a time when she has been entirely free from distress in that region. During the past eighteen months she has been quite unfitted for work on account of the exacerbations caused by any exertion or sudden movement. The pain, which she describes as being of a gnawing and throbbing nature, is felt not so much in the back, over the kidney, as in the right lumbar region and extending across the abdomen as far as the linea alba. Marked tenderness is present when pressure from any direction is made toward the kidney, which she reports has been the case for several years. Although never strong, her general health has not been materially affected until two years ago, since which time she has steadily lost flesh and strength, and suffers much from stomach derangements. She has never experienced any vesical disturbance, and her urine has always seemed to her clear and of natural appearance. The attitude of the patient is very marked, especially when she stands or walks. Her right loin is bent inward, and she projects the upper part of her body forward and toward the side on which she feels the pain. So decided is this peculiarity that, even when she is fully dressed, her friends constantly make remarks on her crooked figure. During the past few years she has spent the greater part of her time in going from doctor to dispensary, and from dispensaries to clinics, where she has been the subject of lectures on impacted gall-stone, chronic peritonitis, floating kidney, uterine disease, etc.

Some eighteen months ago I first saw the patient, and at that time, as on several later occasions, the examination of her urine failed to reveal the presence of any abnormal ingredients. In December last, as she was slowly but surely failing, and was in a state of constant suffering, I concluded that exploration of her kidney was justifiable, for I felt confident that the cause of her pain would be found in that organ. She eagerly consented to the operation, and entered my service in the Presbyterian Hospital. The most careful examination failed to reveal the presence of any tumor or enlargement in the lumbar region. Apparently the right kidney extended somewhat lower than the left, but its position and size could not be satisfactorily determined. At this time pain, tenderness on pressure, and lateral inclination of her body were the diagnostic symptoms. Frequency of micturition was not present. The urine was carefully examined daily by Dr. Marvin, and was found to contain

* Read before the Section in Surgery of the New York Academy of Medicine, March 21, 1888.

many epithelial cells, but no pus, blood, albumin, or crystals of any kind. The quantity passed was small, it was of low specific gravity, and the amount of urea excreted in twenty-four hours was two hundred and thirty grains. On the ninth day of her stay in the hospital, without any unusual disturbance, she passed with her urine a long cast, probably of the ureter, which on examination was found to consist of mucus with pus-corpuscles imbedded in its meshes. From this time until the operation a considerable amount of pus was present in the urine, and there were also a few blood-corpuscles. It needed only these urinary signs to make the diagnosis of renal calculus comparatively certain.

On January 9th the patient was etherized and placed on her belly and left side, with a hard cushion under the left loin. A vertical incision was made along the outer edge of the erector spinæ muscle from the last rib to the crest of the ilium. On coming down on the anterior layer of the lumbar fascia, directly in the line of the incision, a loop of small intestine was seen, rising and falling with the movements of respiration.* It was evident that two peritoneal surfaces were gliding over each other, and that the attachment of the peritonæum extended considerably nearer the spine than the external border of the quadratus lumborum muscle. Through this layer of fascia a hard body, supposed to be the kidney, was felt at the lower part of the wound. After all bleeding had been arrested, the structures on the spinal side of the incision were crowded backward by a large retractor, and, on cutting through the fascia, the circumrenal fat came into view in the inferior third of the wound. Instead of the kidney being in the upper part of the wound, its superior extremity was two inches and a half below the last rib, and my index finger, thrust down as far as possible inside the iliac crest, could barely reach its lower end. About half an inch below the upper edge of the crest of the ilium, evidently in the pelvis of the kidney, I could feel a hard body, and, on thrusting a fine needle against it, the diagnosis of renal calculus was confirmed. The kidney rose and fell fully half an inch with the movements of respiration. It was fixed in its abnormal position on the right sacro-iliac synchondrosis, and was not movable or floating. Finding it difficult to lift up the kidney and bring its pelvis with the calculus into view, I enlarged the wound by a transverse incision, three inches long, running outward along the upper margin of the iliac crest. The flap thus formed was held forward, and the kidney slightly loosened from its bed and raised up well into view. While it was held in this position, I cut into its pelvis, and extracted a rough mulberry calculus. The stone, which weighed 120 grains, was somewhat oblong in shape and covered with sharp mammillations, and from one corner was a projection, which probably had been inserted into the upper end of the ureter. A flow of urine followed its removal. Thrusting one finger into the opening made in the pelvis of the kidney, I thoroughly explored all the calices without finding another stone. The kidney was apparently healthy. A drainage-tube was fastened into the opening in the renal pelvis by a thin catgut suture passed through the circumrenal fat. The kidney was then allowed to sink back into its original position, carrying the tube with it. The upper half of the vertical and the anterior half of the transverse incision were closed with deep and superficial sutures, but the rest of the wound was left freely open, a drain passed down alongside the kidney, and iodoform gauze loosely packed around the tubes. My principal reason for not closing the wound was that the opening in the kidney was situated inside the pelvis, and I feared infiltration of urine within the iliac crest. A peat-bag was used as a dressing. This was changed every six hours during the first few days, afterward less frequently. The drainage-tube in the pelvis of the kidney was removed on the third day, and the other tube two days later. The patient had no unfavorable symptoms during convalescence. The temperature during the first five days varied between 99·5° and 100·5° F., and then fell to normal. There was no infiltration of urine at any time. For ten days, apparently, the whole amount of urine secreted by the right kidney escaped from the wound. By the eleventh day the amount began to diminish, and on the twelfth day the edges of the wound, which were covered with healthy granulations, were drawn together by secondary sutures of silver wire, and after this date no urine escaped from the opening in the loin. By the eighteenth day the wound throughout its entire extent was firmly united, and the patient was sitting up in bed. At the end of the fourth week she was discharged cured. I am indebted to Dr. Douglass, house-surgeon, for his careful notes of the case. Since leaving the hospital the patient has been entirely free from pain, and is rapidly regaining flesh and strength.

From this history it will be seen that the difficulty of diagnosis was caused by the entire absence of any urinary signs which would indicate disease of the kidney. As the patient had been an inmate for weeks at a time of more than one hospital, both in this city and in Philadelphia, if pus or blood had been present in the urine they would certainly have been discovered. When urinary signs are wanting, the diagnosis of renal calculus is always more or less uncertain. In the majority of cases, pus, blood, or crystals are found, but unless the kidney is disorganized they are very often present in small quantity, only to be appreciated by the microscope. Increased frequency of micturition is always an important sign, but this, like every other symptom of renal calculus, is variable. A large stone may be situated in the kidney for years without causing any serious symptoms or any important lesion. On the other hand, a minute calculus may cause the gravest disturbances and the complete destruction of the kidney. Probably pain, accompanied with tenderness on pressure, is the symptom most commonly observed. It is usually more or less constant and is increased by exertion, and attacks of renal colic are often experienced at some time during the course of the disease. As a rule, nothing can be learned from physical examination, though there have been cases where the stone has been felt on palpation through the abdominal wall. Other less diagnostic symptoms are lateral inclination of the patient toward the affected side, and gastric disturbances produced by the communication of the pneumogastric nerve with the renal plexus.

As I have mentioned, the patient's right kidney was situated several inches below its normal position. Instead of its upper end being at about the level of the eleventh rib, it was at least three inches below this point. Malpositions of one or other kidney are by no means a very rare occurrence. Morris* has collected 8,842 cases where the position of the kidney has been noted on autopsy, and in ten instances one or other kidney was misplaced. He concludes: "We may therefore expect, on the average, to find at least one out of every thousand bodies containing a misplaced kidney." Leaving out of consideration the horse-

* The colon was not seen at any time during the operation.

* "Diseases of the Kidney," p. 17.

shoe kidney, the most common displacement is to find the kidney situated over one or other sacro-iliac synchondrosis, and where found in this position the blood supply is generally of abnormal origin, the arteries as a rule arising from either the bifurcation of the aorta or the common iliac. The left kidney is very much more commonly in a condition of displacement than the right, the proportion in twenty-one cases collected by Roberts* being sixteen to five. Deviation of the colon from its usual position and abnormal attachment of the peritonæum are very generally observed in these cases. There are on record cases where the kidney has been found deep in the pelvis, and in one patient it formed a serious impediment to the passage of the fœtal head in labor.†

A word as to the incision I employed. The line of incision which probably is most commonly used is one below and parallel to the last rib. Had I resorted to this alone it would have been impossible to remove, and perhaps even to feel, the calculus, for it was situated five inches below this line. Of course, by afterward adding to this a vertical cut, more room would have been given, but even then the extraction of the stone would have been difficult. It was only by adding to the vertical incision a transverse one along the upper border of the iliac crest that sufficient room was given for thorough inspection of the kidney with its pelvis. It is important in these cases to bring the kidney well into view before cutting into it. Several accidents have been recorded from failure to carry out this precaution, as in a case of Lauenstein's,‡ where the colon was cut into instead of the pelvis of the kidney, that organ being situated high up beneath the ribs, where it was impossible to expose it even after resection of the twelfth rib.

The statement was first made by Morris that a wound in the secreting structure of the kidney healed more readily than one made in its pelvis, and he advocates the extraction of the stone through the cortical structure in all cases where it is feasible. Experience has confirmed his view as to rapidity of healing, but many cases are on record where the pelvis has been cut into and the incision has closed in a reasonable time, and even a wound in the ureter rarely fails to unite, as illustrated in a recent case of Godlee's,# where he removed a large stone obstructing this canal. The slower closure of the wound may not be a disadvantage, for if any gravel or detritus should be left behind in the kidney, its egress from the wound in the loin is easier and safer than its passage down the ureter into the bladder and out by the urethra. It has also been urged in favor of opening the pelvis that a large cicatrix in the secreting substance of the kidney might produce future changes in that organ, but there are no facts to support this theory.

Gross,‖ in December, 1886, published a collection of thirty-four cases of nephro-lithotomy with three deaths. From the reports of operations since that date I have the record of eighteen cases with three deaths. By adding these two collections together, I find that out of fifty-two cases there have been six deaths, which gives a mortality of 11·52 per cent. Compare with this the death-rate of nephrotomy for calculous pyelitis, reckoned by Gross as being 33 per cent., or that of lumbar nephrectomy, given by the same writer at 36·93 per cent.

Of exploratory operations on the kidney for suspected stone where none was found, Gross collected twenty-nine cases, all of which ended in recovery. Since his paper appeared I can find the record of five additional cases with two deaths, but these fatal cases ought scarcely to be classed in this category, as autopsy revealed in both the presence of renal calculus not discovered at the time of operation, even though in one of the patients a free incision of the kidney had been resorted to. I give these figures in order to show the comparative safety of exploratory operations on the kidney, for I could use no better argument for the purpose of urging a more frequent resort to this procedure in patients who give the symptoms of renal calculus. Should the kidney be found healthy, but little danger has been incurred by the patient, and, on the other hand, should a stone be discovered and extracted, his chances for recovery are much better than if the operation had been delayed until disorganization of the kidney had taken place.

| No. | Operator. | Reference. | Result. |
|---|---|---|---|
| 1 | H. Morris . | "Trans. Clin. Soc.," London, 1887, p. 111. | Recovery. No urine escaped from wound after operat'n. |
| 2 | H. Morris . | "Trans. Clin. Soc.," London, 1887. | Death. Suppression of urine. Other kidney diseased. |
| 3 | Tiffany.... | "Med. News," Ap. 16, '87. | Recovery. |
| 4 | Shepherd.. | "Med. News," Apr. 23, 1887. | Death in 3½ mos. from septicæmia. Stone ℥ iv ℥ vij. |
| 5 | Lauenstein. | "Arch. kl. Chir.," Bd. 34, p. 222. | Recovery. |
| 6 | Agnew.... | "Med. News," June 8, '87. | Recovery. |
| 7 | Pick..... | "Lancet," Jan. 7, 1888. | Recovery. Death in 3 m. fr'm phthisis. Sinus nev'r closed. |
| 8 | Gardner... | "Austral. Med. Journ.," March 15, 1887. | Recovery. |
| 9 | T. Jones .. | "Med. Chronicle," Manchester, June 1, 1887. | Recovery. |
| 10 | Franks.... | "Lancet," Dec. 25, 1886. | Recovery. |
| 11 | Agnew.... | "Med. News," Feb. 4, '88. | Recovery. |
| 12 | Lange .... | "N. Y. Med. Jour.," Jan. 21, 1888. | Recovery. |
| 13 | Berkeley-Hill. | "Lancet," Jan. 21, 1888. | Recovery. Sinus never closed. In 11 mos. nephrectomy. |
| 14 | J. Israel... | "Deut. med. Wochenschr.," No. 1, 1888. | Death on 9th day. Calculus in other kidney. |
| 15 | Herczel (Czerny). | "Wien. med. Wochenschr.," p. 1662, 1887. | Recovery. Kidney pelvis sutured and successfully. |
| 16 | Herczel (Czerny). | " " " | Recovery. Kidney pelvis sutured, but unsuccessfully. |
| 17 | Von Bergmann. | "Berl. kl. Wochenschr.," 1887. | Recovery. Stone found in upper part of ureter. |
| 18 | McCosh... | "N. Y. Med. Jour." | Recovery. |

*Exploratory Operations.*

| No. | Operator. | Reference. | Result. |
|---|---|---|---|
| 1 | Chavasse.. | "Lancet," Feb. 26, 1887. | Death. On autopsy, stone and abscess found. |
| 2 | Chavasse.. | "Lancet," Feb. 26, 1887. | Death. On autopsy, stone found. |
| 3 | Lauenstein. | "Deut. med. Wochenschr.," p. 568, 1887. | Recovery. No stone found. |
| 4 | Marsh..... | "Trans. Clin. Soc.," London, 1887, p. 661. | Recovery. Kidney not found until subseq'nt laparot'my. |
| 5 | Hulke .... | "Lancet," 1887, p. 1064. | Recovery. No stone found, but amelioration of symptoms. |

* Roberts, "Urin. and Ren. Dis.," p. 587.
† "Guy's Hospital Reports," 1860, p. 407.
‡ "Deutsch. med. Wochensch.," 1887, p. 568.
# "Practitioner," 1887, p. 250.
‖ "Medical News," December 18, 1886.

# Correspondence.

## LETTER FROM LONDON.

*The New President of the College of Physicians.—Scarlet Fever and the Puerperal State.—The Appointment of a Royal Commission respecting the New Medical Degree.—A New Novel.*

LONDON, *March 27, 1888.*

THE much-discussed question of who is to be the new president of the Royal College of Physicians has been settled at last by the election of Sir Andrew Clark, though not without a very keen contest. The mode of election is somewhat peculiar, inasmuch as no one is proposed, indeed no names are allowed to be mentioned, but the bowl goes round and each Fellow drops a slip of paper in with the name of the man he votes for on it. If at this first ballot any one Fellow obtains the votes of two thirds of those present he is *ipso facto* declared to be duly elected, but, if not, then a second ballot is taken between the two highest on the list, and this time a bare majority is all that is required. This year the second ballot lay between Sir Andrew Clark and Dr. Quain, though Dr. Wilks had a considerable amount of support in the first ballot. The result of the final voting was: Clark, 79; Quain, 71; a very narrow majority in so large a meeting.

The office is by no means a sinecure, and, although it is undoubtedly a great honor, it will mean for the new president a great deal of work and the giving up of a good many fees in private, for the president is expected to preside whenever a college lecture is given, to take part in the examinations for the membership which are held four times a year, to attend the meetings of the Censors' Board, and of the Council, as well as all the meetings of the Fellows. This will mean a great deal of time for so busy a man as the new president, but I have no doubt that he will ungrudgingly and loyally fulfill all the duties of his office. I suppose it is no disparagement to Sir Andrew Clark to say that had Sir William Gull's health not given way he would undoubtedly have secured the much-coveted honor. The curious custom prevails at the College on the occasion of the election of the president of giving every Fellow present a new half-crown. I do not know the origin of it, but it has the effect of securing a large attendance at the meeting, and, inasmuch as the half-crown is only given after the election, the electors all stay to the end of the meeting.

Sir William Jenner, the retiring president, has held office for seven years, a term rather longer than usual, there being a sort of unwritten law that five years shall be the period. Half a century ago, when they got a good man in the presidential chair they kept him there, and Sir Henry Holland served, I think, for twenty years, and his successor for fourteen, but it is not likely that those long periods of office will ever be repeated.

Dr. Boxall has lately made an interesting communication to the Obstetrical Society on the subject of scarlatina during pregnancy and the puerperal state. The paper was a very exhaustive one, and I can only here reproduce some of his conclusions, viz.: 1. That infection by the poison of scarlatina generally produces in the puerpera a disease which presents for the most part the usual symptoms of scarlatina and runs the ordinary course of the disease without the appearance of septic manifestations. 2. That the disease, in addition to the usual symptoms of scarlatina (to a certain extent modified), may occasionally present signs of septic poisoning; that, when present at the outset of the disease, pelvic inflammation and septicæmia may be regarded as accidental complications, but at a later stage such signs may be the expression of a septic process analogous to the secondary sore throat of ordinary scarlatina. 3. That in rare instances the disease may assume a masked form in which the ordinary signs of scarlatina are absent, or so slight and evanescent as to escape observation, and that in some such cases the only manifestation of the illness may be found in signs usually referred to septic poisoning.

The agitation for a new degree in medicine for London medical students is now in abeyance, as the Government have officially announced that a Royal Commission will be appointed to inquire into the whole subject. Had it not been for a handful of professional agitators and a few persons interested in bolstering up opposition claims, I believe that we might by this time have obtained the necessary charter for a new university somewhat on the lines proposed by the two colleges. As it is, we shall now have to wait an indefinite time. Sir William Jenner was exceedingly anxious to see this great work accomplished during his tenure of office as president at the College of Physicians, and it was this that induced him to remain on in office so long.

A new novel, entitled "The New Judgment of Paris," has lately made its appearance, and it is an open secret that it is written by a medical man—in fact, by your late London correspondent—so that your readers may be assured that in literary style at any rate it will take a very high place among the novels of modern times. It is not in any sense a medical story, the plot being laid in the fashionable world, and the hero an artist wrapped up in his work for its own sake; but a doctor, a medical student, and the lady superintendent of a hospital play an important part in the story, and a dispute between the medical authorities and the nursing staff of a hospital forms the subject of a well-written chapter. The book has already been favorably noticed in more than one quarter, and in my judgment deserves very high praise. It is published by the Messrs. Macmillan.

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**The Sense and Senses of Animals.**—"Sir John Lubbock recently devoted a lecture to this subject in Queen Street Hall, Edinburgh," says the "Lancet," "and pointed out that the dog was generally admitted to be a loyal, true, and affectionate friend of man, but, when the nature of the animal was considered, our knowledge, he said, was very limited, and this arose from the fact that attempts were made to teach animals rather than to learn from them. It had occurred to him that some such method as that which was followed in the case of deaf-mutes might prove instructive if adapted to the case of dogs. He had tried with a black poodle belonging to himself, and had made the following experiments:

"'He had taken two pieces of card, one blank and the other with the word 'food' upon it. He had put the latter on a saucer containing some bread and milk, and the blank card he put on an empty saucer. The dog was not allowed to eat until it brought the proper card to him. This experiment was repeated over and over again, and in about ten days the dog began to distinguish the card with the letters on it from the plain card. It took a longer time to make the dog realize the difference between different words. In order to try to discover whether the dog could distinguish colors, he prepared six cards, marking two of them blue, two yellow, and two orange. He put one of each on the floor, and tried to get the dog to bring to him a card with the same color as one which he showed the dog in his hand. After trying this for three months, he found that his experiment in this direction was a failure.'

"Sir John Lubbock proceeded to state that he considered it to be doubtful whether ants could hear, but that it was possible both they and bees might hear sounds so shrill as to make no impressions on the human organ of hearing; and so perhaps with colors. The world might to insects be full of music we could not hear, colors which we could not see, and sensations which we could not feel."

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## MIND CURE AND THE NINETEENTH CENTURY CLUB.

At a meeting of the Nineteenth Century Club held on the 27th of March, a paper on "Mind Cure" was read by one of its disciples, Miss Lydia Bell, and the subject was discussed by Dr. William A. Hammond, Mr. Purrington, and Dr. Louise Fiske-Bryson. Dr. Hammond made the liberal offer of a thousand dollars to any mind-curer who would produce four patients that, after receiving subcutaneous injections of certain drugs, did not show the natural effects of those drugs, and he offered to give another thousand dollars to a mind-cure hospital if any mind-curer would, from the examination of the back of a photograph, tell the character, the color of the hair, etc., of the person photographed. This the advocates of invisible and impalpable physic profess to believe can be done. Dr. Hammond cited numerous instances of the wonderful effect of mind upon body—an effect that always stops short of miracle.

Mr. Purrington considered the medico-legal aspect of mind cure. As the law does not and can not recognize the mental healers as physicians—they use neither drugs nor instruments—it simply has nothing whatever to do with them. They take their place quite naturally among masseurs, electricians, and the like, subject like them to laws that protect the life and welfare of others. Mr. Purrington read several clauses from a petition sent by mind-curers to the Legislature, in which their pretensions and "rights" were set forth with the entire absence of logic and sense that characterizes these enthusiasts.

Dr. Fiske-Bryson said in substance that, in order to discuss mind cure at all, it was essential to have some clear idea of what mind was. The best definition in literature, she said, was the one given by Mr. Raymond Perrin, in his "Religion of Philosophy"—that mind was that part of the organism which was capable of the greatest molecular changes. The union of mind and body was unaccountable, because it was an ultimate fact; the processes of the one were often a clew to those of the other. Mind and body were the obverse aspects of activity; there was nothing in perception that had not been first in the senses; mind acted upon body in its threefold aspect of intellect, emotion, and volition. As to mind cure, it was a theory that the finite could use the infinite, the material the immaterial, to further selfish ends; the motive, whether good or bad, did not affect the principle. Another assumption was that the phenomenal world was mere mirage, an illusion of the thinking self. "There nothing is but thinking makes it so," was the testimony of Hamlet, a man who had well-marked hallucinations. Mind cure, like the poor, was always with us; it masqueraded through the ages, in the guise of voudooism, the royal gift of healing, and witchcraft, finding its expression in charms and talismans among the gnostics and in terrific noises to frighten away the demons of sickness among the Chinese. It was almost the sole principle of the Indian medicine-man's practice. The mind cure of to-day was practical, experimental psychology twisted up into double bow-knots of mysticism and mistiness; it was a return from the simple truths that were now dawning upon mankind to the mysticism of the Platonists, the Rosicrucians, and the alchemists. It meant degeneration from the highest type of psychic experimentation to a low form of metaphysics; retrogression from the intellectual to the sensual, from order to disorder, from law to chaos. Pure psychology read the fate of the mental method of therapeutics as Daniel read the inscription to Babylon's last king. The intense egoism and ignorance of this superstition would inevitably bring about its downfall. Any system that utterly ignored the physical constitution of things must at times come into collision with fact. It had within itself the elements of dissolution; viewed through knowledge of cause and effect, it was evident that the mental method would have to "move on."

## THE SWEDISH GYMNASTIC TREATMENT OF PROLAPSE OF THE UTERUS.

Twenty years ago a Swedish layman, Major Brandt, of Stockholm, published a little work entitled "Nouvelle méthode gymnastique et magnétique pour le traitement des maladies des organes du bassin et principalements des affections utérines." The book is to be found in the Library of the Surgeon-General's Office in Washington. Whatever may be thought of the major's theoretical views, and particularly of his ideas as to the "magnetic" element in the *modus operandi* of his method, it is interesting to note that his treatment of uterine prolapse has in a number of well-attested cases been attended with marked success. An interesting communication on the subject is published in the "Centralblatt für Gynäkologie" for March 31st, by Professor von Preuschen, of Greifswald, who says that, having spent some time in Stockholm observing the application of Brandt's method and the results following its use, he resolved to make further use of it in his own practice. This he has done, and in the article mentioned he gives the history of a case of complete procidentia in which he produced with it a cure that he thinks will prove permanent.

Brandt's treatment of prolapsus consists essentially in methodically lifting the uterus by manual force applied through the abdominal wall; in making the patient exert herself to the utmost in contracting the adductor muscles of her thighs; and in administering sharp taps with the edge of the hand upon the lumbar vertebræ and the sacrum. The patient lying in the lithotomy posture, an assistant introduces one finger into the vagina and presses the cervix backward so as to throw the uterus into an attitude of anteversion; the operator stands at the patient's side, his face toward her head, and presses both his hands, forcibly supinated, deep into the pelvis immediately

above the pubic bones; still keeping his hands buried deep, he carries them slowly upward toward the epigastrium. By the aid of the assistant's co-operation, whose duty it is to follow the uterus with his finger in the vagina and maintain it in a state of anteversion, this lifts the organ as high as it can be made to go. The operator then removes his hands, and the uterus slowly falls back to its former position. The manipulation is repeated about three times on each occasion.

The exercise of the thighs consists in their forcible separation by the operator, whom the patient is to resist with all her power. This calls into play, according to von Preuschen, not only the femoral adductors, but also the muscles forming the floor of the pelvis, the so-called pelvic diaphragm, especially the levator ani; and it seems to be about the only way in which forcible voluntary contraction of that muscle can be brought about without at the same time calling the abdominal muscles into play to a degree that would prove injurious under the circumstances. Doubtless this exercise results in heightened tonicity of the levator ani, which tends not only to close the vagina, but also to produce a favorable change in the direction of a portion of that canal, so that the pelvic floor is decidedly strengthened as a support to the pelvic contents. As to the action of the taps upon the rump—a point that von Preuschen says hardly anything about—it may be partly by stimulation of motor nerves.

There seems to be nothing severe or objectionable in the judicious employment of such measures, and, even if they should fail in accomplishing the cure of a prolapsus, their effect would undoubtedly be of benefit to the patient's general health.

## *MINOR PARAGRAPHS.*

### THE IDEAL OBSTETRICAL FORCEPS.

Dr. William Stephenson, professor of obstetrics in the University of Aberdeen, contributes an article to the "British Medical Journal," in which, after patriotically pointing out the faultiness of the geographical and historical information possessed by a certain author whom he quotes as saying: "It is not to the land of mountain and flood that we are to look for opportunities of acquiring experience in midwifery of this difficult kind; it must be in great centers of population," he unfolds his ideas of what a general-utility obstetrical forceps ought to be. It should be an instrument with which, barring exceptional features, delivery can be accomplished in any case in which extraction with the forceps is indicated. This, he says, can be done with Simpson's forceps slightly modified, mainly by prolonging the shanks. To this or any other good forceps hook-shaped traction rods can be attached, and thus axis-traction be made without the need of resorting to such special instruments as Tarnier's.

### MUSCULAR RUPTURE IN HORSEMEN.

M. Charcot and M. Couillant, surgeons in the French army, have prepared a long paper on this subject, which is published in the "Revue de Chirurgie." From an excellent summary of their article, by Dr. Sprengel, of Dresden, published in the "Centralblatt für Chirurgie," it appears, as might be expected, that ruptures of muscles in cavalrymen are commonest among recruits, both because they have not been sufficiently trained in horsemanship to vault into the saddle and perform the other acts incident to riding with the necessary address, and because the muscles called into play are unaccustomed to such acts. Rupture of the rectus abdominis usually results from an attempt at climbing with the arms to supplement defective vaulting. At first only a few fibers may be torn, so that the soldier, not being wholly disabled, goes on riding, and complete rupture is apt to be the result. The accident is favored when acts are performed in which what is ordinarily the fixed end of a muscle becomes its movable end; for example, when the rectus femoris, instead of acting upon the patella, takes the knee as its fixed point and acts upon the pelvis. Usually the prognosis is good; the effusion of blood is seldom very great, even where, as in the case of the rectus abdominis, large arterial branches are necessarily torn, and muscular hæmatomas rarely suppurate, although the authors think that abscesses of Retzius's space are not infrequently of such origin.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 10, 1888:

| DISEASES. | Week ending Apr. 3. | | Week ending Apr. 10. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 11 | 4 | 9 | 2 |
| Scarlet fever | 177 | 23 | 136 | 24 |
| Cerebro-spinal meningitis | 3 | 2 | 7 | 7 |
| Measles | 49 | 4 | 41 | 2 |
| Diphtheria | 119 | 36 | 146 | 33 |
| Small-pox | 28 | 4 | 25 | 5 |

**The New York Post-graduate Medical School and Hospital.**—The faculty gave their third annual dinner on Tuesday evening, the 10th inst., at the Hotel Brunswick.

**The Medical Association of the District of Columbia.**—At the annual meeting, held on Tuesday, the 3d inst., the following officers were elected for the ensuing year: President, Dr. W. W. Johnston; vice-presidents, Dr. W. W. Godding and Dr. C. W. Franzoni; secretary, Dr. G. C. Ober; treasurer, Dr. S. S. Adams.

**A Prize for M. Pasteur.**—The "Union médicale" states that the grand prize of the Turin Academy of Sciences, amounting to 12,000 francs, has been awarded to M. Pasteur.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the four weeks ending April 7, 1888:*

Armstrong, S. T., Passed Assistant Surgeon. Granted leave of absence for fourteen days. March 21, 1888.

Bratton, W. D., Passed Assistant Surgeon. Promoted and appointed Passed Assistant Surgeon from April 6, 1888. April 2, 1888.

**Society Meetings for the Coming Week:**

Monday, *April 16th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *April 17th:* Missouri State Medical Association (first day—Kansas City); New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburg, N. Y.,

Medical Association; Medical Society of Passaic County, N. J. (annual).

Wednesday, *April 18th:* Medical Society of the State of California (San Francisco); Louisiana State Medical Society (Monroe); Medical Society of Mississippi (Jackson); Georgia Medical Society (first day—Rome); Missouri State Medical Association (second day); Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Windham, Conn., County Medical Society (annual—Plainfield); Middlesex, Mass., South District Medical Society (annual—Waltham); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society (Clinico-pathological).

Thursday, *April 19th:* Georgia Medical Society (second day); Missouri State Medical Association (third day); New York Academy of Medicine; Tolland, Conn., County Medical Society (annual); New Bedford, Mass., Society for Medical Improvement (private).

Friday, *April 20th:* Georgia Medical Society (third day); Chicago Gynæcological Society.

Saturday, *April 21st:* Georgia Medical Society (fourth day); Clinical Society of the New York Post-graduate Medical School and Hospital.

### OBITUARY NOTES.

**Albert G. Browning, M. D.**, of Providence, R. I., a well-known and successful physician, died on the 5th inst., of apoplexy. He was born in Woodstock, Conn., nearly fifty years ago. He had practiced in Providence for twenty-five years. Dr. Browning was an upright man, skillful in his profession, and respected by all who knew him.

## Letters to the Editor.

### ANOTHER REMARKABLE SURVIVAL OF A NEW-BORN CHILD.

20 West Forty-fifth Street, *April 3, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: The remarkable case reported in a recent number of your Journal of the birth of a child at full term on a rapidly running railroad train, the child falling through the pipe of the water-closet on the track into the snow, and being found alive soon afterward and remaining alive, recalls to my mind a similar case (although not quite so severe or so graphic) which came under my observation while I was house physician to the Maternity Hospital at Würzburg, Bavaria, in 1869. A primipara, with her child, was brought into the Maternity under police escort with the following statement: While workmen were opening a sewer-drain in the yard of the residence of a well-known American merchant, whose wife was under von Scanzoni's treatment, they heard the screams of a child apparently proceeding from within the drain. On rapidly opening it, they found a full-grown new-born infant struggling in the filth, which they speedily rescued. Investigation being immediately made, in the water-closet on the *second* floor was found the cook of the family, an unmarried woman, collapsed on the floor. On being revived, she acknowledged being the mother of the child, and said that she was suddenly seized with an uncontrollable desire to go to stool, and when on the seat felt something rushing from her, and fainted.

The child bore signs of having passed rapidly down the drain-pipe (in those days modern water-closets were uncommon in Germany, and most residences had merely closets directly connected with the soil-pipe, but neither trapped nor supplied with a pan). It was badly scratched and bruised, but was otherwise well, and it thrived. It weighed about ten pounds.

The mother, having concealed her pregnancy, was accused of intentional infanticide, and, despite my testimony at the trial that in the agony of the moment she was probably unconscious of the escape of the child, and was not responsible for its birth in the closet, she was sentenced to four years' imprisonment.

The distance traversed by the child was certainly not less than thirty feet, and it is marvelous that the child was not killed by the fall or suffocated in the filth of the drain. While I have repeatedly seen living and healthy children brought into the Maternity who had been dropped on the hard pavement of the street while the mothers were on their way to the Maternity, I know of no instance in my experience where a child has survived such a fall as the one I describe.

Paul F. Mundé.

### HOUR-GLASS CONTRACTION OF THE UTERUS.

Perth Amboy, N. J., *March 27, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: The infrequent occurrence of hour-glass contraction of the uterus is undoubtedly the main factor in accounting for the sparse literature on this important abnormal condition, and gives interest to a case reported in the "New York Medical Journal" of the 24th of March.

The doctor was evidently "prudent and careful" in applying his hand to the abdomen after the birth of the child, with the view of ascertaining the condition of the uterus, yet he failed to act in accordance with the *recognized* evidence which the examination elicited. The existence of persistent pain and hæmorrhage showed perverted action in the womb, and furnished aid in the diagnosis which an internal examination would have rendered entirely conclusive, and led to the adoption of obvious measures—dilatation of the stricture and removal of the placenta and membranes.

Without maintaining that any injury arose from the administration of the full dose of ergot which was prescribed, it was certainly contra-indicated by the fact that the uterus was already in a condition analogous to that produced by this drug, and its influence would naturally aggravate the pain and the condition on which it depended. The location of the placenta in the vagina prior to the administration of the anæsthetic and its existence in the uterus afterward, when it was found detached and adhering to the membranes in the upper segment of the womb, I am unable to reconcile. And, with both segments of the uterus apparently contracted, I am also perplexed in the assumption of a hypothetical condition of the organ that would allow "a deluge of blood" on the removal of the placenta. The after-birth and secundines having been removed, regular contractions would naturally ensue, or could easily be induced, and the hæmorrhage would cease at once. The case recalls one of a similar character that came under my observation a number of years since in the practice of a brother practitioner. Prior to my arrival, ice had been applied to the abdomen for several hours, with the object of arresting the profuse hæmorrhage which ensued after the birth of the child, but it failed to produce the desired result. This agent is similar in its action to the secale cornutum, and would be as objectionable as that remedy.

On introducing the hand into the uterus and passing it along the cord to the location of the contraction, my first impression was that of a ruptured womb, but I soon found the placenta detained in the upper segment by the stricture. I immediately proceeded to dilate the contracted portion, and after continuous

effort for some time succeeded in overcoming the stricture. As soon as I grasped the placenta in my hand, both were forcibly ejected by the violent uterine contractions.

The endometritis to which the doctor referred was very possibly connected with subinvolution of the uterus, growing out of the previous abortions, and acted as a predisposing cause in the development of the abnormal condition.

L. S. Blackwell.

# Proceedings of Societies.

## NEW YORK SURGICAL SOCIETY.

*Meeting of March 14, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**Certain Obscure Cases of Fracture of the Neck of the Femur.**—A paper with this title was read by the President. [See page 401.]

Dr. Sands thought that the reader had expressed the view entertained by almost every practical surgeon who had questioned the common teaching that interstitial absorption of bone might occur in the hip as the result of injury, but nowhere else. Many cases of fracture of the hip were very obscure. It was important that this whole question should be studied anew with the light of fresh anatomical evidence. He had never seen a case of interstitial absorption following traumatism, and was inclined to believe that the condition which was supposed to be this was probably fracture with obscure symptoms.

Dr. McBurney agreed with the reader concerning the great difficulty of deciding as to the existence of fracture in many cases of injury to the hip. He had seen several cases in which it was not possible to make a positive diagnosis until several weeks had elapsed. An important symptom of fracture, which had not been mentioned by the reader, was the difficulty which the surgeon experienced in *inverting* the limb. When this symptom persisted day after day it would be found to be due to fracture. In the case of a contusion there might at first be great disability, but after a week or two it would be possible to invert the limb as on the sound side. The speaker had had no experience with arthritis deformans following injuries to the hip, and agreed with the reader that it could hardly result from any injury less severe than a fracture.

Dr. Rushmore said that in two or three obscure cases of suspected fracture of the neck of the femur he had been assisted in making a diagnosis by lifting the trochanter while the patient was under ether, and noting the effect on the foot. On the unaffected side the toes would be found to rotate through a large arc, while on the affected side they would simply be slightly shaken from side to side.

Dr. Weir said that he would like to amend the reader's treatment by suggesting that apparatus should not be applied too early in the case of elderly patients. He would make them as comfortable as possible by means of pillows and sand-bags. In such patients the symptoms might be aggravated by applying apparatus and immobilizing them too rigidly in bed.

The President said that in his experience extension with a light weight (from five to ten pounds) was most comfortable for the patient.

Dr. Weir said that he could recall two cases in which a zealous house-surgeon had applied such a mild extension apparatus at once with bad results, sloughing being produced in one instance. He had found that it was not well in the cases of aged persons to confine the patient too closely.

Dr. Sands said that his experience had been different from that of Dr. Weir. The books stated that it was better not to treat these cases too rigorously for fear of impairing the general health. He was accustomed to treat every case of doubtful injury to the hip as if it were a fracture, by immobilizing the joint at once. He had had many cases of fracture of the neck of the femur in which recovery had been perfect. Some of his best results had been obtained by the use of plaster of Paris; water-glass splints had also proved useful. He could recall four patients (one a lady eighty years of age) who had been treated for fracture in this region and who afterward walked about without limping. Even when patients did not recover without subsequent lameness they were made more comfortable if the limb was immobilized.

In reply to a question by Dr. Wyeth, the speaker said that in his experience the subsequent motion of the limb was not impaired by immobilization.

Dr. Wyeth said that he had been rather afraid of using plaster of Paris lest a stiff limb should be the result; he generally employed sand-bags.

Dr. Weir explained that he only intended to convey the impression that he would not begin treatment by means of apparatus at the very outset, and especially in doubtful cases. There were cases, however, in which the pain was so great that it was possible to employ with benefit extension at once in order to relieve it. He had merely wished to call attention to the advisability of being careful about treating elderly patients too rigidly at first. He had also frequently met with an unexpectedly good result in the treatment of unmistakable fractures of the cervix, and in these too where it was allowable to adopt the undue refinement of calling it an intracapsular fracture, which term could safely be applied to nearly all the fractures of the neck of the femur.

Dr. Briddon said that twenty-five or thirty years ago there had been a great discussion concerning intra- and extra-capsular fracture of the neck of the femur. His attention had been drawn to this controversy, and he had tried in every case to make an exact diagnosis, but he believed that in his excessive zeal to attain this he had done harm by converting impacted into unimpacted fractures. Now his practice was to avoid a thorough examination of the injured limb. He always instructed his house-staff that, if a patient had pain and disability following an injury to the hip, they should *not* endeavor to obtain crepitus. Since adopting this rule he had met with better results in these cases. He would go so far as to refuse to treat a case of injury of the hip unless he was allowed to treat it as a fracture. Gurdon Buck and Hamilton had objected to fixation of the limb in aged people, but the speaker thought that in most instances this was most comfortable for the patient; immobilization secured subsequent normal movement. He kept the patient under treatment for three or four months. He especially objected to the practice of etherizing a patient in order to make an accurate diagnosis, since it was apt to result in harm. He had seen cases of impacted fracture in which no shortening could be detected at the time of the injury, but after the patient had walked the impaction was broken up, and shortening took place.

Dr. Wyeth cited a case in which a lady fell and injured her hip, and then walked home; ten days after, shortening was found on the affected side.

Dr. McBurney thought that while extension was useful in proper cases, those should be clearly recognized in which simply rest was aimed at; in the latter the weight ought to be very light—only sufficient to counteract muscular contraction, any

not to produce actual extension. In some cases a heavy weight might do great harm. The weight ought to be graduated according to the amount of muscular contraction.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of March 14, 1888.*

The Vice President, Dr. W. W. Kees, in the Chair.

### On the Importance of Primary Suture of Divided Nerves.

Dr. Charles B. Nancrede read a paper on this subject. Although, he said, he had a most profound faith in the vis medicatrix naturæ, he still thought that Dame Nature should always have fair play in her battle with injury or disease, and this she certainly failed to receive at the hands of too many practitioners. In a paper published some fifteen years before, he had contended that if, with such vascular structures as those of the face, which certainly would unite sooner or later in some sort of fashion, it was customary to resort to suture merely for cosmetic effects, one was all the more bound to do so for such non-vascular structures as tendons, which, if they fail to heal well, much more if no union was secured, must entail disability or total uselessness of a member. Nowadays a surgeon who should fail to suture a divided tendon would be considered derelict in his duties. In like manner, he trusted that in the near future the general practitioner would be so impressed with its importance that he would consider his duty unfulfilled until he, or some surgeon summoned by him, had sutured any divided nerve.

It was needless to dilate upon the evils consequent upon the abolition of function of an important nerve; cases must have occurred in the practice of most of those present where division of even such small trunks as digital nerves had resulted in troublesome ulcerations, causalgias, etc. Doubtless the indifference of practitioners to wounds of nerves, or, more strictly speaking, their inclination to "leave them to Nature," had arisen from two causes—viz., (1) the fear that suturing might in some way determine tetanus, and (2) the well-known fact that nerves divided or even excised with the avowed intention of abrogating their function, too commonly reunited. The first cause should not deter one, as it was now known that a suture *per se* could never originate tetanus; while as to the second objection, certain facts which he would submit warranted the conclusion that traumatic divisions of nerves, unless effected by a clean cut—or perhaps ball wounds—involving solely the nerve and little, if any, of the contiguous structures, differed so materially from those purposely effected by the surgeon's knife that conclusions derived from the result of neurectomies could not safely be applied to accidental divisions of nerves. Besides, granting that reunion would occur without suturing, as a stitch could do no harm, why not use one, since it would at least conduce to a more rapid resumption of function? While primary union of nerves with immediate resumption of function—*i. e.*, in a week or ten days—was a surgical rarity, yet it did at times occur, and would doubtless be of more frequent occurrence if suture were the rule and not the exception.

His aim in this brief note was merely to call attention to the *duty* of suturing divided nerves as a routine practice, just as one would tie arteries, and to describe a simple, effective method of carrying out the indication. A critical examination of the histories of nearly all exsections of nerves where reproduction had occurred would show that they had been removed either from a bony canal or from an intermuscular space in which they normally lay, *with the minimum* of injury to the surrounding tissues. Moreover, even when their ends had been turned back and sutured in position or even buried in the surrounding tissues, they had been so secured in the same intermuscular space which the nerve normally traversed. In other words, the bony canals, and the intermuscular spaces likewise, acted as molds which directed the course of the reparative material from the proximal to the distal end of the severed nerve. In extensive wounds, however, this condition did not obtain. Intermuscular spaces were dislocated, and large masses of scar tissue were formed, so that, instead of the new nerve-tissue being *compelled* to grow in only one, and that the right direction, it had too often an insuperable barrier interposed, and union failed.

In the case of a patient now shown, the proximal ends of the ulnar and median nerves had been directed at right angles to their intermuscular space, and would infallibly have been fixed between the ends of the torn muscles in a dense mass of scar tissue, resulting in permanent loss of power of the member. The brachial artery had also been torn through, leaving only a bridge of muscle and skin through which collateral circulation could be carried on. The deficient blood-supply possibly explained the failure of the recovery of power in the interossei muscles, although other of the intrinsic muscles of the hand supplied by the ulnar nerve contracted well. In the seventh month after suture—*i. e.*, the usual period required for the degeneration and regeneration of a nerve—first sensation, and then motion had returned, until now, although the functions of the member were not perfect, the boy could earn his living, and do nearly all that could be effected by a normal hand and forearm.

Further citation of cases seemed hardly necessary, and such good results as he had shown had been reported frequently.

Finally, how should the sutures be passed and what should their material be? Fine aseptic catgut passed by means of an ordinary sewing needle was to be preferred, but fine aseptic silk might be used, and he himself had resorted to this in an emergency. Should the nerve be *very* much lacerated and frayed out, it might, perhaps, sometimes be proper to cut off a portion to gain a clean surface, but this was rarely desirable. The needle should be passed from below upward through the proximal end of the nerve at one border, across, and then from above downward near the opposite border, entering from an eighth to a quarter of an inch from the cut end, according to the size of the nerve. The needle must now be passed from below upward through the distal portion of the nerve at the border corresponding to the last passage of the needle through the proximal end, carried across, and made to pierce the nerve from above downward, when the suture would be found to correspond to the free end of the thread in the proximal piece of nerve.

Gentle traction with an appropriate position of the member would, by the tying of one knot, accurately approximate the nerve ends; in a word, by this simple method all the advantages of the two separate sutures commonly recommended were obtained with a far greater degree of security. The strictest asepsis should be secured, which was easy enough provided the wounded part, the surgeon's hands, and his instruments were strictly cleansed, and the wound was freely irrigated with the bichloride and tartaric-acid solution. With an uncontaminated wound, it was the surgeon's own fault if there was suppuration, and even with the ordinary run of accidental wounds, if he would thoroughly scrub his hands with a nail-brush and hot water, and likewise so treat the parts surrounding the wound, and pour boiling water over his instruments, without any further antisepsis, in most cases healing without suppuration could be secured, while the omission of these details would mar results with gallons of mercuric solution flowing over the wound.

Dr. H. R. Wharton had seen one or two cases of primary nerve-suture, though none in which the injuries had been so extensive as in the case shown. The results in these cases had been good. There was another point to be considered. Should one attempt secondary suture of the nerves when this had been omitted in the first place? The speaker was very decidedly of the opinion that this procedure should be adopted, for a number of such cases had been reported in which the results had been at least good enough to make him feel that secondary suture should be attempted when there was any probability of restoration of the use of the injured part. He thoroughly agreed with Dr. Nancrede as to the great importance of the subject.

Dr. John B. Roberts said that the only case of nerve-suture he remembered was one in which the work had very properly been done by the resident immediately on the admission of the patient. It was a rather extensive incised wound of the leg, involving, he thought, the musculo-cutaneous and anterior tibial nerves. The muscles and nerves were sutured and dressed antiseptically, and the results were good, though he had not followed the patient after discharge so as to make an accurate report as to sensation. Dr. Nancrede had incidentally touched upon a point of great importance, that of teno-suture. It had been the speaker's misfortune to meet with quite a number of cases in which this had been neglected by the attendant called at the time of the accident. One of these recently seen had been that of a man wounded in the forearm just above the wrist, and in the ring finger. There was loss of flexion of the finger, but it was hard to tell which of the wounds to reopen in order to come upon and suture the divided tendon. The family physician believed it to be the one at the wrist; but, after cutting down, the speaker had found the tendon there flaccid and intact. He then opened the finger wound and found the tendon retracted into the sheath. He sutured, but did not get a good result, probably from the extent of dissection necessary to get at the tendon in the sheath, and the great mass of cicatricial tissue. However, he never hesitated to reopen healed or partially healed wounds to suture tendons when this very important measure had been neglected. He had been glad to hear Dr. Nancrede say that with cleanliness of person and of instruments asepsis could be secured without chemical solutions. This was in marked contrast to the idea that the employment of solutions rendered care as to cleanliness unnecessary.

Dr. J. William White did not know whether Dr. Nancrede had spoken of the resection of the crushed and bruised ends of the nerves. The general principles of nerve-suture were admitted by all surgeons, but the question of resecting lacerated or contused ends before suturing, or of allowing them to remain, was one that should be carefully considered in each case. On the one hand, by resection of any considerable portion the longitudinal tension was increased, and greater strain made on the sutures; on the other, the risk was run of including in the stitches tissue too much damaged to recover itself. There was some difference of opinion as to the particular suture to be employed. He should think that the one proposed by Dr. Nancrede, as shown in a diagram, would be open to objection if, as was there apparently represented, it interposed a foreign substance, the catgut thread, between the ends of the nerve; this, if not absorbed, as was sometimes the case even with the best catgut, was likely to be a constant source of irritation, and to prevent union. The speaker preferred and employed a suture passing quite through the nerve above and below the point of union. Evidence, either clinical, or pathological, or experimental, as to the relative advantages of different sutures was desirable, but he did not know of any, and had not understood Dr. Nancrede to say that there was such evidence.

The Chairman spoke briefly of two cases that had occurred in his own experience in connection with the subject under discussion. The first case was one of primary nerve-suture in a boy two years of age, with perfect recovery of motion and sensation. It occurred ten years ago. The child, carrying a glass bottle, fell, and a fragment of glass divided the ulnar nerve and artery about an inch and a half above the wrist. The mother made compression with her thumb until the speaker arrived, very soon after the accident. After ligaturing the artery, he examined the nerve and found that it had been divided. He had with him only a pocket-case containing coarse white silk and an ordinary needle. Not wishing to leave the coarse silk in the wound, particularly not in the nerve-tissues, he debated as to the method of suture, and devised one which proved eminently satisfactory. Drawing the ends together closely with forceps, he passed a surgical pin obliquely through the two divisions, threw a loop of silk around the point of the pin (as in Simpson's method of acupressure), drew out the thread, and passed it around the head of the pin, where it was secured. At the end of forty-eight hours the pin was removed. The thread was thus loosened and removed. Perfect union of the wound took place in a few days. There was no wasting of muscles, and motion was present after twenty-four hours. While the age of the child prevented exact observation as to the time at which sensation returned, at the end of forty-eight hours there was an exclamation of pain on pricking the little finger with a pin. About a year ago the boy's father had told him that his son had perfect use of the hand and fingers.

The second case was one of extensive teno-suture, with quick union. It showed the value of even a brief suture of tendons. A man twenty-five years of age was admitted into St. Mary's Hospital with complete severance of all the tendons of the forearm and of the sheath above the wrist. The resident sewed each tendon carefully. He had only Kocher catgut, which did not remain more than from three to five days, and then closed the external wound and placed the hand in flexion on a splint. The man left without permission after a few days, and, it seemed, removed the splint and tore out the sutures in the skin. He returned subsequently with a gaping wound in the forearm, but, on testing the fingers separately, each finger and each joint was found to have perfect motion, showing that even this temporary apposition of the divided tendons had had a perfect result. The speaker would prefer for the purpose, however, either very fine silk or, better, the ordinary chromicized catgut.

Dr. Nancrede said that Dr. White had misunderstood him. There had been nothing between the divided ends of the nerve. If he would examine the rough model which was now passed around he would see that the nerve was securely and accurately coaptated by the suture. He had no distinct recollection of resecting the injured ends in this case—in fact, he was nearly certain that he had not. In some cases, he had said, it *might* be desirable, but he was dubious about it. In two other cases that he recalled he remembered that he had not made any attempt of the kind, but had brought the ends together as best he could. Referring to the incidental discussion, he was glad to hear that so many of the members always sutured tendons. He made it a rule to suture nerves and tendons in every case, and generally obtained fair results.

**Ectopia Lentis.**—A boy with this deformity was shown by Dr. Howard F. Hansell.

**The Early Recognition of Exophthalmic Goitre** was the subject of a paper by Dr. J. Madison Taylor, in which, he said, he would not attempt to do more than call attention to the importance of early recognizing a disorder which often eluded one, to point out certain features which should enable

one to do so, and to offer in illustration, very briefly, the salient points in half a score of cases.

Exophthalmic goitre, or Graves's disease, was not a rare malady. At first it was merely a disorder, but frequently became a serious disease, and was known to cause death. Oftener it unfitted its victim for active usefulness, or at least limited this and sadly disfigured him. Like certain other ailments, the outcome of irregular nervous discharge, what in its incipiency was a very manageable complaint produced in time a disastrous effect upon the tissues, and formed a practically unconquerable disease. Dr. Jonathan Hutchinson was quoted as saying: "Graves's disease appears to me to be of the utmost importance, not only on its own account, but as what we might call a type malady. It is the most definite and striking example of which we know of a severe and protracted malady which, despite its severity and persistence, yet has a natural tendency to recovery."

In reviewing a large number of cases in the search for a complete symptomatic picture, the author had found that the most constant early feature was sudden and marked evidence of loss of nervous equilibrium. The vaso-motor nerves seemed quite unstrung. Hence arose flushing, sweating, and other skin changes, diarrhœa, and transient albuminuria. If at this time a careful watch was kept, he thought we should find irregularities in the action of the pupil. The skin usually lost its healthy hue, grew sallow or dark, and became greasy to the sight and touch. This oily look had been present in most of the cases he had seen, though he had not seen it mentioned elsewhere. Begbie had recounted one case of pigmentation, or bronzing, of the skin; Reynaud had called attention to vitiligo; and Edward Squire to a discoloration in an isolated instance. The oleaginous appearance seemed to the author quite constant on the face and body. It grew less when the use of salt sponging and belladonna formed part of the treatment. Gowers called attention to muscular tremor. He had seen this rarely. In two cases there had been a tremulousness in the voice, which he had ascribed to nervousness; yet it was constant. The emotions often became so overwrought that various mental peculiarities excited apprehension; or a wiser person might regard the case as one of pronounced hysteria, and, indeed, all through the malady hysteria remained present, more or less, leaving one not seldom in grave doubt. Frequently delusions occurred, and these so closely in unison with the ordinary habits and thoughts of the individual as to render them most difficult of detection. Dr. Hilton Fagge had warned us to be on the lookout for "slight cases in which one or two of the cardinal symptoms may be absent throughout." Troussean had also insisted on this point. Von Graefe had expressed the opinion that among women it was not rare to find instances of this malady where the only symptoms were disordered action of the heart, not accompanied by valvular trouble or hypertrophy, nor the faulty action of the lid as described by him. Heart disturbance most often led the sufferer first to seek medical advice. The pulse was always quick and irritable, usually intermittent. The heart-beats, as a rule, bore surprising relationships to the pulse. Overaction of the heart was well known to be a frequent feature of anæmia and chlorosis. Begbie thought it a powerful factor in causing Graves's disease. Ross regarded the anæmia which was usually present as rather a result.

Throughout the whole vascular system there was a manifest lack of *tone*. So constant was this that it might yet be found competent to explain the causation of the disorder. Certainly the graver features bore a causal relation to this state. The vaso-motor nerves seemed all out of balance; nor could it be confined to one part, though the cervical sympathetic was most prominently involved. There were cases where limited areas not governed by the upper ganglia showed derangement, as in that of a woman now under the care of Dr. E. T. Bruen, where one side sweat from shoulder to toe, and the opposite eye was prominent. Arterial tension varied rapidly and unaccountably; hence the oft-complained-of noises in the head, amounting at times to terrific roarings. This might explain the maniacal attacks, as well as blood-spitting, thirst, and transient albuminuria. The heart itself was rarely diseased. The overaction in time brought on hypertrophy; more commonly, dilatation. It also suffered from the general malnutrition which was noticeable throughout the circulatory system. The small amount of structural damage which this viscus sustained was a matter for remark, however, when the profound functional disturbance was considered. Systolic bruits were commonly heard, even over the auricles and the great vessels of the neck. Dyspnœa was distressing. This at times, even early in the history, alarmed one who felt naught else to complain of.

The thyreoid enlargement was apt to appear long before the eyes became prominent, but readily escaped attention. It might happen that a sense of constriction was felt when swallowing, especially in men who wore tightly fitting collars. Both lobes were, as a rule, enlarged; but, if one only, it was generally the right. When recovery took place, this badge remained to chronicle the victory.

The eye prominence was late to appear, as a rule, and it would seem to mark the height of the disorder. Before the exophthalmia, there might generally be noted the sign asserted by von Graefe to be pathognomonic, a belated action of the lid in following a downward movement of the ball. Sometimes the lower lid was tardy in following an upward glance. This obtrusion of the eyeball was the most picturesque feature, but happily it was not constant, and was often very late. It was of both eyes, mostly, but if of one only, again the right suffered. Sight was seldom affected, except where the outstanding, unprotected cornea suffered hurt or irritation; then opacities might result. If errors of accommodation existed, their correction, in his opinion, greatly aided in reducing the exophthalmia. Fundus lesions were not characteristic, though pulsation of the retinal vessels might serve to confirm suspicions.

Knee-jerks were rarely abnormal; often in slight excess.

Electrical examination had been very recently shown by Charcot, confirmed by Vigouroux and Norris Wolfenden, to aid greatly in foretelling the onset of this trouble, the bodily resistance being greatly lessened most peculiarly in this disease. This might prove a valuable aid in diagnosis.

After giving notes of the histories of eight cases, the author said that he hoped to discuss the treatment, on which he had some decided opinions, on another occasion. It consisted mainly of rest, judicious feeding, and the use of tonics and carefully selected sedative measures. Competent glasses, too, were essential; at times sharp counter-irritation, especially diuretic remedies and attention to the emunctories. Galvanism, too, had immense value in some instances, but required judgment in the selection of cases. In brief, whatever measures tended to repair the tone of the vascular system and allay nervous excitability would best bring about gratifying results.

Dr. S. D. Risley would like to ask Dr. Taylor whether there was any indication from which the development of exophthalmia could be expected in cases in which it had not yet appeared.

Dr. J. B. Roberts believed that the great ocular deformity, which was so unpleasant to the patient and attracted so much attention, could be remedied by a very simple operation: merely putting a stitch at the outer canthus, after freshening the edges of the lids, to diminish the optic commissure after the case had made such progress that it was reasonably certain there was to be no further diminution of the prominence of the

eyeballs. The patient could be made more comfortable and less conspicuous.

Dr. Edward Jackson thought the procedure suggested by Dr. Roberts might be resorted to for other than cosmetic reasons. He had recently seen a case of this disease, with very great exophthalmia, in which one eye had been lost from sloughing of the cornea due to exposure; and had afterward learned that the second eye had been lost in the same way. Such an accident might be prevented by narrowing the fissure of the lids.

Dr. A. V. Meigs knew of one person who had completely recovered from this disease, a woman who had a very severe attack many years ago, under the care of his father. The prominence of the eyes, which had been very great, was now hardly noticeable, and yet no operation was ever done. He did not think that much would be gained by sewing up the canthus, for while the disease was in its acute stage it was hardly likely the operation would afford much relief, and afterward, if the patient recovered at all, the difficulty cured itself. He thought he knew the case that Dr. Roberts had had in mind when he spoke, and Dr. de Schweinitz, who had seen the woman in question, would probably agree with him that nothing would be gained by an operation. One thing he had learned of recent years, and it was that it was not necessary in all cases to put the patient in bed. He could mention three or four cases that he had successfully treated with tonics and proper regimen, without its becoming necessary to order rest in bed; the cases, to be sure, had not been severe. Dr. Taylor had spoken of the early recognition of the disease. For the speaker's own part, he did not see how a positive diagnosis could be made until there were at least two of the features of the disease present, namely, the cardiac palpitation and some thyreoid enlargement: the prominence of the eyes occasionally did not manifest itself, but a diagnosis could undoubtedly be made in its absence.

Dr. G. E. de Schweinitz had examined the patient that Dr. Meigs had referred to, and had seen nothing to be gained by surgery. The eyes had at first been very prominent, but they were then receding, and now the normal relation of lids to eyeballs was restored. Inasmuch as there was considerable myopia, and hence the not uncommon prominence of myopic eyes, to begin with, they would always be more or less conspicuous.

Dr. S. Solis-Cohen thought that he recognized in Dr. Taylor's first case that of a patient whom he had seen, but in whom he had not recognized this disease. She was treated at the Jefferson Hospital some three years ago for anæmia, and was apparently cured. A year ago she returned with the history of "fits" spoken of by Dr. Taylor, and was irregular in attendance and unreliable in statement; the hysterical element, so noticeable, probably prevented the careful investigation the case should have received. He considered it the more remarkable that thyreoid enlargement should have escaped notice at the clinic in this case as the comparatively frequent discovery of it at one time, in cases of cardiac and vaso-motor disturbance, had put all the clinical assistants on the lookout for the phenomenon. He could thoroughly agree with Dr. Taylor that vaso-motor paresis played an important part in the development, if not in the genesis, of this disease. The only case he had seen in the male subject had occurred in a young man subject to frequent attacks of flushing of the face, sometimes accompanied with high temperature, in whom the rapidity of the heart's action had led to a diagnosis of hypertrophy of the heart, not warranted by physical exploration. The eyes were not involved at the last time he saw the patient, nor was thyreoid enlargement sufficient to attract attention without special examination. He had now under his care in private practice a young lady not at all hysterical, subject to similar attacks of flushing which sometimes left behind for a short time wheals like those of urticaria; she had also had two attacks of sudden transient blindness, after which all that could be detected in the fundus was moderate congestion, and her cardiac action, rapid and irregular at these times, was at other times perfectly normal. No organic lesion of any kind had been detected either by himself or by more competent observers. It is possible that this might be an early stage of Graves's disease. Improvement had taken place under the use of minute doses of picrotoxin, a drug which Dr. Bartholow had prescribed in cases of exophthalmic goître, at the hospital, with very good results. One case especially he recalled which had been associated with purpura. He would like to know whether Dr. Taylor had met with this association. A very interesting case of acute exophthalmic goître had presented itself at the clinic, which Dr. J. C. Wilson might remember as the subject of one of his clinical lectures—that of an anæmic young girl affected from childhood with nystagmus, in whom goître and exophthalmia were asserted to have developed within a short time after a fall from a ladder. She was unable to button her collar, which friends had opened in attending to her after the accident.

Dr. J. C. Wilson recalled the case mentioned by Dr. Cohen, but not with sufficient distinctness to add anything of importance to the account already given. He briefly narrated two cases of Graves's disease, recently seen in his private practice, in which the symptoms had developed rapidly after mental shock. The patients were young women. The first, a servant, aged twenty-four, of previous good character, was engaged to be married to a young man who, within a day or two of a visit to her, was accidentally killed, and her first knowledge of his death came through the newspapers. Cardiac overaction at once developed, and within a month thyreoid enlargement and slight exophthalmia. Under rest and large doses of Fowler's solution complete recovery took place in a year. The second case was that of a lady, aged twenty, who rapidly developed the characteristic symptoms of Graves's disease after the shock and grief occasioned by the disappearance of a near and loved relative, and the discovery that he was a defaulter to a very large extent. The prominence of the eyeballs was in this case very slight; the other symptoms were characteristic. Under treatment by rest and arsenic decided improvement took place. It was now a month since she had last reported.

Dr. Taylor, in reply to Dr. Risley's query, whether any sign clearly foreshadowed the exophthalmia, could only say that he knew of none, nor did he see anything in the literature of the subject to aid one. It usually marked the height of the disorder, though it might be the first feature noticed, especially when it arose suddenly, as from shock or overwrought emotion. As to Dr. Meigs's objection that the three classical symptoms could alone and in conjunction constitute the disease, it seemed to him readily possible to recognize the early stages of this disorder in the peculiar vaso-motor disturbances, the extreme and unaccountable nervous excitability, the appearances of the skin, etc. In fact, the object of his paper had been to call attention to this very possibility, so that a quietus might be placed upon it at the very beginning if possible. The use of galvanism was a valuable aid in diagnosis, as Charcot and Vigouroux had pointed out, but in the treatment it had not been of greater use than some other measures, though it should always be used in the severer cases. Many of his own patients lived out of town, but upon those within reach he used it. In his endeavor to be brief he had not intended to say much on plans of treatment, leaving that for consideration elsewhere, but rather to speak of early recognition and *early* treatment, which should consist of rest, carefully regulated living and food, and the use of tonics.

(*To be concluded.*)

# Book Notices.

*California of the South.* Its Physical Geography, Climate, Resources, Routes of Travel, and Health Resorts. Being a Complete Guide-book to Southern California. By Walter Lindley, M. D., and J. P. Widney, A. M., M. D. With Maps and Numerous Illustrations. New York: D. Appleton & Co., 1888. Pp. viii–377.

To him or her whose lot untoward fate has cast amid the vicissitudes of unmistakable winter and alleged spring on our northern Atlantic coast, a bitter sense of envious disappointment must be roused by reading of a climate mildly equable, where poor humanity's thermogenic apparatus is spared the alternating struggle between freezing and broiling environments, and where life seems to be an enjoyable continuity instead of a guerrilla contest for existence. But with the reading comes after a while a delusive oblivion of present discomfort and imaginative transfer to the pictured Utopia, as the whipped schoolboy's smartings are appeased by poring over Perrault's or D'Aulnoy's fairy tales. And, for winter reading, of all works based on sober fact and substantiated by meteorological records, we know of none that come so near to tempting fiction as the book now before us and Mr. Ernest Hart's letters from Orotava. The authors have confined their observations and descriptions to the five southernmost counties of California, which differ from the upper portion of that exceedingly elongated State as much, almost, as Florida differs from Maine, and they have judiciously tempered the records of scientific data with interesting pen-pictures of the scenery of the Pacific elysium, and an account of its agricultural and commercial resources. Whether for the physician who wishes intelligently to direct the exile of invalid patients, for the emigrant who contemplates making a new home on the southwestern shore of the continent, or for the pleasure-tourist planning a holiday ramble in one of the most charming parts of the world, this "guide-book" will be found to fulfill the promise of its title.

## GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—P. Aubry, "La contagion du meurtre. Étude d'anthropologie." (3*fr.* 50.)

P. Asselin, Paris.—E. Doré, "Recherches expérimentales sur l'influence de la température des femelles en gestation sur la vitalité du fœtus."

J. B. Baillière et fils, Paris.—M. Simon, "Le monde des rêves." (3*fr.* 50.) —— Bouilly, Duplay, Picqué, Schwartz, Segond, Poisson, Pousson, et Harrison, "Chirurgie des organes génito-urinaires de l'homme et de la femme." (17*fr.* 50.) —— M. Chaleix-Vivie, "Des névralgies vésicales." (2*fr.* 50.) —— J. Béchamp, "Nouvelles recherches sur les albumines normales et pathologiques." (6*fr.*)

J. Fayoux, Poitiers.—Pion, Rolland, et Brossard, "Suette miliaire du Poitou, 1845–1887."

Hayez, Brussels.—P. Snyers, "Contribution à la pathogénie de la maladie de Bright, de l'albuminurie et des lésions rénales consécutives aux injections d'albumine."

G. Masson, Paris.—H. Mireur, "La syphilis et la prostitution dans leurs rapports avec l'hygiène, la morale et la loi." (5*fr.*)

Bureaux du "Progrès médical," Paris.—A. Ferret, "De l'ophthalmie granuleuse (ophthalmie endémique d'Algérie)." (2*fr.* 50. —— E. Rolland, "De l'épilepsie Jacksonienne." (3*fr.*) —— J. Babinski, "Sur une déformation particulière du tronc causée par la sciatique." (2*fr.*) —— P. Blocq, "Des contractures." (5*fr.*) —— P. Blocq, "Sur une affection caractérisée par de l'ataxie et de l'abasie." (2*fr.*)

Aschendorff, Münster.—R. Handmann, "Die menschliche Stimme u. Sprache in physiol.-psychol. Beziehung." (4*M.*)

P. Savy, Paris.—E. Vernier, "Clinique chirurgicale. Des Rapports de la grossesse, du travail et des suites de couches avec le traumatisme en général."

G. Steinheil, Paris.—E. Leflaive, "De la rhino-bronchite annuelle ou asthme d'été." —— P. Trois-fontaines, "Manuel d'antisepsie chirurgicale." (3*fr.*)

F. Arnold, Munich.—"Vademecum für Pharmaceuten." (2*M.*)

W. Braumüller, Vienna.—R. von Plungen, "Ueber Atonie des Magens." (1*M.*)

H. Bruns, Brunswick.—O. Baumgarten, "Lehrbuch d. path. Mykologie." Part ii.

F. Deuticke, Vienna.—J. Gottstein, "Die Krankheiten des Kehlkopfes." 2d ed. (7*M.*)

N. G. Elwert, Marburg.—T. Rumpel, "Ueber den interstitiellen Leistenbruch." (1*M.*)

W. Engelmann, Leipsic.—C. Gegenbauer, "Lehrbuch der Anatomie." 3d ed., part i. (24*M.*)

F. Enke, Stuttgart.—S. Guttmann, "Jahrbuch d. praktischen Medicin," 1888.

T. C. F. Enslin, Berlin.—M. Schulz, "Impfung, Impfgeschäft u. Impftechnik."

G. Fischer, Jena.—Hertwig, "Lehrbuch d. Entwickelungsgeschichte." Part ii. (6*M.* 50.) —— C. Rieger, "Grundriss d. med. Elektricitätslehre." 2d ed. (2*M.* 50.)

G. Fock, Leipsic.—M. Küster, "Zur Pathologie u. Therapie des Inversio vesicæ fissæ." (1*M.*)

G. Hertz, Würzburg.—G. E. Rindfleisch, "Aerztliche Philosophie." (1*M.*)

A. Hirschwald, Berlin.—Langenbuch, "Sectio alta subpubica." —— W. Henke, "Handatlas u. Anleitung zum Studium der Anatomie des Menschen im Präpariersaale." Part i. (16*M.*)

H. Pohle, Jena.—F. Arnheim, "Lokalisation von Schallempfindungen mittelst der Bogengänge." (1*M.*) —— J. Boneks, "Nachweis, Entstehung u. Vorkommen des Schwefelwasserstoffs im Harn." (0*M.* 90.) —— O. W. Köppen, "Verhalten des Zellkerns im ruhenden Samen." (1*M.*) —— M. Richard, "Zur Kenntniss d. tiefen Blutgeschwülste am Halse." (1*M.*) —— A. Schubert, "Ueber Mediastinaltumoren bei Kindern." (0*M.* 75.) —— J. Stanko, "Enterorrhaphie bei Fistula stercoralis u. Hernia gangrænosa." (1*M.*) —— R. Sy, "Die Eigennamen in der medicinischen Nomenklatur." (1*M.*)

G. Reimer, Berlin.—Stetter, "Kompendium d. Lehre von den frischen subkutanen Frakturen." (2*M.* 40.)

J. F. Richter, Hamburg.—H. Buchner, "Disposition zu Infektionskrankheiten u. Akklimatisation."

Schmid, Francke, & Co., Bern.—R. Nitabusch, "Beiträge zur Kenntniss der menschlichen Placenta." (1*M.* 25.)

# Miscellany.

**"Modern Methods of Antiseptic Wound Treatment"** is the title of a pamphlet recently issued by Messrs. Johnson & Johnson, of No. 23 Cedar Street, the well-known makers of adhesive plaster and various other surgical appliances. The contents have been compiled from notes and suggestions by Dr. D. Hayes Agnew, of Philadelphia; Dr. A. C. Bernays, of St. Louis; Dr. S. W. Gross, of Philadelphia; Dr. Hunter McGuire, of Richmond; Dr. Thomas G. Morton, of Philadelphia; Dr. N. Senn, of Milwaukee; Dr. Stephen Smith, of New York; Dr. Lewis A. Stimson, of New York; and Dr. J. W. White, of Philadelphia. It contains also extracts from the writings of several other well-known surgeons. The collection has evidently been made with care, and it will doubtless prove of great service to practitioners who have not had opportunities for making themselves practically acquainted with the details of antiseptic surgery. Messrs. Johnson & Johnson announce their intention of supplying every physician who may apply for it with a gratuitous copy of the pamphlet.

**The Health of the State of New York.**—According to the State Board of Health's "Monthly Bulletin," there were 8,637 deaths reported in the State during the month of February. In each 1,000 deaths there were 9·90 from diarrhœal diseases, 9·89 from typhoid fever, 27·83 from scarlet fever, and 77·69 from diphtheria.

**The Health of Boston.**—During the week ending Saturday, April 7th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 26 cases and 4 deaths; scarlet fever, 12 cases and 1 death; typhoid fever, 9 cases and 2 deaths; measles, 54 cases. There were also 31 deaths from consumption, 17 from pneumonia, 2 from whooping-cough, 14 from heart disease, 7 from bronchitis, and 6 from marasmus. The total number of deaths was 183, against 205 in the corresponding week last year.

**The Health of Michigan.**—According to the State Board of Health's summary of returns for the four weeks ending March 31st, diphtheria was reported from twenty-five places, scarlet fever from thirty-three, typhoid fever from thirteen, measles from forty-nine, and small-pox from one.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending April 6th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 17th corresponded to an annual rate of 20·3 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Leicester, viz., 12·8, and the highest in Blackburn, viz., 31·6 in a thousand. Small-pox caused 18 deaths in Sheffield, 2 in Bristol, 2 in Manchester, and 2 in Huddersfield.

*London.*—One thousand six hundred and four deaths were registered during the week, including measles, 22; scarlet fever, 25; diphtheria, 22; whooping-cough, 92; enteric fever, 10; typhus, 1; diarrhœa and dysentery, 10. Diseases of the respiratory organs caused 458 deaths, and different forms of violence, 59. The deaths from all causes corresponded to an annual rate of 19·5 in a thousand. In greater London 2,031 deaths were registered, corresponding to an annual rate of 19·2 in a thousand of the population. In the "outer ring" 30 deaths from whooping-cough, 7 from scarlet fever, 6 from diphtheria, and 6 from measles were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending March 17th in the sixteen principal town districts of Ireland was 29·4 in a thousand of the population. The lowest rate was recorded in Newry, viz., 10·5, and the highest in Londonderry, viz., 46·4 in a thousand. In Dublin 196 deaths were registered, including 1 from diphtheria; measles, 5; scarlet fever, 3; typhus, 3; and enteric fever, 4.

*Scotland.*—The deaths registered in eight principal towns during the week ending March 17th corresponded to an annual rate of 21 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 10·1, and the highest in Glasgow, viz., 26·9 in a thousand. The aggregate number of deaths registered from all causes was 531, including 9 from measles; diphtheria, 5; scarlet fever, 3; whooping-cough, 16; fever, 5; and diarrhœa, 9. The death-rate during the week ending March 10th was 24·2.

*Montevideo.*—Eight hundred and eighteen deaths were registered during the two months ending January 31, 1888, including 40 from small-pox and 20 from enteric and typhus fever.

*Callao.*—The United States consul, in his dispatch dated March 3, 1888, states that "from the last report of Dr. Matto, the medical representative of the Government of Peru in Chili, it would appear that the ravages of the cholera in that republic are nearly concluded. Under date of the 1st instant, Dr. Matto reports by cable: 'Have returned from the south. Cholera declining. Has disappeared at Concepcion, Angol, Angeles, Chillan, Parral, and San Fernando. Cases still at Loto and Coronel. None at Talcahuano. At La Serena (to the north), Santiago, and Valparaiso, decreasing.' The condition of the public health at this port and Lima continues to be satisfactory."

*Santiago de Cuba.*—The sanitary inspector reports for the week ending March 24th one death from small-pox at the military hospital, and several cases of varioloid in the town.

*Havana.*—Three deaths from yellow fever and 14 from small-pox are reported for the week ending March 24, 1888.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Glasgow | March 17. | 545,678 | 272 | .. | .... | .... | .... | .... | 1 | 5 |
| Warsaw | March 10. | 439,174 | 201 | .. | .... | 4 | .... | .... | 2 | 4 |
| Calcutta | February 18. | 433,219 | 252 | 50 | .... | .... | .... | .... | .... | .... |
| Rome | February 11. | 382,973 | 242 | .. | .... | 4 | .... | 3 | .... | 1 |
| Copenhagen | February 28. | 300,000 | 130 | .. | .... | .... | .... | .... | 5 | 7 |
| Copenhagen | March 6. | 300,000 | 135 | .. | .... | .... | .... | 1 | 6 | 4 |
| Munich | March 3. | 275,000 | 154 | .. | .... | .... | .... | .... | 1 | 6 |
| Edinburgh | March 10. | 262,733 | 95 | .. | .... | .... | .... | 1 | 1 | 1 |
| Palermo | March 17. | 250,000 | 125 | .. | .. | .... | 2 | .... | 3 | 2 |
| Belfast | March 17. | 227,022 | 137 | .. | .... | .... | .... | 1 | 2 | 1 |
| Genoa | March 17. | 179,337 | 108 | .. | .... | 6 | .... | .... | .... | 3 |
| Leipsic | March 17. | 170,000 | 69 | .. | .... | .... | .... | .... | .... | 7 |
| Trieste | March 10. | 154,500 | 120 | .. | .... | 1 | .... | .... | .... | 1 |
| Toronto | March 24. | 130,000 | 38 | .. | .... | .... | .... | .... | .... | 4 |
| Toronto | March 31. | 130,000 | 18 | .. | .... | .... | .... | 1 | .... | .... |
| Bremen | March 15. | 122,000 | 37 | .. | .... | .... | .... | 1 | .... | .... |
| Havre | March 10. | 112,074 | 110 | .. | .... | 3 | .... | 2 | .... | 1 |
| Havre | March 17. | 112,074 | 104 | .. | .... | 7 | .... | 1 | 1 | 2 |
| Barmen | March 17. | 109,000 | 42 | .. | .... | .... | .... | .... | .... | 3 |
| Leith | March 10. | 74,320 | 26 | .. | .... | .... | .... | .... | 1 | 1 |
| Mayence | March 3. | 65,701 | 36 | .. | .... | .... | .... | .... | 1 | 1 |
| Cienfuegos | March 19. | 40,573 | 38 | .. | .... | 28 | .... | .... | .... | .... |
| Sagua la Grande | March 17. | 15,605 | 11 | .. | .... | 6 | .... | .... | .... | .... |

UNITED STATES.

*Ship Island.*—The Secretary of the Treasury has approved the recommendation of the board designated under the act of Congress dated March 5, 1888, that the national quarantine station on Ship Island be removed to North Chandeleur Island, in the Gulf of Mexico.

The medical officer in charge of the United States quarantine station at Ship Island reports that the Norwegian barkentine Professor Lintner, from Port de France, Martinique, arrived at Pascagoula, Miss., and was sent to the quarantine station at Ship Island on the 30th ultimo, with two cases of small-pox on board. The sick have been removed to hospital, and the crew vaccinated. The vessel has been fumigated and cleansed, and is now undergoing quarantine.

*Louisiana.*—The following resolutions have been adopted by the State board of health:

*Be it resolved by the Board of Health of the State of Louisiana*, That its secretary be instructed to respectfully request the governor of the State to issue his proclamation of quarantine in accordance with the following recommendations: Such quarantine to go into effect from and after the 20th day of April, 1888, simply for inspection and fumigation—this to remain in force until the 1st day of June, unless changed by direction of this board; from and after that time all vessels subject to quarantine treatment shall be detained for observation, as hereinafter provided:

All vessels arriving at the several quarantine stations in the State, together with their crews, passengers, and their cargoes, shall be subjected to inspection by the quarantine officers at the said stations.

All vessels, together with their cargoes, crews, passengers, and baggage, arriving at the Mississippi quarantine station from intertropical American and West Indian ports shall be subjected to thorough maritime sanitation, according to the following schedule:

First class.—Vessels arriving from non-infected ports.

Second class.—Vessels arriving from suspected ports.

Third class.—Vessels arriving from ports known to be infected.

Fourth class.—Vessels which, without regard to port of departure, are infected—that is to say, vessels which have yellow fever, cholera, or other contagious or infectious diseases on board at time of arrival, or have had same on voyage.

Vessels of the first class to be subjected to necessary maritime sanitation at the upper quarantine station, without detention of either vessels or persons longer than may be necessary to place such vessels in perfect sanitary condition.

Vessels engaged in the tropical fruit trade and coming from known

non-infected localities, and whose sanitary condition and health record are satisfactory, may be allowed to pass the quarantine station after inspection, subject, however, to such sanitary treatment and other measures as the board of health may prescribe.

Vessels of the second and third classes to undergo the same conditions, together with detention for observation for a period of five full days from hour of arrival in quarantine.

Vessels of the fourth class to be remanded to the lower quarantine station, there to undergo sanitation and detention of vessels and persons such length of time as the board of health may order.

The five days' detention, as above provided, shall apply to all ports of the Gulf of Mexico and the Caribbean Sea, exception being made in regard to vessels coming from ports south of the equator, whose period of detention shall be three days from time of disinfection.

All vessels arriving from Mediterranean or other ports known or suspected to be infected with cholera, or which may hereafter become infected, shall be subjected to maritime sanitation and such detention as the board of health may determine.

Vessels arriving from the above-named ports and places, and belonging to the second, third, or fourth class, as set forth in the foregoing schedule, shall not be allowed to pass the Rigolets or Atchafalaya quarantine stations, or other State quarantine stations which may hereafter be established, without having undergone a period of detention of forty days and thorough cleansing and disinfection.

*New York.*—The medical officer in charge of the Marine-Hospital Service reports that a seaman sick with small-pox from the steamship City of Augusta, a vessel plying between New York and Savannah, applied for hospital treatment on the 2d instant, and that he was transferred in the quarantine boat to the detention hospital, East River. The forecastle of the vessel has been thoroughly fumigated, the old bedding burned, sixteen of the crew have been vaccinated, and precautions have been taken to prevent the spread of the disease on shore.

*San Francisco.*—The secretary of the health department reports, under date of March 27, 1888, that "there have been 21 cases of small-pox here during this month, and 4 deaths. No cases have been reported since the 21st instant."

## THERAPEUTICAL NOTES.

**Ulexine,** an alkaloid obtained from the common gorse (*Ulex europæus*), has been made the subject of experimental studies by Bradford ("Jour. of Physiol.," viii, 2) and Pinet, a summary of which is given in the "Lancet" for February 4th. The drug seems to have a special action on the respiration, paralyzing the vagus somewhat like curare. It acts first as a stimulant and then as a depressor of the respiratory mechanism. Large doses produce paralysis of the motor nerves, preceded by increased excitability manifested by quivering movements apparently of peripheral origin. It increases the blood-pressure and acts as a diuretic, in which capacity it has been used with success (in doses which are not stated) in cases of dropsy from heart disease in University College Hospital.

**Ergot of Oats** has been used by Dr. Bousquet ("Marseille méd."; "Union méd.," Feb. 19, 1888) in three cases of puerperal hæmorrhage, four cases of uterine inertia without hæmorrhage, three cases of the metrorrhagia of young girls or of the menopause, and one case of cancer of the uterus. He reports that its action was as prompt and lasting as that of ergot of rye, and that it has the advantage of acting as a general excitant and restorative in cases of prostration from prolonged labor or copious loss of blood.

**Ipecac in Hæmoptysis.**—Bernabei ("Boll. del. sci. med. di Siena"; "Gazz. med. ital. Lombard.") feels confident of always being able to check phthisical hæmoptysis within a few hours by giving two grains of powdered ipecac every fifteen minutes.

**An Antiseptic Gargle.**—The "Union médicale" credits Muller with the following formula:

| | | |
|---|---|---|
| Thymol | 3½ | grains; |
| Benzoic acid | 45 | " |
| Tincture of eucalyptus | 180 | " |
| Water | 11,250 | " |

At bedtime the teeth are to be cleaned with powdered soap and a brush, and then the mouth can be rapidly sterilized by gargling for half a minute or a minute with the solution.

## ANSWERS TO CORRESPONDENTS.

*No. 172.*—We know the firm, and consider them perfectly trustworthy.

*No. 173.*—The institution is not to be commended; consequently we can not commend any operation that purports to be peculiar to it.

*No. 174.*—The *sirop d'ipécacuanha composé*, otherwise called *sirop de Desessart* (*syrupus de ipecacuanha compositus*), is made by macerating 30 parts of bruised ipecac and 100 parts of senna leaves in 750 parts of white wine for twelve hours; expressing and filtering; adding to the residue 30 parts of the tops of *Thymus serpyllum* and 125 parts of the petals of *Papaver rhœas*; pouring 3,000 parts of boiling water over the whole; infusing for six hours; expressing; adding to the liquid 100 parts of magnesium sulphate and 756 parts of orange-flower water; mixing the vinous and the aqueous products; and adding white sugar in the proportion of 190 parts to each 100 parts of the liquid, making a syrup by simple solution over a water-bath.

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**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

### AN ADDRESS ON PREDISPOSITION IN TUBERCULOSIS.*

*DELIVERED BEFORE THE SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.*

BY WILLIAM T. COUNCILMAN, M. D., BALTIMORE,
ASSOCIATE PROFESSOR OF PATHOLOGY IN THE JOHNS HOPKINS UNIVERSITY.

WHEN you honored me by the invitation to deliver this address, I hoped to prepare something which would be not only more worthy of the occasion, but at the same time an original contribution to medical literature. The limited time which was at my disposal has not enabled me to do this. I have thought that it would be interesting in this era of tuberculosis, when the infectious theory has gained almost general credence, to consider the question of predisposition. This question is one of the most important in the pathology of the infectious diseases, and in none is its influence apparently more marked than in tuberculosis. This predisposition to the disease was urged as one of the strongest grounds against the theory of its infectiousness. It was held that tuberculosis could not be an infectious disease, because only those who had inherited a certain anomaly of constitution acquired it.

Before directly taking up this question of predisposition, it seemed to me that it would not be amiss to mention briefly some of the newer ideas concerning especially the pathological anatomy of the disease—ideas which have come with the greater light that has been shed on the disease by the recognition of its infectiousness. In doing this I must apologize for repeating what to most of you is a well-known story. In this description I have taken more or less the pulmonary tuberculosis as the type, although it will fit the tuberculous lesions in general. We may now define tuberculosis as an infectious disease produced by the tubercle bacillus. Like many of the more chronic infectious diseases, the lesions produced by the bacilli do not present one unvarying form, but, as the result of their action, we may have a tissue produced of a more or less typical character, which appears both as distinctly circumscribed nodules (miliary tubercles) and as a more diffuse formation (diffuse tuberculous tissue). Further, the bacilli may cause inflammations with a cellular, fibrinous, or hæmorrhagic exudation. The most distinctive feature of the process (or rather what we have long been taught to consider the most distinctive feature), the miliary tubercle, does not always present the same histological structure. Neither the cells nor their arrangement in the tissue are always the same. The tubercles may vary in size from a nodule invisible to the naked eye up to the size of a pea, or even larger. They may be principally composed of large, pale epithelioid cells, with here and there a lymphoid cell between them, or these lymphoid cells may be the principal elements in the formation. There is often a well-marked reticulum between the cells, and, in addition to the epithelioid and lymphoid cells, giant cells are generally found, being mostly in the center of the nodule. Sometimes the nodule makes the impression of a distinct new formation of tissue, but most often appears to be simply a miliary focus of inflammation.

The same differences are seen in the tuberculous inflammations. These may be marked by exudations composed principally of large, pale epithelioid cells, or of cells identical with pus cells, or the exudation may be as typically fibrinous as that of croupous pneumonia. Sometimes red corpuscles are so abundant in the exudation as to give it a hæmorrhagic character. However different these various processes are when compared with one another, they have one point in common. Whatever the character of the exudation, it soon undergoes a form of degeneration which, though not confined to the tuberculous products, is found here more often than elsewhere, and occurs here under totally different conditions. This is the form of coagulation necrosis known as caseation, by means of which all tuberculous products finally become changed into a smooth homogeneous mass. If there is anything about the process which can be regarded as typical, it is not the presence of giant cells, nor of a special sort of tissue, but the tendency of all the products to undergo caseation. This coagulation necrosis is due partly to the absence of blood-vessels in the tuberculous products, but is more directly due to the action of the tubercle bacilli, for it occurs in nodules so small that nutrition could take place from the surrounding vessels.

That tuberculosis is an infectious disease, and that the tubercle bacilli are the infecting agents, are facts too well established to need further discussion. Probably the greatest advances in our knowledge of the disease that have been made since Koch's discovery of the bacillus have been as to the modes of infection. And this has been, not so much the question of the infection of the individual, but how further infection of the different tissues and organs takes place after the disease has established itself. It is especially to the work of Weigert that the most of our knowledge on this subject is due. We know now that the extent and character of the lesions produced are for the most part due to the number of bacilli which enter a part, and to the manner in which they enter. We have the acute miliary tuberculosis, presenting all the clinical features of an acute infectious disease, which is due to general blood-infection by large numbers of bacilli entering the blood-current; then the general disseminated tuberculosis, in which there is also a general infection of the blood (but the bacilli which enter the blood are fewer, or they enter it at intervals); then the tuberculous pneumonia, affecting larger or smaller portions of the lung parenchyma, and due to the aspiration of large numbers of bacilli furnished by a focus of the disease, usually a cavity, in some other part of the lung. The miliary tubercles are most probably due to a comparatively small number of bacilli carried to a part by means of the blood-vessels or lymph-vessels.

* At the meeting of April 4, 1888, held at the Academy of Medicine, Dr. Councilman's address took the place of the regular work of the society, constituting the first annual address. It is the society's intention to have, each year, an address or a course of lectures by some one who has become distinguished for original work in scientific medicine.

These are only some of the various lesions which may depend on the manner in which the bacilli enter a part and their number. The ways along which the bacilli can enter a part can be only three. They can enter it only by means of canals or ducts which penetrate it, or by the blood or lymphatic vessels. Infection of the individual can take place by means of the respiratory system, the alimentary canal, the genito-urinary tract, and the outer surface. Infection by the respiratory tract is the most common, and next to this infection by the alimentary canal, this being more common in children than in adults. The genito-urinary tract furnishes the route of infection in a much smaller number of cases, and a few instances have been known of infection from the outer surface of the body. It is not always easy to ascertain with certainty the primary lesion of the disease. This is often of so little moment anatomically, in comparison with the secondary lesions, that it may readily be overlooked or placed in the same category with these.

The epithelial covering of the surface of the body forms so perfect a protecting mantel that it is extremely improbable that infection of this ever takes place without a lesion. The bacilli may, however, enter the body by means of the alimentary canal without causing any lesion at the place of entry. This mode of infection is seen in the mesenteric phthisis of children, in which the mesenteric glands are the seat of an extensive tuberculous inflammation, often with no lesion of the intestine; or the bacilli may pass through the epithelium of the mouth or pharynx, and the first seat of the disease be in the cervical lymph glands. We know that the bacilli do pass through the epithelial covering of the small intestine, and in cases of intestinal tuberculosis the first formation of tubercles is in the lymphatic tissue beneath this. They may pass into the lymphatics without producing any lesions at the place of entry, and first make their presence known by a tuberculous inflammation of the glands. The anatomical structure of an organ must also influence the character and the extent of the tuberculous lesions produced in it. Thus the lungs, by means of the branching system of the bronchi into which the bacilli soon enter, favor the conveyance of the virus from one point to another more than the liver for example. Not only do the lungs favor a primary infection, but, when once the disease is established, further infection of other parts easily takes place.

It is possible that another point must be considered as having an influence on the character and extent of the lesions. There may be a difference in the virulence of the virus. That the various *vira* may undergo certain modifications, and that these in many instances may be produced artificially, is well known. The small-pox virus is changed by passing through the cow into the vaccine virus; the anthrax virus may have its virulence modified by cultivating it at high temperatures or in certain media. In many of the infectious diseases there seem to be differences in the virus. One epidemic of scarlet fever may cause a large mortality; in another all the cases may be very mild. Neither the manner of infection, the quantity and virulence of the virus, nor the anatomical structure of the tissues are alone or together capable of explaining all the differences which we find in the character of the tuberculous lesions and the course of the disease. The animal body can not be regarded as a fixed chemical compound on which the action of a given substance is followed by a fixed and definite result. This is seen more particularly in the infectious diseases, in which there is a struggle between the living virus and the cells of the tissue. The cells in one case offer a much greater resistance to the action of the virus than they do in another. There is greater resistance to primary infection in the first place, and when the disease has once been established the further infection is resisted step by step. The differences in the character of epidemics of acute infectious diseases is probably only to be explained by differences in the virulence of the virus, for we can not suppose that the resistance of the tissues of a large number of people could be at once increased, nor is the amount of virus which serves for infection greater in one case than the other. The fact that there is often a greater mortality in the cases at the beginning of an epidemic than at its termination may be explained by the fact that the most susceptible were first attacked, and finally only those are left who naturally have a greater resisting power. Of two children exposed to the same source of infection, one may have a severe type of scarlet fever and the other be scarcely affected.

There is no condition in which the effect of different degrees of resisting power is better seen than in the various forms of pulmonary phthisis, and this is in great part shown by the varying extent of connective-tissue formation. In one case we see a great deal of connective tissue formed around cavities, around areas of tuberculous pneumonia, and around miliary tubercles, by which certain limits are set to the advance of the disease, or at least its advance is retarded. In other cases scarcely anything of this is seen, and the disease takes the form of a rapidly advancing inflammation with caseation. Not only are these differences often seen in a single organ, but the tubercles all over the body sometimes show a marked tendency to connective-tissue formation. Even in the clinical study of the disease we are aware of the differences in its course, which can only be explained by differences in the resisting power. But it is especially at the autopsy-table that opportunity is given for the study of these different effects of the tubercle virus. Many cases are met with in which the disease may be regarded as healed, or its course for the time arrested. Every pathological anatomist is well acquainted with the cases in which a circumscribed induration of the apices of the lungs is found with cicatricial contraction of the pleura over it, and which on section often shows calcareous masses surrounded by firm indurated tissue. On careful examination of such tissue, either with the naked eye or with the microscope, we generally find, either in the indurated tissue itself or in the lung tissue immediately adjoining it, small, yellowish nodules presenting the gross character of miliary tubercles, which on microscopic examination are shown to be such. In these cases there may be no evidences of tuberculosis, either elsewhere in the lungs or in the body in general, except a slight caseation, or more often calcification, of the bronchial glands. This affection of the bronchial glands shows us that the power of infection of the bacilli

extended beyond the primary lesion. The same thing is true of tuberculosis in other parts of the body. In the mesenteric glands we often find no trace of it other than a slight caseation to which a deposit of lime-salts has given a mortar-like consistence, and which is surrounded by dense masses of connective tissue. In many of these cases it is difficult to say whether this condition of the glands is due to an old tuberculosis or to a past attack of typhoid. In the tuberculous glands, however, the caseation is more marked. The more closely one examines the cadaver for tuberculosis, the more evidence one finds of its prevalence, until the old saying, that in the end every one has a little tuberculosis, seems to have a certain amount of truth in it.

There are few ideas in medicine more firmly rooted than that there exists in all cases of tuberculosis a special predisposition of the tissue for the disease; this predisposition we can only regard as some condition of the cells or fluids of the body which favors the growth of the bacillus. That the soil in which the bacteria grow does exert some influence on their growth can not be doubted. The cases we have just been speaking of—those cases which have been designated *latent tuberculosis*—are examples of the disease on, for it, unfavorable soil. They are hardly to be explained under any other theory than that there is in these cases some condition of the tissues by which a greater resistance to the growth of the bacilli is offered. It is probable that in all cases of lung infection the quantity of bacilli under whose influence the disease begins is not very large. We are not able to trace in these cases the very beginning of the infection, but we can study the secondary infection of other parts of the lungs in its incipiency, the bacilli being conveyed there by the same route as in the primary infection, along the bronchial tubes. The number of bacilli to whose influence these secondary foci of infection are due is probably much greater than in the first infection. We can scarcely imagine any circumstances, assuming the bacilli to be contained in the inspired air and so taken into the lungs, in which many bacilli could be contained at once in the respired air. It is more than probable that the first focus of the disease is due to very few bacilli, possibly not more than one or two. It is also probable that most of us at some period of our lives have had the bacilli in our air-passages. Why in the one case the bacilli do not exert any action at all, and in another case do enter the tissue, multiply, and produce the disease, can only be explained by differences in the tissues. An idea that is more or less prevalent—namely, that the bacilli find other pathological conditions in the lungs which afford them suitable conditions for their settlement and growth, that there is first a bronchitis or a pneumonia which becomes tuberculous—has no foundation in fact. In the vast majority of cases the bronchitis or pneumonia which is often the first physical sign of any trouble in the lungs, and which afterward is followed by unmistakable signs of phthisis, is in the beginning tuberculous, and does not have the disease ingrafted on it. More than this, in chronic emphysema, that disease of the lung in which bronchitis is almost constantly present, we rarely have an accompanying tuberculosis. Even where the bacilli do find conditions favorable to their growth there is the greatest difference in the effect produced. In one case but a circumscribed portion of the lung is affected, in another the disease spreads almost without limit.

A close study of the tuberculous lesions must impress us with these differences in the character of the lesions, and many of these are due to the various degrees of resistance of the tissue. A most important point in this connection is whether this condition of the tissues, this lack of resisting power which allows the infection in the first place and resists its advance very feebly, is something which is peculiar to the tuberculous individual which he has acquired by inheritance, or whether it is a general weakness of the tissues, a diminished degree of vitality in the cells, if we choose to put it in that way, which may be either transmitted by inheritance or acquired. That this predisposition to the disease is inherited is an opinion firmly rooted in the minds of most practitioners. All textbooks, in discussing the ætiology of the disease, lay great stress on this inherited predisposition. It seems to be a fact that is based upon common experience. It is so firmly impressed on the mind that in the examination of a patient in whom the disease is suspected the first question asked has reference to his family history. And few facts are better established than that in the vast majority of tuberculous individuals a family history of the disease may be obtained. We are convinced, however, that the importance of this family history as showing that some special condition of the tissues, something analogous to a peculiarity of feature or expression, is transmitted, has been very greatly overestimated. In the first place, it must be remembered how common the disease is. If the general statement that one seventh of the human race are victims to it be accepted as correct, when we except those countries where the disease is rare—certainly rare in comparison with the countries in what we may call the tuberculous belt—then where the disease is most common the number of its victims must be more than one seventh. This is only counting the deaths from the disease, and not the cases, probably fully as frequent in number as the deaths, where the disease is recovered from or its progress arrested. We do not think it would be unsafe to say that in those lands where tuberculosis is most common forty per cent. of the people have at some time in their lives had some tuberculosis—in many cases, however, a very slight attack.

If we suppose that there is some special peculiarity of the disease transmitted, a tuberculous constitution as it were, it can not be supposed that it is only transmitted by those who die of the disease. Those who recover, or who, having the disease only in a very slow latent form, die of some intercurrent affection, must also transmit this disposition. So that even the law of chance would favor a family history, and when the family history extends beyond the parents of the individual and takes in his remote and collateral ancestors, it must be rare to find a patient who has not had some member of his family affected. The disease is often spoken of as skipping a generation. We might also find on careful inquiry that some ancestor of the tuberculous individual had a certain color of hair or a certain conformation of nose, and might

in some way connect these with the disease. It is also certain that this predisposition or lack of resistance can be acquired. It is a matter of common experience that all conditions of life which produce a low state of vitality in the system predispose to tuberculosis. Among these causes must be mentioned insufficient food, living in dark, ill-ventilated, and crowded apartments, constant exposure, and excesses of various sorts. Occupations which bring a number of people together in factories are attended with a higher degree of mortality than more solitary occupations. The mortality from the disease in the chief industrial cities of Switzerland is much greater than in the others, although the inhabitants are in general better off. All the conditions which we have mentioned as producing this lack of resistance are combined with other circumstances which in a marked degree favor the infection. No condition of life, the crowding together of prisoners, nor the insufficient food, nor the exposure, will of itself produce the disease, although the low vitality of the tissues will favor the action of the virus when it is once introduced. The high tuberculous statistics of almshouses, prisons, and factories can in great part be explained by the fact that in the atmosphere of such places there are many more tubercle bacilli than in the outside air. Among a lot of prisoners and factory operatives there must be a number of cases of phthisis with cough and expectoration. The bacilli from the dried sputum form a part of the inspired dust of such places. The oft-cited case of the Brompton Hospital, in which, notwithstanding the number of tuberculous patients, there were no cases of infection among the house staff and attendants, only shows that the general health of the attendants must have been excellent, or that the hygienic regulations of the place were good. It forms a remarkable exception to what is observed in hospitals elsewhere, particularly those in Germany.

There is another fact that must be considered in judging of the predisposition. A condition of malnutrition which seems to be the forerunner of the disease is very often directly caused by the disease. Too much stress can not be laid on the fact that a pulmonary tuberculosis must be rather far advanced before physical signs which are absolutely diagnostic of the disease can be elicited even by the most skilled diagnostician. The earliest, most important, and only certain diagnostic sign of the disease, the presence of the tubercle bacilli in the sputum, is availed of by very few practitioners, and without this what we should regard at the autopsy-table as a well-marked case of tuberculosis might be overlooked or mistaken for a simple bronchitis. While we do not doubt that weak and ill-nourished individuals may be less resistant to infection than the strong and robust, it must not be forgotten that nothing so soon produces this condition as tuberculosis. The fact that a patient has lost flesh is consciously or not taken into consideration by the clinician in his interpretation of physical signs. The children of tuberculous parents are apt to be less vigorous, just as the children of weak parents generally are, and may be less resistant to the disease than healthy children, but that any special weakness is transmitted is doubtful. It seems to us that this difference in resistance is shown better by the course of the disease after infection takes place than in the infection. Much better ground can be adduced in favor of the predisposition from the anatomical study of the disease than from the clinical. We constantly find at the autopsy-table cases in which a latent tuberculosis of the apices of the lungs or of a lymph-gland suddenly breaks through the limits which are seemingly set to its advance and becomes generalized. Are these cases only to be explained by a lowering of the at first high resistance of the tissues? In many cases this is almost certainly so. These are the cases in which a typhoid fever or some other infectious disease is followed in a few months by a rapid tuberculosis, and at the autopsy we find that a tuberculous mesenteric gland has broken through into the peritonæum, or that a circumscribed tuberculosis of the apex of the lung has rapidly extended, or that a focus somewhere has broken into a vein leading to a miliary tuberculosis. Such cases are more often seen in children, following their infectious diseases, than in adults. Infection seems to take place more readily after certain diseases, especially after measles. It is also probable that in many cases a high resistance to the disease in the first instance may be gradually overcome.

We find more indication of tissue resistance in the primary focus of the disease than in the secondary foci, although even here it must be borne in mind that we have to do with a gradually increasing amount of virus, and, while the tissue offered some resistance to the small amount of virus on which the first lesion depended, when this becomes greater in amount the resistance may be almost at an end. We know that animals which, under ordinary circumstances, are almost immune to the disease, no longer have this immunity when the amount of virus used for inoculation is a large one. Dogs, which naturally do not acquire the disease and can resist inoculation with a small amount of virus, have this resistance overcome when a larger amount is used. The resistance to the disease can also be increased. The cases are happily not rare where patients with the disease well marked have entirely recovered after change of air and of the habits of life. We can not suppose that mountain air can exert any lethal influence on the organisms themselves, but, in placing the individual under better hygienic relations, we raise the resisting power of his tissues.

In considering the influence that tuberculous parents transmit to their children, we must remember that opportunities for infection are greater in a family in which there is a tuberculous individual, especially if that individual is the child's mother. Such children are exposed to infection from the hour of their birth. They are, in the first place, exposed to infection from their mother's milk. We know that bacilli may be contained in the milk of tuberculous cows, even when the gland or the udder is free from tuberculosis. Kissing of the child by a mother whose sputum contains bacilli is another and probably frequent source of infection. Frequently no great care is exercised in the expectoration of the tuberculous individual, and particles of the dried sputum become mixed with the atmospheric air. In addition to this, the child has the habit of putting everything which he sees into his mouth, and thus runs risk of infection.

Recently another theory has been brought prominently forward. This is that many cases which are apparently due to an inherited tuberculous diathesis are really cases in which, not the diathesis, but the disease is inherited. It has seemed to us that there are many tuberculous affections which are best explained, or probably only to be explained, on this assumption. In the cases of primary tuberculous lesions of the bones in children we can scarcely understand, from our present knowledge of the disease, how the infection could take place. The tubercle bacilli could only be conveyed to this tissue by the blood, and how, in the absence of other lesions of the disease, can the bacilli get into the blood? In children the bacilli can only enter the body by the respiratory or the digestive tract, or by lesions of the integument. We can understand how they could get into the lymphatics, and be conveyed to the glands, without producing lesions at the place of entry, but it would be a far more difficult thing for them to get into the blood. In case they entered the blood by passing through the entire lymphatic system, they would have to pass through the lymph-glands. Even apart from the fact of the difficulty of any solid body like a bacillus passing through the gland, there is no tissue in the body which apparently offers a more favorable soil for the development of the bacilli, and they would be most apt to develop here. These cases of tuberculosis of the bone are primary, as is shown by the frequency with which recovery takes place after appropriate treatment, and sometimes without any treatment. Of course, it is always possible that there may be somewhere else in the body, possibly in a lymph-gland or in the lung, a small focus of latent tuberculosis which may be the source of the bacilli, but the frequency of recovery speaks against this. That these tuberculous bone lesions are preceded by trauma is believed by most surgeons. Of course, it is known that there is nothing so uncertain as traumatic histories; a diligent inquiry made by a biased inquirer can get a traumatic history for almost every surgical affection, but in some cases the connection between the disease and the trauma is clear and definite. If we, then, suppose that these cases are due to the accidental entry of single bacilli into the blood, and that they find in the inflammatory tissue caused by the trauma proper conditions for growth, then there must be a rather remarkable conjunction of circumstances which would bring the bacilli to a certain point just when they would find there the most suitable conditions for their growth. The ways for them to get into the blood are so difficult and uncertain that we can not suppose that many could enter at one time, or that this takes place frequently. It is true that, should any thus get into the circulation, the bone-marrow is one of the places where some of them would probably lodge; but, even if there were a dozen bacilli in the circulation, the chances would be all against several or one lodging in some circumscribed part of a bone. And we can not suppose that they could circulate for an indefinite time in the blood.

The liver and spleen are as susceptible to the influence of the tubercle bacilli as any other organs, and offer, possibly, more favorable anatomical conditions for the retention of the virus from the blood than the bones do. We know that, almost without exception, miliary tubercles are found in the liver when there is any degree of pulmonary tuberculosis. Isolated tubercles are also found in the spleen, in the kidneys, and elsewhere, being caused by the accidental entry of a few bacilli into the circulation, possibly from the formation of tubercles in the small blood-vessels, or in some other way. Yet who of us has ever seen a primary tuberculosis of these organs? although, if the generally assumed way of bone infection is correct, a primary tuberculosis of the liver, spleen, and kidney should be just as frequent as of the bones. It is true that these organs are not exposed to the supposed favoring influence of trauma, but, if this inflammatory tissue, which is supposed in an indefinite sort of way to be present after slight injuries and of whose character and extent in these cases we have no positive knowledge, is followed so often by tuberculosis, why do we not have primary tuberculosis developing oftener in granulation tissue everywhere, and especially in the bone granulations after fracture?

The theory of the direct inheritance of the disease in these cases gives us another, and we think a better, explanation. In accordance with this we must suppose that the bacilli pass from the mother into the circulation of the fœtus, or that the disease is directly transmitted to the fœtus by the infected father without any affection of the mother. The bacilli may be deposited in the organs of the fœtus and may produce some changes here which are of little importance. This is a favorite locality for such a congenital infection. There would then be a latent tuberculosis of such organs, and, like similar cases in the adult, this might last for a considerable time without doing any harm, but is always ready when the conditions are more favorable to extend its growth. *A priori* there is no reason why the disease should not be inherited. It would make the analogy between it and syphilis much stronger, and it would be rather singular if tuberculosis, presenting as it does so many points of similarity to syphilis, should differ from it so broadly in the matter of inheritance. These cases would belong to the same category as the syphilis hereditaria tarda. It is improbable that the tubercle bacilli should remain in the tissues without producing any lesions. Though syphilis has long been known to be inherited, it is only within a few years that we have learned to recognize in certain lesions of the bones the undoubted evidence of its presence in the fœtus. It is possible that the lesions of the inherited bone tuberculosis may differ in some respects from the ordinary lesions of the disease, and that we may find in the bones lesions as constant and characteristic as those which Wegner has pointed out in syphilis. Against the general adoption of this theory to explain the primary tuberculosis of the bones cases of its occurrence in middle age might be cited. We have seen three cases of primary tuberculosis of the vertebræ, all in negroes, in which the ages were thirty-six, thirty-nine, and forty-five. It would seem improbable that the inherited disease should remain latent for so long a time, but cases of congenital syphilis have been known to first appear later than this.

Aside from these cases of bone tuberculosis, which, to say the least, make it appear very probable that the disease

may be inherited, there have been several instances in which the fœtus of a tuberculous mother has been infected. There is a possibility that many of these cases may have been syphilitic, for the lesions of the two diseases may readily be confounded. Charrin has reported a case of abdominal phthisis in a fœtus, but no examination for bacilli was made. There is, however, one undoubted case. Johne found a tuberculosis of the lungs in an eight-months-old calf fœtus, and in this case the bacilli were present. This one piece of positive evidence that the disease may be inherited is worth all the negative. Numerous cases of undoubted tuberculosis have been seen in children in whom the period after birth has been too short to make an extra-uterine infection probable. Lannelongue gives the statistics of 1,005 cases of external tuberculosis in persons under the age of fifteen; 87 of these were under one year, and 6 were under nine weeks. The statistics which Orth has collected from the abattoirs in Berlin are not so favorable for the inheritance theory, but they do not exclude it. From the 1st of April, 1885, to the same time in 1886, 78,733 calves were killed, and among these only 7 were found to be tuberculous. Of the 7, 1 was under four weeks and 1 under six weeks, ages which would lead one to think rather of intra-uterine than extra-uterine infection. Landouzy and Martin have succeeded in producing tuberculosis in a guinea-pig by inoculating it with the lung of a fœtus from a tuberculous mother. Their experiments, however, were repeated by Wolff with negative results. Jani has investigated the tissues of a five-months fœtus whose mother died of acute miliary tuberculosis without finding any bacilli. To any one acquainted with the difficulties of finding isolated bacilli in tissues this should not seem astonishing. Even if a few were present in every organ, it would have been nothing more than the merest chance if he had found them.

Various attempts have been made to find some condition of the body which could be pointed out as the mark of the tuberculous diathesis. Freund has called attention to an early calcification of the first rib, in consequence of which the mobility of the thorax is much impaired, and has attempted to show the connection between such a condition and tuberculosis of the lungs. Others have sought the mark of the diathesis in the so-called paralytic thorax caused by atrophy of the respiratory muscles, a condition that is more often indicative of phthisis than of a predisposition to it. Lebert has called attention to the frequency with which narrowing of the pulmonary aorta is found in phthisis. Others have seen the mark of the diathesis in an indefinite sickliness, a disposition to take cold, and to inflammatory affections of the mucous membranes. Some regard the disease as especially frequent in those of the lymphatic habit, others find it most often in the sanguineous. None of these views have found any general acceptance.

Some conditions of the circulatory system seem to oppose the disease. Tuberculosis is rather rarely associated with those forms of cardiac disease in which there is mitral regurgitation. Orth explains this by supposing that this condition of the circulation makes all parts of the lungs more hyperæmic. He supposes that the anæmia of the apices of the lungs especially favors the location of the disease in this part. We have never seen any reason to believe that the apices of the lungs were more anæmic than any other parts; besides this, tuberculosis of the lungs is as uncommon in emphysema as in mitral regurgitation, and pulmonary emphysema is hardly a disease which can be regarded as causing hyperæmia of the lungs.

Support has been found for the belief in a special inherited tuberculous diathesis by comparing this to the well-known inheritance of hæmophilia. There is no analogy between the cases. In hæmophilia there is no inherited predisposition to the disease, but the disease itself, which probably consists in some alteration of the blood-vessels, is inherited.

To the idea that there is some condition of the tissues which in the one case favors, in the other resists, the action of the tubercle virus, the objection has been made that there is no analogy for this in the lower animals. Different rabbits or guinea-pigs inoculated in the same way and with the same amount of tubercle virus die in about the same time, and the lesions are the same. But these animals are much more susceptible to the disease; for them the tubercle virus is as potent probably as the virus of the plague is for man, and the question of resistance does not come in. In the bovine tuberculosis, however, we find anatomically the same differences in the lesions, and the same evidences of resistance that we find in man.

It seems to us that we have to suppose that there is some special condition of the tissues in consequence of which the resistance to the action of the tubercle bacilli differs. This is shown not only in the greater tendency of certain individuals to primary infection, but especially in the course of the disease after primary infection. It is uncertain whether this lack of resistance lies in some general weakness of the tissues or is the result of some special condition, although most facts speak in favor of its having no special character. It may be either inherited or acquired. There is much that favors the theory that tuberculosis is more often directly inherited than most suppose.

## Original Communications.

### ON CYSTOSCOPY,

### AND THE NEW CYSTOSCOPE OF NITZE AND LEITER.

*WITH A DEMONSTRATION OF THE SAME.**

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Mr. Chairman and Gentlemen: The two new cystoscopes of Dr. Max Nitze and Mr. Josef Leiter are the improved forms of an instrument known to the medical world since the year 1879. It was formerly called the Bruck-Nitze-Leiter or Nitze-Leiter cystoscope.

Bruck, a German dentist of Breslau, Silesia, was the

* Read before the Section in Surgery of the New York Academy of Medicine, April 9, 1888.

first who, in 1857, used platinum wire heated to whiteness for illumination of parts of the body. He tried to accomplish this by making use of the diaphanic qualities of the tissues. To examine the bladder he introduced a strong light, the white-hot platinum wire, into the rectum and a tube *per urethram* into the bladder. Through the latter tube he then inspected the bladder and its adjacent parts. Twenty years later Dr. Max Nitze proposed to introduce the white-hot platinum wire directly into the cavity or canal to be examined. He designed and constructed various instruments with which he intended to inspect more closely the urethra, bladder, stomach, etc., the two latter organs through a telescope situated in a central cavity forming the axis of the instrument.

But these instruments were very defective yet. They were improved and made available for general use by the patience and perseverance of Leiter, a well-known instrument-maker of Vienna, after many months of expensive and troublesome experiments. On the 9th of May, 1879, the cysto-urethroscope was presented to the Society of Physicians of Vienna by Dr. Nitze.*

There is no doubt that Dr. Nitze is the inventor of the urethro-cystoscope, and that the medical profession is indebted to him for his continuous efforts, extending over more than twelve years, to improve the instruments. But at the same time we must appreciate the ingenious work of Mr. Leiter. He also deserves that his name be for ever connected with these electric endoscopes.

The cystoscope (Fig. 1), then, consists of a silver tube of the shape of a catheter, in the short beak of which a platinum wire is fastened. The latter is made incandescent by means of an electric current which passes through it, and then darts its rays upon the wall of the bladder through an oval window in the concavity of the beak, covered with transparent quartz. To convey the current of electricity to the platinum an insulated wire runs through the whole length of the shank; the metal of the tube forms

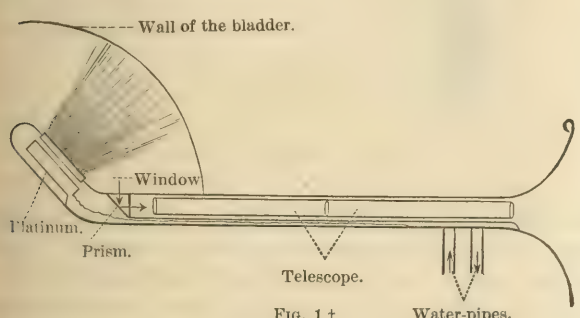



Fig. 1.†

the connection with the opposite pole. The platinum wire is surrounded by a combination of pipes through which a current of cold water runs, to keep the heated instrument perfectly cool. They measure only one millimetre and a half in diameter and pass through the whole length of the sound, entering at its collar. According to Nitze's design, a telescope is introduced into the shank of the cystoscope, as above mentioned. It enlarges and magnifies the spot coming into sight. Without this telescope we should not see much more at the time than a spot of about the size of a pea; with it we are enabled to inspect a portion as large as a silver dollar, and even more.

At the junction of beak and shank corresponding to the concave side a rectangular prism is cemented in, the hypotenuse-plane of which acts as a mirror on account of the total reflection of the rays. Thus a diminished, inverted real picture arises in the shank of that wall of the bladder which is situated at a right angle to the longitudinal axis of the instrument and opposite the prism. It is again inverted by means of the lenses of the telescope and thrown to the outer end of it, where the examining person looks at the now upright picture through the magnifying ocular of the telescope. At the middle of the upper circumference of the funnel-shaped handle a small knob is soldered. It enables us to be permanently informed to which side the beak points.

If the fundus of the bladder is to be inspected with this instrument it must be turned 180° and its handle deeply depressed between the thighs of the patient, the latter being

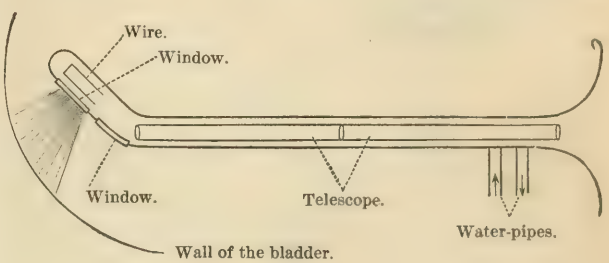



Fig. 2.

in the recumbent (lithotomy) position, the best for examination with the cystoscope. This manipulation may sometimes be very painful. To avoid this, a second instrument (Fig. 2) is made with the window for the incandescent platinum on the convex side of the beak. There is another window at the end of the straight tube through which the observer looks with the telescope. Of course there is no prism.

In using the original cystoscope there were needed, besides a Bunsen's battery with a special fluid, a rheostat, to give the current with the greatest subtileness of the necessary strength in each case, and a reservoir containing about two or three gallons of cold water. These accessory apparatuses complicated the instrument very much and made it very expensive, in consequence of which cystoscopy was very rarely resorted to. The new instrument was only bought by some larger clinical institutions and hospitals and used by a few specialists and surgeons who take interest in investigation of diseases of the bladder, such as Nitze, v. Dittel, Nicoladoni, Ultzmann, Sir Henry Thompson, and the late Dr. Maas, professor of surgery in the university of Würzburg, Bavaria. They all unanimously and repeatedly praised the excellent results of inspecting the bladder.

The enormous advance in electro-technique made in the last few years also improved the cystoscope. Edison's lamps

* "Wiener med. Wochenschrift," 1879, No. 24, and "Wiener med. Presse," 1879, No. 26.

† Instead of the wire loop at the end of the instrument there should be a straight wire.

of a very small caliber, so-called mignon-lamps, well known to you all, took the place of the platinum wire and did away with the many accessory apparatuses, especially with the water-pipes. The new cystoscope is very handy and not expensive.

That the two men who invented and constructed the original instrument are at variance in regard to the priority of the improvements may be immaterial to us. We derive from the controversy—that even found its way into Dr. Nitze's newest and lucid essay, "Beiträge zur Endoskopie der männlichen Harnblase"*—two cystoscopes, made in accordance with the same principle and varying only in some trifles. It seems that both are equally good and useful and of the same price ($18 without duty). Leiter's cystoscope shows the old pattern with the improvements mentioned. A key near the handle can be made to break or make the

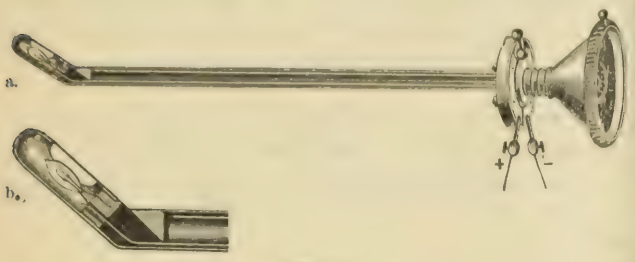



Fig. 3.

current by turning it to the right or left upon or from an ivory plate. The shank of the instrument is somewhat short; its telescope diminishes the part in view a trifle. Why it does not show it in its normal size I do not know. Nitze puts the mignon-lamp into the end of the beak and does not protect it with transparent quartz. He says that it is not necessary, and he is thus enabled to use lamps of a larger

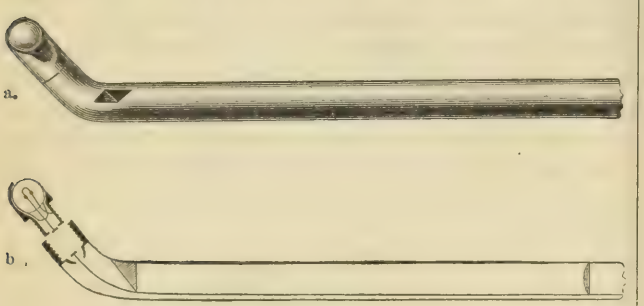



Fig. 4.

size and therefore a brighter light. His telescope magnifies. The shank is an inch longer than that of Leiter's instrument, the beak a trifle shorter. (The wires of the battery are connected with the so-called "tongs" that are attached to two isolated metal rings at the collar of the instrument. A slide makes and breaks the current.) Nitze constructed two more cystoscopes for the thorough and easy inspection of the fundus of the bladder and of the internal orifice of the urethra with the surrounding portions of the bladder, and especially of a part of the prostate. In these the prism is situated in the beak of the sound close to the mignon-lamp. In the first (the cystoscope for the fundus), the lamp and prism face the convex side of the beak; in the second

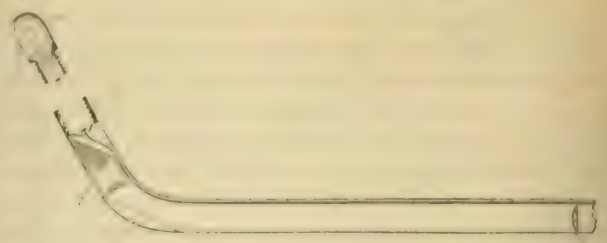


Fig. 5.

(for the internal orifice of the urethra), the concave side. The picture arising, after having passed a system of two strong convex lenses in the beak, is reflected from a mirror fastened at the curvature of the instrument. Another lens in the middle of the shank throws the picture to the outer end, where the examining person again looks at it through the magnifying ocular. Both certainly are very important instruments.

On account of the differences named, Nitze alleges superiority for his cystoscope. Nevertheless, I first sent for Leiter's, because he makes use of the mignon-lamps also for urethroscopy in a very practical manner. To be sure, a kero-

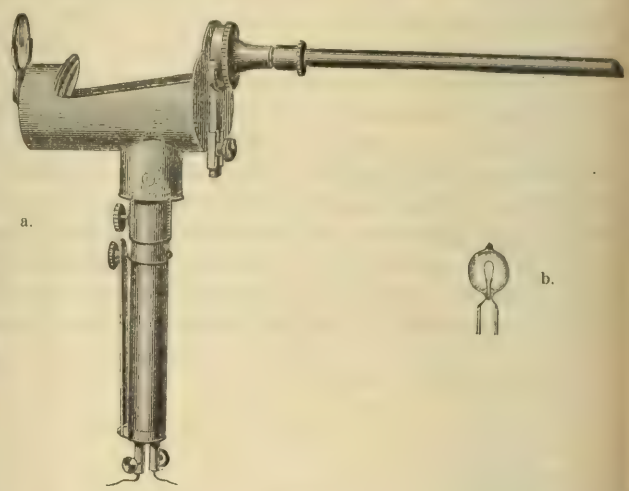



Fig. 6.

sene-lamp with one or a few burners or a gas-lamp gives sufficient light to illuminate the urethra by means of a head-mirror through Grünfeld's or Klotz's urethral endoscopes; but it is undoubtedly an advantage to have an even brighter light in a handle that is easily attached to the endoscope after it has been introduced, and can readily follow the motions of the patient. It also seems that it is just as handy as the former patterns after some practice.

On account of the possibility of using the same electroscope, only with different head-pieces, for rhinoscopy, laryngoscopy, œsophagoscopy, otoscopy, etc., v. Dittel called it "pan-electroscope." I shall also demonstrate it hereafter. A thorough description of these instruments—also of the new gastroscope, which illuminates portions of the wall of the stomach as large as the palm of the hand—can

* Langenbeck's "Archiv für klinische Chirurgie," vol. xxxvi, 3, p. 661.

be found in J. Leiter's separate edition of his catalogue of surgical instruments, Vienna, 1887.

For the generation of the electric current I ordered the battery designed by Leiter, too. Nevertheless, any electric battery used for galvano-caustic purposes will light the bow of carbonized vegetable fiber. But with Leiter's battery we are able to regulate the strength of the current with great ease by millimetres. He slowly dips the elements into the fluid of pure chromic acid, sulphuric acid, and water by means of a screw and winch, thus taking care to reach exactly the strength of the current that is needed to light the bow sufficiently without destroying it. Should this happen, however, the mignon-lamp is very easily replaced by a new one. I have been using the same and first lamp for the last ten weeks. It is worth mentioning that the six small elements can be converted without trouble into one very powerful, and then be used for galvano-caustic purposes. P. Hartwig, an instrument-maker of Berlin, who makes Nitze's cystoscope, sells an electric battery constructed exactly after the same principle.

I received Nitze's cystoscope and the battery only this afternoon, and so can not say much more about the battery at present. But, according to information I got from Dr. Nitze a few days ago, it seems to work well likewise.

In using the cystoscope we put its beak into a glass or bowl under water (the above-mentioned key touching the metal of course), and then slowly turn the winch until the lamp gives a constant and bright light. Then we break the current by bringing the key in contact with the ivory plate, dip the instrument into glycerin (vaseline would dim the window and prism), and introduce it into the bladder. This manipulation is just as easily performed as the introduction of a simple catheter. Before we apply the instrument, the bladder must be washed, provided the urine is bloody or cloudy with mucus, and then be partially distended with from five to six ounces of clear water. If the urine is quite clear, no preliminary washing is necessary. The water cools the heated beak without getting warmer itself. As soon as we feel, after the introduction, that the beak moves freely in the bladder, we light the lamp again by simply turning the key to the left, and are now able to inspect the bladder in perfect daylight.

The advance, Mr. Chairman, that will result from this simpler and more convenient cystoscope for the diagnosis and treatment of diseases of the bladder is great and easy to see. There is no doubt that cystoscopy, this new method of ocular inspection of the interior surface of the bladder, "has as great importance for the diagnosis of diseases of the bladder as laryngoscopy has for those of the larynx" (Nitze).

I should here like to say that I had studied this chapter carefully and with great interest for many months, when Nitze's treatise, mentioned above, the best and most complete we have on cystoscopy in literature, was published. It is rather difficult now to bring out anything new on this subject. Nitze leaves hardly anything unsaid that could be thought of only in regard to the future progress in diagnosis and treatment with the help of the cystoscope. I follow him in some of my further explanations.

Before giving you a summary of this advance, I must mention the conditions that have to be fulfilled if the endoscopical examination of the bladder is to be successfully made. I just said "advance." I should better say "*future* advance" that will be surely made in the diagnosis of obscure diseases of the bladder with the help of the cystoscope, and that not only by the specialist, but by the general practitioner also.

There are three conditions:

1. The caliber of the urethra must be sufficiently large to allow of the passing of the cystoscope (No. 23 French).

2. There must be sufficient capacity of the bladder. Nitze usually injects five ounces, a quantity that can be retained in nearly every instance. To get an easier view of the upper region he adds some air. The bubbles can be seen very distinctly with the cystoscope.

3. We must be able to have a transparent fluid in the bladder, at least during the time of examination. It is important to know, however, that the water does not need to be perfectly clear. The view we get when the water is a little muddy is still quite satisfactory. In cases of hæmaturia originating in the bladder, it will be advisable to postpone the examination until the flow of blood has ceased.

Then, also, I should like to tell you, Mr. Chairman and gentlemen, what is to be seen in the healthy bladder before we inspect the morbid one. Of course, the picture is more monotonous than, for instance, that of the larynx, but it is very interesting nevertheless.

The normal mucous membrane of the bladder mostly has a pale, yellowish-red coloring in bright illumination, more rarely a pink one. If the prism is brought near enough, we perceive in it fine ramifications of small blood-vessels, similar to those that we see on the retina with the ophthalmoscope. Furthermore, there come into view irregular projections (the innermost layer of the detrusor muscles) between flat, but sometimes very deep, holes. The latter ones are "acquired diverticula," which are found, according to Nitze, much oftener than is usually believed. The other class of diverticula—the congenital ones—will be seen when the mucous membrane has its normal smoothness and only shows slight elevations. At last the orifices of the ureters are conspicuous. In most cases they can be seen with great ease. I myself have been able to see them very plainly in all the cases I have thus far examined. They appear as long, slit-formed notches in the middle of an oblong protuberance, or as small, round holes. In watching more closely the orifice of either of the ureters for some time, I have easily been able to see how the urine entered the bladder at intervals of from thirty to sixty seconds. I have been enabled to do so by the whirls which the urine—viz., a solution of salts—produced in the water that had been injected into the bladder. We can see the same arise at any time when we pour urine into a test-tube filled with water. On the same occasion I observed quite an interesting physiological phenomenon, which is not mentioned, as far as I have seen, in any one of our hand-books on physiology. You all know that the urine enters the bladder at intervals with a rush, and so much so that it forms a real little fountain when the bladder is filled with air, or opened by incision. The urine is pressed forward,

first, by the *vis a tergo*; second, by the difference in pressure between the pelvis of the kidney and the cavity of the bladder; and, third, by the peristaltic contractions of the ureteric muscles. Now, as there are in the wall of the ureter more muscular fibers running longitudinally than transversely,* the orifice of the ureter, and with it the elevation of the mucous membrane in which it ends, is drawn *inward* at the end of each conveyance of urine into the bladder, the orifice and its nearest adjacent parts then taking the shape of a funnel. After a few seconds it returns to its former position. That this occurs each time and is a physiological phenomenon I have fully convinced myself in two cases.

Now, what is the advance in the knowledge of the different diseases of the bladder which cystoscopy has accomplished, in addition to what we learn by the examination of the urine and of the interior of the bladder by means of sounds and the combined rectal palpation?

First, we are able to decide with absolute certainty whether the bladder is healthy or morbid.

Every one of you, gentlemen, who has been unable to make out in a certain case of urinary trouble the location of the disease, after a very careful chemical and microscopical analysis of the urine, and exhausting all the older methods of examination, will appreciate the great value of such a surety.

"The negative result is here fully equivalent to the positive one." For, if it is proved that the seat of the disease is *not* in the bladder, then it must be looked for somewhere else, especially in the upper urinary passages, most probably in the kidneys.

The importance of this fact—namely, to be able to decide whether the bladder is healthy or morbid—for a diagnosis *per exclusionem* is evident. Only a few days ago I had an interesting experience in that respect. A young man, twenty-five years of age, was sent to me by a colleague for cystoscopy on account of an obscure trouble of his urinary system. The patient had had gonorrhœa twice, the last time fifteen months ago. It was complicated with catarrh of the neck of the bladder. Lately he had been treated with local applications, made with the help of the endoscope; but he never was relieved. For about seven months there had been a constant painful feeling of pressure in the region of the bladder, sometimes retention for a whole day, sudden stop in the flow of urine, and no relief when the bladder was emptied. Now and then the last few drops were mixed with blood. No symptoms of catarrh, no tenesmus. The urine contained a trace of albumin. Specific gravity, 1·016. The patient was a good deal emaciated, unable to work, and depressed. The early history revealed that he had masturbated more or less for many years when he was a boy.

On inspecting the cavity of the bladder with the cystoscope, I could only detect a very dense network of enlarged small blood-vessels, "a marked hyperæmia" of the trigonum Lieutaudii; everything else was in a perfectly normal condition.

Whether this hyperæmia, undoubtedly a continuation of the catarrh of the neck of the bladder, is the cause of all trouble, I don't venture to decide. Perhaps it is. If so, one or more instillations of a few drops of a five- or ten-per cent. solution of nitrate of silver into the trigonum and neck of the bladder should bring some change for the better. Should this not happen, the symptoms must be looked at as dependent upon a nervous origin, either reflex spasm of the sphincter or paresis of the detrusor muscle. Certainly the formerly obscure disease, and the way of its treatment, has thus been materially cleared up by the cystoscopic examination.

Can we prove now with the cystoscope which kidney is diseased? It seems that we may perhaps be able to do this in future, when we have sufficiently learned to see and to manipulate inside of the bladder after the cystoscope has been introduced. Either we could attempt, according to Nitze, to push a very thin catheter (introduced alongside the cystoscope into the bladder), under the guide of our eyes, into one of the orifices of the ureters—provided they have been found at all—and draw the urine directly from the kidney, or we might be able to observe out of which ureter the blood escaped, for instance, in a case of hæmaturia. Many a time the blood has been seen flowing from an injured papilla of a tumor of the bladder that was examined with the cystoscope.

Looking over the well-known diseases of the bladder, we shall be able, first of all in *catarrh*, to make a strict differential diagnosis between the different forms—acute, chronic, hæmorrhagic, diphtheritic—and probably learn to diagnosticate *in the picture* those differing in ætiological respects, especially the tuberculous one. It will be very easy to see ulcerations. Diverticula are very exactly demonstrated. Even in 1883 Sir Henry Thompson maintained that their presence could not be proved *in vivo* in the majority of cases.

Foreign bodies not to be detected by the sound, even in the hands of a well-experienced surgeon, may not only be seen, but localized.

A very interesting case of this kind was published by Nicoladoni* two years ago. Most of you have read it in the journals. In a lad eighteen years of age, who had introduced a medium-sized pin, head forward, into his urethra nine days before, he saw, by means of the old-shaped cystoscope, the pin fixed in the right part of the anterior wall close to the vertex after he had tried in vain to detect it with the probe. The pin cast a shadow on the opposite wall of the bladder. In the same year v. Dittel† saw a piece of sealing-wax, covered with salts, in the bladder.

In 1884 Fillenbaum‡ found in the bladder of a fifty-four year-old tabetic patient, who catheterized himself, the broken piece of a Nélaton catheter with the cystoscope. Grünfeld's endoscope, that was tried first, gave a negative result.

Last year Nitze# diagnosticated in the wall of the bladder of a woman a silk ligature, and removed it with the help of his cystoscope. Martin, of Berlin, had performed

* Ranke, "Grundzüge d. Physiol.," 1875, p. 496.

* "Wiener med. Wochenschr.," 1886, 7, 8. † *Ibid.*, p. 793.

‡ "Deutsche Zeitschr. f. Chirurgie," vol. xx, p. 453.

# Langenbeck's "Archiv," vol. xxxvi, 3, p. 680.

ovariotomy on her a short time before, and ligated the pedicle and vessels with silk. Some of the ligatures caused an intraperitoneal abscess that perforated into the bladder.

It seems almost unnecessary to mention that we can plainly see stones in the bladder, make out their size, shape, and mobility, and percuss them with the beak of the cystoscope by the guidance of our eyes. (Those gentlemen who take interest in the matter may try this afterward on the phantom.) Cystoscopy is of special importance for the diagnosis of encysted stones.

Allow me, Mr. Chairman, to give here the short history of a case of stone in the bladder that recently occurred in my private practice, and had passed through the hands of a number of doctors of this city. It shows the predominant place we must accord to cystoscopy in the diagnosis of obscure diseases of the urinary system: L. T., aged twenty three years. First gonorrhœic infection two years ago; second, last year. Complications with prostatitis, catarrh of the neck, afterward of the whole bladder; symptoms of stricture. The necessary treatment was ordered and the bladder washed for eight months. No material benefit. In the course of treatment, about seven months ago, a marked chill of ten minutes' duration set in, with pains in the right lumbar region. Since that day there has been a large amount of pus in the urine, sometimes the sixth of the whole quantity. Soon a good deal of albumin was found, and, the diagnosis being made as pyelonephritis ascendens, the prognosis, of course, was very doubtful. In the beginning of February the patient came to my office. I found stricture of the pendulous and membranous portion of the urethra, large prostate, painful on pressure, and urine with a large amount of pus and mucus, very few cells, resembling those of the pelvis of the kidney, prostate corpuscles. No pain in urinating, no blood, no sudden stop in the flow of urine. The patient being opposed to any direct surgical interference, I had to content myself with widening his strictures by the introduction of steel sounds and with internal treatment, keeping in view internal urethrotomy and drainage of the bladder, or, as soon as it could be diagnosticated whether both kidneys were affected or only one, nephrotomy. A careful examination of the bladder revealed nothing at all, the same result the other colleagues had had before me. At that time I received Leiter's cystoscope, and at once resolved to look into this bladder. Without any difficulty I saw there two dark-brown, even stones, of the size of a hazelnut, lying in the groove behind the swollen prostate. With the beak of the instrument I succeeded in throwing them out into the fundus, where I could easily percuss them, finding them very hard. A large, snow-white piece of coagulated mucus was lying at their side, its slender, dentritic ramifications floating in the fluid. The mucous membrane of the bladder was more or less healthy. Only here and there I saw a purple-colored spot with an adherent flake of mucus. I further discovered the mouth of the ureters without any difficulty, and could plainly perceive how whirls originated there that permanently set in motion the whole injected fluid. I was not yet able to make out whether the urine in entering the bladder was clear or muddy. But as the injected water, at first perfectly transparent, became opaque in a few minutes, I could conclude that the pus most probably descended from one kidney or both. Thus far the patient, who feels otherwise very well, has not consented to the proposed removal of the stones. Meanwhile I have had the pleasure of demonstrating them to Dr. A. G. Gerster, who also saw them very distinctly.

Returning to our subject, lastly, let us see in which way the treatment of *tumors of the bladder*—this favorite child of modern surgery of the bladder—has been benefited by cystoscopy. One word will say *how* we did and shall advance here, too, "early diagnosis." If the cystoscope had brought nothing else than this, it would be enough. What prevents our patients on whom we have operated for tumor of the bladder from enjoying the benefit of the removal of the new growth for many years still, to-day, where technique and after-treatment have been so greatly improved, is not the operation itself, epicystotomy or median section. It is pyelonephritis, produced by the long-continued disease of the bladder. As long as we drain the bladder after the operation (by Trendelenburg's T-tube in open-wound treatment, or a permanent catheter after having closed the wound of the bladder by suture), we also drain the pelvis of the kidney. Every drop of urine that enters the bladder from above will leave it immediately by way of the tubes. Reflux is impossible. Of course, the uncomplicated pyelitis will get better under this treatment, as well as the chronic catarrh of the bladder; both even may get cured by prolonged drainage. But, unfortunately, nephritis is so often combined with pyelitis. Pyelonephritis can *only improve*. A "*restitutio ad integrum*" by draining the bladder would be an exceptional case. To cure it we should have to add nephrotomy, and even that sometimes without permanent success, or, if the diagnosis of a unilateral affection has been made, nephrectomy.

I, too, had to have this experience in the case of a patient, fifty-three years of age, in whom I extirpated a villous growth (papilloma) by epicystotomy in October, 1886. It had the size of an apple, and had troubled the patient for several years. He was entirely relieved of all his troubles, was well last summer and able to work, and enjoyed his life. He could easily retain the urine for three hours and more, and passed the water in a strong spurt. But by and by the quantity of albumin in the urine, that had never fully disappeared, increased, the old nephritis that had slumbered for several months made progress, without a recurrence of the chills that had frequently set in before the operation, caused by the cystic pyelitis. A few weeks ago the urine contained about one third of its volume of albumin. The patient is now unable to work, and will certainly die in a short time. If he could have been examined with the cystoscope two years ago, at the time of the first spontaneous hæmaturia, before he came under my attendance, and if with the cystoscope the diagnosis had *then* been made and the small new growth removed, the patient would probably now be cured.

That cystoscopy will enable us to diagnosticate tumors of the bladder *early* is certainly a progress that can not be overestimated. It will now become the duty of the attending physician to take care that the cystoscope is introduced

into the bladder of a patient who is attacked with hæmaturia of short duration without any warning. He will no longer satisfy himself and the patient with the diagnosis so much in favor—"hæmorrhoids of the bladder."

Of course, we shall try to find out the size, location, and manner of insertion, whether the tumor has a pedicle or a broad base. V. Bergmann was enabled, in performing epicystotomy for tumor, not to incise the site of insertion, and consequently to avoid a serious hæmorrhage, having, with Dr. Nitze, localized the growth before by endoscopical examination. Nitze reports in his essay sixteen cases of tumor of the bladder (Nitze 8, Schustler 7, Nicoladoni 1) in which the diagnosis had been made or confirmed with the cystoscope. As Dr. Nitze writes me last week, he has diagnosticated seven more of them with his instrument since his last publication. Six of them were operated on. The diagnosis in regard to size, localization, etc., was sustained by the operations in every particular.

But the cystoscope will often have to reveal the secret hidden in the bladder, not only in recent cases, but also in an advanced stage, of tumor, when the other diagnostic means have failed. It is well known that often in a case of tumor of the bladder nothing can be found in the urine except blood and the evidences of catarrh, that examination with sounds and the combined rectal palpation give no positive result, and that we do not always succeed in tearing off small pieces for microscopical examination. Besides, such particles have caused grave errors when examined. Cases of Czerny's, Küster's, and Tuchmann's demonstrate this possibility.

It need not be mentioned that we shall not depend upon the result of cystoscopy alone. In some instances it will undoubtedly be very difficult to make with its help the differential diagnosis between a new growth that covers a large spot and chronic circumscribed catarrh of the bladder. We rather ought to compare the result gained by ocular inspection of the vesical cavity with those achieved by other methods, judge by all, and then only operate.

Let us see finally, Mr. Chairman and gentlemen, how much the *treatment* of diseases of the bladder has profited by the more exact diagnoses made with the cystoscope. A very great deal! The catarrh in its variations will undergo different treatment; ulcerations of the wall of the bladder will be attacked with the knife, those of tubercular character, according to Schatz, radically extirpated, the wall of the bladder included. Diverticula could be washed with catheters of a special curvature, as Nitze proposes, but has not yet tried. Their presence would require a very careful distension of the bladder for the suprapubic incision. We know that rupture of the bladder especially takes place at a diverticulum with thin walls. Foreign bodies can not only be diagnosticated, as mentioned above, but plainly localized, and therefore removed with absolute certainty by one of the methods. In regard to lithiasis, cystoscopy will again intensify the international discussion, going on for about five years, on "which is the best method of operating"—whether by epicystotomy or median section, or by lithotripsy or litholapaxy. The main reproach to litholapaxy, the frequent and early recurrence of the old trouble, has lost its foundation, as we are now enabled to inspect the interior of the bladder and to crush and evacuate as long as there are fragments to be seen. When this is accomplished the patient will be cured in the simplest and quickest manner. On account of this possibility, Nitze predicts for the crushing method a due and firm place among the different operations for stone in the bladder. How far this will be realized we must wait to see. It has been mentioned above that encysted stones will be seen. The possibility of their removal is thereby materially increased.

The vital statistics of tumor of the bladder will be greatly improved by the early diagnosis. To remove small benign polypi, Nitze proposes not to incise the bladder, but to crush the growths, when localized, with a long forceps, introduced *per urethram*, and then to evacuate them. We can only agree with him when he says that a strong and healthy patient who passes blood, pure or mixed with urine, for a few days will more readily submit to cystoscopy and tearing or crushing of the tumor than to a more serious operation. Whether that will be realized, we again must wait to see. At all events, it seems to be easier to destroy a polypus floating in the fluid and having an insertion known to us than to perform median section and grasp the growth within the empty organ by the aid of digital exploration, as recommended by Thompson. Large and infiltrating neoplasmata will belong, as formerly, to the suprapubic incision.

It is evident, Mr. Chairman, that the advance in the diagnosis and treatment of diseases of the bladder, as described by me, is not so easily, and especially not so quickly, made. No, cystoscopy not only wants to be thoroughly studied in regard to technique, but has to be investigated yet in many respects. "Now, being enabled to inspect the morbid bladder with the help of brilliant illumination in the living subject, the characteristic pictures of different pathological alterations will have to be studied in the same manner as it was necessary to do and was done in regard to the larynx and the eye when the laryngoscope and the ophthalmoscope were invented." "When the cystoscopy of to-day," says Nitze, "is of the same age as, for instance, laryngoscopy, that has been diligently and enthusiastically cultivated and improved by generations, then it will have, beyond any doubt, an equal, perhaps even a greater, surety in the diagnosis of pathological conditions of the bladder."

Although I am not able to-day, Mr. Chairman and gentlemen, to let you inspect the diseased bladder of a living subject, I sincerely hope that the instrument that allows us to do this in such a simple and handy way is sufficiently interesting to justify me in its demonstration and a short discussion of the new branch of surgical diagnostics created by it—cystoscopy.

## THE SYMPTOMS, DIAGNOSIS, AND TREATMENT OF PNEUMONIA IN CHILDREN.*

By DAVID PHILLIPS, M. D.

Probably in no disease to which children are subject does the physician meet with so many difficulties in making

* Read before the Thirteenth District (Yorkville) Branch of the New York County Medical Association, March 15, 1888.

a diagnosis, or is so liable to be led into error, as in certain cases of pneumonia. When we consider how insidiously at times pneumonia commences, how great a resemblance to other diseases it frequently bears, the difficulty, and sometimes impossibility, of obtaining physical signs, especially at its commencement, and, if obtained, to determine whether they represent pneumonia or not—we realize that the physician needs to exercise a high degree of care in order to formulate a correct diagnosis.

It is the object of this paper to present such a description of the symptoms and diagnosis of this disease as will enable the physician to suspect its existence from its commencement even without the evidence of the physical signs. With this purpose the writer has divided the case into classes according to their rational symptoms, giving under each class the differential diagnosis between it and the disease for which it might be mistaken.

Class First.—In this class of cases the disease is sometimes preceded by malaise or symptoms of slight catarrh, but it generally commences abruptly. The child seldom has a distinct chill, but complains of a sensation of chilliness. In the infant, convulsions may occur in place of the chill, the temperature rises quickly, the pulse becomes full and bounding, pain is generally complained of in the thorax, and sometimes in the abdomen, but is seldom of a severe character. There is a dry hacking cough which occurs at intervals, and becomes somewhat looser as the disease progresses. There is loss of appetite but great thirst, and generally constipation, while the urine is deficient in chlorides. The breathing becomes rapid, the inspiration occurs suddenly before the expiration is complete. The alæ nasi are dilated at each inspiration, and there is moaning expiration. The child lies with its mouth open, in fact, breathes mostly through its mouth, and the nursing infant can only nurse for a few minutes at a time on account of its inability to breathe while nursing. Some even can not nurse at all, and have to be fed with a spoon. The tongue is dry, white, and furred in the center, and red at the tip and edges. The child is restless and peevish, and desires frequent change of position. The axillary temperature is from 103° to 105°, averaging 104°; respiration from 30 to 50, and in severe cases it may reach 80 or more; pulse from 130 to 150. Herpes labialis may appear. The intensity of the pulse and respiration is greatest on the fourth or fifth day. The disease generally terminates on the sixth or seventh day. In the second stage the child no longer wishes to be moved, and lies in a more or less drowsy condition. The bright flush of the complexion and the red tint of the lips are gone, and the face appears swollen, pale, and anxious. The extremities may be cool or cold while the trunk has a temperature of 104° or 105°, and the respirations may number nearly half of the pulse-beats. This condition is generally found about the third or fourth day. The last stage is announced by an almost uncountable fluttering pulse, and a sweaty, clammy skin. The respiration becomes irregular, several short and hurried inspirations being followed by one or two deeper and at longer intervals. The voice is lost, the child speaking in a whisper. As the fatal issue approaches the child lies in a state of stupor, the lips and fingers become dusky, the temperature falls, and the pulse is gradually extinguished. In some cases death is preceded by convulsions followed by coma.

In broncho-pneumonia, which is generally a secondary affection, the dyspnœa and duskiness of the complexion are generally more marked from the outset of the disease, and the fever is not so high as in the croupous variety. The irregularity of respiration comes on earlier, and râles are heard in both lungs. The inspiratory murmur, instead of being full and expansive, as in a healthy child, is short, obscure, and almost without the vesicular murmur. The expiration is rarely distinct unless the bronchial respiration is fully developed (Condie). The presence of physical signs depends upon whether the amount of lung involved is sufficient to prevent the intervening air-containing parenchyma from masking the signs of consolidation; otherwise there are no physical signs except râles. The average duration of broncho-pneumonia is fifteen days (Gerhardt). In very young infants febrile reaction rarely, if ever, occurs, the pulse is small and obscure, the skin cold and livid, and the limbs are liable to be œdematous. The cry is incomplete and almost always smothered, becoming clear for a moment, but returning afterward to its altered tone (Billard). The respirations are very rapid. In many cases extremely few or no râles are present despite the existence of severe dyspnœa. Percussion may be normal. Diarrhœa and vomiting may be present.

The physical signs generally present in pneumonia are crepitant or sub-crepitant râles, a feeling of greater solidity below than above the scapula, which can be perceived before the ear can detect actual dullness (West), dullness on percussion, bronchophony, bronchial breathing, and increased vocal fremitus. The crepitant râle is very difficult to detect in the young child, and increased vocal fremitus, though a sign of great diagnostic value, is rarely obtainable in a child which has not reached its second year. If the whole lung is consolidated there will be absence of both bronchophony and bronchial breathing. Dullness may be obtained in the healthy child if the force used be great, so that in making percussion very little force should be used.

In many cases bronchial breathing in the child differs from that heard in the adult, it being feeble and indistinct, and more like a rough respiration.

*Diagnosis.*—Most of the rational symptoms present in pneumonia may be present in pleurisy, and where the physical signs are not well marked the diagnosis becomes quite difficult. In very young infants it may be made by the fact that pleurisy commences with violent and continual screaming, the head is thrown back, and there is great apparent pain when placing the child erect. The working of the alæ nasi is also rare in pleurisy, and the child breathes as if holding its chest on account of the pain. West says it may be laid down as a rule, subject to few exceptions, that whenever a child is suddenly seized with symptoms which, while they indicate some affection of the lungs, are yet unattended with the auscultatory signs of pneumonia, and, while it bears percussion on one side of the chest, it cries and struggles on the slightest attempt at percussion on the other, the disease from which it is suffering is pleurisy. The only

certain physical sign in the child is displacement of the heart, and if this occurs and is thought to be due to some other cause, an aspirating needle may be introduced into the chest; but *care* should be taken that it does not enter more than half an inch. Of course, in ordinary cases of pleurisy we would get fluctuation in dullness by the movements of the child, enlargement of the side, etc.; but it is singular how little difference there may be between the two sides in some cases, and if the pleura is full there will be no fluctuating level, while the absence of bronchial voice and breathing would occur both in this condition and in pneumonia of the whole lung.

Pneumonia may be diagnosticated from bronchitis by the expiratory moan and physical signs, but if both of these be absent, by a comparison of the pulse with the respiration. In health the pulse is to the respiration about as 4 to 1, in pleurisy and bronchitis rarely more than 3 to 1, while in pneumonia they are frequently from 2½ to 2 to 1. Henoch says 40 to 50 respirations a minute in young children indicate that the inflammation is situated in the large and medium-sized tubes, while above this the indication is that the smaller tubes are affected. In all doubtful cases of pneumonia the urine should be examined, as the absence of chlorides is a decisive sign.

Class Second—Cases which at their commencement resemble remittent and typhoid fevers.—In this class of cases the disease commences abruptly, generally at night, the child awaking out of sleep with an attack like acute indigestion. There are nausea, vomiting and purging, a rapid pulse, flushed face, and some fever. The next day the child feels tired and does not wish to be moved or spoken to, and complains of severe frontal headache. The pulse is from 120 to 130, and the temperature (axillary) 103° or 104°. There is generally no more vomiting, but the bowels may move once or twice during the day. On the third day a slight, hacking cough appears, but the child complains of nothing except the severe pain in the head and a languid, tired feeling. The temperature is generally 104° or over, and the pulse rapid and bounding. Examination of the chest either gives negative results, or at the most shows diminished vesicular breathing in the affected portion. The physical signs may continue latent for from four to six days. In a number of these cases I have noticed that there is a daily fall of temperature between 4 and 6 A. M., sometimes amounting to as much as two degrees. This is especially noticeable during the first two days. In some cases, in addition to the symptoms already stated, there is pain referred to the abdomen, with evident increase of discomfort on pressure. The tongue is red and disposed to be dry, diarrhœa is present, and the child, if old enough, talks in its sleep and may be slightly delirious.

The diagnosis in these cases can not, of course, be made with certainty until the physical signs appear, but it may be inferred from the fact that remittent and typhoid fevers rarely commence so abruptly, nor is the temperature in them apt to be so high from the start; and, *further*, the respiration in these cases of pneumonia is more hurried in comparison to the pulse. If the expiratory moan be present the inference is made more certain. The duration of these cases is generally a little longer than ordinary cases, they lasting nine days.

Class Third.—In these cases the attack sets in with nervous symptoms. There is considerable agitation, with muscular tremors, somnolence, delirium, dark-red face, glistening eyes. Or it may set in with convulsions. The child goes into a condition of apathy almost from the start. The cough may be short or altogether suppressed. The hurried breathing may be referred to the supposed brain trouble, or, if it directs attention to the lungs, auscultation may give negative results. In addition to these symptoms there may be vomiting, pain in the head, restless nights, talking in the sleep, constipation, and the head held back on the spine, while convulsions may occur several days before the patient's death. Even when auscultation will not help us the diagnosis may be made in these cases—first, from the extreme high temperature from the outset and its steady continuance; second, by the great and hurried acceleration of breathing, which is unlike the irregular and uneven respirations of acute brain disease; third, by the great frequency of the pulse and its regularity; fourth, by the absence of persistent nausea and vomiting.

I might add another class of cases in which the pneumonia is insidious and chronic in its course, and which occur during the diarrhœal diseases of children, and especially in the teething child, and are accompanied by vague nervous symptoms, general wasting, tumid abdomen, etc., and in which the cough is apt to be slight.

*Prognosis.*—Croupous pneumonia between the ages of four and thirteen is rarely fatal,* but in the infant is a very serious disease. Lobular pneumonia is more fatal than the lobar variety. Unfavorable symptoms are the existence of bronchial breathing after the eighth day, the appearance of pemphigus on the face or body (Smith), swelling of the veins of the hand (Trousseau), and an open mouth, with its angle drawn downward and outward (Ellis). The first favorable sign is a diminution in the number of respirations.

*Treatment.*—Probably in no disease to which children are subject does the physician require to use greater judgment than in pneumonia. While some cases require but the simplest medication, others will tax the resources of our profession to the utmost.

Some writers say that an emetic at the outset will abort or modify the disease. I try to abort it by the administration of quinine and calomel, and believe I have been successful in a certain number of cases. I have found that the result of this treatment resembles in its effects the result of a large dose of quinine when given to break up a commencing cold in the head in an adult. Some patients will be improved the next day, while others, after improving for twenty-four hours, have a return of the symptoms, and still others seem not to be affected. Perhaps pilocarpine may prove more successful, but I have never ventured to use it in the treatment of this disease. The abortive treatment

* It appears to me that, in health, children between these ages do not use the full powers of their lungs in breathing, and consequently bear the crippling of a small portion of a lung without very much discomfort.

by calomel and quinine can do no harm even if it does no good. I give, on the appearance of the first symptoms, a dose of calomel by the mouth, and a full dose of quinine in a suppository by the rectum, repeating the quinine in about ten hours. If this treatment proves unsuccessful, I commence the regular treatment of the disease, being guided by the symptoms, strength of the patient, and variety of the disease. For the first few days, or until consolidation is well advanced, the patient should always be kept in a semi-recumbent position, or, if carried in the arms, the position changed from time to time. This not only renders respiration easier, but prevents that very common occurrence in children—the stasis of fluids in the posterior portion of the lung, and may consequently limit the amount of solidification. In croupous pneumonia the child's chest should be enveloped in cotton batting, covered with oiled silk. Personally, I have no faith in the water girdle or in vesication. If there is much pain in the side, the application of a mixture of equal parts of chloroform and tincture of aconite on a piece of cotton of the size of a quarter of a dollar, held on for a few minutes at a time, will give great relief, and is all that is generally required. If the pain is very bad and the child is strong, the application of one leech may be resorted to; but never blister, as the irritation to the nervous system which ensues at the time and subsequently only does harm. In broncho-pneumonia the application of flaxseed poultices, sprinkled slightly with mustard, is required, and they should be applied both in front and behind, being changed every three or four hours. These poultices should be continued until the skin becomes covered with an eruption; then an oil-silk jacket should be used. The poultices may be repeated from time to time, if deemed necessary. When the child is robust, the symptoms mild, and the fever not very high, the best treatment is the administration of from eight to ten grains of quinine a day. If the fever is high and the pulse bounding, aconite should be added, the pulse being carefully watched during its administration. In my opinion, there is no medicine which works so admirably as aconite in the pneumonia of childhood, if given at the right time. In administering it, the condition of the pulse should always be the guide. In other cases the treatment may be commenced by a mixture consisting of liquor ammonii acetatis, syrupus ipecacuanhæ, and spiritus ætheris nitrosi. As the second stage approaches, the treatment should be slightly changed. The aconite should be stopped, and carbonate of ammonium and, perhaps, syrup of senega added to the treatment, depending upon how the child is withstanding the disease. Stimulants may be necessary at this stage. The treatment of the third stage consists in the administration of digitalis, camphor, musk, and stimulants at frequent intervals. In broncho-pneumonia, without regard to the strength of the child, I commence from the outset the administration of the stimulating expectorants—carbonate of ammonium and quinine—and, if the child will not take the quinine by the mouth, I give it by the rectum three times a day. It appears to me to work just as well as when given by the mouth. When the child is cyanotic, and presents symptoms of suffocation, I have obtained the best results by the administration of an emetic, followed by a steam bath and the use of camphor and stimulants. In cases where there are marked nervous symptoms, which are probably due to the condition of the circulatory apparatus, the right heart being engorged, the venous system full, and the capillaries dilated, camphor, digitalis, and moderate stimulation give the best results. Where the body is covered with perspiration or the extremities are cold, digitalis is indicated. If the bowels are constipated, calomel may be given every third day. The lowering of temperature which follows its administration is remarkable in many cases. If diarrhœa is present it should be stopped at once.

As regards fever in the pneumonia of children, it is surprising how well they withstand it, many of them bearing a temperature of 104° for days without marked inconvenience. As a rule, it is better to leave the fever alone; but if it is thought necessary to reduce it, give full doses of quinine. Do not use antipyrine or acetanilide, as they are too dangerous remedies to give to children suffering from pneumonia. Salicylate of sodium may be used if it is preferred, one grain for each year of the child's age being given every two hours. I, however, use quinine by the rectum in doses of from four to ten grains. Generally two doses during the twenty-four hours are sufficient, the last dose being given about midnight; but it may be administered oftener if necessary. It usually takes four hours before its effects on the temperature are manifest, and in some cases no effect is produced until two or three doses have been given, after which two doses a day will be found sufficient. The following abstract will show its action:

L. L., aged thirty months, suffering from pneumonia. Temperature reached 104·5° (axillary) at 1 P. M., December 20th, when a suppository of six grains of quinine was given. At 3 P. M. temperature 105°; 5 P. M., 103°; 8 P. M., 101·5°; 11 P. M., 102·7°. Suppository given, 1 A. M., December 21st, 103°; 7.15 A. M., 100·5°; 1.30 P. M., 102·5°. Suppository given, 3.40 P. M., 100·5°; 6.30 P. M., 100°; 8.30 P. M., 100·5°; 7 A. M., December 22d, 101·5°; 10 A. M., 102°; 12 M., 103°. Suppository given, 2.20 P. M., 102·5°; 4.30 P. M., 100·5°; 8.30 P. M., 98°. The temperature after this did not need any further treatment, the disease terminating December 24th.

I have thus briefly endeavored to call attention to the points to which our treatment should be directed, but I can not close without again referring to the value of camphor in relieving the nervous condition and rapid respiration, and to the value of the steam bath * in cyanotic conditions and when the right heart is greatly engorged. I believe that to a certain extent it takes the place of bloodletting in the adult in the same condition; and, although it may be thought to be taking a step backward to recommend it, I know of no treatment of the adult, when the respirations are hurried and panting, the face almost black, and the right heart engorged with blood, that gives greater relief than the abstraction of a few ounces of blood from the arm, followed by the administration of digitalis and stimulants.

71 East Seventy-seventh Street, New York.

* I use a kettle of boiling water on the stove and a rubber pipe running from its nozzle under the bedclothes, so that the child's body is enveloped in steam.

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## THE DEATH RATE OF NEW YORK COMPARED WITH THAT OF LONDON.

Dr. Roger S. Tracy, the Registrar of the New York Board of Health, has made an analytical study of the mortality returns of London and New York, for the purpose of ascertaining if the disparity in the rates (about 20 in 1,000 in London, and about 26 in 1,000 in New York) is due to any particular diseases, and, if it is, to what diseases, also whether or not the mortality from those diseases has increased or diminished during the twenty-two years that New York has now been under the government, in so far as sanitation is concerned, of a board of health. Dr. Tracy's report is dated April 9th, and it is addressed to Colonel Clark, the secretary of the board.

The report gives the population of New York as 1,439,037, and that of London as 4,149,533. Using this ratio as a basis, Dr. Tracy compares the number of deaths in the year 1886 from the principal causes (from 80 to 90 per cent. of the total mortality) in the two cities, by means of a table comprising five columns of figures. The first column shows the actual number of deaths in New York; the second, the same amplified to what it would be at the same rate if the population were equal to that of London; the third, the actual number of deaths in London; the fourth, the excess of deaths in New York; and the fifth, the excess of deaths in London. The causes of death in excess in New York are small-pox, scarlet fever, diphtheria, croup, typhus, typhoid fever, cerebro-spinal meningitis, puerperal diseases, malarial fevers, diarrhœal diseases, erysipelas, alcoholism, phthisis, pneumonia, tabes mesenterica, tubercular meningitis, meningitis, sunstroke, cirrhosis and hepatitis, Bright's disease and nephritis, cyanosis and atelectasis pulmonum, suicide, premature birth, drowning, and violence; and those in excess in London are measles, whooping-cough, rheumatism and gout, cancer, bronchitis, heart diseases, aneurysm, convulsions, apoplexy, and diseases of the brain and nervous system. It is explained that in the New York returns tabes mesenterica includes scrofula and marasmus, and tubercular meningitis includes hydrocephalus; also that broncho-pneumonia is generally returned as bronchitis in London and as pneumonia in New York. Other tables arranged in like manner are given, covering the last census year, 1880, and the period of twenty years from 1867 to 1886. In the last-mentioned table we find an excess recorded in New York from scarlet fever, typhoid fever, diphtheria, croup, diarrhœal diseases, erysipelas, tabes mesenterica, tubercular meningitis, phthisis, premature birth, diseases of the brain and nervous system, pneumonia, and diseases of the urinary apparatus; and in London from small-pox, measles, typhus, whooping-cough, rheumatism, cancer, senility, diseases of the circulatory system, and bronchitis. The average annual mortality of London for the twenty years was 79,109, and that of New York, amplified as above explained (the actual being 30,487), was 102,780, being an excess of 23,671.

Dr. Tracy finds that the disparity between the two cities is owing to the excessive number of deaths in New York from diphtheria and croup, diarrhœal diseases, consumption, and kidney diseases; if the rates of mortality from these diseases were the same in the two cities, the deaths from all other causes remaining as at present, the general death-rate in the two cities would be almost precisely the same. It will be seen that most of the diseases to which, as it thus appears, New York owes its excessive mortality are those in the prevention of which sanitation is generally expected to accomplish much. It is therefore gratifying to observe that Dr. Tracy is able to report a diminished death-rate from several of them—diarrhœal diseases and consumption—during the twenty years; but, unfortunately, he also finds himself constrained to record an increase of that from diphtheria (including croup) and kidney diseases. Diphtheria is one of the diseases against which sanitation is most vigorously plied, and we may be sure that the board will not rest easy until it has added that scourge to the list of those that its efforts have been able to moderate.

The overcrowding of the population in New York (where in 1880 there were 16·37 persons to a dwelling, while in London there were only 7·8) and its trying climatic conditions lead Dr. Tracy to think it very improbable that its death-rate can ever be reduced to that of London. In that he is probably correct, but, still, there is reasonable ground for expecting a reduction in the disparity, although not perhaps in any decided degree so long as New York contains a suburban element at only one end, being elsewhere confined between two rivers as in a strait-jacket, while London is free to spread itself out in every direction; nor so long as persons obviously far on in the journey to the grave are brought hither from all parts of Europe in such numbers as is the case at present. At all events, the board of health is to be commended for having so honestly reviewed the history of its own achievements and failures, and to be congratulated on the possession of an officer so competent to carry out the review as Dr. Tracy.

## A PARIS DOCTOR'S TRIBULATION.

It is doubtful if in any part of the world doctors' premises are quite exempt from the visits of bores. In this country certainly we suffer in our full proportion, but thus far we have been spared the importunities of the watering-place doctor, and that is no mean compensation for the undeveloped state of hydrology, balneology, etc., in the United States. Some idea of what we thus escape may be formed from an amusing sketch given in a book recently announced in Paris, entitled "Scènes de la vie médicale," an extract from which constitutes the *feuilleton* of two consecutive issues of the "Union médicale."

The passage recounts, perhaps with some exaggeration, how one Dr. Bitourou, of the *boulevard des Batignolles*, was tormented on a certain day in the month of April. His first visitor was Dr. Tartini, consulting physician at Veyrac, who, although, as he announced, not having the honor of being known to Bitourou, had called to ask that gentleman to send patients to Veyrac. Bitourou politely promised that he would not forget Veyrac, in case a course of its waters seemed to be indicated for any of his patients; whereupon Tartini declared that, inasmuch as the indications were so numerous, he felt sure of receiving several patients from his Paris *confrère* in the course of the season. It was, of course, unnecessary to recount these indications, but he mentioned among the morbid conditions in which the Veyrac waters were beneficial all varieties of dyspepsia, chlorosis, anæmia, gout, diabetes, affections of the liver, the bladder, and the kidneys, intestinal obstructions, obesity, herpetism, and arthritism, and added that there were many others that escaped his memory for the moment. He thanked Bitourou for a qualified promise to send him a certain dyspeptic whose case was proving rebellious, and announced his intention of sending him a copy of his "Treatise on Fractures." To a question implying surprise he replied that it had occurred to him to write a monograph on that subject because it was a part of current practice. "Such cases are met with every day," he remarked, "and a practitioner like you must be very glad to have at hand a conscientious guide to their management, well up in the latest advances of science."

Tartini having departed, two more bath doctors are announced simultaneously: Dr. Lescourbiac, consulting physician at the Aiguecaude hot springs, and Dr. Ruelle, ex-physician-inspector of the Frédefons waters. The latter explains that he puts *ex-médecin-inspecteur* on his cards for the purpose of airing a grievance, the government having done him a bad turn, but declares that he is now more of a fixture at Frédefons than before. Being asked the reason of the marvelous qualities of the Frédefons waters, he attributes their superiority to the fact that each litre contains from two to three tenths of a milligramme of uranium, a substance which, even in such minute quantities, is endowed by the "living water" with tenfold and perhaps a hundredfold "dynamic potency," has an elective affinity for all the abdominal organs, acts as a vaso-constrictor on the portal circulation, regulates the action of the thoracic organs, and consequently . . . .

But, amusing as poor Bitourou's interviews are with his other visitors, we must content ourselves with the mere mention that they are two in number, making in all five balneologists that called on him in one afternoon. Reflecting that, as the exploiter of uranium has told him, there are between three hundred and three hundred and fifty mineral-water stations in France, he computes that a short visit by a representative of each of them would make his afternoons lively for some time to come. He comforts himself with the thought that his visitors have been of good appearance, and that they will pass among the others in waiting, as well as with his *concierge*, for choice patients.

# *MINOR PARAGRAPHS.*

## THE NEW NOMINEE FOR THE HEALTH OFFICERSHIP OF THE PORT.

Dr. Edward C. W. O'Brien, of Buffalo, having been nominated by the Governor for the office of Health Officer of the Port of New York, it is, in our opinion, earnestly to be hoped that the Senate will confirm the nomination. In the matter of the political antagonism that has for so long a time defeated the confirmation of a new officer, this Journal has no preferences whatever, as indeed it has none in any other affair of pure politics; but it has a decided preference for a suitable incumbent of the important office in question, and such a man it believes Dr. O'Brien to be. The objection has been raised in some quarters that Dr. O'Brien was a Republican "machine politician," but it is a sufficient answer to this charge to cite the expressions of opinion by a great number of the medical men of Buffalo, of all shades of political connection and representing both the medical colleges of Buffalo, which we find filling nearly two columns of the "Buffalo Evening News." All this shows—what we knew well enough before—that Dr. O'Brien is highly esteemed by his fellow-practitioners, those who know him best, and that his services in the great small-pox epidemic in Buffalo fifteen years ago, when he was the health physician of that city, are remembered and appreciated. It is our conviction that there ought to be no delay in his confirmation.

## THE NEW YORK ACADEMY OF MEDICINE.

Certain propositions to amend the constitution and by-laws were to come up for action at the meeting of Thursday evening, the 19th inst., after the time of our going to press. Their purport was to extend the territory from which the Academy was to draw its membership, either to the whole State of New York or to a district including all localities within a hundred miles of the city; also to make officers of the Marine-Hospital Service and physicians residing in other States eligible as non-resident Fellows, as medical officers of the army and navy are now. It is evident, we think, that the Academy has reached a stage in which its field ought to be extended, but it is difficult to say whether the State at large or the district mentioned would be the more appropriate. We see no objection to taking in both, thus securing the whole State of New York and a goodly portion of New Jersey and Connecticut.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending April 17, 1888:

| DISEASES. | Week ending Apr. 10. | | Week ending Apr. 17. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhus | 0 | 0 | 2 | 0 |
| Typhoid fever | 9 | 2 | 6 | 4 |
| Scarlet fever | 136 | 24 | 167 | 38 |
| Cerebro-spinal meningitis | 7 | 7 | 6 | 6 |
| Measles | 41 | 2 | 58 | 7 |
| Diphtheria | 146 | 33 | 136 | 30 |
| Small-pox | 25 | 5 | 18 | 4 |

**The Boston Medical Library.**—A donation of $1,000 has been made toward the $10,000 necessary to purchase a site for a proposed new building at the corner of St. Botolph and Irvington Streets. When the land becomes the property of the library, a building costing about $60,000 will probably be erected.

**A Chinese Medical School.**—According to the "Union médicale," a medical school for Chinese students was opened in Hong-Kong on the 8th of October.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 1 to April 14, 1888:*

Baxter, Jedediah H., Colonel and Chief Medical Purveyor, and Greenleaf, Charles R., Major and Surgeon. Detailed as members of an Army Retiring Board appointed to meet at Washington, D. C., on Wednesday, April 4, 1888. S. O. 75, A. G. O., April 2, 1888.

Alden, Charles H., Major and Surgeon, will repair to Washington, D. C., on public business, and on the completion thereof will return to his station (West Point, N. Y.). S. O. 75, A. G. O., April 2, 1888.

Biart, Victor, Captain and Assistant Surgeon. Having been found incapacitated for active service by an Army Retiring Board, sick leave of absence is still further extended until further orders on account of disability. S. O. 77, A. G. O., April 4, 1888.

Gardner, Edwin F., Captain and Assistant Surgeon. Leave of absence extended fourteen days. S. O. 77, A. G. O., April 4, 1888.

*By S. O. 79, A. G. O., April 6, 1888.*

Bushnell, George E., Captain and Assistant Surgeon. Ordered from Fort Preble, Maine, to Camp Pilot Butte, Wyoming.

Stephenson, William, First Lieutenant and Assistant Surgeon. Ordered from Camp Pilot Butte, Wyoming, to Fort Verde, Arizona.

Mearns, E. A., First Lieutenant and Assistant Surgeon. Ordered from Fort Verde, Arizona, to Fort Snelling, Minnesota.

Kneedler, W. L., First Lieutenant and Assistant Surgeon. Ordered from Fort Snelling, Minnesota, to West Point, New York.

Borden, W. C., First Lieutenant and Assistant Surgeon. Ordered from Fort Douglas, Montana, to San Antonio, Texas.

Edie, G. L., First Lieutenant and Assistant Surgeon. Ordered from San Antonio, Texas, to Fort Douglas, Montana.

**Society Meetings for the Coming Week:**

Monday, *April 23d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement.

Tuesday, *April 24th:* Medical and Chirurgical Faculty of Maryland (Baltimore); Texas State Medical Association (Galveston); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society (private); Medical Society of the County of Putnam, N. Y. (quarterly); Hunterdon, N. J., Medical Society (Flemington); Litchfield, Conn., County Medical Society (semi-annual); Boston Society of Medical Sciences (private).

Wednesday, *April 25th:* Arkansas State Medical Society (first day—Fort Smith); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Philadelphia County Medical Society (conversational); Berkshire, Mass., District Medical Society (annual—Pittsfield); Middlesex, Mass., North District Medical Society (annual—Lowell); Gloucester, N. J., County Medical Society (quarterly).

Thursday, *April 26th:* Arkansas State Medical Society (second day); New York Academy of Medicine (Section in Obstetrics and Gynæcology); Brooklyn Pathological Society; Pathological Society of Philadelphia (conversational); Roxbury, Mass., Society for Medical Improvement (annual—private); Cumberland, Me., County Medical Society (Portland); Hartford, Conn., County Medical Association (annual).

Friday, *April 27th:* Arkansas State Medical Society (third day); Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *April 28th:* New York Medical and Surgical Society (private); Worcester, Mass., North District Medical Society (annual—Fitchburg).

## Obituaries.

**Cornelius Rea Agnew, M. D.,** died on Wednesday, the 18th inst., in the fifty-eighth year of his age, after an illness of only a few days' duration—a peritonitis, understood to have originated as a typhlitis.

The deceased was a native of New York and a graduate of the College of Physicians and Surgeons, of the class of 1852. For a few years he was a general practitioner, but the greater part of his professional life was spent in the practice of ophthalmology and otology, in which department he was one of the first in New York to arrive at eminence. At various times he occupied numerous positions of distinction in hospitals and in medical societies, he was for many years the clinical professor of ophthalmology and otology in the College of Physicians and Surgeons, and he may almost be said to have created the Manhattan Eye and Ear Hospital. But, excellent as he was in all these capacities, it was not by his strictly professional work that he was known so much as by the devotion and intelligence with which he taught his fellows the duties of citizenship. Although the extent of his services in this direction was known to only a few, enough of them was known to secure his general recognition in New York as one of the most respected of her citizens. Perhaps the most far-reaching work of his life was what he accomplished as one of the organizers and working members of the United States Sanitary Commission. The commission was materially aided in its operations by his industrious labor, and guided by his wisdom. It is no more than the simple truth to say that every sick man and every wounded man in the Union army had his condition alleviated, so far as mitigation of the horrors of war was possible, by appliances that were largely due to Dr. Agnew's forethought and executive skill. In another sphere, as one of the trustees of Columbia College, his efforts to improve the institution were constant, and it is not to be doubted that they had much to do with bringing about the very decided advances made by the college during the last few years; and in a like capacity on the board of the College of Physicians and Surgeons he worked intelligently and zealously for the advancement of medical education in New York. In his devotion to the public interest he did not disdain to concern himself with political discussions and contests—never as a partisan or with any motive looking to his own advantage, but always as a source of light to those who were right at heart but perplexed in mind. In whatever sphere he acted, he always influenced men's minds powerfully, but, although he was a speaker delightful to listen to, he never resorted to oratorical devices, and seldom even to parliamentary

tactics; it was rather his clear, cold logic, his evident fairness, and his unquestioned devotion to the general welfare that gave him his power in debate. Consequently, he never worked his hearers up to the point of voting under the influence of passion, and they never repented of having heeded his words. It long ago came to be understood in New York that Dr. Agnew's advocacy of any movement was *prima facie* evidence that the movement was a good one. To be sure, not every cause that he supported triumphed — occasionally intrigue, and on one memorable occasion medievalism, proved too much for him— but never did an opponent indulge in innuendo against Agnew without writing himself an ass. He was a man whose course it was never necessary to explain; he was *sans peur et sans reproche*.

Personally, Dr. Agnew was a man of wholesome and attractive appearance. His glance was clear and penetrating, but kindly. He played the Mentor to many a restless or misguided spirit, but his advice was given only when it was invited, and it always savored more of affection than of rebuke. With the community, with his professional brethren, with his patients, with his personal friends, and in his family, he was a remarkably exemplary man. His loss is that not only of the New York profession of medicine, but that of the entire people.

## Letters to the Editor.

### A CASE OF MANIACAL EPILEPSY.

63 West Ninety-seventh Street, New York, *April 9, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: I forward you the report of a curious case of nervous disease which came under my observation about two years ago, which you may deem of sufficient interest to your readers to give a place in your journal.

On May 18, 1886, while the Pacific Mail steamship City of Sydney was lying in the port of Yokohama, Japan, the United States consul sent us a sailor destitute of means, to be taken back to his home in America, stating at the same time that the man was an epileptic and would require medical attendance. From the patient himself I gathered the following history: He was a native of California, twenty-two years of age, a sailor, and had been at sea seven years, most of that time attached to vessels plying between San Francisco and Europe. While on one of these voyages, during the year 1884, he fell from the fore-yard arm and sustained an injury of the head situated in the region of the parieto-occipital suture, from which he was laid up for a little more than two months. A year after this, while in Alaska, he was bitten in the calf of the leg by a dog "believed to be rabid." Two months later he was taken with a violent fit, which lasted for thirty hours, and from time to time since he had been attacked in a similar manner. During these convulsions he was very violent and dangerous to both himself and others. He stated, moreover, that he could tell half an hour before one of these attacks would come on by a feeling of determination of blood to the head and a sensation of compression starting from the occipital region in the neighborhood of the old wound, gradually extending forward over the parietal and on to the frontal region to the eyebrows. When the latter part was reached he would lose all knowledge of what was taking place.

I then made a careful examination of him. I found him to be a well-nourished and to all appearances a strong, healthy man, showing nothing peculiar excepting a cicatrix in the occipito-parietal region, about an inch in length, extending from above downward; also a cicatrix of a lacerated wound on the right calf. Besides this, he presented widely dilated pupils and a watery and injected eye, giving the face a fierce expression. He was able to talk rationally on all subjects, giving no evidence of impairment of his mental faculties.

From the history and symptoms I strongly suspected epilepsy. I at once put him on the use of large doses of the bromides, but was not altogether satisfied in my own mind that my conclusion was a correct one, and therefore kept a very strict watch on the patient. During the next four days I noticed nothing out of the usual run, but that he slept very little.

On May 22d, at 8 P. M., the patient sent for me, and informed me that one of his attacks was about to come on, and that I had better put him under restraint at once. Before I could get him thoroughly secured the convulsion had taken a very violent form, and it took the combined efforts of eight men to control him. His first symptom was violent trembling extending to the whole of the muscular system. His face was flushed and the veins stood out like cords; the pupils, from being dilated, were now but as pin-points, as in opium poisoning. Quickly following upon this condition was a fixation of the muscles of the larynx, the spasm extending to the thorax, inspiration becoming very labored and expiration producing a guttural growl. There was also a profuse secretion of ropy mucus from the mouth. His pulse was weak and so rapid that it was impossible to count it accurately. The temperature, taken in the anus, was 104·5° F. His mind was wandering and he muttered constantly. This condition of things lasted about forty minutes, when he returned to partial sensibility and demanded a glass of water, at the sight of which he was thrown at once into the most violent maniacal paroxysm, expectorating vast quantities of mucus and biting at everything within his reach. Tearing his shirt from his shoulders, he inflicted severe wounds on the upper part of his arms with his teeth. For the following two hours and a half he was the most violent maniac that I had ever seen, striving to do both himself and everybody about him injury, notwithstanding the hypodermic injections of half a grain of sulphate of morphine. At the end of that time he again asked for water, and once more on sight of it the same result took place. Long before this I had arrived at the diagnosis of a genuine case of hydrophobia, in which two other medical men, passengers on the ship, concurred. Much to my surprise, at about four o'clock in the morning he regained the complete use of his faculties, the only change being complete aphonia, which lasted twenty-four hours. The pupils were once more widely dilated and there was great exhaustion. During the day he both ate and drank without difficulty. While under my charge he had three more attacks of a similar nature, though not quite so prolonged. Previous to one of them he made a determined effort to commit suicide. These last convulsions took place on the nights of May 22d, 25th, and 31st.

I found nothing more worthy of note on arriving at San Francisco, except that the patient's friends stated that he was a confirmed opium-eater. I should also state that in the intervals between his attacks he was quite rational.

I committed him to the Stockton Insane Asylum as a person unfit to be at large, where he remained about three months and was then discharged, after which I lost all trace of him. My attention was called to this history by a somewhat similar one published in one of the daily papers, of a man having been found in the street suffering to a certain extent in the same manner as I have described, and having been taken to St. Vincent's Hospital.

Joseph N. Henry,
*Late Surgeon, Pacific Mail Steamship Co.*

# Proceedings of Societies.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of March 14, 1888.*

The Vice President, Dr. W. W. Keen, in the Chair.

(*Concluded from page 417.*)

**Graduated Tenotomy in the Treatment of Insufficiencies of the Ocular Muscles (Stevens's Operation).**—Dr. Charles Hermon Thomas read a paper on this subject. The study of disorders of the ocular muscles in relation to functional nervous diseases had, he said, received a strong forward impetus during the past year, chiefly due to the published results of the labors in this direction of Dr. George T. Stevens, of New York, whose work on "Functional Nervous Diseases," recently published,* had challenged special attention, even where it had not met with entire approval. The subject occupied a point on the line between the two important specialties of ophthalmology and neurology, taking somewhat from both, and had already, by force of circumstances, become in a certain sense a specialty by itself. The operation and its application had until recently remained to a remarkable degree personal in the hands of Dr. Stevens, notwithstanding that for many years he had reported it before medical societies and in the medical journals.† All this, however, had been changed by the publication, within the last year, of his work above referred to, which had brought the method into such prominent notice as to compel its recognition. Other operators had now entered the field, among whom was Dr. A. L. Ranney, of New York, who, as a neurological specialist, had reported ‡ a series of cases of the gravest neuroses successfully treated by the Stevens method. Beyond question a point had now been reached which showed the subject to be worthy of the most careful investigation.

What the author had to present in the paper was to a certain extent in the nature of a preliminary report, as his work was necessarily incomplete in some particulars, owing chiefly to the considerable length of time required for observation to arrive at a just estimate of the permanency of the results obtained, especially in the gravest and, therefore, most important cases. He would attempt to add little that was new to the presentation of the case as made by Dr. Stevens himself, and he could not hope, in the length of time allotted for its consideration, to make a statement commensurate with its importance, but he had thought it right to rehearse briefly its principal features and to give his own experience in connection therewith, together with a sketch of a few of his own cases.

It was now about ten years ago that the operation had first been brought to his notice by patients who had been under Dr. Stevens's care. It had seemed to him incredible that results such as they alleged had been produced in their cases could have been derived from the cause assigned. Again, he had questioned the practicability of performing the operation by the definitely graduated manner which was said to be practiced by Dr. Stevens. Under these circumstances, and in the absence of better information, his position had for a long time been one of earnest opposition to the practice. About three years ago, however, having under his care several cases of muscular asthenopia which he was unable to relieve, though he obtained the advice of several of the best known ophthalmologists, and being freshly reminded of the work of Dr. Stevens by a patient of unusual intelligence and reliability, who reported great relief obtained at his hands, he asked his assistance in the treatment of these cases. He kindly demonstrated to him, upon patients of his own, the practicability of the operation, and he became convinced of its great value. The results obtained were so satisfactory that since that time he had investigated the muscular as thoroughly as the retractive conditions in all cases coming under his care, and had as faithfully undertaken to correct them.

For the discovery of abnormity in any of the straight muscles, their physiological condition, both while at rest and while in action, and in all states of the accommodation of the eye, must be thoroughly understood. In order that binocular vision should result, the visual lines of both eyes must converge upon the same point, whatever might be the position and distance of the object. It was only under such circumstances that the rays of light were brought to a focus at corresponding points upon both retinæ. A slight deviation resulted in diplopia, constituting strabismus, a subject sufficiently well understood, and one to which Stevens's researches did not directly apply. But, while there might be perfect binocular vision, and not the slightest indication of strabismus, there might be, nevertheless, grave faults affecting the recti. It was these faults that Dr. Stevens had emphasized, and to these his observations had been chiefly confined.

In the normal condition of the ocular muscles the visual lines of both eyes naturally preserved an almost exactly parallel direction when looking at distant objects; and they maintained such a position of their own accord from muscular tonicity alone, without the necessity of any additional stimulus. This could be shown by prismatic tests. The artificial diplopia produced in making the test would be such that the two images would lie in that plane which was at right angles to the base of the prism.* If, for example, diplopia was induced by a prism placed before either eye with its base directed either outward or inward, the two images would lie in the same *horizontal* plane; and, in like manner, *vertical* prisms, with base up or down, would induce diplopia; but in this case the two images would be situated in the same *vertical* plane. The reason for this was that the normal visual lines of both eyes naturally lay in the same *horizontal* and *vertical* planes, even when the powerful stimulus which the need of binocular vision presented is abolished by the prism. Hence, if the eyes in the normal state were directed to a distant object, binocular vision would occur without the need of additional muscular action to bring the visual lines to properly bear upon the object. If, on the other hand, the visual lines of the two eyes did not naturally take the proper position, one of two things would result: either there would be no effort to bring them into correspondence, and strabismus with attending diplopia occurred, or, *more frequently*, by an extraordinary nervo-muscular effort, called into action by the demand for binocular vision, the proper position would be maintained; just as in facultative hypermetropia accommodation was necessary, even when parallel rays coming from a distant object were to be brought to a focus upon the retina. From this forced, though it might be involuntary or even unconscious, effort to maintain the proper direction of the visual lines the abnormal conditions under consideration resulted. There was abundant clinical evidence of the enormous expendi-

* D. Appleton & Co., New York, 1887.

† See articles by Dr. George T. Stevens, on "Chorea," "Medical Record," 1876; on "Anomalies of the Ocular Muscles," "Archives of Ophthalmology," June, 1877.

‡ "The Treatment of Functional Nervous Diseases by the Relief of Eye Strain," "New York Medical Journal," January 7, 1888.

* Not that Dr. Stevens had by any means been the first to employ prisms for the discovery of muscular irregularities, but he appeared to have used them with greater precision and by more systematic methods than had before prevailed.

ture of nerve force under these circumstances, and of the development of marked reflex disturbances, manifested in symptoms both of irritation and of exhaustion.

Dr. Stevens* had introduced a series of terms descriptive of the various abnormities to which the recti muscles were subject. The word *exophoria* designated simply an outward tendency of the visual lines, without implying anything as to which muscle or set of muscles was at fault. The opposite condition —namely, a tendency to convergence—was designated by the word *esophoria*, meaning an inward tending. If either visual line deviated above its fellow, the fact was expressed by the term *hyperphoria*, right or left, as the case might be, always remembering that the lower image represented the higher-tending visual line. It was to be remarked that the condition of hyperphoria was far more frequently productive of serious reflex disturbances than any other fault, and mainly for the reason that a small amount of deficiency in this direction might, and usually did, involve a considerable proportion of the total co-ordinating power of the vertical muscles; and this because the power of sursumduction was usually limited to about three degrees, while that of abduction was about eight degrees, and that of adduction might be fifty degrees and upward. The generic term to express any deviation whatever from *orthophoria*, the normal, was *heterophoria*. Finally, the amount of heterophoria found in any given case was equivalent to and expressed by the degree of the prism required to correct the fault.

In practice, the tests for insufficiency were made by placing prisms before the eyes with their bases in certain definite directions. Lateral diplopia was produced by a prism with base in, vertical diplopia by a prism either up or down. If, in lateral diplopia so induced, either image was above the plane of its fellow, the higher image belonged to the eye whose visual line was lowest, to be expressed as hyperphoria of the opposite eye. If, in induced vertical diplopia, either image deviated from the vertical, there was lateral fault—esophoria if the diplopia was homonymous, exophoria if crossed. In applying the prism test for the discovery of muscular anomalies it was not sufficient to be content with the results of a single or even several examinations, because the possibility of latency should always be borne in mind—as in latent hyperopia, the true fault might be concealed or masked. Indeed, as in latent hypermetropia there was sometimes apparent myopia from spasm of the muscle of accommodation, so in actual esophoria an apparent exophoria might be manifest, the result of spasm of the externi, and this was equally true of the other muscles. It was only by a careful consideration of all the circumstances, such as the degrees of abductive and adductive power, and, finally, by the use of temporary correcting prisms for whatever fault might be manifested, and following it up—but not leading it—as it developed by a new correcting prism until the fault became stationary, that we were justified in proceeding to operation. In one obstinate case of exophoria the author had several times obtained relaxation of spasm of the interni by a moderate dose of morphine administered hypodermically. But, though the after-results proved the observation under morphine to be expressive of the true condition in this case, there were obvious objections to the use of the drug as a matter of ordinary practice. The discovery of an efficient and safe agent for the relaxation of spasm of the recti muscles was greatly to be desired. It sometimes happened that muscular anomalies of considerable degree were discovered in connection with refractive faults. By correcting the refractive error first, not infrequently the muscular difficulty soon disappeared, showing the muscular to have been dependent upon the refractive state. The correction of refractive errors, especially those of hypermetropic character, should always be made before applying the prismatic tests.

Defects of refraction and accommodation were well known as the source of serious reflexes, especially headaches or severe migraine, nausea, and dizziness; but it was not so well known that defects of muscular adjustment from faults of the guiding muscles of the eye produced all these and many more serious results besides.

Dr. Stevens* had said:

"Respecting the importance to be attributed to ocular, refractive, and muscular anomalies, I fear that my views will for some time to come continue to be regarded as something more than radical; but I am ready to reaffirm the proposition made years ago, that, among the various elements constituting the neuropathic tendency, these anomalies must be regarded as occupying a pre-eminent position. Summing up the experience in this field of work, it is shown that, not in occasional and rare instances only, but in a large proportion of cases of the most redoubtable neuroses, unusual and most salutary results may be anticipated from attention directed to visual troubles."

Among the neuroses shown in many cases to be dependent upon such troubles were to be mentioned neuralgia, spinal irritation and neurasthenia, chorea, epilepsy, and mental disorders. Dr. Stevens had further said:

"Not only are those painful or irregular conditions usually described as neuroses in great proportion responsive to the relief from ocular tensions, but a great variety of conditions commonly regarded as local affections yield as readily, and prove that with some possible local complications they are, in fact, reflex phenomena. As an instance of this class of trouble, I may mention the fact that in more than a score of cases of extreme dysmenorrhœa—in each of which the periodical suffering has been of intense character, of regular occurrence, and of the full duration of the menstrual life of the patient—the dysmenorrhœa has failed to occur after relief to the tension of a superior or inferior rectus."

"So far as my experience goes, epilepsy very rarely results from simple conditions. The ocular anomalies in epilepsy are of the most complicated, and often of the most obscure, character. A simple insufficiency may induce headache or other minor manifestations, but the ocular causes of epilepsy are usually of a character most perplexing to the surgeon, and sometimes of a character which can not be completely remedied. Hence, great patience, and, in certain cases, much time and skill are required to accomplish that which can finally be done. If, in the mean time, the patient and his friends are constantly assured by both lay and professional advisers that his efforts must, of necessity, prove fruitless, he is apt to withdraw from treatment, even while defects which are of great importance are known to exist, and which, by continued efforts, might be removed."

Dr. Ranney was authority for the statement that in cases of epilepsy of long duration under treatment directed to ocular difficulties, the affection had been scarcely less tractable than diseases commonly regarded as easily curable. As furnishing a suggestion as to the possible method of production of epileptic attacks from eye-strain, it was interesting to note some experiments performed several years ago by Dr. Dercum, Dr. Parker, and others in the artificial induction of convulsive seizures. They had found that it was possible to produce spasms in many persons by the following method: †

"The subject being seated, the tips of the fingers of one or both hands were so placed upon the surface of a table as to give

* "A System of Terms relating to the Conditions of the Ocular Muscles known as 'Insufficiencies,'" by George T. Stevens, M. D., Ph. D., "New York Medical Journal," December 4, 1886.

* See "N. Y. Medical Journal," April 16, 1887.

† See "Journal of Mental and Nervous Disease," October, 1884.

merely a delicate sense of contact—*i. e.*, the fingers were not allowed to rest upon the table, but were maintained, by a constant muscular effort, barely in contact with it. Any other position involving a like effort of constant muscular adjustment was found to be equally efficient. Any one object in the room was now selected, and the mind fixed upon it, or some subject of thought was taken up and unswervingly followed. After the lapse of a variable period of time, extending from a few minutes to an hour, and depending upon individual peculiarities to be noted, . . . the subject was frequently thrown violently to the ground in a general convulsion, preceded by tremors which rapidly became more violent. Seizures equaling in violence a general convulsion were by no means induced in all subjects, and were generally the result of experiments repeated many times during the same evening. In the experimentors the convulsions became so easily induced that it was thought advisable to desist for a long period."

The *effort of constant muscular adjustment* here spoken of appeared not unlike the condition found in the eyes in cases of insufficiency of the ocular muscles; and it seemed not unreasonable to infer that, if such strain of the muscles of the forearm would produce results of the kind reported by the authors just named, the strain upon ill-balanced ocular muscles (which must be continuous during the whole of the time that the eyes were open) should be productive of even more serious and, indeed, permanent results.

In the great majority of these cases there was but one satisfactory method of treatment, and that was by graduated tenotomy. The operation consisted in making a small opening through the conjunctiva, exactly over the insertion of the tendon, when the tendon was seized with an extremely fine forceps and divided outwardly in each direction, preserving the extreme outer fibers, or, at least, the reflection of the capsule of Tenon, which served as an auxiliary attachment. Tenotomies for strabismus and so-called partial tenotomies had, of course, long been done, but there were radical differences between these and the operation here described. The fan-shaped expansion of the tendons of the recti at their points of insertion into the sclerotic was somewhat wider than was generally supposed, while the elasticity of their edges was an influential factor in determining a favorable result of the operation—in bringing about a relaxation which should be permanent by permitting the divided portion to retract and form a new attachment to the globe farther back.

The use of prisms as a means of treatment of marked heterophoria was not to be relied on, as in many cases they were found to be insufficient and disappointing. They, however, had a certain value as means of systematic exercise of the ocular muscles, particularly in the milder cases. When the correction was made by tenotomy, all that was necessary to be done in a given case should be regarded, in a sense, as one operation, though it might be in several stages and at different periods—as a watchmaker counted the regulating of a watch one operation, though he might be obliged to move the regulator a number of times; or as the correction of an astigmatism was one operation, though it might involve a number of sittings. In one complicated case the author had operated as many as seven times—the first operation nearly two years, and the last a week ago—the net result being an unquestionable gain both in head symptoms, which had at one time been alarming, and in the severe asthenopia to which the patient had long been subject. Previous to the operation she had suffered from severe pain in the region of the eyes and in the back of the head, accompanied by general nervous distress of an entirely disabling character. An eminent ophthalmologist had declared her to have organic disease at the base of the brain from the appearance of the fundus. This was about three years ago. To-day this lady had assured him that she felt "wonderfully better," and had expressed her entire satisfaction with the treatment she had received.

It was to be re emphasized in this connection, as an additional caution, that no operation was ever to be undertaken unless the indications for it were positively made out. From a perfectly plain case, evident to the merest tyro, to one demanding the greatest skill and patience of the most experienced there was every gradation. Nothing would tend more to bring discredit upon the procedure than premature operations, which might result in such disturbance of the ocular muscles as seriously to cripple binocular vision without in the least alleviating the reflex condition for which the operation was undertaken.

After giving the histories of some of his cases, showing a patient, and exhibiting photogravure proofs belonging to Dr. Stevens, the author concluded by saying that whether the allegation that the neuropathic predisposition was more frequently due to eye-strain than to other conditions was fully justified by the facts or not, it was unnecessary at present to determine; seeing that enough was known to make it certain that eye-strain from muscular fault was the cause of grave and varied reflex neuroses; and that in these cases carefully graduated tenotomy promised relief. Besides, there was in such cases always sufficient justification for the correction of the fault for the sake of the eyes and sight, apart from the nervous condition. His own experience covered many of these operations, performed for the relief of a variety of conditions, and, notwithstanding serious difficulties at times encountered, he had a steadily increasing confidence in the legitimacy and value of the method.

Dr. H. F. Hansell would like to ask Dr. Thomas for a more definite statement as to the means of diagnosis. To his mind these are not at all satisfactory. The recognition and the exact determination of superior and inferior insufficiencies were very difficult, much more so than of lateral defects.

Dr. B. A. Randall said that, as to diagnosis, much had been written, sometimes pretty wide of the mark; and he could not see that Dr. Stevens had improved our methods. He had brought forward a very nice set of terms for what had long been known, and he had expressed clear-cut opinions which read well. In the same way, Landolt made out very pretty graphic charts of cases, and marked out well-defined groups, which were to be treated according to certain rules. But the cases which the speaker met with in practice refused very often to be included in such categories, and very dissimilar cases afforded discouragingly similar charts. He had understood from Dr. Thomas's paper that the estimation of defects was largely made with a distant object, presumably a light at twenty feet. To do this we must know the refraction and the accommodation, and he supposed that these were investigated as a matter of course. But it was not safe to take the accommodation for granted. He could himself change his exophoria to apparent esophoria by the accommodative effort, so called; and every patient could as readily do the same. As to correction by operation, he could not speak, like Dr. Thomas, from personal experience. We all knew that when a certain degree of error was reached it was necessary to operate, and Dr. Stevens placed that point very low. His method of operating was highly praised as a delicate one, but the necessity of dividing the operation into many steps was rather unfortunate. However, if he could thus relieve epilepsy, that minor disadvantage could be overlooked. It might be said in conclusion that, except in pointing out that *hyperphoria* was a frequent cause of perplexing and irregular insufficiencies of the lateral muscles (?), Dr.

Stevens had added little to our knowledge of the nature of these affections; that in his statements as to their importance he had gone much further than the experience of equally competent and diligent investigators had enabled them to confirm him in; and that in his operative treatment he had merely developed a refinement of the partial tenotomy long in use, as the only means of correcting, without overdoing it, the minute deviations from the perfect balance which he deemed worthy of operative interference.

Dr. THOMAS replied that lack of time had prevented him from treating at length in the paper of the points as to diagnosis which had been made the subject of questions. There was a variability, and yet, after all, a certainty, in these tests which came as the result of practice and observation. There was an irregularity in the results of the tests from day to day, but, after getting the extreme limits of the swing and studying all the circumstances of the case, one was able to strike an average which very fairly represented the error to be corrected. Then a prism was temporarily adjusted to compensate for this error; and thus we made a crucial experiment and were further guided by the effects obtained. A lighted candle at twenty feet, and the dot and line of von Graefe at reading distance, were *both* to be employed as test objects, and a comparative study should be made of the results obtained—both in the absence and in the presence of accommodation. In this way we frequently got important clews. Sometimes anomalies appeared in the action of the lateral muscles on comparing the tests at reading distance with those at twenty feet; and when great erraticism of this sort was shown, we might be pretty sure in the majority of cases that we should in the end find a manifest hyperphoria. Unfortunately, there was no known analogue of the mydriatics which we could well use in these cases, and yet with great patience and watchfulness we should usually succeed. His results had been hopeful in epilepsy, but his operations were too recent to speak positively of cure. In reply to a question by Dr. Osler, Dr. Thomas said that he had not as yet met with any case of chorea suitable for the operation.

## Book Notices.

*Transactions of the American Gynæcological Society.* Vol. xii. For the Year 1887. New York: D. Appleton & Company, 1888. Pp. 512. [Price, $5.]

MANY circumstances conspired to make the last meeting of this society noteworthy and memorable. It was held in New York, it was honored by the presence of a distinguished body of guests from various parts of the world, and the papers and discussions, while they inaugurated no new epoch in gynæcology, were unusually animated and interesting. From the "Address of Welcome" to the end of the volume there is much profitable reading. It is to be regretted that Apostoli's paper and the discussion on it were not incorporated in the volume. Scarcely any subject in gynæcology is receiving more attention at the present time than the therapeutic value of electricity, and Apostoli has played so important a part in the development of this subject that it would seem to have been especially fitting that his words to the American Gynæcological Society should be preserved in its records. The paper by Doléris, setting forth the indications for Alexander's operation, the method of performing it, and the results, will be found as clear and satisfactory a demonstration of the subject as has ever been made.

Bantock's paper on the treatment of the pedicle in supravaginal hysterectomy was important, not only as an expression of the matured views of one who has had large experience in the extraperitoneal treatment of the pedicle, but also because it called out the views of Martin, who, since Schroeder's death, may be considered the chief advocate of the intraperitoneal method.

Johnstone's paper on the infantile uterus suggests a number of questions which involve most important considerations. His assertion that the uterus is independent, at least as to its nerve supply, of the adjacent organs, which have hitherto been supposed to have intimate reciprocal relations with it, while it increases our knowledge of an obscure subject—if it is confirmed—also opens up new difficulties to the gynæcologist. It may signify the discovery of an increasing number of useless uteri, and, if useless, it is but a step to consider them injurious—*facilis descensus Averni*—so that there is a possibility that the near future may see the question of the extirpation of the uterus (malignant disease being now excluded) approached with the same want of careful deliberation which is now frequently exhibited concerning radical operations upon ovaries and Fallopian tubes. This suggestion is made in no flippant mood, for no careful observer can have failed to notice during the past generation the ease with which current notions and theories in gynæcology have been adopted and extended. Notwithstanding the possible dangers which may inhere in Dr. Johnstone's paper, it is unsurpassed by any in the volume for originality of research and independence of conclusions.

## Reports on the Progress of Medicine.

### CUTANEOUS AND VENEREAL DISEASES.

BY GEORGE THOMAS JACKSON, M. D.

**The Treatment of Eczema and Psoriasis.**—Dr. Myrtle, of Harrogate, in England, reports ("Lancet," Dec. 3, 1887, p. 1105) favorable results from the use of the Harrogate sulphur waters in some very bad cases of eczema and psoriasis. He has found that the best manner of using the water is at a low temperature, the patient remaining in the bath as long as he feels comfortable. In eczema, internal treatment for obvious derangement of the system is resorted to according to the nature of the case, and the diet is regulated. In psoriasis internal treatment and diet are considered useless. In order to derive benefit from the baths the patient must be free from disease of the heart, liver, or kidneys, as well as from gout and rheumatism.

**Chronic Eczema of the Nostrils** is the theme treated of by Herzog in the "Archiv f. Kinderheilkunde," 1887, Hft. iii, p. 211. He regards this trouble as one expression of the scrofulous diathesis in children in the majority of cases. In all the cases there exists a chronic rhinitis. It most often affects the junction of the skin and mucous membrane, and is hardest to cure when it locates itself on the inner side of the point of the nose. It frequently is accompanied by furuncles, and acts as a point of departure for recurrent attacks of erysipelas. The treatment consists in softening and removing the crusts and in the application of yellow-oxide-of-mercury ointment, or equal parts of unguentum plumbi and pure vaseline spread on lint and placed in the nostril so as to be accurately applied to the diseased part. Together with this treatment due attention must be bestowed upon the chronic rhinitis.

**Furuncles following Eczema.**—Unna draws attention to the frequent occurrence of furuncles after an attack of eczema ("Monatshft. f. p. Dermat.," 1888, No. 3), and regards their occurrence as a sign that the eczematous process is at an end. He confesses, however, that this knowledge on the part of the physician is of little comfort to the patient. Why furuncles should occur as a sequence to eczema is uncertain. It is possible that the fungus of eczema [Unna believes in the

parasitic origin of many cases of eczema] may prevent by its presence the growth of the fungus of the furuncle; or that the eczema leaves the tissues in a proper condition for the growth of the *Staphylococcus aureus et albus*. It is the duty of the physician to prevent this sequence of diseases by treating the eczema during its final stages by means of some active antiparasitic, and the surest of all is the addition of one to two per cent. of corrosive sublimate to zinc ointment, combined with the internal use of one sixth of a grain of sulphide of calcium three times a day. Carbolic acid, thymol, resorcin, and sulphur may also be used as additions to zinc or lead ointments or pastes. Tar and salicylic acid are not so efficacious.

**The Treatment of Acne.**—When Unna takes up even an old theme we expect him to treat it in a new way, nor are we disappointed in the paper now before us ("Monatshft. f. p. Dermat.," 1888, No. 1). He divides acne into two clinical divisions: 1. The process of closing of the follicle and formation of the comedo. 2. The process of suppuration of the follicle. Comedones are to him only the evidence of the abnormally close coherence of the corneous layer of the skin in the parts supplied with lanugo hairs. The corneous layer becomes thickened and closes the mouth of the follicle. The comedo forms on account of the continuance of the parakeratosis on the inside of the follicle. Suppuration only succeeds to the comedo formation in those follicles which contained *Staphylococcus aureus et albus* before they became closed, or into which they have entered on account of some subsequent irritation, as from tar, chrysarobin, or the like, permitting their breaking through the walls of the glands. The indications to be met in the treatment of acne are two: 1. The loosening of the corneous layer of the skin. 2. The killing of the staphylococcus. We can fulfill the first indication in public practice by the use of green soap, acetic acid, a five-per-cent. caustic potash solution, and salicylic-acid plaster. In private practice these are too rough procedures, and it is better to use sulphur with carbolic acid, or resorcin with corrosive sublimate. Two or three times a week it is well to scrape off the whole diseased parts with the curette, open all pustules, and squeeze out all comedones. The patients should wash with warm water and soap, and follow this, if their skins are tender, with a powder of oxide of zinc and flour. During the night the medicament is best applied in a paste; during the day in a watery or spirituous solution, two or three times daily after washing. Thus, at night we might prescribe:

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| ℞ Benzoinated zinc ointment | 86 parts; |
| Precipitated sulphur | 10 " |
| Siliceous earth | 4 " |

And by day:

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|---|---|
| ℞ Resorcin | 2 to 5 parts; |
| Glycerin | 1 part; |
| Orange-flower water | 20 parts; |
| Alcohol | 80 " |

Or by night:

| | |
|---|---|
| ℞ Benzoinated zinc ointment | 80 parts; |
| Resorcin | 10 " |
| Siliceous earth | 10 " |

And by day:

| | |
|---|---|
| ℞ Corrosive sublimate | 0·05 to 0·2 part; |
| Glycerin | 1 " |
| Orange-flower water | 20 parts; |
| Alcohol | 80 " |

After the acne is pretty well overcome by these means, it is well for some time to use a resorcin paste, or a resorcin-sublimate-spirituous solution, or simply the use of sublimate soap.

**A Paste for Pemphigus,** made of equal parts of linseed-oil, lime-water, oxide of zinc, and chalk, is recommended by Unna ("Monatshft. f. p. Dermat.," 1888, No. 2). This is said to work admirably in drying up the new blebs and preventing their return.

**The Anatomico-Pathological Alterations in Alopecia Areata and Alopecia Syphilitica.**—Giovanni, who has already bestowed much careful labor upon the study of the hair in health and disease, read a paper upon this subject at the last congress of Italian physicians ("Monatshft. f. p. Dermat.," 1888, No. 1). He has failed to find any micro-organisms in alopecia areata, and believes that the disease is due to a disturbance of the nutrition of the follicles. He has found a heaping up of leucocytes about the blood-vessels in the immediate neighborhood of the follicles, and a thickening of the connective-tissue fibers of the walls of the follicles. On this condition one of atrophy follows. The fall of the hair he regards as a process analogous to the scaling off of the epidermis which follows upon slight disturbances in the nutrition of the corium. In syphilitic alopecia a widening of the blood-vessels in the immediate neighborhood of the hair root-sheaths was found, accompanied by an infiltration with lymphoid cells. Mibelli at the same meeting reported that he had repeated the experiments of Joseph, and had produced bald patches strongly resembling those of alopecia areata. These had appeared in from fifteen to thirty-two days after the operation. Within three months after the hair had fallen it grew in again.

**Trichorrhexis Nodosa and Sycosis.**—Giovanni, of Bologna, has been continuing his study of the hair in health and disease, and contributes a long and interesting paper upon the subject to the last number of the "Vierteljahresschrift f. Dermatologie und Syphilis" for 1887. In trichorrhexis nodosa he has found that most of the diseased hairs have a triangular contour on cross-section, and only very few of them approach the normal oval shape. In those with triangular contour a more or less well-marked depression showed itself upon one, two, or three sides, which caused the angles to stand out prominently. Even those hairs which approached an oval shape were marked with slight depressions that made the contour irregular. Among the normal hairs were found triangular ones, but not so frequently as in the parts affected with the disease in question. When the hairs split the division is always into two or three large fibers before the hair becomes fringed out. The splitting of the ends of the hair is a process identical with the splitting in trichorrhexis nodosa, only that the process is limited to the ends of the hair. The medulla is affected in trichorrhexis nodosa only secondarily, as is proved by the fact that it shows no alteration till the cortex is split.

In sycosis the affected hairs are always thicker than normal, and their contour is more or less notched, so that the hair presents irregular projections, which may number anywhere from two to six. In the middle of the hairs are various broad and irregular cavities filled with pigment, fat, and detritus. These are sometimes so numerous as to occupy nearly all the substance of the hair. It is possible that these thick hairs may be produced by the growing together of several hairs from the same follicle. These large hairs act as irritants.

**The Bacilli of Anæsthetic Leprosy.**—After a careful study of a case of anæsthetic leprosy which proved fatal, Chassiotis concludes ("Monatshft. f. prakt. Dermat.," No. 23, 1887) that leprosy is not only a disease of the peripheral nerves, but also of the spinal cord; that the so-called lepra cells are in reality colonies of bacilli located in the lymph-channels and surrounded by a mucous envelope, and that when the spinal cord is affected there is found an inflammation, beginning about the venæ centrales.

**The Parasites of Favus and Ringworm.**—Some time ago, in 1886, Quincke, of Kiel, declared his belief that there were at least three different forms of fungus in favus, and these he named $\alpha$, $\beta$, and $\gamma$ fungi. Now, again ("Monatshft. f. prakt. Derm.," Nov. 15, 1887), he brings forth facts in support of his position, and propounds the thesis that the $\alpha$ fungus occurs almost exclusively in favus of the non-hairy portions of the body, and is its cause, while the $\beta$ and $\gamma$ fungi, especially the latter, have the hairy portions, particularly the scalp, as their sphere of action. He proceeds so far, indeed, as to add a name to our already burdened nomenclature—that is, *Favus herpeticus*—by which he would designate favus of the body due to his $\alpha$ fungus. A table of diagnosis between this form and favus of the scalp—favus vulgaris, as he calls it—is given.

In the same periodical Quincke gives the appearances presented by cultivations of *Trichophyton tonsurans* in comparison with those of *Achorion Schoenleinii*. In many points the trichophyton resembles the $\alpha$-favus fungus, and in many other respects differs from it. On gelatin at ordinary temperatures the herpes fungus grew slower than the $\alpha$ fungus; it appeared fluffy white on the surface like the $\alpha$ fungus, but soon became moister, and showed more tendency to grow downward. On agar-agar in a warm temperature the herpes fungus grew more rapidly, and macroscopically resembled very closely the $\gamma$ fungus of favus. The herpes fungus under the microscope differed from the $\alpha$-favus fungus in having the ends of its mycelia simply rounded off and not tapering, and

the mycelia themselves were straighter. The herpes fungus differed further from the α-favus fungus in not growing on potato.

**Treatment of Ringworm.**—It affords us pleasure to note that two of our French *confrères* commend in the treatment of this affection the method proposed by our countryman, Dr. Reynolds, of Chicago. Dr. Charon and Dr. Gevaert report ("Jour. de méd." de Brux., Nov. 20, 1887, p. 673) excellent results in the treatment of ringworm by the use of galvanism, the positive pole with its electrode, saturated with a three- to five-per-cent. solution of bichloride of mercury, being applied to the diseased spot for ten or fifteen minutes. They found that even with a three-per-cent. solution considerable burning was caused, although but a moderate current was employed. This they take for evidence that the mercury penetrated the tissues, as the same current without the mercury produced no discomfort. The average duration of treatment was about four weeks.

**Treatment of Syphilis by Calomel Injections.**—Welander, of Stockholm, after treating forty-two cases of syphilis with hypodermic injections of calomel, draws the following conclusions ("Vierteljhrschrft. f. Derm. u. Syph.," 1887, xiv, 4): In nearly all his cases he obtained as good results by this method as he could expect, but it alone could not be depended upon for a cure; other methods of treatment must be used with it, such as local treatment, and the internal use of iodide of potassium. It did not seem to have any more effect in preventing relapses than any other method. The injections often caused painful infiltrations and sometimes abscesses. Stomatitis of greater or less severity occurred in thirteen of the cases. The quantity of mercury which the organism takes up can not be exactly determined by this method, though it can be more nearly approximated to by it than by the use of the drug by the mouth or by inunctions. Still, he believes that the method is worthy of further trial, as it is a simple and powerful one.

# Miscellany.

**The Seventh Meeting of the International Ophthalmological Congress** will be held in Heidelberg, on the 9th, 10th, 11th, and 12th of August of this year. In January the provisional committee, consisting of Dr. Otto Becker, of Heidelberg, Dr. Wilhelm Hess, of Mayence, and Dr. J. Stilling, of Strassburg, issued the following circular:

"At the meeting of the Heidelberg Ophthalmological Society held last year it was decided to celebrate the twenty-fifth anniversary of the society by inviting the ophthalmologists of all countries to attend its meeting to begin August 9, 1888, and by their presence to expand the meeting of the local ophthalmological society into an International Congress. The undersigned committee was intrusted with the preparations necessary for the carrying out of this plan.

"The committee felt able to undertake this honorable though difficult task, since the Ministry of the Grand Duchy of Baden, as well as the municipal authorities of Heidelberg, had volunteered their most willing assistance in the undertaking. There is therefore some prospect, notwithstanding the more limited circumstances under which the congress will meet in Heidelberg, that, besides the scientific stimulus which the meeting of so many distinguished ophthalmologists will naturally afford, our visitors will carry away with them impressions of town and country which, we hope, will not fall far short of the pleasant recollections of such cities as Brussels, Paris, London, New York, and Milan.

"In informing the representatives of ophthalmology of the determination of our society, we feel compelled, before publishing an exact programme of the congress, to discuss the following point with some fullness: Is the Ophthalmological Society of Heidelberg justified in designating this international meeting which it convokes the seventh session of the International Ophthalmological Congress? An answer to this question can be given only after a review of the history of the *Congrès international périodique d'ophthalmologie.* But first, for the sake of chronological order, we must mention what was without question the First International Ophthalmological Congress, that held at Brussels between the 13th and 16th of September, 1857. The initiative in convoking it was taken by Dr. Warlomont, editor of the 'Annales d'oculistique,' which has appeared in Brussels since 1836. In his opening address President Fallot attributes the merit of the organization of the congress to him and to the kindly assistance of the Minister of the Interior. The international character of the meeting is shown by the vice-presidents, appointed from the countries represented. They were James Dixon, Arlt, Melchior (Denmark), Sichel, Stromeyer, Sperino, Donders, Marques (Spain), v. Graefe, v. Kabath (Russia), and Ammon. There were 160 members present; Warlomont was secretary.

"The *Société universelle d'ophthalmologie*, sanctioned by the French Government in March, 1861, held its first meeting in October of the same year This meeting, however, from a scientific point of view, hardly deserves to be called an international congress. In the report of the second meeting of the *Société universelle* (30th Sept.–3d Oct., 1862) Warlomont writes that the first meeting was indeed attended by a few distinguished foreign ophthalmologists (*un certain nombre d'ophthalmologistes étrangers de distinction*), some of whom came as representatives of their governments. There were in all but 15 present. But these distinguished visitors, Warlomont continues, were not a little surprised on their arrival in Paris to be left entirely to their own resources and to find only a few French colleagues at the meeting. After a few days of scientific discussion, it was recognized by the members that their first and most important duty was the reorganization of the society. This was done at the session on the 13th of October, 1861, in which the Paris specialists also participated. It was decided that the meetings should not be held exclusively at Paris, but that each year the society should convene in another town, excepting the following year (1862), when it should meet once more at Paris. At first ten other towns in different countries were designated as places of meeting. Subsequently the permanent committee in Paris added twenty-one others to the list.

"The constitution presented by the permanent committee at the second meeting of the *Société universelle* (1862) was discussed in its first session and was adopted with a few modifications. The most important of these was that the meetings should be held every fourth year instead of annually. The number of members present at this meeting was 113. Thereupon Warlomont drew attention to the fact that the society, in the adoption of so long an interval between its meetings, had changed its character and had become in reality a periodical congress instead of a permanent society, and he proposed that it should accordingly take the name *Congrès international périodique d'ophthalmologie.* He very justly added that on this account the meeting of 1862 might very properly be considered the Second Congress, or a repetition of that held at Brussels in 1857. 'Too many links connect it with the congress which met in Brussels in 1857 for it not properly to be considered as a continuation of the work to which so many distinguished members of this assembly so eminently contributed.'

"In this way the Periodical International Ophthalmological Congress was definitely organized. Let us follow its history. Vienna was selected for the place of meeting of the third session, in 1866. But, although many preparations had been made by the committee, the meeting was rendered impossible by the Austro-Prussian war, and insurmountable obstacles prevented a meeting in Vienna also in 1867. Thereupon Friedrich Jaeger and Arlt very properly proposed to the permanent committee of the *Société universelle d'ophthalmologie*, still existing in name, that an invitation to Paris for the third session in 1867 would be acceptable. The International Exposition had already attracted the attention of the entire scientific world to Paris. The Third Session, called the Second Paris Congress, was accordingly opened in the *Salle du Grand Orient de France* at Paris on the 12th of August, with an attendance of 114 members. This brilliant meeting, distinguished by the presence of Helmholtz, is well remembered. At the morning session of the 14th of August, Berlin was chosen for the fourth congress, in 1871, Arlt having formally declined for Vienna. But again the Fates prevented. The death of v. Graefe in 1870 would have made the success of a meeting in Berlin doubtful had not the political situation rendered it quite impossible. By the motion of Critchett at the meeting of the Heidelberg Ophthalmological Society (September 5, 1871) the International Congress was revived. Without special com

mission, he assumed the responsibility, in his own name and in behalf of his English colleagues, of inviting the oculists present to hold a meeting of the International Congress in London in the following year, and advising that this meeting be not appointed for later than the middle of August, as September in London is very unpleasant.

"The Fourth Congress accordingly met in London, beginning August 1, 1872. In the opening address Critchett referred to the fact that the meeting had been proposed in Heidelberg. There were 104 members in attendance. The celebrated English ophthalmologists, more particularly Bowman and Critchett, the universally renowned Moorfields Hospital, English hospitality, and the interest offered by the metropolis, made this congress most memorable. It also had the advantage that the next meeting (the fifth session) was actually held at the time and place designated at its closing session on the 3d of August.

"Preparations were made by Agnew, Noyes, and Roosa, and the congress met at New York between the 12th and 14th of September, 1876. Among the considerable number of members, Europe had naturally but a small representation because of the great distance. The perpetuation of the congress was thought to be sufficiently assured when, on a motion of Noyes, a committee was appointed consisting of Hansen, of Copenhagen, Becker, of Heidelberg, and Arlt, with full power to appoint the time and place of the next meeting and to empower a committee at the chosen place to make all necessary preparations. The committee found it quite impossible to arrange a meeting. Neither in Copenhagen nor in any of the Swiss towns could the co-operation of those most concerned be obtained. The Ophthalmological Section of the International Medical Congress, in Geneva, in 1877, proposed that the International Ophthalmological Congress be convoked to Vienna in 1880. Although Arlt had assurance of the aid of the Austrian Government, the congress died from lack of interest on the part of the other eminent oculists of Vienna, whose co-operation had vainly been sought for by the committee. It was thought impracticable at that time to meet in one of the towns of the new German Empire. Nothing remained for the committee but to return its commission to the Ophthalmological Section of the International Medical Congress at Amsterdam. It was thereupon decided at the meeting of the 13th of September, 1879, that the sixth session of the International Ophthalmological Congress should meet in one of the towns of Italy, to be chosen by the Italian Ophthalmological Society. Thanks to the energy of Donders, who presided in Amsterdam, Italy undertook the responsibility of the meeting.

"Quaglino, chairman of the committee, opened this sixth session of the congress at Milan on the 1st of September, 1880. The number in attendance was 118. Before the close of the session Cervera (Madrid) gave an invitation to meet at Madrid in 1884, which was accepted with applause. A motion of Landolt, to the effect that it would be well to merge the International Ophthalmological Congress into the Ophthalmological Section of the International Medical Congress, was laid over for decision at the next meeting of the International Ophthalmological Congress. The proposed meeting at Madrid did not take place. The International Medical Congress, which was to have met in Copenhagen in 1883, had to be postponed till the next year. The Spanish committee, thinking it best not to call a meeting to Madrid the same year, left the arrangement of the next meeting to the Ophthalmological Section of the International Medical Congress. It is not shown by the official report of the Copenhagen congress whether there was any consideration of the subject by the Ophthalmological Section.

"Since then no mention has been made of the International Ophthalmological Congress. Shall it be allowed to drop silently from the list of scientific congresses? The Ophthalmological Society of Heidelberg hopes not. In giving expression through us, its committee, to the hope that it may entertain many foreign colleagues at the celebration of the twenty-fifth anniversary of its foundation, to take place in the second week of August of this year, in Heidelberg, the society desires to recall the fact that on a former occasion the International Ophthalmological Congress was resuscitated in Heidelberg, and to point out that the motion made by Landolt at the close of the Milan congress remains to be considered. Should this motion meet with approval, the International Ophthalmological Congress, though losing its independent existence, will continue to live honorably and with renewed vigor under another form. The Ophthalmological Society ventures to express the hope that invitation may find general acceptance, more particularly as the International Ophthalmological Congress has not heretofore met in a German town."

Subsequently, in March, the committee issued a provisional programme, including reports on "Glaucoma," by Priestley Smith, of Birmingham, and Snellen, of Utrecht; on "Cataract," by Gayet, of Lyons and Schweigger, of Berlin; and on "Bacteriology," by Leber, of Göttingen, and Sattler, of Prague. The general meetings are expected to be held in the aula of the University. During the afternoon of the last day, Sunday, August 12th, there will be a *fête champêtre* at Ziegelhausen, in the valley of the Neckar; and after sunset the old castle will be illuminated.

**The Doctor in Fiction.**—A recent issue of the "Lancet" contains the following as a leading article:

"A bitter attack recently made upon the profession in the pages of a novel reminds us that at the present day all classes and professions are to a certain extent at the mercy of the writer of fiction. Novels now enjoy a portentous popularity, unparalleled, and indeed unapproached, at any other epoch of the world's history, and form the sole intellectual pabulum of thousands. We are not concerned at present to inquire how far this preponderance of one species—and that certainly not the highest—of literature is a thing to be deplored or to be cheerfully acquiesced in; but there can be no doubt that the novelist is, whether by accident or deliberate intent, one of the potent forces of the age. No doubt he does not usually pose as a teacher or moralist, didactic novels being commonly regarded both as artistically defective and as destined to a precarious popularity, and few readers of fiction deliberately base either opinion or conduct upon the dictum of a novelist. Not the less, however, is it most true that the books we read influence our mental and moral nature as powerfully, though as insensibly, as the air we breathe affects our bodies; and hence the fiction of the day not only reflects, but to no inconsiderable extent molds, current thought and opinion. It is not, then, a matter of indifference to us that our professional methods, aims, and work should be honestly depicted, and not maliciously caricatured, in the pages of the modern novel.

"Taking a broad view of the subject, we do not think that any complaint can justly be made regarding the portraiture of medical science and its professors which is to be found in the fiction of this century. No doubt the picture is often palpably defective in some of its details, and the lack of practical knowledge is on many occasions abundantly manifest, but there is seldom any designed ill-will or palpable untruth. Medical practice is commonly depicted as an admirable field for the exercise of all the nobler qualities—courage, endurance, self-reliance, foresight, patience, sympathy; and the skill, wisdom, and matured experience which distinguish the leaders of our profession receive ample and ungrudging recognition. We can hardly complain that the reverse of this picture is also painted with no hesitating hand, and that ignorance, quackery, and cupidity are held up to merited ridicule and reprobation. We must remember that the aim of the novelist is primarily to amuse, and that satire is often a readier means to this end than serious delineation. It is not surprising, then, that a writer like Dickens, who delighted to paint, not average humanity, but oddities, whether amiable or ridiculous, should seize the ludicrous side of medical life, and find a congenial subject in the freaks of the medical student of the day. A higher moral teacher has given us in the hero of 'Middlemarch' a professional portrait of which we may be justly proud. The young and high-spirited surgeon, full of generous aims and noble ambition, who struggles through the difficulties presented by the narrow sympathies and petty jealousies of a small country town, is a powerful study which can hardly leave the most careless reader unimpressed. A favorite novelist of to-day, Mr. R. L. Stevenson, has gone perhaps further than any other writer in praise of our profession, when he pronounces the physician as 'the flower of modern civilization,' and does not hesitate to place him as first in the rank of those who struggle for the elevation of humanity.

"As no habit is more wholesome than that of looking at ourselves from the point of view of others, we may with advantage consider those characteristics of our profession which apparently unfavorably impress

bservers so shrewd as are many of our novelists. First among these e must place professional jealousy and professional differences of pinion. The former is no doubt a great evil. An enlarging knowledge f the world teaches us that a scrupulous regard for the rights of our rofessional competitors and an honorable solicitude for their profes- onal reputation are not only right, but eminently wise and politic. he whole profession is wounded by a slander upon any member of it, nd, while there must always be great contrasts in point of natural lent and acquired experience, it is our duty not rashly or lightly to tter any word which may be even perverted to imply that a profes- onal brother is incapable of discharging with credit the work which ily devolves upon him. As regards professional differences of opin- n, we think a little more candor would often be advantageous. When e find a bench of judges perhaps evenly divided upon the meaning of statute laboriously constructed so as to insure perfect precision and cidity of meaning, we can not see that there need be any hesitation confessing that serious difference of opinion, even among the ablest nd wisest of our profession, is often inevitable in dealing with the dif- ult and sometimes inscrutable processes of disease. Medicine is not, erhaps never will be, an exact science, and mathematical certainty of agnosis or prognosis is often simply impossible. Sensible men will eedily recognize this fact and appreciate our candor if we are care- l to abstain from the assumption of knowledge which we do not ossess.

"A more serious charge has lately been urged with some persist- ce, viz., that medical men unduly trifle with their patients for the rpose of advancing science, and that our hospitals especially are the ene of dangerous experiments, in which the interests of the suffering e subordinated to the acquisition of knowledge. Now, if it be once oroughly realized that medical science is still largely empirical, and at new remedies and new methods of treatment are constantly being ggested for the improvement of our art, it is obvious that in a certain nse experiment is not only justifiable, but absolutely incumbent upon . If every trial of a novelty in practice were ruled out of court as admissible because involving something in the nature of an experi- ent, we should never have advanced beyond the wild theories and ude practice of Hippocrates and Galen. We should still be holding st to long-exploded errors and practicing antiquated methods of treat- ent to the infinite loss and detriment of humanity. We must seek uth in spite of detraction and misrepresentation, and a cautious trial any remedy or any therapeutic method which offers fair hope of sav- g one additional life or allaying one human pang must be courage- sly and perseveringly essayed.

"The days are gone when medical art could cover itself with that oak of mystery so dear to many. The 'fierce light' of modern criti- sm beats upon us, as upon all. We do not complain of that; we wel- me it rather, provided always that the criticism is founded on real owledge, advanced in the spirit of charity, and that due care be exer- sed that truth is not sacrificed to the exigencies of fiction or satire."

**The New York Academy of Medicine.**—The programmes of meet- gs of sections to be held during the remainder of April include the llowing:

*Section in Laryngology and Rhinology*, Tuesday evening, April 24th. -Brief answers to the questions: "How do you treat Hypertrophies the Middle Turbinated Bodies in contact with the Septum?" and What will prevent Excessive Granulations after Removal of Obstruc- ons from the Nasal Chamber?"; and a paper on "Intranasal Exosto- s and the Method of Treatment," by Dr. D. H. Goodwillie.

*Section in Pædiatrics*, Wednesday evening, April 25th.—"Some Re- nt Views on the Pathology and Treatment of Pertussis," by Dr. E. C. endt.

*Section in Obstetrics and Gynæcology*, Thursday evening, April 26th. "Some Unusual Cases of Pelvic Abscess, and their Treatment," by r. J. B. Hunter; and "A New Suture-fastener for Silver Wire, special- adapted for Operations upon the Cervix and Perinæum," by Dr. A. . Goelet.

*Section in Materia Medica and Therapeutics*, Friday evening, April th.—"Therapeutic Remarks on Cocculus Indicus and Picrotoxine," Dr. M. Putnam Jacobi.

**"Scotch Oats Essence."**—Dr. Herbert E. Smith, the professor of chemistry in the Department of Medicine in Yale University, writes us as follows, under date of April 14th: "I have recently had occasion to make a chemical examination of 'Scotch Oats Essence,' and have separated from the preparation a considerable quantity of morphine. Having since had my attention called to your note on this preparation in the last number of the Journal, it has occurred to me that you might be interested in learning of this confirmation of Dr. Eccles's results, obtained from another sample."

**The South Carolina Medical Association.**—At the annual meeting, held in Columbia, on the 11th and 12th inst., the following officers were elected for the ensuing year: President, Dr. C. R. Taber, of Fort Motte; first vice-president, Dr. George Howe, of Columbia; second vice-president, Dr. J. S. Hughson, of Sumter; third vice-president, Dr. S. M. Orr, of Anderson; recording secretary, Dr. W. P. Porcher, of Charleston; corresponding secretary, Dr. J. L. Dawson, Jr., of Charleston; treasurer, Dr. H. W. De Saussure, of Charleston.

**The Gross Medical College**, of Denver, held its commencement exercises on Tuesday evening, the 10th inst.

**The Medical Department of Niagara University**, of Buffalo, held its annual convocation on Tuesday evening, the 10th inst., when the degree of M. D. was conferred on twelve gentlemen. Dr. Henry Flood, of Elmira, delivered an address to the graduates. During the day, the Alumni Association held its third annual meeting. In the morning, addresses were delivered by Professor Thomas Lothrop and by the president of the association, Professor Floyd S. Crego. In the afternoon, the following programme was taken up: "Some of the Relations of Pathology to the Practice of Medicine and Surgery," by Dr. Frank W. Ross, of Elmira, N. Y.; "The Diagnosis of Contracted or Granular Kidney," by Dr. A. D. Lake, of Perrysburg, N. Y.; "An Inquiry into the Importance of Physical Culture as a Branch of Preventive Medicine," by Dr. William C. Bailey, of Albion, N. Y.; and "A Detailed Account of the Weir Mitchell Treatment," by Dr. Edward Angell, of Rochester, N. Y.

**The Health of Boston.**—During the week ending Saturday, April 14th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 21 cases and 10 deaths; scarlet fever, 17 cases and 1 death; typhoid fever, 7 cases and 5 deaths; measles, 32 cases and 1 death. There were also 43 deaths from consumption, 32 from pneumonia, 4 from whooping-cough, 15 from heart disease, 8 from bronchitis, and 7 from marasmus. The total number of deaths was 222, against 188 in the corresponding week last year.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending April 13th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 24th corresponded to an annual rate of 21·1 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Huddersfield, viz., 14·8, and the highest in Plymouth, viz., 37·6 in a thousand. Small-pox caused 17 deaths in Sheffield, 1 in Bristol, 2 in Blackburn, 2 in Hull, 1 in Nottingham, 1 in Manchester, and 1 in Sunderland.

During the year 1887, 191,887 deaths were registered, being in the proportion of 20·8 in a thousand of the population, and including 332 deaths from small-pox, 278 of which occurred in Sheffield.

*London.*—One thousand six hundred and fifty-five deaths were registered during the week, including measles, 18; scarlet fever, 24; diphtheria, 17; whooping-cough, 80; enteric fever, 10; typhus, 1; diarrhœa and dysentery, 6. Diseases of the respiratory organs caused 457 deaths, and different forms of violence, 64. Four cases of suicide were registered. The deaths from all causes corresponded to an annual rate of 20·2 in a thousand. In greater London 2,064 deaths were registered,

corresponding to an annual rate of 19·5 in a thousand of the population. In the "outer ring" 25 deaths from whooping-cough; scarlet fever, 7; diphtheria, 8; and fever, 6, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending March 24th in the sixteen principal town districts of Ireland was 30·8 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 9·6, and the highest in Waterford, viz., 48·6 in a thousand. In Dublin 201 deaths were registered, including 4 from whooping-cough; measles, 5; scarlet fever, 4; typhus, 1; dysentery, 2; diarrhœa, 1; and erysipelas, 1.

*Catania, Italy.*—Four thousand and thirty-one deaths were registered during the year 1887, including 679 from cholera.

*Fayal.*—The United States consul, in his dispatch dated March 15, 1888, says:

"I deem it proper to inform the Department that the variola has been and is raging with intensity in the neighboring island of Torceera, and I should have done this sooner were it a place visited by our shipping. At St. Michael's it is spoken of as being in a couple of villages, but not in the town. At Fayal it has been introduced twice within a year from Torceera, but in both instances was stamped out. I shall keep you informed of its progress in the islands. The variola is not classed by the Portuguese authorities as one of the infectious diseases, and they give clean bills of health at times, notwithstanding its presence."

*Santiago de Cuba.*—The United States sanitary inspector reports for the week ending March 31, 1888, "one death from yellow fever at the military hospital, and two cases under treatment. Several cases of varioloid have appeared this week."

*Havana.*—Six deaths from yellow fever and 12 from small-pox are reported for the week ending March 31, 1888. During the month of March there were 567 deaths registered, including yellow fever, 14; small-pox, 85; enteric fever, 9; so-called pernicious fever, 12. . . . The sanitary inspector states that "small-pox continues to slowly diminish in and immediately around Havana, but in some towns a few miles out of the city it is increasing, as in Alquizar, Santiago de las Vegas, while others are being invaded by the pestilence. Cienfuegos and Sagua are still suffering very much from it."

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | March 24. | 2,260,945 | 1,120 | .. | ... | 6 | .... | 11 | 13 | 40 |
| Glasgow | March 24. | 545,678 | 275 | .. | .... | .... | .... | 2 | 6 | 1 |
| Warsaw | March 17. | 439,174 | 215 | .. | .... | 6 | .... | .... | 3 | 4 |
| Calcutta | February 25. | 433,219 | 219 | 46 | .... | .... | .... | 1 | .... | .... |
| Amsterdam | March 17. | 389,916 | 185 | .. | .... | .... | .... | 1 | 1 | 1 |
| Amsterdam | March 24. | 389,916 | 175 | .. | .... | .... | .... | 1 | .... | 2 |
| Munich | March 10. | 275,000 | 172 | .. | .... | 1 | .... | .... | 3 | 6 |
| Munich | March 17. | 275,000 | 154 | .. | .... | .... | .... | 4 | 2 | 3 |
| Palermo | March 24. | 250,000 | 114 | .. | .... | .... | .... | .... | .... | 2 |
| Belfast | March 24. | 227,022 | 131 | .. | .... | .... | .... | 2 | .... | 1 |
| Genoa | March 24. | 179,362 | 101 | .. | .... | 5 | 2 | .... | .... | 1 |
| Leipsic | March 24. | 170,000 | 74 | .. | .... | .... | .... | .... | .... | 7 |
| Stuttgart | March 24. | 125,510 | 34 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | March 22. | 122,000 | 40 | .. | .... | .... | .... | .... | .... | .... |
| Leghorn | March 25. | 101,718 | 39 | .. | .. | .... | .... | .... | .... | .... |
| Cadiz | March 24. | 65,028 | 49 | .. | .... | .... | .... | .... | .... | .... |
| Cienfuegos | March 26. | 40,573 | 28 | .. | .... | 15 | .... | .... | .... | .... |
| Cienfuegos | April 2. | 40,573 | 21 | .. | ... | 13 | .... | .... | .... | .... |
| Gibraltar | March 18. | 23,661 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Antigua | March 23. | 15,847 | 8 | .. | .... | .... | .... | .... | .... | .... |
| Sagua la Grande. | March 24. | 15,605 | 17 | .. | ... | 5 | .... | .... | .... | .... |
| Sagua la Grande. | March 31. | 15,605 | 11 | .. | 1 | 3 | .... | ... | .... | .... |
| Cartagena | March 24. | 13,000 | 3 | .. | ... | .... | .... | .... | .... | .... |

UNITED STATES.

*Charleston.*—The medical officer in charge of the Marine-Hospital Service reported, under date of the 7th inst., that "a seaman from the schooner Lillie F. Schmidt, out of New York on the 19th ult., presented himself for treatment at this office to-day. I found him to be suffering with small-pox, on the fourth day of the eruption, and have reported the fact to the health authorities of the city, who have taken charge of the case. It is probable that he will be sent to the quarantine station."

The vessel was immediately towed to the quarantine station in the harbor, by direction of the health officer, and on the 9th inst. sent to the United States quarantine station at Sapelo Sound, where the vessel is now undergoing quarantine.

*Norfolk.*—The medical officer in charge of the Marine-Hospital Service reported, under date of the 5th inst., the removal of a seaman from St. Vincent Hospital to the city pest house, suffering with small-pox. The patient came from New York on the schooner Henry Parker. The vessel and crew are now undergoing quarantine.

## ANSWERS TO CORRESPONDENTS.

*No. 175.*—It has been done, but always, so far as our information goes, unsuccessfully. Success has been reported in the case of tendons, however.

*No. 176.*—We do not think the lime will injure the preparation, except perhaps by causing excessive shrinking of the cartilaginous portions. To guard against that, it will be well to examine it from time to time, and, if the result alluded to appears imminent, trust to immersion in ether for any further removal of fat that may be necessary. We thank you for the circulars.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

# THE CARTWRIGHT LECTURES
ON
# THE GENERAL PATHOLOGY OF FEVER.

*DELIVERED BEFORE THE ALUMNI ASSOCIATION OF THE COLLEGE OF PHYSICIANS AND SURGEONS, NEW YORK.*

By WILLIAM H. WELCH, M. D., Baltimore,
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### Lecture III.
### THE ÆTIOLOGY OF FEVER.

*Thursday, April 12, 1888.*

We considered in the last lecture the experimental evidence concerning the effects of increased bodily temperature. An advantage of the experimental over the clinical method of investigating this subject is that it enables us to study the effects of heat upon the whole body and its various functions, without the intervention of disturbing factors, such as infection, which complicate the clinical analysis of febrile phenomena with reference to this question.

We found that animals might be kept at high febrile temperatures for at least three weeks without manifesting any serious symptoms. The only functional disturbances which could be attributed directly to the influence of the elevated temperature were increased frequency of respiration and quickened pulse. The rapid respiration was found to be due partly to stimulation of the skin by external heat and by the warmed blood, and partly to the action of the warmed blood on the respiratory centers. The quickened pulse could be positively referred to the effect of the warmer blood upon the heart itself. No definite relation could be established between the variations of arterial tension which occur in fever and the height of the temperature.

Although the experiments narrated showed that prolonged high temperature was an element in the causation of fatty degeneration of the heart, they also indicated that other factors, such as infection, were concerned in the production of this lesion. Moreover, experimental evidence was found in support of clinical facts showing that this alteration may exist without serious interference with the functions of the heart, so that the conclusion seemed justified that failure of the heart's power in fever was less an effect of high temperature than of other concomitant conditions.

Of the other disturbances in fever, we learned that the increased consumption of tissue could be explained only in relatively small part by the elevation of temperature. The lessened perspiration, the renal disorders, and the digestive disturbances (with the possible exception of constipation) are referable also chiefly to other causes than the increased temperature. Both experimental and clinical observations strongly support the view, now widely accepted, that the disturbances of the sensorium which constitute so prominent a part of the group of so-called typhoid symptoms are dependent in far higher degree upon infection or intoxication than upon the heightened temperature.

Although no attempt was made to analyze in detail the clinical evidence relating to the effects of high temperature, attention was called to the fact that the absence of all serious symptoms in many cases of relapsing fever and in the so-called aseptic fevers, in spite of prolonged high temperatures, strongly supported the conclusions derived from the experimental study of the effects of heat upon man and animals. Even in fevers, such as typhoid fever and pneumonia, where the height of the temperature is undoubtedly a most important index of the severity of the disease, there exists no such parallelism between the temperature and the nature and the severity of the other symptoms as we should expect if these symptoms were caused by the increased heat of the body.

It was emphasized that the results of experimental investigations should not be permitted to control the treatment of fevers, more particularly the use of so-called antipyretic agents. These agents, whether hydrotherapeutic or medicinal, influence, as is well known, many functions besides reducing the temperature. I need only refer to the powerful influence of cold baths upon the circulation and the nervous system, and to the action of antipyrine and other antithermic drugs upon the nervous system.

Reasons were given for assigning to hyperpyrexia and insolation a position separate from other febrile conditions in the discussion as to the effects of elevated temperature.

Before leaving this subject of the effects of increased temperature, I wish to call attention to one consideration which should perhaps influence our opinion on this much-disputed question. Is it a matter of indifference, so far as the effects of febrile temperatures are concerned, in what manner the increase of temperature is brought about? We have seen that heat-regulation, heat-production, and heat-loss are disturbed in fever, but, as experience shows, not always in the same manner or the same degree. In one case the inco-ordination of the regulating mechanism may be most apparent, the temperature fluctuating strangely up and down; in another case the heat-producing processes are excited to the utmost; and in another the circulatory changes in the skin, the vaso-motor disturbances, are the most prominent phenomena. Now, this varying interplay of the factors which cause febrile rise of temperature doubtless corresponds to varying conditions of innervation, of structure, and of function of certain tissues of the body. May we not resonably suppose that these varying conditions of the tissues directly associated with the rise of temperature may influence their tolerance of increased body heat? We have not the experimental or the clinical data which would enable us to give a definite answer to the question here propounded, and it would lead me too far from the theme of the present lecture to attempt to sift the equivocal evidence which might be gathered. I suggest this question, however, as one worthy of more attention than it has hitherto received.

I wish now to invite your attention to some considerations concerning the ætiology of fever. In this era, when ætiological studies occupy the foremost rank in medical science, it will naturally be expected that a discussion of

the general pathology of fever, even though it does not aim at completeness, will not leave wholly untouched the ætiological aspect of the subject.

The general ætiology of fever relates mainly to a consideration of the agents producing fever, the so-called pyrogenic substances. It is, moreover, only certain general characters of these agents which can be properly considered here. Most of the questions which at present engage so prominently the attention of physicians concerning the specific causes of individual fevers belong, of course, to the special ætiology of fevers, and therefore do not lie within the limits of our subject. But even with these limitations we can not, in treating of the general ætiology of fever, consider the febrile process so much in the abstract as we have done hitherto. We must come into closer contact with the individual forms of fever.

At the start it should be said that probably in no instance are we acquainted with the actual substance or substances upon which the febrile disorder of animal heat immediately and directly depends. We deal here, as elsewhere in medicine, not with direct but with remote causes. But in no department of ætiology have we advanced nearer the proximate causes than in many of the infectious fevers. To be convinced of the immense progress which has been brought about by the ætiological study of fevers, let one pick up some of the older books on fevers—such as Percy's or Solle's,* with their endless divisions into symptomatic genera and species and their barren speculations. Percy, for instance, describes no fewer than one hundred and fifteen different kinds of fevers.

In all ages it has been customary to divide fevers into two great groups—viz., those which are secondary to some local cause, usually an inflammation, and those which can not be explained by the presence of any local lesion. The explanation of the symptomatic seemed so much clearer than that of the essential fevers that attempts have repeatedly been made to place all fevers in the symptomatic group. It is a curious fact that the two methods which have been of the greatest service in the study of fever, each, when first introduced, led to an entire misconception of the nature of fever. Boerhaave, who was the first to make any extensive use of the thermometer at the bedside, supposed that this instrument indicated a reduction of the bodily temperature during the febrile chill. He therefore taught that increased frequency of the pulse, and not the elevation of temperature, was the constant and essential symptom of fever. If we except de Haen's correction, which never became widely known, it was not until the middle of the present century that Boerhaave's error was overthrown. A no less serious misconception sprang from the study of the pathological anatomy of fevers in France during the early part of the present century. The exaggerated ideas of the immediate followers of Bichat as to what could be accomplished by pathological anatomy led them to the belief, for a long time widely accepted, that there was no such thing as an essential fever, that all fevers were symptomatic of some local disease. This error of Broussais, one of the most influential and eloquent medical teachers of this century, is plainly traceable partly to the fact that his autopsies were chiefly of typhoid fever, and partly to the belief that the lesions found at the autopsy sufficed to explain all of the manifestations of the disease during life. But we need not stop to trace the fate of the various attempts to overthrow the doctrine of essential fevers. I have mentioned one attempt chiefly on account of the suggestive lessons it conveys, rather than from a desire to enter into historical details, which I have hitherto purposely avoided.

The division of fevers into symptomatic and essential fevers is one of undoubted practical utility, and is not likely to be abandoned. But it can not truthfully be said that this popular classification has been of much assistance in advancing our knowledge. Close inspection shows that the boundary-lines between the two groups of fevers are vague and shadowy. Probably no one any longer believes that traumatic fever, the principal type of the symptomatic group, is due to increased production of heat in the seat of inflammation, which, acting like a furnace, was once thought to warm the whole organism, or to the irritation of nerves connected with the inflamed region. The opinion of Billroth and of Weber is now generally accepted, that traumatic fevers are caused by the absorption of pyrogenic substances from the inflamed district. Symptomatic fevers, as well as essential fevers, therefore, are dependent upon the presence of fever-producing agents within the blood. Many essential fevers, moreover, resemble the symptomatic ones in the existence of inflammation or necrosis at the portal where there is reason to believe that the pyrogenic agents gain access to the general circulation. A distinction in these cases can not be based on the ground that in symptomatic fevers only chemical substances, although possibly the products of bacteria, enter the circulation, and in essential fevers micro-organisms invade the blood; for such a distinction would place cholera, and possibly tetanus and typhoid fever, among the symptomatic fevers. These considerations show how vague and unsatisfactory are the distinctions between symptomatic and essential fevers. Still, similar criticisms can be made of many of our artificial classifications, which Nature is under no compact to observe, and we should undoubtedly be put to great inconvenience if we attempted to dispense with the epithets symptomatic and essential as applicable to different forms of fever. There are, however, other points of view which seem to me more fruitful in the study of the ætiology of fever than those embodied in these distinctions. I refer to the differences in the nature of fever-producing agents, concerning which our knowledge, although still very imperfect, has been materially increased within recent years. And here again we are greatly indebted to the results of experiments upon animals.

Much light has been shed upon the causes of a certain class of fevers by a series of experiments which received their impulse from the important studies of Alexander Schmidt and his pupils upon the physiology of the blood. A particular direction was given to these experiments by the often-repeated observation that fever and other inju-

* Percy, "Die gesammte Fieberlehre," Pesth, 1820 [the original is in French]; Solle, "Rudimenta pyretologiæ methodicæ," Berolini, 1773.

rious effects might follow the transfusion of blood, especially when the blood of one species of animal was transfused into an animal of another species. In order to test the supposition that these bad symptoms were due to an excess of fibrin ferment, Köhler* injected into the vessels of animals blood made rich in fibrin ferment and fibrinoplastic substance, and found that this blood, when injected in large amount into the jugular vein, caused sudden death by rapid coagulation of the blood in the right heart and pulmonary arteries, but, when injected in smaller amount or in a different manner, produced a typical febrile attack bearing a close resemblance to that following the injection of putrid fluids. Angerer† then found that a similar fever, although less intense and more gradual in its development, might be produced by the injection of blood into the peritoneal cavity or the subcutaneous tissue, or even by an extravasation of blood. Although in these experiments it was believed that fibrin ferment was the pyrogenic agent, Edelberg‡ was the first to produce fever and other symptoms of intoxication by the injection of this ferment isolated according to Schmidt's method.

In the light of these experiments it was to be expected that other ferments would be examined with reference to their pyrogenic power. Schmiedeberg# discovered that injections of histozyme into the blood of dogs produced high fever associated with general illness, and particularly with diarrhœa. The ferment to which Schmiedeberg has given the name histozyme he believes to be present normally in small amount in the body and to be concerned in the dissociation of the nitrogenous constituents of the tissues. He concludes from his experiments that an excessive accumulation of this normal ferment in the body gives rise to fever with increased metamorphosis of nitrogenous material. Schmiedeberg thinks it probable that the fibrin-ferment solutions employed by Edelberg in his experiments contained also histozyme, and that the pyrexia was due to the latter substance.

Following those observations concerning the pyrogenic power of fibrin ferment and histozyme comes the discovery by von Bergmann and Angerer‖ that injections of pepsin and of trypsin into the blood of dogs cause a well-marked fever with characters like those of the other ferment intoxications described. A valuable calorimetrical study of pepsin and trypsin fevers has been made by Wood, Reichert, and Hare.△ These authors, as well as Ott,◊ have demonstrated that it is not the pepsin and the trypsin ferments themselves which constitute the pyrogenic agents, but some contaminating substance which seems to be a peptone. That peptones artificially prepared contain poisonous principles has been known for some time, and Brieger* has succeeded in isolating a crystallizable poisonous ptomaine, called peptotoxine, from commercial peptone and from that formed by the artificial digestion of fibrin. This ptomaine, however, is not identical with the pyrogenic agent found by Ott and by Wood and his colleagues in commercial pepsin. To this list of pyrogenic substances obtained from impure ferments may be added leucine, and, according to Ott, papayotin and neurine, which produce marked fever when injected into the blood in small quantity. The substance sold under the name of papoid possesses marked pyrogenic power when its filtered aqueous solution is injected into the blood. This substance contains principles belonging to the peptone, or albumose, group. Dr. Mall, fellow in pathology at the Johns Hopkins University, has isolated from commercial papoid a bacillus which in pure cultivation exerts a powerful peptonizing action on fibrin and on connective and elastic tissues. The bacillus itself is not pathogenic, but an albumose or some similar substance produced by its activity has pyrogenic power when injected into the blood.

It does not appear that any one has actually isolated the pyrexial agent from the various ferments employed in these experiments. Certainly no such agent has been obtained in a crystalline form, which is the test of its purity, if we except Brieger's peptotoxine, the pyrogenic capacity of which has not been established. It has been alleged that the fever-producing agent is the same in all of these ferment intoxications, but this has not been proved nor does it seem probable.

On better grounds it has been urged by von Bergmann and Angerer that all of the substances in the group of pyrexial agents now under consideration cause fever by producing the same change in the blood. These authors maintain that this change is the formation of an excessive amount of fibrin ferment in the circulating blood, which leads either to coagulation or to stasis in the capillaries, particularly those of the lungs and of the intestines. One of the main arguments for this view is the fall of blood-pressure which von Bergmann and Angerer observed after injections of pepsin and of pancreatin, but this fall can be explained in other ways than by supposing that the pulmonary capillaries are occluded, and, moreover, Wood, Reichert, and Hare find that the blood-pressure often rises in the course of pepsin fever. It does not seem to me that we are any more able to explain in exactly what manner the pyrogenic substances act in this class of fevers than in other fevers. The idea, however, that the liberation of the fibrin ferment in abnormal quantity is capable of causing fever finds support not only in experiments which have been mentioned, but also in the fact that injections of hæmoglobin solutions and of large quantities of water into the blood produce fever.

But you perhaps by this time have asked yourselves what bearing all of these experiments with various pyrogenic substances have upon the ætiology of human fevers. They have, in my judgment, an important bearing on this subject. However obscure may be the explanation of the mode of action of these substances, however doubtful may be

* Köhler, "Ueber Thrombose und Transfusion," u. s. w., Inaug.-Diss., Dorpat, 1877.

† Angerer, "Klin. u. exp. Untersuch. üb. d. Resorption von Blutextravasaten," Diss., Dorpat, 1879.

‡ Edelberg, "Arch. f. exp. Path. u. Pharm.," Bd. xii.

# Schmiedeberg, *ibid.*, Bd. xiv.

‖ Von Bergmann u. Angerer, "Die Verhältniss d. Fermentintoxication," Festschrift, Würzburger Universität, 1882, i, p. 135.

△ Wood, Reichert, and Hare, "Therapeutic Gazette," 1886.

◊ Ott, "Journal of Physiology," vol. viii.

* Brieger, "Ueber Ptomaine," Berlin, 1885.

their exact chemical composition, they have certain common characteristics which are calculated to shed light upon the causation of some obscure febrile disorders of human beings. In the first place, the members of this group of pyrogenic substances, if not identical with certain physiological ferments, are readily produced by them, quite independently of the action of bacteria or other micro organisms. In the second place, some of these substances are present normally in small amount in the body, and, if their elimination is impeded or their formation is excessive, there is reason to believe that they become efficient causes of fever. In the third place, these pyrogenic substances may be produced, again without the action of bacteria, in extravasated blood or by the abnormal disintegration of tissues, and, if they are absorbed from these sources in such a condition or in so large an amount that Nature can not render them harmless, they are capable of producing fever. It is customary to call the morbid condition produced by the absorption of these substances ferment intoxication, in analogy with the term putrid intoxication, applied to the diseases caused by the absorption of the products of putrefactive bacteria. The term ferment intoxication seems to me to imply more than our knowledge warrants, but it is not of much use to contend against names which have gained currency. It is probable that some of the pyrogenic agents in this group belong to the class of leucomaines, but our present information regarding these bodies does not justify any positive statements on this point.

Although the ætiology of individual fevers does not belong to our subject, I can not forbear calling your attention to certain febrile conditions which seem to be produced by the accumulation of substances that either are normal constituents of the body or are the result of chemical processes differing but little from physiological ones.

To this category probably belongs the so-called aseptic fever first described by Genzmer and Volkmann.* These surgeons have established the fact that there are traumatic fevers not caused by the absorption of septic material, and that severe injuries and wounds which pursue an entirely aseptic course are not infrequently associated with considerable elevation of temperature. This aseptic fever is usually to be observed with extensive wounds or injuries in which there is much lacerated tissue or extravasated blood to be disintegrated and absorbed. It occurs not only with wounds correctly treated by antiseptic methods, but also with subcutaneous injuries, particularly fractures of the large bones, where there can be no suspicion of the action of bacteria. Aseptic traumatic fever differs by such marked characteristics from septic fever that there can be no doubt that the two types of fever are ætiologically distinct. Aseptic fever has no prognostic significance; its only symptoms are the elevation of the temperature, which may mount to 104° F. (40° C.), or even 105·8° F. (41° C.), and the increased frequency of the pulse. The entire absence of all of the intoxication symptoms of septic and infectious fevers, such as the benumbed sensorium, the dry tongue and skin, the lessened secretion of urine, I have already referred to in confirmation of the belief that these symptoms are not dependent upon the rise of temperature. Genzmer and Volkmann assign as the cause of aseptic traumatic fever the absorption of substances resulting from the disintegration of the wounded tissues and of the extravasated blood, and state that these substances probably do not differ markedly from those produced by physiological tissue metamorphoses. This explanation certainly has received decided support by the experiments which I have described in this lecture, a large part of which have been performed since the publication of Genzmer and Volkmann's article. It has been suggested that aseptic traumatic fever is a reflex neurosis, and this suggestion can not be absolutely rejected as a possible explanation, but, for various reasons, which can not here receive further consideration, the usually accepted explanation is the more probable one.

An instructive case of ferment intoxication has been reported by Cramer.* There existed in a young woman a cyst of the size of a goose's egg between the fibers of the semitendinosus muscle. The cyst was developed from a cavernous angeioma, and was filled with dark fluid blood. The patient had had fever for almost two years up to the day of the operation. The cause of the fever could not be discovered. Immediately after the removal of the cyst the fever stopped and did not return. In this case the cavernous structure of the cyst-wall accounts for the ease with which we must suppose a considerable quantity of the pyrogenic substance was continuously absorbed from the bloody contents of the cyst. The results of Angerer's experiments, already mentioned, enable us to explain the source of the fever in this case.

Another instance may be cited in which fever is probably to be explained by the accumulation within the body of products of normal metabolism. More or less fever appears to be a constant accompaniment of the agonizing method of treatment known as the Schroth cure. In this treatment the patient is kept for a number of successive days on dry food with scarcely any fluids. Both Bartels and Jurgensen,† who have investigated the nutritive changes of individuals under this treatment, believe that the body becomes so poor in water that some of the products of regressive metamorphosis can not be carried out of the system. This certainly seems very probable, and, if true, it affords, in the light of recent experiments, an explanation of the accompanying fever.

I believe that good reasons can be adduced in support of the opinion that the febrile conditions sometimes associated with leucocythæmia, profound anæmias, and chlorosis belong to the group of fevers we are now considering. It is possible that some of the obscure ephemeral fevers are also to be included here. But to consider these febrile disorders in detail would lead us into the domain of special ætiology, upon which we have already perhaps encroached too far. My purpose has been to bring before your attention only a few clinical examples in illustration of the experimental results.

* Genzmer u. Volkmann, Volkmann's "Sammlung," No. 121.

* Cramer, "Verhandl. d. deutschen Gesellschaft f. Chirurgie," 13tes Congress, 1884.

† Jurgensen, "Deutsches Arch. f. klin. Med.," Bd. i.

I think that you will agree with me in the conclusion that experimental and clinical evidence justify us in recognizing as a distinct group of pyrogenic agents substances which have no necessary connection with micro-organisms, and which either are not foreign to the healthy organism or are readily formed by unorganized ferments from normal or abnormal constituents of the body. These substances may be described as homologous, in distinction from the heterologous agents concerned in the production of septic and infectious fevers.

A class of pyrogenic agents of far greater clinical importance than those previously considered is formed by the products of micro-organisms which in themselves are not pathogenic. A considerable number of bacteria which, when inoculated in pure cultivation into the body, are not capable of further invasion or of multiplication, produce in cultivation fluids and in dead animal or vegetable material poisonous substances often of great virulence. Exception may be taken to the description of these organisms as non-pathogenic, inasmuch as the products of their activity are poisonous, but the epithet pathogenic is usually assigned by bacteriologists only to such micro-organisms as are capable of multiplication within the body. If we called all of the micro-organisms pathogenic which produce poisonous ptomaines, we should have to include in this category a far larger number of the known species of bacteria than has hitherto been customary.

The best known and most important of the fevers produced by chemical products of saprophytic bacteria are those grouped under the name putrid intoxication. Until the introduction of the latest era in bateriology, by Koch, nearly all of the experimental work on the ætiology of fevers related to the causation of the septic and putrid fevers. It is instructive with our present knowledge to follow the experiments on this subject from the period of Gaspard, Magendie, and Sédillot up to recent times. What light has been shed upon the mass of contradictory and perplexing results of experiments with putrid fluids by the recent chemical and biological studies of putrefactive processes! Some of the putrid substances experimented with undoubtedly contained parasitic micro-organisms, and others contained only obligatory saprophytes; some were rich in poisonous ptomaines, and others were nearly devoid of them. The whole doctrine of the parasitic nature of infectious fevers seems to have hinged in the minds of some upon the determination of the question whether septic and putrid fevers are produced by the absorption of chemical substances or by the invasion of pathogenic bacteria. The ideas concerning putrid intoxication dominated at one time the whole field of fever ætiology, and were applied not only to septicæmia, but to typhoid fever, typhus fever, yellow fever—in fact, to nearly all infectious fevers. Nor have the echoes of this period even now entirely died out.

Panum was the first to isolate from putrid materials some chemical substance or substances in tolerable purity, certainly free from bacteria. This substance, when injected into animals, produced symptoms of putrid intoxication. Subsequently von Bergmann and Schmiedeberg isolated from putrefying yeast a poisonous crystalline substance, their celebrated sepsin. For a time the opinion prevailed that this sepsin was the source of all putrid intoxications. Thanks to the investigations of Nencki and others, and particularly of Brieger, we now know that many alkaloidal substances can be separated from putrefying materials. Some of these so-called cadaveric alkaloids, or ptomaines, are poisonous, fever-producing; others are harmless. There is no reason to suppose that the list of the ptomaines of putrefaction has been exhausted, nor is it necessary to believe that all of the poisonous constituents of putrefying materials are of an alkaloidal nature.

Most of the bacteria concerned in ordinary putrefactive processes are purely saprophytic. They are incapable of multiplication in the living animal tissues. In a mixture of putrefactive bacteria it is not, however, uncommon to find genuine pathogenic or parasitic bacteria. It was from such sources that the bacilli of mouse septicæmia and of rabbit septicæmia (Koch) were obtained. The bacillus of malignant œdema is also often found in the early stages of post-mortem decomposition.

There is, of course, no doubt that the absorption of the chemical products of putrefaction may produce fever with septic symptoms quite independently of the penetration and multiplication of bacteria within living tissues.

Here belong certain cases, usually described as septic, in which fever and other bad symptoms subside upon the thorough cleansing and disinfection of a foul wound or of a puerperal uterus. The majority of cases of septicæmia are not to be included here, for they depend upon the invasion of pathogenic bacteria. But, excluding the cases of genuine septicæmia, there remain the putrid intoxications which result from the absorption of poisonous substances produced in necrotic or disintegrating tissues, or exudations, or extravasated blood by the action of purely saprophytic bacteria. The ideas which I have expressed on this subject are now so generally admitted that they require no further elucidation.

It is probable that fever with symptoms of intoxication, although generally of a much milder nature than in the class of cases just considered, may be produced by abnormal fermentations and putrefactions caused by saprophytic bacteria in the alimentary canal. But here the essential morbid conditions seem to be abnormities in the gastric and intestinal contents, due partly to the character of the ingesta, but chiefly to alterations of the digestive juices. Fermentative and putrefactive bacteria are normally present in the intestinal canal, and have abundant opportunities to gain access to this situation. The number, however, which can multiply and thrive there is quite limited, for, under normal conditions, according to Escherich, only such bacteria can multiply to any extent in the intestinal canal as are capable of growing with little or no oxygen and of deriving their nourishment from the anaerobic fermentation of the food supplied to them in this situation.

Of a far more serious nature are the putrid or ptomaine intoxications which result from the ingestion of substances which have undergone outside of the body putrefaction or changes which lead to the formation of poisonous ptomaines. To this group of cases belong at least many of the instances

of poisoning which have been caused by eating certain kinds of meat, sausage, fish, cheese, etc. In some of these instances poisonous ptomaines have been isolated from the suspected substances; but we know scarcely anything of the micro-organisms which are concerned in their production.

It is important to bear in mind that it is not stinking putrefaction alone which gives rise to poisonous products. Brieger has found that such products may be absent in very advanced decomposition, and that, in general, the most virulent products are formed in the early stages of putrefaction. We know, furthermore, that putrefactions and fermentations differ in the character of their products. There are differences according to the kind of bacteria present, according to the substances decomposed, and according to various other conditions, such as the presence of oxygen, the temperature, etc. This is not the proper occasion to discuss these details.

Enough has been said to prove that we are justified in recognizing as a second class of pyrogenic agents substances which are the products of bacteria in themselves not pathogenic. These pyrogenic agents may be formed on or within the body, or they may be produced outside of the body. I would not, by any means, have you infer that it has been proved, in all of the special examples which I have mentioned, that the bacteria involved are not pathogenic or capable of multiplication within the living tissues. We have not sufficient knowledge to assert or to deny this in every instance, but I do not think that it is likely exception will be taken to the classification which I have adopted for most of these cases. As has repeatedly been mentioned, our purpose here is not an analysis of individual cases of fever, but an attempt to classify systematically the various pyrogenic substances.

We come now to the third and most important group of fever-producing agents, the pathogenic micro-organisms. So overshadowing is their importance that it has been maintained that they are the sole causes of fever. In contrast with former times, it is no longer the symptomatic fevers whose ætiology is clearest. We have much more definite ideas as to the mode of production of some of the essential fevers, which were once the most obscure, than we have of symptomatic fevers. It does not seem to me worth while to go over the chain of evidence which establishes the doctrine that the infectious fevers are caused by micro-organisms. There is probably no one who has thoroughly investigated the subject and is competent to form an opinion on it who does not to-day admit that a number of infectious diseases have been proved to depend upon specific micro-organisms, and that it is a logical inference that all infectious diseases are caused by parasitic organisms.

It is not germane to our subject to enter into a morphological or biological description of the different species of pathogenic organisms which are causes of febrile diseases. The only question which concerns us in this consideration of the general ætiology of fever is how the micro-organisms produce fever. Are they themselves the pyrogenic agents, or do they produce chemical substances which are pyrogenic? A number of other possibilities might be mentioned. These and similar questions have suggested themselves to investigators since the beginning of any knowledge of parasitic micro-organisms. Our information is far from sufficient to enable us to answer these questions in a positive manner, and still we are not left wholly to vague surmises in attempting to form some sort of an opinion.

That bacteria can produce mechanical effects by plugging up capillaries and in other ways is certain; but the wide differences presented by the various infectious diseases can not be reconciled with the idea that pathogenic bacteria act chiefly by mere mechanical interference with the fluid and the solid constituents of the body. Notwithstanding the fact that Stricker and Albert succeeded in producing fever by the injection of starch granules into the blood, probably no one will be inclined to attribute the pyrogenic activity of bacteria in any considerable extent to occlusion of blood-vessels.

In a certain number of infectious diseases, particularly of animals, bacteria are present in such enormous number in the blood and tissues that some are inclined to refer the disastrous effects of the organisms to the withdrawal of oxygen and other nutritive pabulum from the cells of the body. So far as the appropriation of oxygen is concerned, this idea is not supported by the results of most of the examinations of the blood in cases of anthrax. This explanation was more popular in the early days of bacteriology than it is at present, and at the best its value is limited, for it can not be applied to a large number of infectious diseases, such as cholera or typhoid fever, where the circulating blood is not largely invaded by the parasites. Furthermore, it is not clear how the appropriation by bacteria of nutriment intended for the tissues would help us to explain the production of fever.

It has been suggested that the increased temperature in infectious fevers may be explained by the heat produced by oxidation or other chemical changes in the micro-organisms themselves. But this is not at all a satisfactory explanation. Not only is the quantity of heat which can come from this source in all probability very small compared with that constantly produced in the body, but such an explanation of febrile rise of temperature is not in harmony with what we know concerning the mode of production of fever (see Lecture I).

The failure to explain the pathogenic power of bacteria in these and similar ways led to the supposition that the morbid activity of pathogenic bacteria was exerted chiefly by means of injurious chemical products. The demonstration of such products leaves no room for doubt as to the correctness of this supposition for some infectious diseases. This explanation is probable for most such diseases, but experience has shown that it is particularly dangerous to indulge in hasty generalizations in this department of medical science.

Sterilized and filtered cultivations, particularly old cultivations, of various pathogenic bacteria are capable of producing fever and other symptoms when injected into the blood or tissues. This, of course, makes it evident that the bacteria in question give rise to poisonous substances. It is necessary to distinguish between the intoxication pro-

duced by the injurious products of bacteria and the infection caused by the multiplication of the micro-organisms within the body. That this distinction may be readily overlooked is shown by the recent experiments with the inoculation into animals of pure cultivations of the typhoid bacillus. Small quantities of these cultivations may be inoculated without any apparent effect; if, however, larger quantities are injected into the veins or the peritoneal cavity of a rabbit, the animal dies in a short time, and the characteristic bacilli are found in the blood, in the spleen, and elsewhere. It was supposed by Fraenkel and Simmonds,* to whom we owe this latter observation, that actual infection took place, but it has been demonstrated by Sirotinin, and by Beumer and Peiper,† that under these circumstances no multiplication of the injected bacilli occurs, and that the same results may be obtained by the injection of sterilized typhoid cultivations.

The isolation in a chemically pure state of the poisonous products of pathogenic bacteria encounters great difficulties, and we owe to Brieger ‡ nearly all that has been accomplished in this direction. Two substances which he has obtained from cultivations of pathogenic bacteria are of great interest. Brieger isolated from pure cultivations of the typhoid bacillus a very poisonous ptomaine, or toxine, as he prefers to call this group of substances. He has given to it the name typho-toxine. It may be somewhat significant that he failed to find typho-toxine in a cultivation which had stood for twenty-four hours at a temperature of 102·2° F. (39° C.). The injection of typho-toxine into guinea-pigs produced great muscular weakness, diarrhœa, increased frequency of pulse and of respiration, and death. Nothing is said as to the effect upon the temperature of the animal.

A toxine has been isolated by Brieger in a crystalline form from an impure cultivation of the tetanus bacillus. This substance, called tetanine, produces, when injected into animals, the characteristic symptoms of tetanus.

It is evident that these important discoveries render far more definite than was formerly possible the belief that bacteria produce fever by means of their chemical products.

A dangerous influence exerted by poisonous ptomaines is that under their agency the power of the body of resisting the invasion of various micro-organisms may be impaired or overcome. Thus, Wyssokowitsch has shown that the immunity of some animals against certain species of bacteria may be destroyed by ptomaine poisoning.

In order to observe the effects upon the temperature, I have injected into rabbits sterilized cultivations of the typhoid bacillus. Injections of very small quantities of these cultivations produce no effects; somewhat larger amounts cause a rise of temperature without other marked symptoms; still larger quantities produce increased temperature, diarrhœa, weakness, and other manifest symptoms of severe illness, but the animal may recover; relatively large amounts are followed by a fall of temperature, grave illness, and death. I have also obtained results similar to those of Sirotinin, who inoculated two rabbits with the same amount of a typhoid cultivation. In one rabbit fever developed and the animal recovered; in the other the temperature fell after the injection and the animal died. This certainly does not indicate that the rise of temperature in itself is an unwelcome attendant of intoxication with the poisonous products of bacteria. My experiments certainly showed that the animals were more likely to die after injection of typhoid cultivations when the temperature fell than when it rose, independently of the quantity of material injected. One is reminded here of the very malignant cases of typhoid fever reported by Fraentzel and others, in which the temperature throughout a great part of the disease was subfebrile, or even at times subnormal.

In no disease is the dependence of the febrile paroxysm upon the presence of bacteria so apparent as in relapsing fever, where, according to the statements of most, although not of all, observers, the spirilla appear in the blood at the beginning of a paroxysm and disappear at the end. Whether or not here and in malarial fever the pyrogenic agent is a chemical product of the micro-organisms causing the disease we do not know.

I must content myself with having brought before you evidence showing that at least in some of the infectious fevers the specific bacteria produce pyrogenic substances. We have no right to say that this is the only way in which pathogenic bacteria can cause fever.

We have considered now three groups of agents concerned in the production of fever, viz.: first, unorganized ferments and other relatively homologous substances; second, ptomaines and other chemical products of saprophytic micro-organisms; third, pathogenic micro-organisms and their chemical products.

It is not to be understood that these groups correspond to sharply defined classes of fever-producing agents. The same substance may be produced by the action of unorganized ferments as well as by saprophytic bacteria or by parasitic bacteria; hence we may find the same fever-producing agent in each of the three groups. As has already been mentioned, our knowledge does not justify us in regarding these various substances as the immediate and direct pyrogenic agents. The epithet pyrogenic is applied to them only by a certain latitude of signification. It is possible that these various substances which we are in the habit of describing as pyrogenic may produce in the body some common change which gives rise to the real fever-producing agent. This is the view of von Bergmann and Angerer, who believe that this common change is a liberation of fibrin ferment by destruction of leucocytes. While we can not consider this view as more than a hypothesis, it is nevertheless well to remember that apparently heterogeneous substances which are usually designated as pyrogenic may produce similar changes, which are to be regarded as the real source of the febrile disorder of animal heat. But, notwithstanding these limitations and those elements of uncertainty, it seems to me that some such classification as

* Fraenkel and Simmonds, "Die ätiologische Bedeutung des Typhus-Bacillus," Hamburg und Leipzig, 1886.

† Sirotinin, "Zeitschrift f. Hygiene," Bd. i, p. 465; Beumer u. Peiper, *ibid.*, p. 489.

‡ Brieger, "Untersuchungen über Ptomaine," Berlin, 1886.

that suggested of the agents producing fever is more useful than that usually employed in the discussions of the etiology of symptomatic and of essential fevers.

There is one point which must be impressed upon every one who makes many experiments with pyrexial agents. This is that once in a while a substance of undoubted pyrogenic power causes a fall instead of a rise of temperature. This occurs frequently when the substance is injected in large quantity, and under these circumstances there is usually produced a condition of collapse. But in exceptional cases the same dose which will cause in one animal a rise of temperature may give rise in another animal of the same species to a distinct reduction of temperature. In these latter cases there must be some idiosyncrasy on the part of the animal. Aronsohn* refers this unusual phenomenon to some peculiarity of the heat centers in the brain, and he draws an interesting parallel between this contrary effect of pyrogenic substances and the exceptional cases in which antipyretic drugs give rise to elevation instead of lowering of temperature.

The causes of fever which we have thus far discussed have been substances which exert a pyrogenic effect when introduced into the circulation. We suppose that those substances act in some way upon the nervous system, but whether or not this action is a primary one it is impossible to say. Even if we assume, as is often done, that these substances incite directly in the blood and tissues chemical changes which lead to increased production of heat, we must still have recourse to some action upon the nervous system, as has already been sufficiently set forth in the previous lectures.

It can not be doubted that fever may be caused by other agencies than pyrogenic substances present in the blood or tissues. The effects of exposure to external heat have already been considered. We found experimental evidence in support of the view ably advocated by H. C. Wood that, in typical cases of thermic fever or sunstroke, the strain placed upon the heat-regulating centers by exposure to excessive heat results in paralysis of these centers with rapid elevation of the external temperature.

The cause of the elevation of temperature in tetanus is not altogether clear. In this disease the temperature may vary but little from the normal, but it is not uncommon to find excessive elevations of temperature toward the termination. Temperatures of 113° F. (45° C.) or more have been recorded. The idea would naturally suggest itself that the rise of temperature is due to the tetanic muscular spasms, which we know to be accompanied by production of heat. Leyden was led to adopt this explanation by the results of experiments made upon animals. He succeeded, by producing violent tetanic contractions of the muscles of a dog, in raising the internal temperature in the course of an hour and a half from 103·3° F. (39·6° C.) to 112·6° F. (44·8° C.). Clinical observations, however, do not support the supposition that the hyperpyretic temperatures of tetanus are dependent upon the muscular contractions. In spite of violent and prolonged tetanic spasms, the internal temperature may remain normal, or be but slightly elevated. There is a decided similarity between the hyperpyrexia of tetanus and that which occurs in rheumatism and some other diseases, particularly in affections of the central nervous system, and it certainly seems probable that in all of these cases there is a profound disturbance of the heat-regulating centers. As the elimination of urea in tetanus is not excessive, we find additional reason to separate tetanic hyperpyrexia from ordinary febrile conditions. Recent investigations of the ætiology of tetanus have rendered it certain that at least some forms of this disease are caused by infection with a special micro-organism. This has been demonstrated not only in the tetanus of animals, but also in that of human beings. The tetanus bacillus has been found wide-spread in the ground in Germany, and I find it abundant also in the ground in Baltimore and its neighborhood. In experimental tetanus the specific bacillus, which has not yet been obtained in perfectly pure cultivation, develops chiefly in the tissues near the seat of inoculation, and does not invade other parts of the body and the blood to any great extent. This indicates that the symptoms are referable chiefly to poisoning by some chemical products of the specific micro-organism. As has already been mentioned, this view is sustained by Brieger's discovery in cultivations containing the tetanus bacillus of a peculiar ptomaine which he has called tetanine, which produces tonic spasms of the muscles. It is therefore reasonable to believe that the hyperpyrexia of tetanus is caused by the action of poisonous products of the tetanus bacillus on the nervous centers concerned in temperature regulation. Our present knowledge, however, does not warrant us in asserting that all forms of tetanus in human beings are of an infectious nature.

In the first lecture of this course evidence was presented to show that pyrexia may be caused by affections of the nervous system without the agency of any pyrogenic substance. It may jar upon the sensibilities of some to call this form of pyrexia fever; but this hesitation can be due only to the idea that symptoms which are referable to infection or intoxication are essential to the conception of fever. In my judgment, we shall be led into confusion if we attempt to incorporate into our definition of fever more than properly belongs to the febrile disorder of animal heat, and from this point of view there can be no impropriety in designating as fever the pyrexia dependent directly upon affections of the nervous system.

It is not necessary to repeat here the conclusive experimental evidence for the existence in the nervous system of centers or regions which control the dissipation of heat and the chemical processes concerned in the production of heat. Those who are not much impressed by experiments upon animals can hardly fail to be convinced by the clinical evidence, which demonstrates that lesions of the nervous system may cause elevation of temperature that can not be referred to the action of any pyrogenic substance. Such evidence must, of course, be collected from cases where the fever can not be explained by inflammation, bed-sores, or other lesions which can give rise to absorption fever.

W. Hale White,* in the interesting article already re-

* Aronsohn, "Deutsche med. Wochenschrift," 1886.

* W. Hale White, "The Theory of a Heat Center from a Clinical Point of View," "Guy's Hospital Reports," vol. xlii, 1884.

ferred to, has collected a number of cases of tumor, hæmorrhage, softening, sclerosis, injury, and functional disturbance of the spinal cord and brain in which the pyrexia or hyperpyrexia is to be explained only by the lesion of the nervous system. The number of such cases might be considerably increased. These cases show that lesions of the cervical part of the cord, of the pons, of the corpus striatum, and of the neighboring white matter are most likely to be associated with high temperature, but the cases hitherto reported hardly justify positive statements as to the exact situation in men of thermically active nerves or regions in the brain and spinal cord. As might be expected, not only focal lesions, but also diffuse diseases, such as occur in general paralysis of the insane, locomotor ataxia, and multiple sclerosis, may give rise to pyrexia which sometimes assumes the form of temperature crises. It is in harmony with what we know of other disorders of the nervous system to find that not only demonstrable anatomical lesions, but also functional disturbances, may produce nervous pyrexia. Such functional disturbance furnishes the most probable explanation of the singular and erratic elevations of temperature which have been occasionally observed in hysteria.

A question which merits more consideration than it is possible to give to it on the present occasion relates to the possibility of the occurrence of fever as a reflex neurosis. The advance in our knowledge of the ætiology of traumatic and inflammatory fevers has pushed aside almost wholly the old doctrine of irritative fever. There are, however, cases of fever where still the simplest and apparently most rational explanation of the causation is peripheral nerve irritation. As examples, may be mentioned the fever resulting from teething in children, that sometimes accompanying the passage of gall-stones or urinary calculi, and that occasionally following the insertion of a catheter into the urethra. It must be admitted that the evidence on this point is not conclusive. Especially is there lack of satisfactory experimental evidence. Electrical irritation of the exposed sciatic nerve is, under ordinary circumstances, followed by a moderate fall of temperature, although Ott * finds that in atropinized cats such irritation is followed by a decided rise of temperature. But these experiments can not be held to weigh for or against the doctrine of irritative fever. Observations on human beings indicate that peripheral nerve irritation, if ever a cause of fever, is so only in certain situations and under certain forms of stimulation and in certain individuals. In infants, temperature regulation is more labile than in adults, so that it may be that nerve irritation can more readily disturb the temperature in the former than in the latter. The chief controversy as to the question now before us has been as to the explanation of certain forms of urethral or catheter fever. It can not be doubted that a large number, probably most, of the cases of so-called urethral fever are instances of genuine absorption fever. Even if we exclude all cases with diseased kidneys, or with cystitis or other inflammatory disease of the urinary passages, there remains a certain number of cases in which the gentle insertion of a disinfected catheter is followed by distinct febrile reaction. It seems unwarrantable to assume that in all of these cases the catheter has caused a laceration of the urethra through which pyrogenic substances are absorbed. What is the nature and whence the source of these substances? In the cases now under consideration they can be sought only in the normal urine, and of their existence there no proof has been afforded. In these cases it is certainly very difficult to understand how the fever can be interpreted as due to the absorption of some pyrogenic agent, and, failing this explanation, the idea that the fever is dependent upon nerve irritation is most plausible.

I have now presented to you an imperfect survey of the general ætiology of fever. The attempt has been made to classify the leading causes of fever, but it can not be maintained that every variety of fever can be assigned to one of these groups of causes. Our knowledge of the ætiology of special fevers is still too imperfect to warrant any such generalization. This is an attractive field for much patient investigation. I need only remind you of the uncertainty which still pertains to the causation of many of the fevers of warm countries. There is reason to believe that there remain yet to be differentiated ætiologically specific types of fever which occur among us, and particularly in our Southern States. It may be that increasing knowledge will necessitate the recognition of varieties of pyrogenic agents entirely distinct from any with which we are now familiar. It is certain that future investigations will add clearness and precision to our ideas of the nature and mode of action of causes of fever which, at the best, we can now understand only imperfectly.

I can not conclude this course of lectures without saying a word on a subject which must engage the attention of every one who gives much thought to the nature of fever. What is the significance of fever? is a question which thrusts itself upon us no less than it has upon physicians in all ages. Unfortunately, we can not to-day, any more than could our predecessors, give other than a speculative answer to this question. There have been in all ages enlightened physicians who have held the opinion that fever is a process which aids in the elimination or destruction of injurious substances which gain access to the body. Under the influence of ideas which sought in increased temperature the origin of the grave symptoms of fever, we have in recent times, in great part, lost sight of the doctrine once prevalent, that there may be in fever a conservative element. There is much which speaks in favor of this doctrine. The real enemy in most fevers is the noxious substance which invades the body, and there is nothing to prevent us from believing that fever is a weapon employed by nature to combat the assaults of this enemy. The doctrine of evolution indicates that a process which characterizes the reaction of all warm-blooded animals against the invasion of a host of harmful substances has not been developed to such an extent, and is not retained with such pertinacity, without subserving some useful purpose. This is a point of view from which many pathological processes can be regarded with advantage. Even suppuration, which one does not generally look upon as a beneficent provision, is a most important instrument of nature in forming a barrier against

* Ott, "Therapeutic Gazette," August, 1887.

general infection of the body with certain micro-organisms. It is impossible with our present knowledge to say in exactly what way fever accomplishes a useful purpose. There are facts which suggest that in some cases of fever the increased temperature as such may impair the vitality or check the virulence of pathogenic micro-organisms, but there are many circumstances which make it difficult to suppose that this is the agency by which fever usually exerts a favorable action. The supposition seems to me more probable that the increased oxidation of fever aids in the destruction of injurious substances. According to this view, the fever-producing agents light the fire which consumes them. It is not incompatible with this conception of fever to suppose that the fire may prove injurious also to the patient, and may require the controlling hand of the physician. Time will not permit me to elaborate further the ideas here suggested. In the course of these lectures some facts have been presented, and others might be drawn from clinical and experimental observations, which favor the hypothesis that fever is, in a certain sense, a conservative process. Unproved and intangible as the hypothesis may seem to some, no apology is needed for bringing to your attention a conception of fever in favor of which much can be adduced, and which, if true, is of fundamental importance, both theoretically and practically.

## Original Communications.

### ON THE PRIMARY REMOVAL, BY ABDOMINAL SECTION, OF THE TUBE AND ITS CONTAINED FŒTUS IN CASES IN WHICH PREGNANCY HAS BEEN DIAGNOSTICATED BEFORE RUPTURE OF ANY PORTION OF THE TUBE HAS OCCURRED.*

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By "primary" abdominal section in these cases I mean abdominal section performed for the removal of the tube and its contained fœtus *before any* hæmorrhage has occurred into the peritoneal cavity from a rupture, or a *partial* rupture, of the cyst wall, the pregnancy having been diagnosticated prior to the laparotomy, and the operation having been performed with the expectation of delivering the tube and its contained fœtus *intact*. Furthermore, the operation must have been done before the end of the fourth month of the gestation.

In a paper by the author, written for the meeting of the American Gynæcological Society in September, 1886, and published in that society's "Transactions" for that year, in speaking of the time at which laparotomy should be done in cases of tubal pregnancy, I made the following statement: "That, in cases where a moderate hæmorrhage has been positively diagnosticated (whether from a rupture of a superficial artery or a venous plexus, or from a partial rupture of the sac itself), and this hæmorrhage has occurred prior to the termination of the fourth month of gestation, it is undoubtedly better surgery to perform laparotomy at once, and thus remove all possible danger of further hæmorrhage, than to trust to electricity in any form. Cases of this kind, in which a positive diagnosis can be made, have been rare up to the present time, principally, I think, from the fact that the full significance of the so-called 'colicky pains,' with the shock and collapse, has hardly been appreciated. I am convinced that in these attacks there is always some bleeding, it may be very slight, from the superficial vessels of the sac, and that, as a rule, several (three or four) attacks occur before the real rupture of the sac takes place. If I am right in this, it seems to me that in all such cases, where the symptoms of hæmorrhage *are becoming* at all alarming, we should at once resort to laparotomy. In all cases in which hæmorrhage has been considerable there will, as a rule, be a *decided* tear in the sac, and in such cases it seems to me that laparotomy is demanded as soon as the patient rallies from the shock sufficiently to have a fair prospect of recovery from the operation."

At a meeting of the New York Obstetrical Society, held on December 7, 1886, in referring to a case in which I had diagnosticated tubal pregnancy at the fifth week, and in which death had occurred at the end of the seventh week of gestation from a *second* hæmorrhage from a ruptured artery on the peritoneal surface of the sac (the first hæmorrhage, which was extremely small, having occurred from this same artery nine days previously, and galvanism having been employed in the mean time to destroy the fœtus), I said: "I infer from this case (and three others similar) that in all cases of tubal pregnancy where transient collapse symptoms suddenly appeared from the fifth to the seventh week of gestation, or even a little later, there was a rupture of one of the superficial vessels of the sac; but the final catastrophe, severe hæmorrhage, did not occur until later. The time to operate was when this preliminary or partial rupture occurred; indeed, the primary collapse symptoms constituted an almost certain indication both of the pathological condition and of the need of immediate interference."

In speaking of the symptoms of tubal pregnancy I stated that I believed it was easier to recognize this condition than a case of hydrosalpinx; that the presence of an irregular decidual discharge in a woman who had missed a period, associated with the normal signs of pregnancy and an enlarging, fluctuating, and exquisitely sensitive mass on one side of the uterus, and subsequent symptoms of shock, could hardly be referred to any other condition even as early as the fifth week. "In a case of this kind," I said "I should certainly *perform laparotomy whenever the first symptoms of internal hæmorrhage occurred.*"

At the January meeting (1887) of the Obstetric Section of the Academy of Medicine, when this subject was under discussion I closed my remarks by saying that "in any case in which, from the rational and physical symptoms, I became convinced that I had to deal with a tubal pregnancy, *even before* symptoms of a rupture of the peritoneal

* Read before the New York County Medical Association, April 16, 1888.

covering of the tube occurred, I should most earnestly urge laparotomy, and perform it if I could obtain the consent of the patient. Even if mistaken in my diagnosis, I should certainly find something which ought to be treated surgically."

Up to the present date I find but one case on record in which the operation has been performed prior to a laceration or a partial laceration of the tube and before the fourth month of gestation. This case is reported in the March number of the "Annals of Gynæcology," of Boston, and is No. 3 in a list of four cases of extra-uterine pregnancy operated upon by abdominal section by Dr. Joseph Price, of Philadelphia. The report of the case has come to my knowledge since the first of this month, although the operation was performed successfully on September 11, 1887. Dr. Price, under date of April 7, 1888, to me, says: "The history was simply that of *delayed bleeding two weeks, constant pain, and nausea.* I operated for 'extra-uterine pregnancy or pus tube.'" I believe that in *all* other cases in which laparotomy has been performed in these cases of tubal pregnancy one or more decided hæmorrhages have occurred prior to the removal of the tube and fœtus. Mr. Lawson Tait has reported thirty-six operations of this latter kind done during the past three years, with thirty-five recoveries. In several of these cases the fœtus was not found, but evidences of a laceration of the tube and consequent serious hæmorrhage were found. The clots and tube, and the fœtus, when found, were removed, and, as before stated, thirty-five women were successfully treated by this method. At the last meeting of the American Gynæcological Society, held in this city in September, 1887, Professor A. Martin, of Berlin, reported nine cases in which he had performed abdominal section for tubal pregnancies, with but one death. I can not state positively, but, from his remarks at the meeting and from subsequent conversation with him upon the subject, I feel safe in saying that in all these cases there had been decided symptoms of hæmorrhage and shock prior to the operation. Quite a number of other cases, similar as to time and attendant conditions, have been reported from Germany. In our own country during the past two years I find one successful case reported by Dr. A. W. Johnstone, of Danville, Ky., operated upon by abdominal section on November 6, 1886, *after* several attacks of hæmorrhage and shock going over a period of one month preceding the operation. The fœtus was three months old. Dr. Johnstone had diagnosticated the condition on October 6th, at the date of the first hæmorrhage, when, in all probability, the bleeding was simply from a superficial vessel on the peritoneal covering of the sac.

The second case as to date of operation is reported by Dr. Joseph Price, of Philadelphia, and stands "No. 1" in his series of four cases of extra-uterine pregnancies before alluded to. In this case the tube and contents were removed, together with blood-clots filling the pelvic cavity, at the end of the seventh week. The operation was successful, and resulted in complete recovery.

The third case is reported by Dr. S. C. Gordon, of Portland, Me., in the February 4, 1888, number of the "N. Y. Med. Journal," and was operated upon on September 24, 1887, the day following the rupture of the sac. There had been a large amount of bleeding—three pints—into the peritoneal cavity. Dr. Hitchcock, of Rockland, Me., the attending physician, had diagnosticated tubal pregnancy in this case a week before the rupture occurred. Gestation was three months advanced, and the result of the operation was complete recovery.

The fourth case was reported by Dr. William Gardner, of Montreal, at the Montreal Medico-chirurgical Society's meeting, February 17, 1888. This was a case of rupture of the right tube, followed by severe hæmorrhage and collapse, at the sixth or seventh week of gestation. Abdominal section was performed. The tube, with the fœtus imbedded in the blood-clots, was removed. Result, recovery.

I have also (within the past three days) learned from Dr. Charles B. Penrose, of Philadelphia, that he has operated successfully upon a case in which the pregnancy had advanced two months, and in which the rupture of the tube took place only a few hours before the operation. Dr. Penrose had believed the case to be one of tubal pregnancy ten days before the rupture occurred, and had advised laparotomy at that time. This case stands No. 5 in the list of these operations in this country. Dr. Penrose, under date of April 14, 1888, writes me as follows: "The cyst was of about the size of an ordinary orange. It was in the outer third of the tube, and the cyst-wall (membrane) could be plainly made out distinct from the structure of the tube. The inner two thirds of the tube was very slightly enlarged. The rupture seemed to be on the posterior surface of the tube. The ovary was not adherent to cyst or tube. There were about eight ounces of blood-clots in Douglas's *cul-de-sac.*"

The sixth case was operated upon by Dr. G. M. Tuttle, of New York, some two weeks since, and the specimen exhibited at the meeting of the New York Obstetrical Society on April 3, 1888. In this case also there had been rupture of the tube and hæmorrhage at about the eighth or ninth week of gestation. Tube, with contents and blood-clots, removed. Result, recovery.

In all these cases—those reported by Mr. Tait, A. Martin, and others abroad, and those reported in this country—with the bare exception of the one case, "No. 3," operated upon by Dr. Joseph Price last September, there had been a rupture of some part of the tube, and hæmorrhage had taken place *before* laparotomy was performed. All such cases I think should be classed as *secondary* operations. I believe that the credit of first urging the propriety of performing abdominal section and removing the ruptured tube, with the fœtus and blood-clots, is due to an American surgeon. I refer to the late Dr. Stephen Rogers, of this city, who, as far back as 1867, urged the merits of this operation in these cases.

The propriety of enlarging this field, and of removing the tube with its contained fœtus *before any* rupture has occurred and during the early weeks of gestation, instead of resorting to the use of electricity for the purpose of destroying the life of the fœtus, as stated at the beginning of this paper, I have advocated on every possible occasion during the past year and a half. I am aware that until

very recently I have stood almost, if not quite, alone as to this point, but during the past few weeks I find that other and more expert gynæcologists than myself have come to the same conclusion, notably Mr. Lawson Tait, who (although he states that he has never been called to operate upon a case of tubal pregnancy until after the sac had ruptured) says, in the April, 1888, number of the "American Journal of Obstetrics": "If there was any reasonable supposition that there was a tubal pregnancy which had not yet ruptured, I should recommend immediate operation."

Dr. Joseph Price and Dr. Howard A. Kelly, of Philadelphia, I believe, are in accord with this proposition. The latter-named gentleman, in a recent letter to the writer of this paper, says: "The history of fœtuses which have been destroyed by faradization has frequently been associated with protracted suffering to the mother, and with conditions of chronic invalidism."

Dr. R. P. Harris, of Philadelphia, in the August, 1886, number of the "American Journal of Obstetrics," refers to several cases in which attacks of peritonitis have occurred (in cases in which the fœtus has been killed by electricity) several years subsequent to the death of the fœtus, and due to its presence in the abdominal cavity. Mr. Tait also has very recently, in the April, 1888, number of the same journal, pointed out the danger "that the placenta will go on developing enormously after the fœtus has died from natural causes."

On the other hand, up to the present date, the weight of opinion among American gynæcologists is decidedly in favor of destroying the fœtus by electricity in some form, in cases in which a diagnosis has been made prior to the fifth month of gestation, and in which there has been no decided hæmorrhage from the sac-wall.

Foremost among the advocates of this measure stand Thomas, Garrigues, Lusk, Mundé, and others of this city, and M. D. Mann, of Buffalo, and each of these gentlemen, as well as others of us throughout our country, have had excellent results by this method of treatment.

An excellent paper by Dr. Mann, of Buffalo, is published in the February, 1888, number of the "Annals of Gynæcology," of Boston. He asks this very pertinent question: "Granted that the diagnosis can generally be made early, have we a settled and reliable method of treatment?" and also states that "there is no more burning question before gynæcologists to-day." Dr. Mann further states—what is perfectly true—that "Dr. Janvrin was able to find only three cases in literature, including his own, where rupture of a vessel caused death without rupture of the sac." This statement is based upon my paper written for the American Gynæcological Society two years ago. Since then I have seen one other case in which this condition was fully demonstrated at the autopsy, evidences of a slight hæmorrhage having occurred from a vessel in the peritoneal covering of the sac some days prior to the secondary and fatal hæmorrhage (also from a superficial artery) having been found. In this case also the patient died before the surgeon in attendance had fully made up his mind to perform laparotomy.

Two other specimens I have recently seen, from cases in which abdominal section has been performed, in one of which the fœtus had died from pressure of blood-clots at about the end of the third month of gestation, several other attacks of hæmorrhage occurring between this date and the seventh month, when the tube, fœtus, clots, etc., were removed by Dr. Kletsch, of this city, everything being matted together by inflammatory processes, and the patient succumbing to the operation within a few days.

The second specimen, before alluded to as having been successfully removed at the seventh or eighth week of gestation by Dr. Tuttle, of this city, gave a history of slight hæmorrhage from the sac-wall, and slight peritonitis for a week or ten days prior to its removal by laparotomy. The specimen itself showed a small tear in the sac-wall which had evidently occurred but a day or two, I should judge, before the operation. I believe, therefore, as I have contended for the past two years, that in many—possibly all—of these cases of tubal pregnancy the hæmorrhage *begins* in the laceration of a blood-vessel in the peritoneal covering of the sac, simply by the greater distension of the outer coat during the development of the fœtus, and that this is evidenced by the first attack of colicky pain and collapse which occurs in these cases. Subsequent attacks of hæmorrhage occur until the sac finally ruptures, and then the only thing to do is to perform abdominal section and remove the lacerated tube, together with the escaped fœtus and the extravasated blood.

Mr. Tait has already given us a splendid record in these cases, as heretofore stated.

Dr. Mann, in speaking of these cases, says: "Laparotomy it must be"; but he adds: "If rupture has not occurred, . . . electricity should always take precedence." At the same time he refers to two cases in which, "after being killed by electricity, the fœtus has ulcerated its way out." To this proposition I would assent, provided no experienced laparotomist could be found to do the operation of abdominal section. Otherwise I would not assent to the rule as laid down by Dr. Mann. On the contrary, I would perform laparotomy, and urge upon every successful operator in that line to do the same, as early as the diagnosis has been established, and before any hæmorrhage from the sac, with its subsequent attacks of peritonitis, *could* possibly take place. These frequently recurring attacks of slight hæmorrhage are exceedingly dangerous to the life of the mother, and when they have occurred, and the time comes when abdominal section *must* be performed, the patient is in bad condition for the operation, and the operation itself is much more complicated.

The same may be said in reference to waiting to perform laparotomy until serious symptoms supervene (after the fœtus has been killed by electricity). Here, too, we have more or less adhesions to deal with, and the work to be done is much more complicated than the removal of a simply enlarged and unruptured tube containing the fœtus, in which there are no products of inflammatory processes to interfere with its easy extraction.

Note.—Since the foregoing was written my attention has been called by Dr. George T. Harrison, of this city, to the fact that in 1857 Kiwisch very strongly urged the propriety of performing abdominal section in

cases of *ruptured* tubal-pregnancy sac, and gave a full description of his proposed operation, "Extirpation of the Entire Fruit-Sac, in which we should have to proceed as in Ovariotomy." This establishes Kiwisch's priority in cases of *ruptured* tube over that alleged for the late Dr. Stephen Rogers.

## ON THE NON-IDENTITY OF CHANCRE AND CHANCROID.*

By JAMES P. MARSH, M. D.,
GREEN ISLAND, N. Y.

First Question.—"Are the 'chancre' and 'chancroid' essentially different pathological processes, or do they originate in the same virus, modified in some way by the infecting or infected party?"

It has devolved upon me to open the discussion this evening by the consideration of a question which has taxed the minds, the ingenuity, the patience, and the fortitude of many of the most distinguished surgeons of modern times. A question, too, which has infused such enthusiasm into these earnest investigators as to cause them, through inoculative experiments performed upon themselves, to sacrifice their health and, in some cases, their lives. The outcome of all this labor has been a vast literature, written in many languages, and yet there has been no complete penetration of the veil of uncertainty which surrounds this question of the relationship between chancre and chancroid. The annals of this controversy afford one of the most interesting chapters in medical history, but the limitation of the time at our disposal forbids my entering upon this division of the subject. Neither is it my privilege to detail to you the results of elaborate experimentation, nor to present to you anything remarkably new; still, it is not a vain labor to review past studies, or to recall forgotten and neglected facts.

As, to a certain extent, my remarks must be of a judicial nature, it is demanded that the first step in our inquiry shall be the predicating of a definite meaning to the words "chancre" and "chancroid." It is admitted that all definitions exist by common consent, and are constantly undergoing a change, and, although it may seem to savor of "begging the question," nevertheless, permit me, as far as concerns the purposes of this paper, to define "chancre" as the name given to a lesion—usually an ulcer—commonly recognized by certain definite characteristics, which constitutes the first appreciable lesion in a slow, continued fever known as syphilis; and "chancroid" as the name collective given to several species of local ulcerative action, which almost invariably attack the genital organs, and are communicable, by contact only, from one individual to another, or to different parts of the same person. It is the reasonableness of these definitions that I shall attempt to maintain, in the first place considering the subject theoretically, and in the second from its practical side.

It is frequently, I admit, fallacious to reason by way of analogy, but where there is a lack of positive knowledge it seems to throw much light upon the subject under consideration, and at times to approach almost to certitude. Therefore, then, let us ascertain in what respects these sores correspond to the initial lesions of other well-recognized constitutional diseases.

There is a species of ulcer, usually contracted during sexual intercourse, which is, as a rule, multiple; there is another form of ulcer, usually contracted in the same way but far less so than the former, which, in the majority of instances, is single. Why is this so? Because we have observed that the acrid and violent nature of the first may cause a breech of continuity, and that where this happens an ulcer is formed similar to the one from which the virus originated; in addition, we have ascertained that almost always the development of the second form is conditioned by a previously existing denudation of the surface upon which it may have been deposited. The first of these sores can be inoculated indefinitely on any part of the body, while the second can not be so reproduced. The first develops almost immediately after exposure, but the second requires a long period of incubation—from three to five weeks—and herein we observe the first striking analogy, the one to local lesion, the other to that of constitutional disease. In the second variety the original abrasion is rapidly healed, but again becomes diseased at the end of the period of incubation, whereas in the first instance it is not so, but when once healed it remains so until a fresh inoculation has occurred. The second also obeys the law of most of the acute exanthemata in that one attack is nearly always protective against a second; also, again, it conforms to the law of the primary lesions of constitutional diseases in that there is little or no loss of tissue, whereas the first-mentioned sore is eminently destructive from the beginning. Herein, I think, we find the reason why the one is attended with much pain and the other with but little.

Now, for the purposes of this paper, the first of these sores has been called chancroid and the second chancre. The one is a disease in itself, the other a symptom of disease. The chancroid is a process of cell destruction; the chancre is a process of cell proliferation. The one totally destroys the cell with which it comes in contact; the other simply maims the cell it attacks during the life of said cell. As in the chancre there is a process of cell proliferation, its base soon becomes hard by reason of the number of the cells there deposited, and hence it has been called the indurated—the Hunterian—sore; and, on the other hand, as the other destroys every cell it attacks, its base remains soft. For like reasons the one is attended with copious secretion, the other with but little. The chancroid is annihilistic in its tendency, the chancre has a bias to the new-formative type of disease, and hereby it seems to tend to a malignant relationship. Like local diseases in general, the chancroidal poison can be destroyed by an early and thorough excision or use of the caustic; but it is not so with the chancre, for, like the initial lesions of typhoid, small-pox, scarlatina, etc., its excision or cauterization is of no avail. I am well aware that the protective power of the early excision of chancre has been alleged by a few observers, such as Auspitz and Kölliker, of Vienna; but the mass of the profession—that great court before which come all causes medical for their final trial—have not prevented syphilis by this means.

* Read at a meeting of the Medical Association of Troy and Vicinity, March 6, 1888, as the opening paper in a discussion on syphilis.

The location of these two sores gives us much to theorize upon. The chancroidal type is rarely seen upon any other part of the body than the genital region, whilst the chancre, not being essentially a venereal disease, may be found upon any part whose surface may have become denuded of its epithelial covering. How like are all these distinctions to the points of demarkation which have been observed to separate the class of local from that of constitutional disorders!

You may have been surprised that I have said so little concerning the inoculative evidence in regard to the differentiation of these two sores, but to me it is a labyrinth of assertions and contradictions, one observer correcting a former investigator, to be in turn corrected himself. Balfour declared that gonorrhœa and syphilis were distinct; Hunter said that gonorrhœa and chancre were identical; Benjamin Bell contradicted Hunter, and so you find it *pro* and *con* all the way down to the present day.

I shall not be disputed when I assert that the thought of the world at large is ruled by fashion, and I beg to remind you that this holds true also of the medical world. The great fashion—the all-absorbing *crank*—of the present time is bacteria; hence these are the diseases in which, pre-eminently above all other disorders, we should expect to find specific micro-organisms. From time to time observers have professed to have found bacteria distinctive of the two forms of sore. In the "Lancet" for April 10, 1886, Eve and Lingard published the results of experiments made upon the various secretions of syphilitic patients and professed to have discovered a bacillus morphologically distinguished from all other bacilli. However, they failed to demonstrate that this bacillus had any relation to the disease other than its mere presence. Therefore the *Bacillus syphiliticus* is announced, but it has not yet been demonstrated; we are expectant, but, as you are well aware, everything bacteriological is *sub judice*.

It is more than probable that the chancroidal and chancre viruses are frequently deposited together on an undenuded surface, and that the one would not gain admittance to the system were it not for the corrosive action of the other. In connection with this statement let me call attention to the fact that there is, in another direction, an antagonism between the virus of chancre and that of chancroid, for von Zeissl, on page 8 of his work on the "Pathology and Treatment of Syphilis," maintains that the virus from a chancroid situated on a syphilitic person always gives rise to a soft sore. Now, these two ideas appear at first to be contradictory, but in reality they demonstrate an intense antagonism between the conditions of chancre and chancroid. Chancroid, by its intensity, may inhibit the production of the chancre virus, but when that virus has once been formed it is powerless against it. This, then, carries us to a point which we have all observed, that a local disease may so alter the manifestation of a previous constitutional condition in its vicinity as to cause it to lose many of its distinguishing characteristics.

Perhaps one of the most interesting of the theories which have been elaborated regarding the relationship existing between chancroid and chancre is that of Clerc, who maintained that the chancroid was a bastard product, the result of inoculating a syphilitic person with the virus of an infecting chancre, which was capable of propagating itself indefinitely, without assuming in any case the character of an infecting sore. This is interesting, but can never be anything more than an assertion; however, it recalls a fact which has frequently impressed me, and that is that the severest and most intractable forms of chancroid that I have ever seen have occurred in patients who had received mercurial treatment for secondary lesions. Whether this is owing to the existence of syphilis or the mercurial treatment I do not know, but it points out to me one of the strongest arguments yet adduced as regards the non-identity of chancroid and chancre. This point is the different effect that mercury has upon the two sores. What I shall say in the next few sentences is purely an hypothesis and highly imaginative, but I beg to remind you that the imagination has led to more discoveries than cool reason has. Mercury is known to be destructive to the organism as a whole—*e. g.*, it promotes the destructive metamorphosis. It will also remove the induration of a chancre rapidly and uniformly. What is the reason for this? Simply that the cells which have been affected by the virus of syphilis are so lowered in vitality that they can not withstand the further debilitating effect of mercury, and hence die, whilst the cells which are healthy, although damaged by this agent, are not so seriously injured but that they, in a measure, regain their former health when the drug has been withdrawn. Now, it causes chancroid to take on a phagedenic character, because it lowers the resisting power of the cells. Here now, again, these same sores act respectively like local and constitutional diseases, for nature resists local disease by the successive strength of the individual cell, but constitutional disorder by the united strength of all the cells in the body. Thus you see that the effect of mercury on these sores demonstrates that they are essentially different.

A part of our question asks us if there are individual peculiarities which may influence the inoculation of the syphilitic virus. I need but to mention the wide-spread prevalence of the disease, and the numerous chancres of contamination other than by sexual intercourse, to convince you that there are states of the system which are incompatible with the virus, or that, in the case of the infected individual, the discharges do not at all times possess the same amount of virulence. Undoubtedly there are persons who, by reason of idiosyncrasy, remain throughout life refractory to syphilis, the same as there are those who are refractory to various of the exanthemata.

That indeed, were it possible, would be a most instructive investigation which should discover how far the children of syphilitic parents, although not showing any signs of the inherited form of the disease, were refractory to chancre. Herein many find much consolation, for they look to the time when the human race shall all be protected by hereditary influence. Perhaps in this way we might account for the gradual decadence of the violence of syphilis, which has now been observed to have been in operation for a number of years. Finally, then, although we allow for the age, the occpuation, the habits, the co-existence of other dis-

eases, we still have to account for the diversity of the primary lesions by the personal peculiarities of any given patient.

The foregoing pertaineth to the theory; practically I say to you, in all earnestness, you can never know absolutely when you may have the one or the other, for in much knowledge is there also much sorrow. Tell your patient the probabilities; treat him as the learned gentlemen who are to follow me shall direct, but, with Sir Astley Cooper, make no positive assertions, but "wait the issue."

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## COMMENTS ON DR. DETTWEILER'S METHOD OF TREATING PULMONARY CONSUMPTION.

By T. L. DIX, M. D.,
SHELBYVILLE, KY.

The very able appeal for the establishment of an institution for the "Rational Treatment of Pulmonary Consumption," by Dr. Kretzschmar, as published in the "New York Medical Journal" of February 18, 1888, contains several facts which are pregnant with physiological and pathological truths that are, in the estimation of the writer, of too great importance to pass unnoticed; and he considers this a sufficient reason for imposing this article upon the attention of the reader.

The facts alluded to may be enumerated as follows:

1. "The most liberal and, we might say, specific use of pure mountain air."

2. "The greatest importance is placed in 'resting' in the open air."

3. "The administration of a rich, liberal, and peculiarly adapted mode of diet," with milk, wine, and cognac.

These three particulars, the writer says, constitute "the strong points in Dettweiler's treatment of consumptives."

The object of this paper is to inquire into the influences these circumstances exert upon the consumptive. But it is necessary first to know the condition of the consumptive and the changes necessary for his restoration to health.

The dominant feature of the consumptive is the preponderance of the arterial over the venous system, which results in fibrinosis—a cardinal point in the establishment of tuberculosis. We will not enter upon a discussion of this part of the subject, but will be content with a reference to an article by the writer "On the Correlation of Alcohol, Rheumatism, and Phthisis," August 15th number of this Journal of 1885.

1. Mountain air overcomes arteriosis and produces venosity in two ways: First, by its attenuation the patient does not receive so much oxygen at each inhalation as when at the foot of the mountain; second, for each eighty-seven feet the mercury in the barometer falls one tenth of an inch; and, as Dr. Kretzschmar says the Falkenstein sanitarium is fourteen hundred feet above the sea-level, we have a fall of one inch and three fifths. Counting half a pound to the inch, we have nearly one pound less pressure to the square inch than when the patient is on the sea-level. It is a well-known fact that when heights are attained, the body being relieved of atmospheric pressure, the superficial veins are seen to expand, even to such an extent as to cause hæmorrhage from the mucous membranes. This circumstance empties the arteries and fills the veins, and brings the blood from the viscera to the surface; consequently there is not so much blood in the lungs to become oxidized, as well as not so much oxygen in the lungs to oxidize the blood. Thus we discover the fact that this attenuated mountain air affects the patient in a twofold manner in the production of venosity.

2. The great importance "in resting." It is not necessary to produce arguments to show that in a state of rest of both body and mind there is less oxidation produced within the body, and consequently less fibrination, than when in active exercise. The production of fibrinosis by exercise, and the results which are likely to follow, are pointed out in the article to which reference has already been made.

3. A rich and liberal diet, with milk and cognac. This is a factor, in the treatment of tuberculosis, of the greatest moment. The production of fats within the system by superalimentation to consume the oxygen, with the aid of alcoholic drinks, contributes largely to the production of venosity.

The interesting points connected with this subject are to supply the patient who finds the mountain sanitarium beyond his reach with efficient means of producing venosity and defibrination of his blood-mass when at home, and with the least expense. The attenuated atmosphere may be simulated by adopting such means as will prevent, in part, the air from entering the lungs. A gentleman who had consumption and had suffered several hæmorrhages, attributed his cure, in part, to the use of a small silver tube which he breathed through by wearing it in his mouth. The diminished atmospheric pressure can be simulated by the use of a cupping apparatus, which is made to embrace the entire body and limbs from the neck down. The diet should be of carbohydrates, with as little of nitrogenous food as may be found consistent with a healthy state of the economy. And the patient should be enjoined to remain in a recumbent position as many hours in the twenty-four as his circumstances will admit.

In conclusion, it is interesting to note the effects of superalimentation, as is demonstrated in Experiment No. 3, as stated by Dr. Kretzschmar. These five animals were "turned loose, and one died at the expiration of a month," whereas the five rabbits in Experiment No. 1 were "stinted in the quantity of food given them, while being themselves artificially infected with the tubercle bacillus." Four of these perished within three months, and the fifth one was killed four months after injection, and found to be tuberculous. Had these five rabbits enjoyed the same superalimentation as the five in the former experiment, although deprived of light and exercise, the results would have been far more favorable; while, upon the other hand, if those in Experiment No. 3 had been restrained from such excessive exercise, all perhaps would have survived.

# Correspondence.

## LETTER FROM PARIS

*Lannelongue on Tuberculosis.—Mercury in the Treatment of Mercurial Stomatitis.—Saccharin.*

PARIS, *April 12, 1888.*

PROFESSOR LANNELONGUE, of the Paris faculty, and surgeon to the Trousseau hospital, has contributed so much to the important revolution that has been accomplished during the last ten years in our doctrines concerning surgical tuberculosis that the appearance of his new book on "Tuberculose vertébrale" induces me to speak of his work. It has a double object: to show, first, that tuberculosis is to be found all over the body, in the bones, the articulations, the cellular tissues, etc.; then, secondly, to clear up the mass of foreign element that has been invading the great field of surgical tuberculosis. Since Lannelongue's teachings began it has become quite an easy matter to distinguish cases which only a short time ago were ranged in the obscure chapters of caries, necrosis, etc. Since 1878 he has labored to show what tuberculosis of the bones was and how its local manifestations acted. His *coxotuberculose* quite altered the aspects of hip-joint disease, and one may truly say that Pott's disease is now quite another matter, pathologically, than what it was in 1879, when our Professor Sayre declared in his work: "The disease which produced the deformity is *not tubercular* in character" (page 362). In describing vertebral tuberculosis Dr. Lannelongue gives it a much broader signification than our old name of Pott's disease, which was intended merely to mean the softening and breaking down of the bodies of the vertebræ. M. Lannelongue was the first to show that there were many other tubercular lesions than those of the bodies of the vertebræ, such as the one he calls *mal vertébral postérieur*, and three other important localizations, the suboccipital, the sacro iliac, and the sacro-coccygeal. The tuberculous abscesses, or *tuberculomata*, that are so frequently developed in connection with these diseases are simply an extension of the spinal tubercular focus, which itself was the result of the regression of a tubercular deposit. The bony lesions are the first, as to date, and from this point the fungus destroys the cartilages and penetrates the tissues. As a rule, such abscesses communicate with the bony lesion, but they may be independent of it, and start from one or several points, taking their origin from a tuberculogenic membrane, which plays the principal part in the increase of the abscess. This augmentation may sometimes take place upward, thus proving that they do not depend on the law of gravity. There are two new points in regard to symptoms that might be mentioned; first, that in many cases, months before the spinal lesion is found, there are occasional attacks of neuralgic convulsions, that are similar to epilepsy, but differ in the pain actually felt. These nervous accidents are often the cause of errors in diagnosis, and they should always receive important consideration in judging of such troubles, as treatment may lead to the prevention of paralysis if the case is seen in time. Again, in examining an old case of Pott's disease one may frequently find traces of a tubercular lesion in the form of cysts, that are often filled with a soft caseous matter, or sometimes with a hard cretaceous substance. Treatment should follow such a discovery, as these cysts may be, and often are, the starting-point of renewed trouble. I can not pass in review all the chapters of Professor Lannelongue's work, but must say a word or two on his treatment. He has adopted a therapeutic doctrine which is original with himself, but which is accepted by most of our European surgeons. In hip-joint disease he attributes the most important action to the compression caused by the contraction of the muscles in destroying the articular surfaces, and also to the effect of the local tuberculosis. The deformity of the head of the femur and of the cotyloid cavity results, in M. Lannelongue's opinion, from the compression and the consequent ulceration which aggravates the disease. On this basis he starts with his treatment, which, in one word, is *continued extension*. What is true for the hip joint is true also for the knee and the spine. In Pott's disease, whether it is located in the suboccipital region or in the sacro-coccygeal, the compression exercised is what should be prevented. Dr. Sayre's plaster jacket fulfills this important indication in some measure, but it is only useful in certain cases. What action can it have, for instance, in a Pott's disease located in the superior dorsal or the cervical region? Evidently none. The work under revision contains drawings showing the apparatuses used by Professor Lannelongue to secure the needed continued counter-extension. I can only add that they act on the base of the head above and on the pelvis below, but sometimes only on the shoulders above. Experience has shown them to be well supported by the little patients. They give perfect immobilization and continued extension.

It seems rather curious to treat an affection that has been produced by a drug by the same drug, but this is what is being tried here for mercurial salivation. It was first proposed by Professor De Renzi, of Naples. He found that the mouth in such cases was certainly the seat of very active decomposition, and he employed a 1-to-4,000 solution of corrosive sublimate, directing his patients to wash out the buccal cavity several times a day with the solution, but not to use more than half a pint in all in a day. This brought about a rapid cure in all his cases of mercurial stomatitis, even when there was considerable ulceration. From the first day the fœtid odor of the breath disappears, and by the third day there is hardly any swelling left, while the attack always ends in cure on the fifth day. It is often asked why it is that mercury, which is such a good antiseptic, produces a stomatitis, and one that so often presents itself in the form of a putrid fermentation. Dr. De Renzi gives a plausible theory. He says that the mercury does not produce it directly, but indirectly, by modifying the nutrition of the anatomical elements of the mouth, so that they become so feeble that they can not resist fermentation, which is always so ready to take place in the buccal cavity, filled as it is with all sorts of germs. The mercury, in fact, is like the alcohol in drunkards' pneumonias; they both prepare the ground for the implantation of the disease to follow, and, just as alcohol must not be withheld from such pneumonic patients, so can we secure, or at least aid, the cure of mercurial stomatitis by the use of the wash mentioned above. It is probable also that such a solution will cure fermentative stomatitis from other causes.

M. Worms reports to the Academy of Medicine that saccharin, given to four diabetic patients, caused in three of them dyspeptic troubles, such as a sensation of epigastric weight, loss of appetite, etc., so that he feels that there is a certain amount of risk in giving this new and unknown substance to such patients. The dose used was a grain and a half. Both M. Dujardin-Beaumetz and M. Constantin Paul stated, however, that, using it mixed with a sodium salt, forming a saccharate of sodium, they had not noticed any such troubles.

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**Intra-muscular Lipoma.**—The "Lancet" says: "Exceptionally lipomata may develop in organs normally wanting in cellular adipose tissue. Their presence has been noted in the nerve centers, in the spinal cord, and in the thickness of muscles, even in the midst of the muscular fibers. These intra-muscular fatty tumors are more common in men than women, and are chiefly found in very active muscles, like the tongue, the heart, and the sartorius. M. Ribet has collected in his Parisian thesis many interesting observations on these tumors."

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NEW YORK, SATURDAY, APRIL 28, 1888.

## THE JOHNS HOPKINS UNIVERSITY.

IN our last issue we published the first of a proposed series of annual addresses before the Society of the Alumni of Bellevue Hospital, and this week we complete the publication of the course of Cartwright Lectures for the current year. It is not yet a decade since the first course of Cartwright Lectures was given, but they have already come to be looked forward to by the profession as reasonably sure to constitute matter well worth listening to or reading, embodying the fruit of the matured observation and thought of men of exceptional capacity or opportunities. This expectation has in the main been amply borne out, and never more so than by Dr. Welch's lectures on "The General Pathology of Fever." Dr. Welch's competence to deal adequately with such a puzzling, although familiar, subject need not be proclaimed; it is a fact of which all our readers are fully aware. They know also that his comprehensiveness of mental vision and his faculty of correlating facts are so pronounced as to preclude at the outset all danger of his falling into the error of magnifying the importance of laboratory work and depreciating that of clinical observation. Essentially a pathologist, he views pathology through the glass of every-day experience. Nothing could make of such a man a doctrinaire or an enthusiast. The days of Brownism, Broussaism, and the like, have passed away, it is true, but the scientific world is not yet wholly emancipated from the tendency to set up idols and then try to make facts bow down to them. It is therefore a matter for congratulation, although, as we have already said, not one calling for special statement, that a gentleman called upon to speak with the authority of a Cartwright lecturer—an authority not in this instance conferred by the invitation, but rather recognized by its being given—is so widely known for the qualities that have been mentioned.

No less is the young Society of the Alumni of Bellevue Hospital to be congratulated on its selection of Dr. Councilman to deliver the initial address of its series. "Predisposition in Tuberculosis," the theme chosen by Dr. Councilman, is one concerning which there might have been a great temptation for a mere laboratory man to repeat the famous chapter "On Snakes in Iceland." Far from making that blunder, Dr. Councilman judiciously accorded the utmost consideration consistent with facts to whatever foundation there may be for the predisposition theory of the ætiology of consumption. The subject was one that needed to be reviewed in just the temperate and readily comprehensible manner that Dr. Councilman adopted, and we do not doubt that his address will serve to clarify the thoughts and impressions of many a practitioner.

It is not unworthy of note that both Dr. Welch and Dr Councilman came from Baltimore to address their auditors; still less that they are both professors of pathology in the same institution, the Johns Hopkins University. Taking into account the short period of time that has elapsed since the university was established, we must view it as of good omen for its career, and especially as giving evidence of the discrimination with which the members of its medical faculty have been chosen, that two of its professors should have been called simultaneously to such important work as that of addressing the Alumni Association of the College of Physicians and Surgeons and the Society of the Alumni of Bellevue Hospital. The prominence already achieved by the Johns Hopkins University goes far as a token of Baltimore's progress as a seat of teaching institutions.

## ALBUMINURIA AND DISEASE OF THE PLACENTA.

THE pathology of the albuminuria of pregnancy is still involved in so much obscurity that any observation tending to throw light on the subject can not fail to be of interest. Fehling recently drew attention to the connection between nephritis and diseases of the placenta, and Wiedow, of Freiburg, takes up the subject anew in a recent number of the "Zeitschrift für Geburtshülfe und Gynäkologie." So long ago as 1860 the matter was under discussion by the Edinburgh Obstetrical Society. Since then several accoucheurs have noted the frequency with which morbid conditions of the placenta have been met with in conjunction with albuminuric eclampsia, but most of them have been content with observing that the placenta was diseased, or presented patches of fatty degeneration, without any closer inquiry into the pathological condition. But Wiedow has investigated the matter very thoroughly, and has made most careful microscopical examinations of the altered placental tissues. He gives the histories of six cases that he has observed at the Freiburg clinic. In some of them premature labor was induced, in others it occurred spontaneously, and in still others labor took place at full term, and the child either was still-born or died in a few hours. The placentæ presented numerous small, grayish-white nodules, which were seen under the microscope to consist of fibrous tissue considerably infiltrated with fat. The upper layers of the maternal portion contained muscle-cells and the usual decidual elements. The scanty villous tissue toward the fœtal surface was observed as small, round, whitish areas of about the size of a pin's head. The villi were devoid of epithelium, widely dilated at places, and filled with an amorphous substance. Their vessels showed thickening of the adventitia, with diminution of the lumen, and in some instances total closure. The closure had been brought about in two ways; in many vessels it was by a coagulated granular mass, and in others by a proliferation of the endothelial cells of the intima. Everywhere, even outside the nodules, the thickened adventitia showed a decidedly fibrillar structure inclosing spindle-shaped nuclei. Only one lobule presented a different condition; it was distended with blood. The membranes in the vicinity of the diseased lobules showed grayish-white elevations of fibrin.

Pathologists differ as to the character of the morbid process. Some of them, including Rokitansky, have held that it was of an inflammatory nature; others, like von Scanzoni, have said that it consisted in an effusion of blood. Hegar and Maier, who were among the first to make careful histological examinations, attributed the change to an interstitial inflammation, but quite recently Ackermann has expressed the conviction that the nodules are composed of coagula necrosed in consequence of periarteritis of the villi, and Wiedow's researches seem to confirm this view. A more difficult problem to solve is that of the relationship between the albuminuria and the placental disease. Is the albuminuria the cause or the effect? One's first impulse is to say that it is the cause, but the opposite view is not without some weighty arguments. In the majority of instances there is only the simple nephritis of pregnancy, to which so deleterious an effect can hardly be ascribed. Normal placentæ are found in women suffering with chronic nephritis; moreover, the first symptoms of renal irritation are frequently observed only after the embryo has been dead for a longer or shorter period. Furthermore, although the fœtus is sometimes expelled shortly after the onset of the symptoms of albuminuria, the placenta shows changes that must have taken some time in forming. Finally, if the kidney affection is the cause, how can the fact be explained that in cases of twins one of the placentæ may remain intact, as in one of the cases described by the author? But it would require a considerable stretch of one's speculative powers to assume that the nephritis was due to the occlusion of some of the vessels of the villi and the consequent increased arterial tension. Still another view is that both conditions are coincident results of a common cause, such as syphilis. It is evident that the subject offers a fertile field for further inquiry.

## *MINOR PARAGRAPHS.*

### THE AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

Elsewhere in this issue we publish the preliminary programme of the next meeting of the association. Although the meeting is not to be held until September, the preliminary announcement gives the titles of thirty-three papers. This fact speaks in unmistakable terms for the efficiency of the secretary, Dr. Taylor. It is usually the unhappy fate of secretaries of such societies to fail to get responses to their queries as to papers almost up to the very time of their being compelled to print the final programmes in order to be able to have them at the meeting, to say nothing of getting them to members living at a distance. When we first mentioned the establishment of this association we ventured to predict a successful career for it, and it was largely on the strength of the well-known energy of the president and the secretary that we felt warranted in making such a forecast. Since that time we have been abundantly confirmed in our prediction, and the programme thus far arranged for the next meeting leaves no room for doubt as to the success of the occasion.

### SIR MORELL MACKENZIE AND THE LONDON "TIMES."

It appears as if the Berlin correspondent of the London "Times" had systematically pursued a course, in his dispatches to his paper, calculated to put the most unfavorable aspect on Sir Morell Mackenzie's connection with the German Emperor's case, mainly by quoting from hostile articles in the German papers and keeping back all information as to the favorable notices printed in Germany, and even such corrections as have been published there. The correspondent seems to be a countryman of Sir Morell Mackenzie's, although that may not be the case; if it is, it makes the matter all the worse. At all events, he has followed the policy that marks him as eminently lacking in one of the qualities essential to a satisfactory correspondent.

### THE LATE DR. AGNEW'S WILL.

It is announced that the late Dr. Cornelius Rea Agnew bequeathed all his property to his widow and children, and that the will contains the following sentence: "I wish particularly to express my regard for my associate, David Webster, a physician residing in New York, and for that purpose I request my executrixes and executor to give him, after my decease, such token of my regard for him as may to them seem proper." This, it seems to us, was an exceedingly delicate way chosen by Dr. Agnew to insure the spontaneity of the gift, whatever it may prove to be—a way quite in keeping with his exquisite tenderness of feeling. That, in Dr. Webster's eyes, it will clothe the token with an added value can not be doubted. Such cordiality as that with which Dr. Agnew and Dr. Webster worked together for years is not often observed, and it was fitting that it should be commemorated in such a manner.

### THE RESPIRATORY FUNCTION OF THE NOSE.

It used to be held that the air inspired was warmed and moistened by the lungs. Two years ago Aschenbrandt showed that this was not the case, but that the air derived its absolute heat and humidity from the air-passages, and he concluded that it was chiefly in the nose that the thing was done. Now, however, Dr. Richard Kayser, of Breslau, has been over the ground anew, and, in an article published in the "Archiv für die gesammten Physiologie," an abstract of which is to be found in the "Centralblatt für klinische Medicin," drags the nose down from this particular niche of physiological dignity, and maintains that the warming and moistening of the air inspired are quite as well accomplished in the mouth and the pharynx.

### "CHRISTIAN SCIENCE" IN MIDWIFERY.

"Christian science," which was lately denounced by a clergyman, in an after-dinner speech, as neither Christian nor science, has been tried in the town of Milford, Mass., in a case of midwifery, and, according to a press dispatch, the practitioner is likely to be tried in a court of law. The case resulted in the death of both the *accouchée* and the infant, and the apostle of "Christian science" was the dead woman's mother.

### ITEMS, ETC.

**The American Gynæcological Society.**—The next meeting, which was appointed to be held in Boston, will be held in Washington, on the 18th, 19th, and 20th of September. It is understood that the change is made at the request of both the Washington and the Boston members, in order that the members may be present at the sessions of the Congress of American Physicians and Surgeons.

**Dr. Thomas Keith, of Edinburgh,** the famous laparotomist, having retired from the surgical staff of the Royal Infirmary, the "British Medical Journal" announces that the managers have adopted the following minute: "The managers, in accepting with regret the resignation of Dr. Thomas Keith,

desire to record their sense of the importance and value of the work which, in conjunction with Mr. Skene Keith, he has done in the wards under his charge. They beg to convey to him their thanks for the skill and success with which he has performed his duties as extra surgeon for the treatment of ovarian diseases, the result of which has been much relief to suffering females, increase of credit to the Royal Infirmary, and enhancement of the reputation of the Edinburgh Surgical School."

**The New York Post-graduate Medical School and Hospital.**—Dr. J. E. Weeks, instructor in bacteriology, is about to begin a course in that branch.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending April 21, 1888:*

Percy, Henry T., Passed Assistant Surgeon. Detached from the Naval Academy, and ordered to the Naval Hospital, Washington, D. C..

Crawford, M. H., Passed Assistant Surgeon. Relieved from duty at the Naval Hospital, Washington, D. C., and to wait orders.

Flint, J. M., Surgeon. Relieved from Fish Commission duty and special duty at the Smithsonian Institution.

Persons, R. C., Surgeon. Ordered to duty in charge of the Army and Navy Hospital, Hot Springs, Ark.

Stone, E. P., Assistant Surgeon. Relieved from further treatment, and ordered to duty at the Naval Hospital, New York.

Kindleberger, David, Medical Director. Detached from the Naval Hospital, Washington, D. C., and to wait orders.

Hoehling, A. A., Medical Inspector. Ordered to the Naval Hospital, Washington, D. C.

Harmon, G. E. H., Passed Assistant Surgeon. Ordered to duty at the Naval Academy, Annapolis, Md.

A. C. Rhodes, Medical Inspector. Detached from special duty, New York, and waiting orders.

Henneberger, L. G., Passed Assistant Surgeon. Detached from Naval Hospital, New York, and ordered to special duty attending officers and families, New York.

**Society Meetings for the Coming Week:**

Tuesday, *May 1st:* Kansas State Medical Society (Topeka); Wisconsin State Medical Society (Milwaukee); New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Hudson (Jersey City—annual) and Mercer (annual), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Connecticut River Valley Medical Association (Bellows Falls, Vt.).

Wednesday, *May 2d:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond, N. Y. (Stapleton); Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Essex, Mass., North District (annual—Haverhill), and Plymouth, Mass., District (annual) Medical Societies.

Thursday, *May 3d:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans, N. Y. (semi-annual—Albion); Ocean, N. J., County Medical Society (Tom's River); Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *May 4th:* Practitioners' Society of New York (private).

Saturday, *May 5th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

## Obituaries.

**Edward Greely Loring, M. D.,** died suddenly, in the street, on Monday afternoon, the 23d inst., in the fiftieth year of his age. It was not known to his friends, and probably not to himself, that his health had undergone any deterioration, and on the day of his death he attended to his practice as usual. It is understood that his sudden death was owing to heart disease.

Dr. Loring took his medical degree from the Medical Department of Harvard University, in 1864. He soon came to New York, and for a time he was associated in practice with the late Dr. Agnew, whose death preceded his own by only five days. At the time of his death, and for many years before, Dr. Loring was one of the surgeons of the New York Eye and Ear Infirmary, and he had achieved distinction as an ophthalmologist. Indeed, in the field of physiological optics, and especially in that of ophthalmoscopy, his pre-eminence was everywhere acknowledged. His "Text-book of Ophthalmoscopy," the first volume of which was published in 1886, took rank at once as the standard American work on that subject. Not only was Dr. Loring's ability as an ophthalmologist generally recognized, but his qualities of heart endeared him to his patients and to all who knew him. As the shock felt on the announcement of his sudden death passes off, it will be succeeded by an abiding sense of the loss that the profession and the community have sustained.

### OBITUARY NOTES.

**J. Ford Prioleau, M. D.,** of Charleston, S. C., died, at the residence of his son in Beaufort, on Wednesday, the 11th inst., at the age of sixty-two. He was born in Charleston, received his collegiate education at the Charleston College, and was graduated from the Medical College of the State of South Carolina in 1847. In 1849 he settled in Stockton, Cal., but returned to Charleston in 1851, in which year he was appointed lecturer on diseases of women and children at the Charleston Medical Institute, from which he resigned in 1856. In 1871 he was appointed professor of obstetrics in the Medical College of the State of South Carolina, and in 1881 was made dean of the college, which position he held at the time of his death. He was a member of the American Medical Association and of the South Carolina Medical Association.

## Letters to the Editor.

### THE "INDEX MEDICUS."

New York, *April 17, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: There has been much editorial complaint of late that the "Index Medicus" is not getting enough support to pay its expenses. May not the reason for this be the steady increase since it first appeared in the price of subscription? How many doctors are there who are willing to pay ten dollars a year for something which they have no very great need for personally, in order that some other man may be saved trouble?

When the "Index Medicus" was first issued there was a considerable number of those who subscribed for the journal for purely sentimental reasons. When the price reached $5, some of these dropped out; others remained because they had the publication from the start, and did not like to abandon it. When its price reached $8 and $10, and its publishers acknowledged that its survival was doubtful, many of these made up their minds that, if was "going up," they might just as well keep their money in their pockets, and favored an early demise.

What is wanted is a more popular subscription price, the incorporation of some reading matter, and the establishment in connection with the journal of a department whereby exchanges of books can be made, or rare or otherwise desirable books and journals can be bought. There are already many reading clubs, journal clubs, library associations, and similar organizations of physicians in this country, and by making such a publication a medium of exchange between them, and providing it with a certain amount of reading matter relative to medical literature, both current and ancient, it would be a paying instead of a losing scheme. F. A. Castle.

## Book Notices.

*Nouvelle méthode de traitement de la diphthérie.* Par le Docteur G. Guelpa, Membre de la Société de médecine pratique, etc. Contribution au traitement de la diphthérie. Premières applications de la méthode de traitement de la diphthérie faites à l'hôpital Trousseau. Considérations et propositions au sujet d'un cas de diphthérie. Paris: Octave Doin, 1887. Pp. 7 to 76.

Actuated partly by the somewhat discouraging results of other methods of local medication in diphtheria, partly by a sympathetic consideration for the discomfort occasioned to infant patients by sponging the pharynx with solution of perchloride of iron, the author of this brochure has devised the more efficacious and agreeable plan of making copious injections of the same drug, in a solution of from one half to one per cent., into the pharynx and nares, with an ordinary clyster syringe, every fifteen minutes during the day and every half-hour through the night. When given by the nostril the injection must be large enough and forcible enough to return, not only through the other nostril, but also through the mouth, and, if tracheotomy is required the same solution is to be propelled in the form of spray through the cannula. By these means Dr. Guelpa believes that, in addition to the dislodgment and expulsion of existing false membrane, extension of the morbid process is prevented, and the mortality of diphtheria reducible below the average of the other contagious maladies. It is rather on persistent irrigation than on any specific action of the iron that he insists, for he is willing to admit that as good, or perhaps better, results might be obtained with carbolized or borated solutions or with lime-water.

On the convenience and comfort to the patient of the persistent prosecution of a *methodus medendi* of this sort it is needless to dwell, and it would be equally superfluous to observe that the author is a firm disciple of the school which teaches the local pathogeny of diphtheria, regarding the constitutional involvement as a secondary infection. It may, however, be remarked that his practice of administering cathartoemetics, full doses of quinine, and such other therapeutic agents as may appear to be indicated by circumstances during the course of the disease, renders it somewhat difficult to determine how large a share in cases of recovery should be allotted to his "new method" of irrigation.

### BOOKS AND PAMPHLETS RECEIVED.

A Manual of Diseases of the Nervous System. By W. R. Gowers, M. D., F. R. C. P., Assistant Professor of Clinical Medicine in University College, London, etc. American Edition, issued under the Supervision of the Author, and containing all the Material of the Two-volume English Edition, with some Additions and Revisions. With Three Hundred and Forty one Illustrations. Philadelphia: P. Blakiston, Son, & Co, 1888. Pp. xx–25 to 1357. [Price, $6.50.]

Transactions of the Ninth Annual Meeting of the American Laryngological Association. Held in the City of New York, May 26, 27, and 28, 1887. New York: D. Appleton & Co., 1888. Pp. v–249. [Price, $3.]

Natural History of Tuberculosis in Accordance with the Germ Theory. By Noah Cressy, M. D., V. S., Ph. D. [From the "Report of the Secretary of the Connecticut Board of Agriculture," 1887.]

Annual Report of the Board of Health of the City of Indianapolis for the Year ending December 31, 1887.

Ophthalmic Surgery. By Robert Brudenell Carter, F. R. C. S., Ophthalmic Surgeon to St. George's Hospital, etc., and William Adams Frost, F. R. C. S., Assistant Ophthalmic Surgeon to St. George's Hospital, etc. Illustrated with a Chromograph and Ninety-one Engravings. Philadelphia: Lea Brothers & Co., 1888. Pp. 554.

A Method of Estimating Adduction and Abduction of the Leg in Hip Disease. By Robert W. Lovett, M. D., of Boston. [Reprinted from the "Boston Medical and Surgical Journal."]

The Legal Aspect of Suicide. Annual Address before the Medical Jurisprudence Society of Philadelphia, January 10, 1888. By the Hon. W. N. Ashman, President of the Society.

Des contractures. Contractures en général; la contracture spasmodique; les pseudo-contractures. Par le Dr. Paul Blocq, Ancien interne des hôpitaux de Paris, etc. Paris: A. Delahaye et E. Lecrosnier, 1888. Pp. 7–11 to 210. [Prix, 5 francs.]

A Practical Treatise on Diseases of the Skin, for the Use of Students and Practitioners. Second Edition, thoroughly revised and enlarged. By James Nevins Hyde, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago, etc. Philadelphia: Lea Brothers & Co., 1888. Pp. xix–17 to 676. [Price, $4.50.]

Lectures on Certain Diseases of the Jaws. Delivered at the Royal College of Surgeons of England, 1887. By Christopher Heath, F. R. C. S., Hunterian Professor of Surgery and Pathology in the College, etc. Sixty-four Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 128. [Price, $1.]

Memoranda on Poisons. By Thomas Hawkes Tanner, M. D., F. L. S. Sixth American from the last London Edition. Revised by Henry Leffman, M. D. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 177. [Price, 75 cents.]

Recent Advances in Electro-Therapeutics. Electricity in Gynæcology. By A. M. Rosebrugh, M. D., Surgeon to the Eye and Ear Dispensary. [Reprinted from the "Canadian Practitioner."]

Sixty-first Annual Report of the Directors of the General Hospital Society of Connecticut, for the Year 1887.

Chylous Ascites. By Dr. P. J. Murphy, Columbia Hospital, Washington, D. C.

Discussion on Typhoid Fever. Remarks Introductory to a Discussion on Typhoid Fever. By Alfred Ludlow Carroll, M. D. [Reprinted from the "Transactions of the New York State Medical Association."]

Pneumonia; its Mortality and Treatment. A Statistical and Rational Inquiry. By Henry Hartshorne, M. D. [Reprinted from the "Transactions of the College of Physicians of Philadelphia."]

Twenty-seventh Annual Report of the Cincinnati Hospital to the Mayor of Cincinnati, for the Year ending December 31, 1887.

A Case of Icterus Infantum from Congenital Deficiency of the Ductus Communis Choledochus. By John Blake White, M. D. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Ueber den Zusammenhang von chronischen Verstopfungen der Nase und des Nasenrachenraums mit Unterleibsbrüchen. Von Dr. W. Freudenthal. [Separat-Abdruck aus der "Monatsschrift für Ohrenheilkunde," etc.]

# Reports on the Progress of Medicine.

## OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

**The Bacteriological Nature of Trachoma.**—Kucharsky ("Ctrlbl. für prakt. Aug.," Aug.-Sept., 1887) draws the following conclusions from a series of observations and experiments: 1. Contrary to the views of numerous clinical observers, trachoma is a disease of the conjunctiva *sui generis*, since many observers have found in the contents of the nodules or granules micro-organisms, which undergo peculiar morphological and biological differences. The pathogenesis of the micro-organism has not yet been demonstrated. 2. This micro-organism demands still more careful investigation in order finally to determine its morphological relations to diplococcus. 3. The micro-organism found by Michel in trachoma, which morphologically consists of diplococci resembling the gonococci, presents nothing characteristic. 4. The micrococcus found by the author in trachoma grows in the form of white, coalescing spots, which form a membrane running in threads. 5. Beef-peptone gelatin (5 to 8 per cent.) is always rendered fluid by it, and on its surface is found a white, very delicate membrane composed of threads. 6. The culture increases much more rapidly when the temperature is increased. 7. The cultivation of this micro-organism may under certain circumstances be alternated with *Staphylococcus pyogenes albus* and other micrococci met with in the atmosphere. 8. The author has not succeeded in producing true trachoma by inoculating doves, rabbits, cats, dogs, and man with the cultivation. 9. Inoculation of the contents of the trachoma granule upon the conjunctiva of the cat produces granules, which are analogous to the trachoma granules. 10. Trachoma and the so-called follicular catarrh (folliculosis conjunctivæ), which by some authorities are regarded as clinically very different, may bacteriologically be regarded as identical, because the same micro-organism is found in both.

**Notes on Pterygium.**—Lopez ("Rec. d'ophthal.," July, 1887) draws the following conclusions as to the pathogenesis and development of pterygium: 1. Repeated action of extraneous agents, such as dust, smoke, wind, heat, etc., upon the horizontal diameter of the eyeball. 2. Consecutive formation of a pinguecula, which is but the first stage of a pterygium. 3. Denudation of the epithelium over the pinguecula and neighboring portion of the cornea by the action of the same causes. 4. Implantation of micro-organisms in the loss of substance or denuded spot, and adherence of the pinguecula to the cornea. 5. Progressive growth of the pterygium by propagation of the microbes. 6. Limitation of its extension at the center of the cornea for some unknown reason. 7. Triangular shape of the pterygium by the disposition of the blood-vessels in the form of spokes of a wheel. Hence the definition of a pterygium should read: Partial hypertrophy of the ocular conjunctiva, which by the action of certain germs is implanted in and grows upon the cornea, without alteration of adjacent tissues.

**An Instrument for testing Refraction and its Errors, the Strength of the Recti Muscles, and their Insufficiency.**—Holden ("Arch. of Ophth.," xvi, 3) has devised an instrument for the above purpose, which consists of a thin brass disc, 0·85 mm. in diameter, rotating on a stand adjustable in height. On each side of the disc is a clip for holding lenses, each allowing 90° rotation of the lens. On one side of the disc, in addition to the clip, is a groove in which a lens of oblong shape can be slipped laterally. In the center of the disc is a perforation 9 mm. in diameter. A small sliding disc slips before and covers the large perforation. This small secondary disc has at one place a vertical slit and at another place two perforations, each 1 mm. in diameter and 4 mm. apart. The lenses are a cylinder of + 7 D. and one of — 7 D., and a prism of 6°. These are similar to the ordinary test lenses, and slip into the clips, where they may rotate 90°. In addition there is a — 10 D. cylinder cut in an oblong shape, which slides laterally in the groove on the disc. The tests are made by rotating the cylinders of 7 D. (the + cylinder in testing hypermetropia and the — cylinder in testing myopia) before the disc with the two small perforations placed horizontally, while the patient looks through them with one eye at a light 6 mm. distant. The cylinders are placed at a right angle to each other and two horizontal images are seen. When either cylinder is rotated, one image revolves about the other, and the images come into a vertical line. Then when the + cylinder is rotated, one image revolves about the other, and at that point in the rotation where the images become vertical, a pointer on the cylinder indicates on a calculated scale marked on the disc the amount of hypermetropia in diopters in the horizontal meridian. When the — cylinder is rotated and the images become vertical, the pointer on that cylinder, indicates the amount of myopia in the horizontal meridian, on a calculated scale marked on the other side of the disc. The patient is seated before a high table or shelf on which the instrument is placed, and the stand is adjusted to the height of the eye. One eye is now closed and the patient looks with the other through the two horizontal perforations at a small light six metres distant. Two horizontal images of the light are seen, and when the + cylinder is rotated, if the images become vertical before the end of the scale is reached, there is hypermetropia in the horizontal meridian, and its amount is read off the scale. If the images become vertical only when the end of the scale is reached, there is no hypermetropia in the horizontal meridian, and the — cylinder is then rotated, and when the images become vertical, the amount of myopia in the horizontal meridian is read off the scale. If the images here become vertical only when the end of the scale is reached, there is no myopia. The disc is next rotated 90°, making the perforations vertical, and the vertical meridian of the eye is tested. The images appear vertical, and when the + cylinder is rotated they become horizontal, and the amount of hypermetropia in the vertical meridian is read off the scale. If the images become horizontal only when the end of the scale is reached, there is no hypermetropia. The — cylinder is then rotated, and when the images become horizontal the myopia is read off the scale, or if the end of the scale is reached there is no myopia. If the error is of the same amount in both meridians, the case is one either of simple hypermetropia or of myopia, or possibly a case of astigmatism with the principal meridians at 45° and 135°. If the amount of error is different in the two meridians, astigmatism is present. As a large proportion of astigmatic cases have their principal meridians at 0° and 90° or a few degrees from these, cylinders of the strength we have found by the instruments are taken from the test case and put at 0° and 90° in a test frame. If now the patient reads $\frac{20}{20}$ by the Snellen types, the astigmatism is at 0° and 90° and has been determined. If the correction is not attained at once, we proceed to find the meridians of greatest and least curvature, and test them likewise. The image may be looked through from either side, and in testing hypermetropia the — side is placed next the eye, so that the operator may rotate the + cylinder readily; and when myopia is tested, the instrument is turned the other way. In testing the strength of the recti muscles, the cylinders used for refractive tests are taken out of the clips; the small disc is slipped so that the vertical slit is in the center of the instrument, and a quadrilateral cylinder of — 10 D., 12 mm. wide in the line of its axis and 36 mm. long, is placed in a groove, in which it slides laterally before the vertical slit. The axis is placed in line with the slit, and a distant light is observed with one eye looking through the slit, and the other outside of the instrument. A single light of the image is seen, and as the lens is slowly slipped outward, at some point double images appear, which run some distance apart and can not be fused again. Then on a scale on the instrument is indicated in degrees the strength of the prism which the external muscles will overcome. The lens is then slipped inward, and in the same manner the strength of the internal muscles is read off the scale when double images appear. The whole disc may be rotated 90°, and in a similar way the superior and inferior muscles may be tested. In testing for insufficiency of the recti muscles the small disc is slipped aside, leaving the large perforation in the center of the instrument, and a prism of 6° is placed upward in one of

the clips. The patient, looking with one eye through the perforation, and with the other outside of the instrument, at a distant light, sees two images. If the images are exactly vertical, there is no insufficiency. If the images are oblique, the prism is rotated base inward until the images come into a vertical line, and then the degree of insufficiency is read off a scale on the disc. The ordinary line with a central dot is used in a similar test for insufficiency for near objects. Then the disc is rotated 90°, and the images will appear horizontal if the superior and inferior recti are balanced. If the images are oblique the prism is rotated until the images become horizontal, and the degree of insufficiency of the superior or inferior recti is read off the scale. If the images are fused when the prism is placed horizontally, a supplementary strong prism is slipped into the other clip, and the scale is not altered. In testing the internal recti, if the images show any tendency toward oscillation, a supplementary prism may be placed vertically in the other clip, and the images will be seen farther apart and oscillation will not occur.

**One of the Causes of Stationary Amblyopia.**—Imbert ("Annales d'oculistique," July–August, 1887) thinks that the symmetry and the malformations of the eyeball may be referred to one and the same physical cause—the elastic reaction of the enveloping membranes of the eye, which is brought into play by the intra-ocular tension. But while explaining the facts in this manner, the tension and curvature of the membranes should also be considered, in order to avoid mistaking cause and effect.

**Amyloid Tissue in the Cornea of a Staphylomatous Eye.**—Beselin ("Arch. of Ophth.," xvi, 3) describes a rare instance of amyloid deposit in the cornea. The freshly enucleated eyeball measured 37 mm. in its antero-posterior diameter and 27 mm. in its equatorial. The enlargement was chiefly due to the so-called intercalary portion of the sclera. Under the microscope the superficial layers of the cornea proper, a newly formed subepithelial stratum, and in places the corneal epithelium, were found infiltrated by peculiar, homogeneous, highly refractive, organic masses. The smaller deposits appeared as mere round dots strewed through the tissues like granules of inorganic substance; the middle-size deposits were round or oval like fat-globules; the larger formed irregular lumps. These homogeneous formations showed the typical amyloid reaction with iodine solution and iodine violet. The accumulation of the larger masses near the surface, and of the smaller ones in the deeper layers of the cornea, seems to indicate that the morbid process originated in the outer layers, and progressed toward the inner layers. The walls of the newly formed blood-vessels in the cornea were free from amyloid degeneration. The disease did not originate in the cells, but showed a degeneration of the fibers, not as a diffuse alteration of their contents, but rather as an impregnation of the tissue with amyloid substance, or as a gradual conversion of pre-existing tissue constituents.

**Co-excitation in the Regions of Homonymous Visual Fields.**—Schiele (*ibid.*), from observation and experiment, draws the following conclusions: 1. The so-called fatigue and the anomalous excitability of the retina must be regarded as a fatigue of the cortex of the occipital lobes. It is found (1) in all conditions heretofore erroneously designated as anæsthesia or hyperæsthesia of the retina. It may occur in purely functional affections, and in organic lesions of the central nervous system; (2) in transient psychical alterations. 2. The limitation of the periphery of a sector of the visual field has no influence on the periphery of an adjacent sector or any other part of the same visual field. 3. The fatigue of the visual center produced by the examination in one eye is transmitted in a definite manner to the fibers for the other retina that govern homonymous parts in the visual fields. 4. The limitation of homonymous retinal fields is incompatible with Wernicke's views on the projection of the visual center, according to which there is in each occipital lobe a demarkation line of the hymonymous halves of the retinæ corresponding to the vertical lines of separation of the two visual fields.

**The Connection between Albuminuria and Cataract.**—Evetsky ("Arch. d'ophthal.," July–August, 1887), from observations of his own upon the above subject, draws the following conclusions: 1. Age undoubtedly exerts considerable influence in the production of cataract, for the occurrence of the latter increases progressively with advancing years. In extreme old age, between eighty and ninety, cataract is much more frequently met with than is the normal lens. 2. Unfavorable conditions of nutrition seem to favor the development of cataract. 3. Both sexes are equally subject to the formation of cataract. 4. In young persons affected with renal disease cataract is not ordinarily met with. 5. In old persons affected with renal disease cataract is frequently met with, but not more so than among old persons in general. 6. Albuminuria in subjects affected with cataract has, in an enormous majority of cases, a physiological significance.

**Researches on the Subject of Ocular Grafting.**—Baraban and Rohmer (*ibid.*) have been experimenting with intraperitoneal grafts of the eyeball, and from these experiments and the experience of others have drawn the following conclusions: The æsthetic value of the operation of grafting an eyeball into the human orbit has proved to be practically *nil*, since the so-called success consists in nothing but the insertion into the orbit of an organ which steadily atrophies, and in which the lens becomes probably calcareous, while the cornea assumes gradually the character of a skin covered by epithelium. The larger the dimensions of the cornea the less are the chances of its preserving its integrity. The cornea rapidly becomes vascularized, and its tissue is as rapidly transformed. Its laminæ lose their homogeneous aspect, and seem to be decomposed into fibrillæ. This change begins in the vicinity of the capillaries. The skeleton framework of the cornea disappears gradually, and its place is taken by an absolutely new tissue. A certain degree of transparency may be preserved during the first few weeks after the operation, but in the end the cornea of the transplanted eye acquires the dull grayish aspect of any connective tissue.

**Ophthalmoplegia Externa and Interna.**—J. Hutchinson, Jr. ("Ophth. Review," August, 1887) reports a case of this kind, with autopsy. Besides almost complete paralysis of the ocular motor nerves of the right eye, the man had persistent pain in the forehead and temple, proptosis, congestion of the eyelids, and defective vision. Chronic inflammation around the right cavernous sinus had produced neuritis of all the nerves in its wall, had obliterated the venous canal, and had led to partial obstruction of the carotid artery, and adhesion of the apex of the tempero-sphenoidal lobe to the dura mater. The lesion was of syphilitic origin. The reporter related two other precisely similar cases of unilateral ophthalmoplegia externa and interna, in which syphilitic inflammation about the cavernous sinus was also the cause, and laid stress on the fact that the sixth nerve, lying farthest away from the wall of the sinus, being involved the latest and to the least extent, and also the involvement of the ophthalmic division of the fifth nerve, pointed to this view of the pathology rather than to central nuclear degeneration.

**Glioma of the Retina.**—Von Grolman ("Arch. für Ophthal.," xxxiii, 2) draws the following conclusions from his investigations upon the subject of glioma: 1. Vision is by no means as a rule lost as soon as the fundus reflection (*Augenleuchten*) appears, but may exist in glioma endophytum for a long time in good condition, according to the location of the tumor. 2. Glioma endophytum, in contradistinction to glioma exophytum, leads with tolerable frequency to metastases in the vitreous. 3. Retrograde metamorphosis of the neoplasm may appear not only after previous inflammatory action and perforation, but also during the early stages with a fair amount of vision, and has apparently been brought about by mercurial treatment. Still a permanent cure is never reached in this way. 4. A reappearance of the disease in the fellow-eye is to be feared even without any local return in the orbit of the eye first affected, after enucleation, even after a number of years. It has been observed after an interval of four years. The prognosis depends especially upon the age. 5. Gliomata grow luxuriantly from several layers of the retina, even from the external granule layer.

**Bilateral Metastatic Ophthalmia in the Puerperal State produced by Numerous Embolic Masses of Streptococci.**—Wagenmann (*ibid.*) gives the following results of his examination of a case of this nature: He found multiple emboli composed of streptococci in the retinal vessels, masses of the same streptococci in the retina and vitreous, isolated emboli in the vessels of the iris, ciliary body, and chorioid, more numerous ones in the conjunctiva, ocular muscles, and orbital tissue. There was nothing pathological in the optic nerves, but in the remains of the left internal carotid artery, after the origin of the ophthalmic artery, there was a thrombus which consisted of

white blood-corpuscles and fibrin, but no cocci. The left ophthalmic artery was empty, and nothing pathological found in it. The left eye was the first attacked. The valves of the heart, the cardiac tissue itself, and the kidneys were the seat of metastases. The disease had produced complete blindness within a few hours. The examination showed the existence of a septic, embolic disease of the retina, and as its cause a multiple embolic condition of the vessels with streptococci and enormous proliferation of the microbes in the eye. The process probably began with the introduction of a soft embolus into the central retinal artery. It was not positive whether the embolus consisted solely of cocci, or whether it also contained particles of tissue as well as cocci. It probably divided and stopped a number of small arterial branches and capillaries simultaneously. This caused the first disturbance of vision. The streptococci then rapidly increased in the caliber of the vessels and extended thence into the surrounding tissue, retina, vitreous, and chorioid. The chorioid contained no emboli, and the base-membrane presented a firm obstacle to the extension of the cocci. The latter attacked the bacillar layer and pigment epithelium of the retina relatively early, for an extensive detachment of the retina subsequently appeared. The pus was the consequence of the infectious character of the cocci. In those parts of the retina which were free from cocci there was no suppuration. The pathological changes of the vitreous consisted mainly in a fibrinous saturation and marked purulent infiltration. The changes were relatively trifling compared to the enormous development of streptococci met with in the vitreous. Masses of suppuration also occurred in the ciliary body, iris, and circumscribed parts of the chorioid, due to the existence of isolated emboli.

**Glaucoma after Linear Extraction of Cataract.**—Stölting (*ibid.*) thinks that the pathogenesis of the glaucomatous process in these cases is as follows: By the incarceration of the lens-capsule in the cornea, and the adhesion of the stump of the iris upward, the ciliary body is drawn forward. This leads to inflammatory processes in the chorioid, to the closure to the lymph channels of exit around the venæ vorticosæ, to lymph stasis in the hyperchorioidal space, and consequently to pressure on the vitreous. If the vitreous is not fluid but rather of abnormally firm consistence, it must be drawn or pushed in the direction in which yielding is still possible—that is, where the lymph channels of exit are still open, or forward, where room may be made for the vitreous by exit of a portion of the aqueous. The vitreous therefore presses forward like a wedge into the ring formed by the ciliary body, especially its circular fibers, and pushes the latter forward until the fibers of Müller and the base of the iris are pressed laterally against the sclero-corneal margin. Hence, in these cases, the adhesions between the iris and the cornea are not the cause, but rather the result, of glaucoma.

**The Causes of Erythropsia.**—Dobrowolsky (*ibid.*) draws the following conclusions from his own observations and experiments: 1. The maximal dilatation of the pupil is the chief cause for the production of the appearance of erythropsia throughout the entire visual field or its greater part. In an eye with narrow pupil the same appearances may occur only when the eye looks fixedly at the sun's disc, and even here the erythropsia is limited to the point of fixation and its immediate vicinity. This difference may perhaps be explained by the assumption that in the eye with dilated pupil the light may extend over the entire retina, while in the eye with narrow pupil a sharply defined image of the sun is cast upon the retina. 2. The violet color, which appears in the visual field of the atropinized eye in all the experiments, forms a negative after-image of those rays which proceed from the sun and are dispersed over the entire fundus. Mackenzie is correct in stating that erythropsia is caused by the production of after-images. Hence it would be more correct to replace the name "erythropsia" by the expression "violet vision," which corresponds better to the facts.

**The Pathogenesis of Pterygium.**—Theobald ("Amer. Jour. of Ophth.," Aug., 1887) thinks that it is highly probable, in view of the intimate connection between the vascular system of the recti muscles and that of the conjunctiva in the neighborhood of the corneal margin, that these muscles, by influencing the blood-supply of the overlying conjunctiva, play an important *rôle* in determining the formation of pterygium. Assuming this to be the case, it is manifest that, of all the straight muscles, the internal recti would exert by far the most decided influence in this respect, for they are not only the largest and the most active, but they lie in closer relationship with the conjunctiva than any of the others, since their attachment to the sclerotic is nearer to the corneal margin. This would seem to give a satisfactory explanation of the fact that a pterygium occurs in so large a majority of cases on the nasal side of the cornea. In support of this view it may be stated, as a matter of observation, that persons who suffer with this affection not infrequently complain that the pterygium itself and the neighboring conjunctiva become injected when the eyes are much used in near work. What are the especial conditions which bring about this state of localized hyperæmia of the conjunctiva in some eyes and not in others we do not yet know. In some instances it is perhaps due to peculiarities in the distribution of the blood-vessels of the muscles and conjunctiva, but in a greater number it is probably dependent upon conditions which disturb the normal relationship between accommodation and convergence.

**Echinococcus in the Orbital Cavity.**—Zehender ("Kl. Mon. f. Aug.," Sept., 1887) reports a case of this very rare disease occurring in a man, aged thirty-eight, who presented himself with an exophthalmus of the right eye of six weeks' duration. The vision at this time was not materially affected. The retinal veins were greatly engorged. Two months later the exophthalmia had perceptibly increased. Between the upper lid and the upper orbital margin, and deep in the orbit, a soft, rounded tumor could be felt. The vision was reduced to read Jaeger No. xviii very slowly, and the ophthalmoscope showed the signs of choked disc. The patient also complained of double vision. Two months later the patient consented to an operation for the removal of the tumor. After a free division of the external canthus, the tumor could be felt distinctly, and a hook was introduced into its walls and an attempt made to draw it forward. This ruptured the wall of the cyst, and a large quantity of clear fluid poured out into the orbital tissue, and the tumor immediately receded from view and could not be discovered with the finger. The eyeball was intact, and the wound was then dressed antiseptically. There was considerable reaction, but in a few days this had entirely subsided. The exophthalmia still persisted, however, and a second operation was undertaken seven weeks later. The orbital cavity was again freely laid open, and, with the fingers and scissors, a dense membranous mass was removed from the upper and outer part of the orbit, which contained the remains of an echinococcus sac. From this time on the eyeball steadily receded into the orbit until at the end of the second week its normal position was regained. Diplopia, however, remained.

**The Phenomenon of the Pupillary Shadow and its Application to the Measure of Ametropia.**—Leroy ("Rev. gén. d'ophthal.," July and August, 1887) thinks that the method of determining errors of refraction by means of the pupillary shadow or keratoscopy has the following advantages: 1. It does not necessitate the relaxation of the accommodation in the observer. 2. Whatever the degree of the ametropia, the limit of possible error always remains the same and it is always known. 3. The inconvenience of the close approximation of observer and patient during examination with the upright image is avoided. 4. It may be employed for the purpose of instruction, for the errors made by the pupil may be rectified by the master much more readily than in examination by the upright image. 5. It does not require in the observer the ability to see the fundus of an eye with the ophthalmoscope.

**Eserine in the Treatment of Detachment of the Retina.**—Guaita ("Ann. d'oculistique," July–August, 1887) advocates the use of eserine in the treatment of detachment of the retina. He thinks that, as eserine is said to regulate the intra-ocular circulation and the filtration of the intra-ocular fluid, and also hastens the absorption and evacuation of serous and purulent intra-ocular exudation, and of inflammatory infiltration in the cornea, it would also prove efficacious in the case of serous exudation between retina and chorioid. Furthermore, he thinks there is something analogous between glaucoma and detachment of the retina, in spite of the increased tension in the one and diminished tension in the other. The eserine must be used persistently and methodically at least four times a day, and in solution of the strength of 0·50 to 0·75 per cent.

**Operation for the Advancement of the Rectus with the Capsule.**—Prince ("Ophthalmic Review," Sept., 1887), in devising this operation,

has aimed at the three following points: 1. To secure an unyielding anterior fixation point by utilizing the dense episcleral tissue. 2. To avoid the danger of splitting the theca and consequent escape of the muscle by the formation of a loop suture perforating the capsule and conjunctiva, the cutting tendency of which should be transverse to the direction of the muscular fibers. 3. The formation of a knot, which, while avoiding the danger of vertical displacement, would secure precision in the maximum as well as the minimum degrees of deviation and insufficiency, and at the same time be subject to modification after the recovery from the anæsthesia or the paresis which attends manipulation. In high degrees of deviation, tenotomy of the opposite rectus is made for the double purpose of increasing the effect, as well as that of equalizing, on the two sides, the cicatrization, thus preventing consequent deviation. The eye being fixed, the anchor of pulley suture is introduced slightly into the dense tissue, one millimetre from the corneal margin, with a very sharp, slender, curved eye-needle. The conjunctiva and capsule of Tenon having been divided, one branch of the advancement forceps is introduced underneath the tendon of the rectus and the other closed upon it, securing the edge of the retracted conjunctiva, after which the tendon is separated from the sclera. Each end of a thread being armed with a needle, both are passed from beneath the elevated rectus, through capsule, muscle, and conjunctiva, inclosing the middle portion of the rectus in a loop from which it can not escape. The tissues in the grasp of the forceps are now divided two millimetres anterior to the loop suture, the location of which will depend on the amount of advancement required in each case. In the absence of an efficient advancement forceps, this suture may be introduced by opening the conjunctiva and capsule parallel with the margin of the rectus, elevating the muscle on a strabismus hook, and suturing it, together with the capsule and conjunctiva, before separating the tendon. One end of one suture is then crossed over the other suture, both ends of which are now brought together and securely tied, inclosing the former in a loop or pulley. Both ends of this suture are now brought together in the form of a surgical knot, and it becomes apparent that in proportion as they are tightened over the pulley formed by the second suture will the cut end of the rectus be advanced, simultaneously closing the conjunctival gap. To obtain the most perfect correction a bow-knot is applied, and time allowed for recovering from the effect of traction, which should be avoided as much as possible during the operation. Very nearly the same effect may be obtained by reversing the order of the sutures, and making the scleral attachment with the needle at one end of the second suture, in which case the pulley will be formed by the bridge of dense scleral tissue. The conception of a sliding suture, enabling the operator to regulate the effect to any desired degree, removes much of the uncertainty attending tenotomies in cases of insufficiency and diplopia. As there is no cause for exsection in cases requiring the so-called "limiting tenotomy," a curved needle is passed into and out of the tendon, subsequently dipping into the sclerotic in the reverse direction, thus forming the first and second sutures with one continuous thread. The tendon is then completely divided without anxiety from over-correction, for, if it should occur, the effect may be limited by tightening the suture when the tendon is advanced as may be required. The remaining difficulty which has been experienced in these operations is the recovery of a muscle retracted after a previous operation. To accomplish this a curved needle has been devised, which will be found useful in various operations. It has a short curve with an eye in the point, through which the thread passes after leaving a spool in the handle, on which it is wound, after being sterilized. Its size and shape permit of the introduction of its point through the tissues back of the equator of the eye.

**The Transmissibility of Measles through the Medium of the Eyes.**—Galezowski ("Rec. d'ophthal.," Sept., 1887) has observed the transmission of measles in many instances by means of the eyes, generally under the form of phlyctenular kerato-conjunctivitis, or subacute catarrhal conjunctivitis, persisting for a number of days, and attacking several members of the same family. When the ophthalmia has become fully developed, it becomes complicated with the ordinary phenomena of measles. When certain members of a family have previously had an attack of measles, the second attack is very apt to be localized in the eyes.

**Amblyopia from Sulphide of Carbon.**—Duboys de Lavigeric (*ibid.*) describes this form of amblyopia as analogous to the toxic form of amblyopia due to the abuse of alcohol and tobacco. There is, however, a difference in the condition of the visual field, as there is usually no central color-scotoma. The question naturally arises as to whether the trouble is purely functional or due to the existence of organic lesions, and this can only be answered after careful examination and comparison of a large number of cases.

**Herpes of the Eye.**—Durruty ("Rec. d'ophthal.," Sept. and Oct., 1887) divides herpes of the eye into (1) constitutional, (2) traumatic, (3) herpes zoster, and (4) febrile, and he devotes his paper to a consideration of the latter variety. The herpetic ocular eruption may be the sole manifestation of the febrile state which precedes or accompanies it. It is therefore idiopathic, or else a simple epiphenomenon of more important troubles of the organism. If the latter, it is symptomatic. There is a periodicity in these febrile attacks which seems characteristic of this form of eruption, and excites the suspicion of there being some miasmatic cause. Durruty draws the following conclusions: 1. Herpes, no matter what its origin, is a vesicular eruption of the skin or mucous membrane, the immediate cause of which is a neuro-paralysis of the trophic and sensitive nerves of the parts involved. 2. Ocular herpes, in particular, is the result of an anæsthesia of the trophic filaments of the trifacial, either total and resident in the ganglion of Gasser, or partial and situated on one or more peripheral branches of the fifth nerve, either ciliary, nasal, frontal, or lacrymal of the ophthalmic branch of Willis. 3. Febrile herpes with keratitis is the most frequent variety. 4. Rodent ulcer of the cornea is merely a later evolution of the febrile corneal herpes. 5. Sulphate of quinine, rigorous antisepsis, and cauterization of the cornea with either silver nitrate or Paquelin's cautery, rapidly arrest the progress of the disease, and re-establish the functions of the cornea.

**Experimental Explanation of the Apparent Aseptic Properties of Particles of Lead in the Eye.**—Rolland ("Rec. d'ophthal," Sept., 1887) draws the following conclusions from his experiments upon this subject: 1. Neither the shape nor the chemical composition of particles of lead suffices to explain why they so rarely produce panophthalmitis after entering the vitreous, but rather their aseptic qualities, which are due to the burning of the particles by the deflagration of the powder. 2. When the particles of lead are not aseptic at the moment of penetrating the eyeball, they produce panophthalmitis as frequently as chips of copper, iron, or brass. 3. The latter, if burned before entering the eye, are as innocuous as particles of lead.

**Suppurative Irido-chorioiditis, with Adherent Leucoma of the Cornea.**—Despagnet ("Rec. d'ophthal.," Sept. and Oct., 1887) draws the following conclusions from his investigations on the above subject: 1. Besides the ordinary complications of adherent leucoma, recognized by all the world, there is one which has received but little attention—suppurative irido-chorioiditis, or phlegmon of the eye. 2. This phlegmon is developed without any external cause in the eyes, and without any trace of inflammation having existed for years. 3. It is the result of a permanent traction on the ciliary region by the prolapsed portion of iris and the increase of the intra-ocular tension. The resulting cyclitis offers an admirable region for the development of microbes. 4. Every case of adherent leucoma or consecutive staphyloma should be regarded as a grave affection. In order to prevent accidents in the future, all traction upon the ciliary body should be prevented by an appropriate operation, either synechetomy or iridectomy. 5. If the phlegmon develops, immediate enucleation should be employed in preference to all other operative procedures.

**Remarks on Naphthalinic Cataract.**—Hess ("Rev. gén. d'ophthal.," Sept. 30, 1887) has discovered, in the course of his researches upon the alterations in the lens due to errors of nutrition, that the local changes in the pigmented retinal epithelium seem to show a phenomenon of motion in the pigment cells, due to a mechanical and perhaps a chemical cause, analogous to the movements observed by Czerny and Van Genderen Stort under the influence of light. He does not accept the theory of nutrition of the lens advanced by Panas, based on changes produced by naphthaline. The retinal changes are secondary and caused by noxious influences acting through the chorioid. In two forms of cataract so absolutely different, in one of which the cause is

mechanical and in the other chemical, the primary changes are exactly the same as the changes described by Becker in physiological cataracts.

**Bilateral Amaurosis following Hæmorrhage from an Operation on the Nose.**—Schmidt-Rimpler ("Kl. Mon. f. Aug.," Oct., 1887) reports a case of this kind in a young woman, aged twenty-three, who became blind within a few hours after the removal of nasal polypi. Not much blood was lost at the time of the operation (about two hundred grammes), and there was no secondary hæmorrhage. Within five hours the vision began to fail, and the next morning she was totally blind. The discs and adjoining retinæ were cloudy, and the vessels were indistinct. There was no perception of light. Six days later there was little change. There was no reflex of light from the macula, and there were signs of the beginning of a choked disc. The tension was slightly increased. The pupils were dilated and immovable. The patient was very pale and emaciated. She had suffered for many years from naso-pharyngeal catarrh, and had frequently had epistaxis. She had frequently had polypi removed from the nose and pharynx. Six weeks later the right disc was distinctly atrophic, and the left disc was at the height of the "choked-disc" stage. The amaurosis remained absolute in both eyes.

**Pemphigus of the Conjunctiva.**—Schmidt-Rimpler (*ibid.*) reports a case occurring in a woman aged forty-three. In 1879 the patient had eczema of both forearms and hands. Several months later pemphigus vesicles appeared on the dorsal aspect of both feet and on the legs, and thence gradually extended to the trunk and head, and finally became localized on the eyelids. In October, 1885, the conjunctiva became affected, and in the summer of 1886 the patient came under Schmidt-Rimpler's care. There was a drooping of both upper lids, and in the left eye the lids were congested. The left lower lid had lost the lid margin, and there was ectropion of the mucous membrane. There was a posterior symblepharon in the left eye, and a small marginal corneal opacity. There was marked hypertrophy of the papillary region of the conjunctiva in the upper lid. On the right side there was no ectropion, but there was cicatricial tissue along the ciliary margins. There was no marked symblepharon. Hypertrophy of the papillary portion of the conjunctiva existed in the upper lid. Treatment produced but little benefit.

**Death from Conjunctival Hæmorrhage.**—Schmidt-Rimpler (*ibid.*) reports a case of this kind in a child, nine months old, in which the hæmorrhage occurred suddenly at first, and was followed by hæmorrhage from the nose and behind the ear. In the course of the day the upper lid became swollen. The bleeding from the nose and behind the ear came from spots covered with bluish vesicles, and was soon checked, but all efforts to check the conjunctival hæmorrhage failed. There was a small, irregular loss of substance in the tarsal conjunctiva of the left upper lid, from which the blood oozed, and it also oozed out along the entire ciliary margin. The actual cautery checked the hæmorrhage for about twenty hours, but it recommenced, and the actual cautery failed again to check it. The child died on the tenth day. There was no marked hæmophilia in the family.

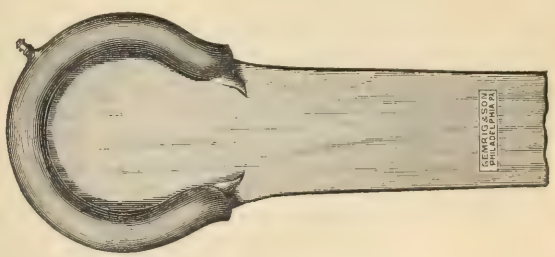
**An Operation for Trichiasis.**—Burchardt ("Ctrlbl. f. prakt. Aug.," Oct., 1887) recommends the following operation: He makes an incision in the intermarginal portion of the lid as far as the trichiasis extends, and splits the lid to a depth of four millimetres. For the upper lid he employs Knapp's clamp-forceps; for the lower lid the horn spatula is preferable. Fine silk ligatures are then passed from the bottom of the split through to the conjunctival surface, at a distance of three or four millimetres from each other. A shallow incision is then made, parallel with the edge of the lid and three millimetres from it, but outside the region of the lashes, and this incision must be several millimetres longer than the vertical cleft between the two surfaces of the lid. A second incision, parallel with and of the same length as the first, must be made 1·5 to 2 mm. higher on the lid, and the strip of skin between the two incisions must be carefully dissected up throughout its entire length, leaving it attached at its two ends to the skin of the lid. The points of a strong pair of scissors are then introduced into one end of the interpalpebral cleft and into the corresponding end of the first horizontal incision, and the tissue included between them divided. The same thing is then done at the other end of the lid. The bridge of skin is then inserted with the aid of a strabismus hook into the interpalpebral cleft, and firmly fastened there by means of the above-mentioned sutures, the ends of which are brought out through the skin and tied. The raw surface left by the transplanted bridge of skin is then closed.

# New Inventions, etc.

## DESCRIPTION OF A NEW PAD FOR GENERAL SURGICAL PURPOSES.

By Howard A. Kelly, M. D.,
PHILADELPHIA.

In addition to the pads in constant use at the Kensington Hospital for Women in this city, described by me in the "American Journal of Obstetrics" (vol. xx, October, 1887)—one for perineal and cervical operations, called the perineal pad, which is rectangular in shape, and the other a larger ovariotomy pad, with a narrower inflatable rim, and a third smaller pad for use upon the office table, when douching out the vagina and uterus—I have found a fourth form of very great service in general surgical work, which I call the general surgical pad. This is made with the rim inflatable around three fourths of a circle, open on the remaining fourth, and draining, as in the others, on to an apron which conducts all fluids into the bucket on the floor. It has somewhat the shape of the ovariotomy pad, but is smaller, and has a wider opening on to the apron and a higher rim when inflated, answering better the purposes of general surgery; also well adapted for use in instrumental or even in ordinary confinements in small women in cases in which I have already used the ovariotomy pad. This general surgical pad has proved very serviceable to me on many occasions. I used it in an amputation of the arm at the shoulder when the operation was much prolonged by the great care necessary to remove large amounts of gangrenous *débris*, the sequelæ of an old suppurating bullet-wound received during the late war. The operation was conducted under continuous irrigation in a private house, and the patient returned to bed without any soil of night-dress, table, or floor, to the satisfaction of the operator and the comfort of the family. It has stood me in good stead in amputation of the forearm, and in a very difficult excision of the left half of the lower jaw for osteo-sarcoma, which had extended into the base of the skull, requiring a painfully careful dissection for its removal. The abundant use of water greatly facilitated the operation, and the satisfaction of the operator was greatly enhanced by the fact that clothing and bedding were perfectly dry after its completion. The inflated rim, in operations about the head, is of material assistance in exposing the parts, serving as a sort of crotch over which the neck is stretched and by which it is supported. The measurements are: width of pad, 19½ inches; collapsed rim, 3½ inches; top of apron, 12 inches bottom of apron, 8 inches; length of apron, 25½ inches.



A little flap attached at each free extremity of the rim, pointed toward the center of the apron, serves to direct the stream of water away from the edge toward the center down into the bucket.

In any operation about the buttocks, in using this or the perineal pad, one simple precaution should be observed; after the rim is blown up taut and the patient placed upon it, the screw should be turned, and air allowed to escape until the hand feels that the pad comfortably fits the back. The tensely inflated rim will strain the back and cause

complaint. The simple sketch accompanying this fully explains the general appearance of the pad.

They are kept in stock by Mr. Gemrig, 109 South Eighth Street, and sold at four dollars and a half each.

# Miscellany.

**The late Dr. Cornelius R. Agnew.**—At a meeting of the New York Academy of Medicine, held April 19, 1888, the following preamble and resolutions were unanimously adopted, and, as a further mark of respect to the memory of Dr. Agnew, the Academy thereupon adjourned:

The New York Academy of Medicine has been informed of the death, on Wednesday, April 18, 1888, of Dr. Cornelius Rea Agnew, who, both as an officer and a member of the Academy, has been most assiduous and successful in his efforts for its welfare.

The Academy hereby records its appreciation of his untiring zeal, of his eminent ability, of his executive capacity, and of his fidelity; of the largeness of his views for its development, of his generosity both in his gifts and in personal labor for its good.

He was alert to make the best of its methods of work as well as to improve their efficiency. He sought to develop its scientific discussions and proceedings by judicious classification of subjects; he was warmly interested in the enlargement of the library; he was exacting in attention to economy in the expenditure of its funds; he was deeply earnest in the plan for procuring a new building. In his loss the Academy has sustained a heavy blow, and the removal of his friendly and energetic personality is a great bereavement, while we shall miss his wise counsels, his discriminating judgment, his courtesy and vigor in debate, and his promptness in forwarding every scheme for the scientific and practical advantage of the Academy.

We have lost a true friend and an efficient worker. Beyond what he has done for the Academy, we are proud of his achievements in what makes the medical profession an honor and a power for good.

He founded two eye and ear hospitals and placed them on a successful basis. He aided in the organization, and was for many years one of the managers, of an asylum for the insane. He was active in many medical societies. While practicing a specialty, his outlook and concern were for the whole profession. He had no professional narrowness, and his judgments were always inclined to be charitable to those who differed with him. His services as a patriot are part of the history of our country, he was zealous for the civic weal, and a leader in movements for reform. Sanitary and social improvements were among the causes to which he earnestly devoted himself. He took an active part in helping on education, both in its popular cultivation and in its higher and technical developments.

Probity, uprightness, unselfishness, and courage were typified in him, while his character was imbued and moved by deep religious conviction.

His life is to us a glory and a stimulus.

*Resolved*, That we respectfully tender to his family the assurances of our deep sympathy, and, with the tribute of our affection, our high admiration for the many noble qualities which were embodied in Dr. Agnew.

The Fellows of the Academy will attend the services of his funeral.

[Signed.] Alfred L. Loomis, M. D., William H. Draper, M. D., Henry D. Noyes, M. D., *Committee.*

A. Jacobi, M. D., *President*,
A. M. Jacobus, M. D., *Recording Secretary.*

At a meeting of the Board of Directors of the Manhattan Eye and Ear Hospital, held on April 19, 1888, the following resolutions were adopted and ordered to be placed upon the minutes of the board:

*Resolved*, That the death of Cornelius Rea Agnew, M. D., the secretary of this board, a surgeon to this hospital, and one of its founders, is deplored by us as a great calamity to this charity—one that deprives us of a man possessed of remarkable medical and surgical knowledge and skill, combined with a rare kindliness of spirit and devotion to duty.

*Resolved*, That we mourn the loss of one distinguished in many arenas for executive ability and wisdom, which were here especially called into action in the successful establishment and maintenance of our hospital.

*Resolved*, That we shall ever cherish the memory of Dr. Agnew as an incentive to the performance of our duties in the care of this institution, so largely a monument to his Christian philanthropy and professional achievements.

[Signed.] John Sinclair, *President*,
D. B. St. John Roosa, *Secretary pro tem.*

At a special meeting of the junior members of the Medical Staff of the Manhattan Eye and Ear Hospital, held on Friday, April 20, 1888, the following resolutions were adopted:

*Whereas*, It has pleased an all-wise Providence to remove from our midst and the scene of his earthly labors our friend and colleague, Dr. Cornelius Rea Agnew,

*Resolved*, That each member of the junior staff of the hospital feels the sad bereavement as a personal loss.

*Resolved*, That it may be safely said he was to each and every member on all occasions as an elder brother, as well as a counselor and guide. His suavity of manner, his kindly and lovable disposition, endeared him to each of his colleagues, as well as to all who were fortunate enough to be brought in contact with him.

*Resolved*, That his was a high type of manhood, true and noble in its every expression, and brimful of the warmest and tenderest sympathies for his poor and suffering fellow-man. He was a man of prodigious industry, and always on the alert to do good to others. This hospital is an outcome of that industry, and was called into existence largely by his indomitable pluck and energy. It will remain a lasting monument to him, the last but not the least of his life-work.

*Resolved*, That we tender to his wife and children our deepest and most heartfelt sympathies in this time of general sorrow, expressing at the same time the hope that He who "tempers the wind to the shorn lamb" may mitigate, to some extent at least, the poignancy of their grief.

*Resolved*, That a copy of these resolutions be engrossed and presented to his family.

[Signed.] George F. Carey, M. D., Charles G. Johnston, M. D., J. Oscroft Tansley, M. D., *Committee.*

**The American Association of Genito-urinary Surgeons,** which forms a part of the Congress of American Physicians and Surgeons, will hold its next meeting in Washington on Tuesday, Wednesday, and Thursday, September 18th, 19th, and 20th. The preliminary programme includes the following titles of papers: "Clinical Observations on Diseases of the Testicle," by Dr. L. B. Bangs, of New York; "Clinical Observations on Chronic Gonorrhœa" and "Two Cases of Cancer of the Seminal Vesicles, with Pathological Specimens," by Dr. J. P. Bryson, of St. Louis; "The Operative Treatment of Hypertrophy of the Prostate" and "A Case of Bowel ending in the Urethra of a Child Four Weeks Old—Relief by Operation," by Dr. A. T. Cabot, of Boston; "On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis," by Dr. George Chismore, of San Francisco; "The Connection between Masturbation and Stricture," by Dr. S. W. Gross, of Philadelphia; "Operations on the Kidney," by Dr. W. H. Hingston, of Montreal; "Syphiloma of the Vulva," by Dr. J. N. Hyde, of Chicago; "The Curability of Urethral Stricture by Electricity—an Investigation" and "The Comparative Value of Suprapubic and Perineal Drainage in Curable and Incurable Bladder Disease," by Dr. E. L. Keyes, of New York; "The *Filaria sanguinis hominis* in the United States, especially in its Relationship to Chylocele of the Tunica Vaginalis Testis," by Dr. W. M. Mastin, of Mobile; "A Case of Perineal Section for Traumatic Retention—Unusual Condition of the Bladder," by Dr. J. E. Michael, of Baltimore; "The Prophylaxis of Syphilis," by Dr. P. A. Morrow, of New York; "An Unusual Case of Urethral Calculus," by Dr. H. G. Mudd, of St. Louis; "On the Radical Cure of Stricture by Dilating Urethrotomy" and "Demonstration of a Perfected Evacuator, and an Improvement in the Method of Removal of

Débris from the Bladder," by Dr. F. N. Otis, of New York; "Pyæmia as a Direct Sequel of Gonorrhœa," by Dr. R. Park, of Buffalo; "Retrojections in Gonorrhœa," by Dr. E. R. Palmer, of Louisville; "Prostatotomy for Enlarged Prostate at the Age of Forty-two," by Dr. Abner Post, of Boston; "A Case of Removal of both Testicles for Recurrent Carcinoma" and "A Case of Nephrolithiasis complicated with Hydronephrosis in which Lumbar Nephrotomy was performed," by Dr. F. W. Rockwell, of Brooklyn; "Some Points in the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and other Instruments," and "On the Physiology of the Bladder," by Dr. A. W. Stein, of New York; "Local Treatment of Chronic Urethral Discharges," by Dr. F. R. Sturgis, of New York; "Some Points in the Ætiology of Stricture of the Urethra," by Dr. R. W. Taylor, of New York; "The Operative Treatment of Hypertrophy of the Prostate" and "Spontaneous Fracture of Stone in the Bladder," by Dr. F. S. Watson, of Boston; "The Relation of the Prostate to Chronic Urethral Discharges," "The Value of the Tolerance of the Iodides as a Diagnostic of Syphilis," and "Urethral Stricture and Enlarged Prostate in their Relation to Vesical Calculus and Calculous Pyelitis, with Cases," by Dr. J. W. White, of Philadelphia; "The Prognosis of Stricture, based on Thirty Years' Death Record of Stricture at the London Hospital and the Practice at St. Peter's Hospital," by Dr. E. Hurry Fenwick, of London, England (by invitation); and "The Congenital Anomalies of the External Urethral Orifice," by Dr. C. Kaufmann, of Zurich, Switzerland (by invitation).

**American Pharmacists.**—In a letter to the "Philadelphia Medical Times," for December 15, 1887, Dr. C. L. Mitchell, of Philadelphia, says:

"In regard to substitution and adulteration, it must be admitted that in numerous cases the charge is a true one, and the evil is of growing dimensions. With the reduction in the margin of profits caused by the fierce business competition of the present day comes the temptation to adulterate or substitute inferior quality. No condemnation can be too severe for the man who thus trifles with human life; and, if he can not carry on his business honestly, he had better abandon it and seek some other occupation.

"Again, the outcry is made that the physician is too apt to prescribe various remedies, more or less proprietary in character, put up by large manufacturing concerns and introduced by skilled advertising, and thus require the druggist to carry an endless variety of such articles in stock, many of which are seldom or only once called for, and thus remain a dead loss to the proprietor. But is the physician much to blame? True, he is sometimes imposed upon by the bland and suave canvasser, and the glowing printed indorsements of his professional brethren in favor of some new remedy—*vide* stenocarpine. But when he sees remedies in convenient and compact shape, of appearance much more elegant than those he can procure from the corner druggist, and of at least equal efficacy, is it to be wondered at that he should prefer X., Y., or Z.'s manufactures to the oftentimes imperfectly prepared remedies of the pharmacopœia?

"And why should the druggist complain? *As long as he keeps open store he must submit to the unalterable law of traffic—namely, the needs of the customer are to be supplied.* He will buy Lubin's extracts for Miss Jones, and Alfred Wright's for Miss Brown. Why should he not keep bromidia for Dr. A. and papine for Dr. B.? Although he makes a great outcry about being obliged to carry so much stock, he in reality does it to a very limited extent, and, outside of a few standard preparations, shifts the burden on his wholesale druggist and lets him carry the supply for him. Nearly all the large manufacturers have established depots for their goods in the principal cities, and the druggist very rarely lays in a stock outside of his actual present need unless he is sure of a steady sale. And let him remember also that if he don't keep what is called for, some once else will, and his customers will be sure to go where their needs receive best attention.

"And here let a word be said for that much abused class, the modern manufacturers of pharmaceutical specialties. The medical and pharmaceutical profession owe to them a great debt. It is their industry and their capital which have developed the perfection of the coated pill and the compressed tablet, the pancreatic ferment and the scale pepsin, the smooth and palatable cod-liver oil emulsion, and the perfected extracts of malt. To their energy do we owe the modern methods of treating disease with pre-digested and concentrated foods—a plan which has been the means of prolonging many valuable lives. They have spread the fame of American pharmacy over the entire globe, and established its supremacy against all competitors; therefore let them receive at least just recognition and honor for their labors."

**A Sanitary Convention** is to be held at Lewisburg, Pa., under the auspices of the State Board of Health, on Thursday and Friday, May 17th and 18th. The preliminary programme includes the following titles: "The Prevention of Contagious Ophthalmia," by Dr. P. N. K. Schwenk, of Philadelphia; "Diseased Meats and the Prevention of Trichinosis," by Dr. G. W. Fury, of Sunburg; "The Water Supply of Lewisburg," by Professor W. G. Owens, of Bucknell University; "Cremation as a Means of Disposal of the Dead," by Dr. B. F. Hyatt, of Lewisburg; "Small-pox in Country Places," by Dr. Fetterolf, of Mazeppa; "The Hygiene of the Teeth," by Dr. H. Gerhart, of Lewisburg; "Insanity among Women," by Dr. Alice Bennett, of Norristown; "Sanitary Protective Associations," by Dr. Benjamin Lee, of Philadelphia; "The Sanitary Shortcomings of Lewisburg," by Dr. W. B. Atkinson, of Philadelphia; "School Hygiene," by Dr. G. G. Groff, of Lewisburg; "Household Hygiene," by Professor Frances E. White, of Philadelphia; "How Germs Cause Disease," by Dr. V. C. Vaughan, of Ann Arbor, Mich.; and "The Drainage of Lewisburg," by Mr. S. D. Bates, of Lewisburg. The Hon. S. T. Davis, of Lancaster, will preside. Persons desiring to attend the convention at reduced railway rates should apply to the manager of transportation, Dr. William B. Atkinson, 1400 Pine Street, Philadelphia, stating what railway they will travel by.

**A Remarkable Case of Heredity.**—A correspondent writes that a hydrocephalic child was born to an ultra-prohibitionist father, who said to the doctor, "What is the matter with my child?" "Why, it has inherited its disease from you." "What do you mean?" "Why, it has *water on the brain.*" The father was informed that the child's prospect of recovery was about the same as that of his (the father's) succeeding in his undertaking.

**The California State Medical Society.**—The annual meeting was held on Wednesday, Thursday, and Friday of last week. Our information is to the effect that the proceedings were most interesting and profitable. Dr. James Simpson, of San Francisco, was elected president for the ensuing year; Dr. Walter Lindley, of Los Angeles, first vice-president; and Dr. William Watt Kerr, second vice-president.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality," for March, 1888, the whole number of deaths during the month was 488, including 11 from croup and diphtheria, 3 from cerebro-spinal meningitis, 4 from erysipelas, 6 from typhoid fever, 5 from malarial fever, 2 from measles, 2 from syphilis, 1 from septicæmia, 4 from scarlet fever, 4 from small-pox, and 1 from whooping-cough.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending April 20th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending March 31st corresponded to an annual rate of 21·5 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 15·1, and the highest in Preston, viz., 33·4 in a thousand. Small-pox caused 19 deaths in Sheffield, 1 in Bristol, 3 in Blackburn, 1 in Hull, 2 in Nottingham, and 1 in Manchester.

*London.*—One thousand six hundred and sixty-eight deaths were registered during the week, including measles, 17; scarlet fever, 40; diphtheria, 15; whooping-cough, 93; enteric fever, 13; typhus, 1; diarrhœa and dysentery, 16. Diseases of the respiratory organs caused 460 deaths, and different forms of violence, 75. Two suicides were registered. The deaths from all causes corresponded to an annual rate of 20·3 in a thousand. In greater London 2,109 deaths were registered,

corresponding to an annual rate of 19·9 in a thousand of the population. In the "outer ring" 41 deaths from whooping-cough; scarlet fever, 5; diphtheria, 4; and fever, 4, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending March 31st in the sixteen principal town districts of Ireland was 33·5 in a thousand of the population. The lowest rate was recorded in Dundkalk, viz., 13·1, and the highest in Kilkenny, viz., 76·1 in a thousand. In Dublin 211 deaths were registered, including 8 from whooping-cough; measles, 3; scarlet fever, 2; diphtheria, 1; and enteric fever, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending March 31st corresponded to an annual rate of 23·7 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 16, and the highest in Glasgow, viz., 27·4 in a thousand. The aggregate number of deaths registered from all causes was 509, including 4 from measles; scarlet fever, 6; diphtheria, 8; whooping-cough, 17; fever, 5.

*Havana.*—Six deaths from yellow fever and 18 from small-pox are reported for the week ending April 7th.

*Ceará, Brazil.*—One hundred and twenty-seven deaths were registered during the month of February, including 4 from yellow fever.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | March 31. | 2,260,945 | 1,122 | .. | .... | 4 | .... | 9 | 4 | 46 |
| Glasgow | March 31. | 545,678 | 277 | .. | .... | .... | .... | 1 | 4 | 2 |
| Warsaw | March 24. | 439,174 | 202 | .. | .... | 4 | .... | .... | 3 | 6 |
| Calcutta | March 3. | 433,219 | 228 | 52 | .... | .... | .... | .... | .... | .... |
| Copenhagen | March 20. | 300,000 | 136 | .. | .... | .... | .... | .... | 5 | 3 |
| Munich | March 24. | 275,000 | 157 | .. | .... | .... | .... | .... | 1 | 4 |
| Edinburgh | March 17. | 262,733 | 87 | .. | .... | .... | .... | .... | 1 | .... |
| Palermo | March 31. | 250,000 | 94 | .. | .. | .... | .... | .... | 3 | .... |
| Genoa | March 31. | 179,397 | 92 | .. | .... | 4 | .... | .... | .... | 2 |
| Trinidad | March 10. | 178,270 | 19 | .. | .... | .... | .... | .... | .... | .... |
| Stuttgart | March 31. | 125,510 | 50 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | March 24. | 122,000 | 44 | .. | .... | .... | .... | .... | .... | .... |
| Havre | March 31. | 112,074 | 81 | .. | .... | 4 | .... | 1 | .... | 2 |
| Pernambuco | March 13. | 110,000 | 92 | .. | 1 | .... | 1 | 3 | .... | .... |
| Mayence | March 24. | 65,701 | 27 | .. | .... | .... | .... | .... | .... | 1 |
| Cadiz | March 31. | 65,028 | 43 | .. | .... | .... | .... | .... | .... | .... |
| Guayaquil | March 4. | 30,000 | 73 | .. | 2 | 5 | .... | 35 | .... | .... |
| Guayaquil | March 11. | 30,000 | 70 | .. | 3 | 6 | .... | 33 | .... | .... |
| Gibraltar | March 25. | 23,631 | 9 | .. | .... | .... | .... | .... | .... | 1 |
| Kingston, Can. | April 13. | 16,216 | 9 | .. | .... | .... | .... | .... | .... | .... |
| Cape Haytien | March 31. | 15,000 | 6 | .. | .... | .... | .... | .... | .... | .... |
| Cartagena, Cola. | March 31. | 13,000 | 8 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | April 7. | 12,000 | 8 | .. | .... | .... | .... | .... | .... | .... |
| Turk's Island | March 29. | 5,000 | 4 | .. | .... | .... | .... | .... | .... | .... |

United States.

*Charleston, S. C.*—A telegram received under date of the 18th instant, relative to the schooner Lillie F. Schmidt, stated that "the small-pox-infected schooner Lillie F. Schmidt did not go to Sapelo, as ordered, but is reported to have sailed for Baltimore." The health officer at Baltimore was immediately notified by telephone from this bureau.

*Connecticut.*—One thousand one hundred and seventy deaths were registered in 153 cities and towns in Connecticut, having an aggregate population of 701,937, during the month of March, 1888, corresponding to an annual rate of 20 in a thousand. The deaths include measles, 4; scarlet fever, 16; cerebro-spinal fever, 16; diphtheria and croup, 39; whooping-cough, 7; and enteric fever, 11.

*California.*—One thousand and sixty-six deaths were registered in 87 cities and towns in California, having an aggregate population of 734,750, during the month of March, 1888, corresponding to an annual rate of 17·4 in a thousand. The 1,066 deaths included small-pox, 15; diphtheria, 28; scarlet fever, 10; measles, 24; whooping-cough, 3; and enteric fever, 18.

*Philadelphia, Pa.—Small-pox.*—Sixty cases and four deaths were reported up to April 18th.

*New York, N. Y.—Small-pox.*—Seventy-nine cases were reported in New York on the 19th instant.

*Brooklyn, N. Y.—Small-pox.*—An official report, dated April 20th, states that there are 38 cases in the county hospital that were removed from the city. Three cases quarantined in city. Six deaths at hospital last week and 1 death in the city.

*Jersey City, N. J.*—No cases of small-pox have been reported since March 30th. The record up to that time was 38 cases and 2 deaths.

*Florida.*—A late inspection at Micanopy, Plant City, and Bartow, has proved the recent existence of yellow fever there, and that several other points in the southern and western portion of the State are to be looked upon as suspicious.

Notice.—All State and local boards of health are respectfully requested to exchange reports regularly.

## ANSWERS TO CORRESPONDENTS.

*No. 177.*—Immediately on the receipt of your letter we wrote to the author of the article, asking for the information you desired. He has not favored us with a reply. From the article itself, however, it is evident that he means the dry crystals, and not a solution. Of course, the application calls for much carefulness.

*No. 178.*—Dr. Daniel Lewis, No. 62 Park Avenue, New York.

*No. 179.*—It varies from half a teaspoonful to a teaspoonful and a half.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

# THE SIGNIFICANCE OF THE EPIBLASTIC ORIGIN OF THE CENTRAL NERVOUS SYSTEM.

*PRESIDENTIAL ADDRESS DELIVERED AT THE ANNUAL MEETING OF THE NEW YORK NEUROLOGICAL SOCIETY, May 1, 1888.*

BY GEORGE W. JACOBY, M. D.

[AFTER a few remarks pertinent to his entrance upon the duties of his office, the speaker proceeded as follows.]

When, after impregnation, the remarkable process of segmentation takes place in the germ, the result is the formation of a number of so-called embryonal or indifferent corpuscles, from which the entire protoplasm of the future animal is the direct descendant, but which lack any definite character as regards the formation of future tissue. By the word segmentation is, of course, not meant a breaking up of the protoplasm of the germ into isolated individuals, but it is to be understood that the corpuscles are interconnected during every stage of segmentation, either by the intervening layers of cement-substance, or by means of delicate offshoots or bridges. This continuity is a fact which is considered established by almost all modern biologists, whether engaged in the study of animal or in that of vegetable life. The next stage after the completion of segmentation is the division of the germinal spot into layers. This phenomenon has been best studied in the fructified germ of the chick. We know positively that, as a result of fructification, we have the division of the germ into two layers, inclosing a small vacuole or cavity, which two layers are speedily increased by the appearance of a third, between the two original ones. These three layers are of supreme importance in the development of the embryo, and their history is one of the most important points in comparative embryology.

These layers have been termed by Remak * the ectoderm, close beneath the vitelline membrane, and the entoderm, forming the bottom of the vacuole toward the yolk, whereas to the middle layer filling the vacuole he applied the term mesoderm. Balfour was the first to make any change in this nomenclature, suggesting the terms epiblast for ectoderm, hypoblast for entoderm, and mesoblast for mesoderm, and these terms have been adopted by all English and by a great many German writers on account of their manifest superiority. Ever since the attention of embryological observers has been turned from the mere recognition of changes to the question of their *provenance*, the first stumbling-block has proved to be the origin of the mesoblast.

A large number of investigators maintain that the mesoblast is an offspring of the epiblast; a smaller number, among whom is Balfour † himself, maintain that to the hypoblast alone is due the origin of the mesoblast, and still a third group exists, who, taking the golden path, are willing to allow both the hypoblast as well as the epiblast to participate in this formation. To the view of Peremeschko,* that the elements of the mesoblast creep or fall through the fenestrated hypoblast from the subjacent white yolk into the space between the original layers, little or no importance can be attached.

A number of modern writers seem to agree that the mesoblast grows from the periphery, *i. e.*, from the germinal wall and the area vasculosa, into the space between these two layers in the primitive streak.

Von Baer,† and afterward Remak, were the earliest to make an attempt at proving a direct relationship between these layers and the tissues derived from them. Remak proved that the epiblast generated the epithelium of the skin and its appendages, such as the hairs and the sudoriparous and sebaceous glands, the crystalline lens, and the central nervous system; that the hypoblast formed the epithelia of the alimentary canal and its glands; and that the mesoblast gave rise to the vascularized connective tissue and muscles. This theory of exclusiveness was received with great enthusiasm, since no preceding publication had shed so much light upon the functions of the germinal layers and their relation to the parts of the complete organism. But in its turn this special significance has been considerably shaken. A. Kölliker,‡ for instance, comes to the conclusion that it is only the hypoblast that is exclusive in the production of epithelia, whereas the epiblast and the mesoblast are governed in the formation of tissues only by their location in the germ, and do not possess any inherent qualities in this respect. He says: "In consequence of these considerations, the conviction is irresistibly forced upon us that the significance of the germinal layers is not a histologico-physiological one, but a morphological one. If we start from the premise that originally all embryonal cells as they arise from segmentation are of equal value, then the thesis may be sustained that all three layers, *potentia*, also possess the capability of transformation into all tissues, but, on account of certain morphological conformations, do not manifest this power everywhere. All observers, without exception, admit the fact, shown first by von Baer for the vertebrates and by Kowalewsky for a large number of the invertebrates, that the central nervous system is an offspring of the epiblast, which by all is considered epithelial in nature, and which, beyond a doubt, also produces the epidermis of the skin, its appendages, etc. Only in the batrachians has Stricker seen a separate layer beneath the epiblast, from which he maintains the central nervous system is derived.

The question now forces itself upon us, Can we explain the philosophy of the remarkable fact that the surface layer

* "Untersuchungen über die Entwickelung der Wirbelthiere," 1850–'55.

† Foster and Balfour, "Elements of Embryology," London, 1883.

* Peremeschko, "Ueber die Bildung der Keimblätter im Hühnereier," "Wiener Sitzungsbericht.," vol. lvii, 1868, p. 499.

† Von Baer, "Entwickelungsgeschichte der Thiere," "Beobachtungen und Reflexionen," Part i, 1828; Part ii, 1837.

‡ A. Kölliker, "Entwickelungsgeschichte des Menschen und der höheren Thiere," Leipsic, 1876, vol. i.

of the body also furnishes the organs of perception and intelligence? The answer, it seems to me, must, notwithstanding different views of other writers, be given affirmatively.

The lowest forms of animal life, such as the infusion animalcules, including the amœbæ, lack nerves and nervous system; nevertheless, they are unquestionably endowed with the capacity of sensation. In an infusion they are always found gathered at that portion which is best supplied with light, and this is the case even in a single drop of fluid. So also will they evade obstacles in their path and react upon the eddy produced in the liquid by an approaching rotifer. Or let us follow Ferdinand Cohn,* and scoop into a glass vessel some of the green scum from the surface of the water of a ditch. We shall find in this water innumerable *Euglenæ*, microscopical green, spindle-shaped particles of protoplasm, belonging to the class of *Flagellata*, which have not yet been allotted positively to the animal or to the vegetable kingdom. After a brief period these *Euglenæ* agglomerate at the side of the glass which is turned toward the window. Toward evening they gather upon the surface of the water and crowd together in the shape of green balls. Among the *Euglenæ*, however, are found parasites in the form of spores of *Chrytridium*, which separate from the green balls, and are detected as colorless bubbles. Hereupon a number of offshoots grow out from the periphery of each bubble, and each one is prolonged until it it has reached a *Euglena*. The offshoot is then forced into the latter and its interior sucked out. Now I am sure that you will all agree with me if I maintain that these movements of these organisms are due to sensation, be it mechanical or perception of light, and that this sensation is localized in the outermost cover of the animalcule, which cover itself is a layer of living matter, obviously most exposed to the influences of the outer world. It is, therefore, the living matter itself which is endowed with the property of sensation, and which, upon receiving an impulse from without, communicates this impulse to the rest of the organism, whereupon a reflex action, motion, ensues. If now the outermost layer of an animal becomes more resistant by being cornified or calcified, it serves as a protective layer, but at the same time becomes less serviceable for the perception of impressions from without, and when this has occurred we easily appreciate the necessity for a more precise localization, which assumes the character of the sense of touch. This sense, according to Lovett,† was, as early as the fifth century, B. C., declared by Democritus to be the primary sense, and the senses of sight, hearing, and taste were assumed to be differentiations from it.

This localization, then, will take place in the shape of a delicate offshoot, a cilium or flagellum, protruding from the surface of the body, and also penetrating to a certain depth where it is in direct connection with the active living matter —living matter which is certainly more active than that of the surface generally.

* Professor Ferdinand Cohn, "Lebensfragen," "Wiener med. Presse," 1886, p. 1431.

† R. W. Lovett, "The Development of the Senses," "Popular Science Monthly," 1882, p. 34.

Conn and Beyer,* speaking of the organs of special sense of *Porpita*, describe "ectodermal pockets" filled with "modified ectodermal cells," and they say "from their histological appearance they would seem to be organs of touch. The presence of such long delicate cells, with free ends exposed to the surrounding water, would certainly point to such a function; and their position at the extreme end of the velum would favor the same view. They have no connection with the nerve ganglia above described; not a single nerve cell is to be found in them or in any way connected with them."

These reflections also hold good for the comprehension of localization of sensory impressions, more especially for that of vision.

Here the external layer is depressed in the shape of a pocket or cup, thus producing the earliest known visual organs of low animals, in which this spot is marked, very often at any rate, by an accumulation of coloring matter, and in the majority of these low divisions retains its primitive connection with the epiblast even in the stage of complete development. We furthermore find that the number, as well as the localization in different parts of the body, of such visual organs in low organisms varies considerably. This latter fact certainly goes far to prove the differentiation of these organs from an indifferent basis, and this view is only strengthened by the examination of certain species of worms. In many of the latter species (*Turbelaria*, *Trematoda*, *Nemertina*) we find† "at that place in which, in those of a higher class, there are well-developed eyes, nothing but pigment spots, symmetrically arranged and situated near the brain." Speaking of the *Annulata*, referring particularly to the *Hirudinea*, Gegenbaur says: "Their organs of vision correspond so remarkably in their construction with those cup-like formations described as organs of touch that a condition seems to be given here in which a specific organ of sense is developed from an indifferent organ of perception formed in the integument."

Obviously a depression of the surface layer is more protected than the surface itself, and may thus remain in a more sensitive or percipient condition than the rest of the surface. These depressions, which lower in the scale were simply pigment spots, in the somewhat higher organisms are found to have a species of lens at the entrance of the pigmented pocket. Strange to say, Gegenbaur is very loath to admit that a pigment spot alone, without any traceable nerve connection, is worthy of being considered as a visual organ, although in other parts of his book, as shown by the citations above given, he virtually acknowledges that such is the case. Similar facts have been established as regards the organ of hearing, which in low forms of animal life is nothing more than a depression of the external layer in the shape of a cup, whose lining is intensified in its perceptibility for waves of sound—that is to say, is supplied with more living matter than the rest of the surface. Here also all special connection between these organs (in low forms of

* H. W. Conn and H. G. Beyer, "The Nervous System of Porpita." Studies from Biological Laboratory, Baltimore.

† C. Gegenbaur, "Grundriss der vergleichender Anatomie," Leipsic, 1876, pp. 163–164.

worms) and the central nervous system has been sought for in vain, thus again demonstrating the formation of an organ of special sense from an indifferent perception organ.

Here it is not amiss to cite the words of Heitzmann and Bödecker,* who have expressed these facts as follows: "From an organogenetic point of view we may say that the outer senses of the animal organism, serving for perceptions from the outer world, are formations of the outer investment of the animal, its epiblast. The brain, being the highest perfection of sensual impression, retains its origin from the epiblast. The same may be said of the teeth, which, in some lower order of amphibious organisms, such as *Chelonia*, are nothing but horny ledges, or a thickening of the epithelium. Even at the height of development they retain their genesis from the epiblast, and are, at least as far as the enamel is concerned, derivations from it."

The sensory perceptions, then, being special localizations of sensation and perception in general, are the earliest to appear both ontogenetically and phylogenetically, to make use of the terms of Ernst Haeckel.† Even in the supremely developed organism of man all knowledge of the outer world passes into the body first by means of sensory perception. This is popularly acknowledged, as expressed in the much-cited quotation: "The burnt child dreads the fire." Who has not, in observing the restlessness of the infant, thought that every turn of the head at a noise, every gaze at surrounding objects, the fingering and sucking of all things within its reach, all represented the process of development by means of the senses? To make use of Herbert Spencer's words, "they are the first steps in the series which ends in the discovery of unseen planets, the invention of calculating engines, the production of great paintings, or the composition of symphonies and operas." Based upon such personal experience ensues the reasoning, the intelligence. According to this conception, the system serving for sensory perception will be a depression of the outer layer of the body, which in all higher animals is the epiblast made up of epithelia; and, the nervous system being derived from the epiblast, it is implied that the functions of the nervous system were originally taken by the entire skin, and then became gradually concentrated in a special part of the skin, which was finally removed from the surface and became an organ *per se*. In accordance with this, we see in all higher animals the first trace of the future central nervous system as a furrow, along the dorsal aspect of the germ, which is bordered by a slight elevation of the epiblast. The furrow deepens, remaining for a time in continuity with the epiblast, until finally the furrow becomes closed into a tube, having a central caliber and being lined by a single layer of epithelia, severed from the outer epiblast layer of epithelia, and covered with the epithelia of the epiblast, now no longer in connection with the tube. Thus far the development of the central nervous system is identical with the development of the crystalline lens of the eye.

How widely different, however, is the course taken by the epithelia in these two organs! Whereas the epithelia of the crystalline lens become elongated, mainly in the ventral portion of the tube, and remain epithelia throughout life, the epithelia building up the so-called medullary tube, the future spinal cord, rapidly undergo a change in their morphological appearance, beginning with the second day of incubation (chick embryo), and assume the character of medullary or indifferent tissue. Here, therefore, that portion of indifferent tissue which has served for the formation of the epiblast, particularly that part of the epiblast from which the nerve-tube has been produced, has once more retrogressed into the original indifferent form, and has given rise to a tissue which has no title whatever to be termed epithelial—namely, nerve-tissue. A close study of the history of development plainly demonstrates that such oscillations, such a rise and fall, are very frequent in the formation, more especially in the transformation, of tissues. Such fluctuations are best observed in the development of bone-tissue. The medullary tissue produces cartilage in the notochord, from which we know the bodies of the vertebræ are subsequently produced; but cartilage never produces bone-tissue directly; it first returns to its medullary or indifferent condition, and then, and only then, produces bone-tissue. These same oscillations are common occurrences in the growth of any tissue where the increase in bulk does not take place directly, but by the intermediary stage of medullary corpuscles. I therefore again reiterate that nerve-tissue has no title whatever to the appellation "epithelial" except in the very earliest stages of its formation. This reiteration is all the more necessary because it has been attempted to carry the theory of the exclusiveness of the three germinal layers so far as to call even nerve-tissue, because it is formed from the epiblast, epithelial in nature. No less an authority than Balfour* himself has made such a capricious statement. He maintains that the so-called ganglion cells have been evolved from simple epithelial cells of the epidermis, and that their offshoots, the axis-cylinders, may be considered as offshoots of epithelia.

He also speaks of "epithelial cells" in the act of becoming "nerve cells," and, furthermore, maintains that the spinal nerves are outgrowths from the central nervous system, and grow thence through the mesoblast to the periphery of the body. These views are all the more surprising since Balfour, as already stated, allows that the mesoblast originates from the hypoblast, thus admitting that connective tissue and muscle may arise from purely epithelial tissue; but because the nervous system arises from the epiblast he says that this nervous system must be epithelial, which, to be logical, he ought also to allege for connective tissue and muscle.

Mihalkovics,† in a few specimens, saw some epithelial-like formations lying at the bottom of the furrow formed in the epiblast, and from this he assumes the formation of the epithelia of the central canal. Such formations were absent in all the specimens that I have studied, and certainly at the fifth day of the chick embryo thereis no trace of a lining epithelium around the central canal. In fact, all

* Carl Heitzmann and C. F. W. Bödecker, "History and Development of the Teeth," "Independent Practitioner," 1887, p. 455.

† E. Haeckel, "Generelle Morphologie," 1866.

* Balfour, F. M., "An Address," "Nature," London, September, 1880, p. 417.

† Mihalkovics, V. von, "Entwickelungsgeschichte des Gehirns," Leipsic, 1877, p. 12.

these views become untenable in view of the facts which the study of embryology reveals.

On the fifth day after incubation (chick) we unmistakably see the tissue which is sharply defined as the future spinal cord to be composed of a mass of protoplasm, with faint indications of agglomerations into medullary corpuscles; even the nerves, more especially the vagus, which is the earliest discernible, is not a nerve proper, but a tract of medullary corpuscles. Only very much later do ganglionic elements appear at all. We know, for instance, that in the human embryo no motor ganglia are present in the spinal cord prior to the third month of embryonal life, and that even in the new-born the number of ganglionic elements in the gray substance is very small, so that the great majority are obviously formed after birth. It is, therefore, astonishing that the fact has been overlooked that between the original epithelia and the late ganglionic corpuscles there has existed a retrograde stage of absolute indifference. We can not compare ganglionic corpuscles with epithelia, knowing, as we do, that each ganglionic element is made up of a certain number of medullary corpuscles. We know, also, from the history of development, that the gray substance of the central nervous system appears first in the form of indifferent protoplasm, in which thread-like tracts make their appearance, the future axis-cylinders, long before any medullated nerve is visible. Can we consider the white substance an epithelial one, since we know that it is freely mixed with connective tissue, the neuroglia, and its blood-vessels? How is it possible to understand the presence of so great a number of blood-vessels, which are of mesoblastic origin, throughout the gray substance, if the latter is epithelial in nature? The theory presupposing an immigration of mesoblastic elements into the gray substance is an entirely gratuitous one, since we observe in other parts than the nervous system the new formation of blood-vessels independently of other blood-vessels and in no connection whatever with blood and its vessels. Bearing upon these questions are the interesting observations of Heitzmann and Bödecker,* showing the formation of nerves in peripheral portions of the body (in the pulps of teeth) entirely independently of all previously formed central nerves.

I can see no escape from this dilemma unless we assume that that portion of the epiblast which serves for the production of the nervous system has entirely lost its epithelial nature and has returned into the stage of indifference in which it is impossible to decide whether a tissue is epithelial, therefore epiblastic, or connective tissue, that is, mesoblastic. I look upon the gray matter of the central nervous system as such an indifferent substance—namely, pure protoplasm—and I am convinced that all endeavors of histologists to establish a differentiation between purely connective tissue and purely nervous tissue in this gray matter are useless and will remain ineffectual.

The phylogenetic order of development of the sensory organs of the higher animals is not identical with that of the lower ones. In the latter the depression of the epiblast which serves for a special sensory function is the primary, whereas in the former the depression of the epiblast for the central nervous system is first formed, while the retina, the labyrinth, etc., are secondary formations. Nevertheless, the epiblast participates primarily in the formation of the lens and of the auditory canal.

The cerebrum, being the seat of association and intelligence, is entirely a secondary formation, arriving at its full development in direct dependence of the knowledge gained through sensual impressions, this being the case not only in the higher classes of animals, but also in single individuals. In my conviction, the history of the development of the central nervous system is intelligible only upon the following grounds: (1) That its earliest stage is a depression of the epiblast, in concordance with depressions of the surface layer of lower organisms, for sensory perceptions; (2) that the central nervous system, being an offspring of the epiblast, is epithelial in its origin and so remains *only for the earliest periods of embryological development;* and (3) that the original epithelium returns to a stage of morphological indifference in which it remains during life, composing the gray substance of the central nervous system.

* Carl Heitzmann and C. F. W. Bödecker, "Contributions to the History of the Development of the Teeth," "Independent Practitioner," p. 1, 1888.

## Original Communications.

### TREATMENT OF PENETRATING GUNSHOT WOUNDS OF THE CRANIUM.*

By JOSEPH D. BRYANT, M.D.

It is not my intention to fatigue you with either a long or a critical consideration of the generally accepted steps of treatment of penetrating gunshot wounds of the cranium. I do not desire to disturb in the least the well-established measures that are found along the paths of surgical inquiry, which have served as satisfactory guides both to the inexperienced and the experienced alike, on all occasions. It should be the purpose of each one who acts on principle, rather than on impulse or from policy, to do his share in so directing the lines of thoughtful consideration and conclusion in respect to professional methods that the profession of which he is a member may not be exposed to satirical expressions not unlike the one used by Young, who said in his epistle to Pope: "*And* oftener changed their principles than *shirt.*" It is the purpose of this paper to add somewhat to the accepted method of the treatment of these forms of injury, or, at least, it is hoped that its presentation and discussion may inspire a fuller confidence in the modern deviations of treatment—deviations that are recognized as the legitimate issue of antiseptic cleanliness and inventive genius. This paper will be devoted almost entirely to the consideration of the indications for treatment of the injuries which give to the paper its title. This course is thought to be an eminently proper one, since the

* Read before the Medical Society of the State of New York at its eighty-second annual meeting.

indications for the treatment of a condition bear the same important relations to the treatment itself as exist between the compass point and the trusted pilot at the wheel. The indications for treatment are divided properly into constitutional and local. The local indications only will engage our attention at this time, together with the consideration of the deviations in the fulfillment of them that appear to be warranted by the recent advance in surgical technic. The commonly accepted local indications for treatment of these injuries may be enumerated as follows:

1. The arrest of hæmorrhage.
2. The elevation of depressed fragments of bone.
3. The removal of foreign bodies from the wound.
4. The establishment of good drainage.
5. The combating of inflammation.

The means to be adopted for the arrest of hæmorrhage will depend on the source from which it comes. If it comes from the scalp, the common means employed for the arrest of hæmorrhage in other situations will be found to be ample in this instance. If the flow of blood comes from the bone itself, I am accustomed to plug the bleeding-point with catgut. The shape and size of the catgut plug are made to correspond to the requirements of the case. The employment of this agent in the manner indicated possesses this virtue: the plug can be permitted to remain in position without the least concern, since it will become absorbed after having performed its obstructive function, and in no instance need fear be had of any septic influence by reason of its presence.

*Hæmorrhage from Meningeal Vessels.*—Hæmorrhage from the vessels of the pia mater can be controlled usually by simple pressure alone. The vessels associated with the dura mater, however, bleed with a much greater degree of persistence. The middle meningeal artery, for instance, and also its branches, not infrequently cause much hæmorrhage, and not a little difficulty is experienced in arresting the bleeding. If the bleeding-point can be caught as it makes its appearance near the border of the fractured bone, the hæmorrhage is easily controlled by ligature. In my observation of this class of cases, the open end of the bleeding vessel is drawn so far beneath the border of the fractured bone that it can not be seized with a forceps directly. In this emergency I have employed the following plans for the arrest of hæmorrhage:

1. Plugging the bleeding-point with catgut. This is insecure and should not be employed if the hæmorrhage is persistent.

2. Clamping the bleeding vessel against the inner surface of the bone beneath which it runs. This plan can be carried into effect easily by aid of the Langenbeck clamp, or of any other that will meet the indication. The blade of the clamp may be applied directly to the lower surface of the vessel, or an antiseptic compress may be interposed between the blade and the vessel.

3. Cutting away the portion of bone that obscures the bleeding-point with a rongeur and catching and tying the point directly. The latter is the surer, consequently the better plan.

*Hæmorrhage from a Sinus.*—This form of hæmorrhage is often troublesome, but need not excite much apprehension if the blood does not collect in the cranium in an amount sufficient to cause cerebral compression. The blood should be permitted to escape or be removed, and further accumulation of it be obviated by directly closing the bleeding-point of the sinus. The closure can be accomplished easily by the direct application of an antiseptic compress to the wound of the vessel, if the wound is accessible. If the bleeding-point is inaccessible through the brain-wound and the hæmorrhage is persistent or dangerous and not controllable by other means, then the seat of the wound of the sinus should be located with the probe, as in the case of a ball, and it should then be approached from without by aid of the trephine when practicable. If a rent is present in the sinus, its border can be united with fine catgut. The application of a simple compress to the wound of a sinus, however, is usually sufficient to meet the indications. If the hæmorrhage arises from injury of a sinus of the base of the brain, especially the petrosal, the application of direct pressure on the bleeding-point can not be so well accomplished. In this instance a fatal flow of blood may be prevented by closing the external wound, even at the risk of causing compression of the brain by accumulation of blood in the wound. Problems of this character are not presented often for solution, since the missile that wounds a sinus in this situation causes almost immediately fatal injuries of the brain-substance at the same time. It is not impossible in sinus wounds to pass by means of a probe a small tampon of an antiseptic astringent substance connected with a long thread through a straight channel to the point of hæmorrhage. This tampon should be of proper size to admit of its easy passage along the track made by the ball. When it has been properly applied against the bleeding-point the probe can be withdrawn and the tampon permitted to remain in position. The thread connected with it is allowed to hang from the wound, and is for the purpose of withdrawing the tampon when necessary. This plan has been employed successfully by Dr. Girdner on several occasions for the purpose of checking hæmorrhage from the brain-substance. In many of these cases, however, death from compression by blood, or from injury of important nervous centers, ensues too quickly to permit the services of a surgeon to be of avail, even though they are exercised without delay.

*Hæmorrhage from the Brain.*—If considerable blood escapes from a wound of the brain, it is probable that the vascular structures in or about the ventricles are lacerated; to use a practical expression, "The ball has gone through the ventricles." Severe hæmorrhage from a wound of the brain may be caused by the wounding of a sinus, or of an intracerebral vessel of considerable size. Fortunately, hæmorrhage from a wound of the brain-substance only need cause no apprehension. Moderate, gentle pressure over the external opening, or tamponing the track of the ball, and elevation of the head when permissible, are sufficient to control it. The dusky color of the blood, the direction of the wound of the brain-substance, and the persistency of the flow will indicate whether or not a sinus has been injured. As to the direction of the wound: It should not

be forgotten that the impingement of a ball on a prolongation of the dura mater, while passing, may cause such a deflection of the ball as to render its course after this time entirely a matter of conjecture. The manipulations to be made along the track of a missile for the purpose of locating or removing it, or for the purpose of making a counter-opening through the skull, should not be attempted until the danger from hæmorrhage has disappeared. The passage of a ball into or through normal brain-structure at other situations than those already mentioned is not attended with hæmorrhage of a dangerous nature, consequently any steps thought to be necessary as a means of treatment for the removal of a ball in the latter instance need not be delayed for this reason alone.

*Elevation of Depressed Fragments.*—The importance of this indication and the means of meeting it are so well understood already that it is superfluous to take the time for its consideration.

*Removal of Foreign Bodies.*—This indication is a most important one, and it is in its fulfillment that the principal deviations from the previously accepted course of treatment will be noticed. The foreign bodies requiring removal from the brain are (1) fragments of bone, hair, textile fabrics, etc.; (2) the missile itself. Such of these agents as may be located around the open mouth of the wound, or have entered an inch or two within the brain, have been removed frequently and with complete success. However, the manipulation employed to remove a ball from the brain, even if it has entered that structure but a short distance, has been deemed a sufficient deviation from the proper course of treatment, at a recent date, to be presented in a court of justice as contributive to the death of the patient. It is not now worth the while to enter into the consideration of the exact distance the surgeon may explore the brain for the purpose of locating and removing a ball, since the object of this paper will be to commend the removal from the brain of such bodies at once, in nearly all instances, when their exact location can be determined. Let us pass now to the consideration of the questions:

1. Should a ball be removed from the brain? 2. If so, how should it be done? To determine a general rule of action regarding the first question, it is only necessary to inquire whether or not a greater number of patients have recovered after removal of balls from the brain, or after the missiles had been permitted to remain within it. It must be presumed, of course, that all other things were equal in the two classes of cases.

Dr. R. H. Wharton, of Philadelphia, published in the "Philadelphia Medical Times" of July 19, 1879, a concise tabulated satement of the results of "an analysis of 316 cases in which foreign bodies were lodged in the brain." It is thought by the writer of the present paper that this number is entirely sufficient for the purpose of establishing the conclusions that will be drawn from them—conclusions which must be recognized as having little or no practical reference to antiseptic methods. An analysis of these cases shows that 236 of the entire number of missiles were "balls," "portions of balls," and "buck-shot." Of this number the missiles were removed from the brain in 66 instances, and in 170 instances they were permitted to remain. Of the 66 cases in which removal was resorted to, 27 of the patients (40 per cent.) died and 39 (59 per cent.) recovered. Of the 170 cases in which the missiles were not removed, 97 of the patients (57 per cent.) died and 73 (43 per cent.) recovered. It is now easy to be seen that the death-rate is 17 per cent. greater when the missiles are allowed to remain unremoved.

In order to determine the relative rates of death and recovery after gunshot wounds of the different lobes of the brain, with and without removal of the missile, a series of 140 cases were collated at my request by Dr. Glover C. Arnold upon which to base the calculations. The great majority of these cases were taken from the history of the late civil war. It is proper to state that all possible caution was enjoined on Dr. Arnold in the selection and study of the cases. With but few exceptions, they were taken consecutively as placed on record by the different authors. The point of entrance and the track of each missile, together with the situation and final lodgment or exit of it, were carefully determined by comparing the statements of the records of each case with the topography of the normal brain as set forth in the works of accepted authorities of the topography of this organ. Of the 140 cases, 60 implicated the frontal lobes alone, and one half of the patients died. Of the 60 cases, in 3 only did the missile pass directly through and out of the cranium, and 1 of the patients died and 2 recoverd. Of the remaining 57 cases, in 30 the missiles were removed; 16 patients died and 14 recovered. The missiles of the remaining 27 were not removed; of these, 13 died and 14 recovered. The parietal lobes were involved alone in 11 of the 140 cases, and 5 patients died. In 6 of the 11 cases the missiles were removed; 1 died and 5 recovered. Of the 5 remaining patients, 4 died and 1 recovered. Of the 140 cases, the temporo-sphenoidal lobes were penetrated in 24 instances, and 9 patients died and 15 recovered. The missiles were removed in 7 of the 24 cases; 2 of the patients died and 5 recovered. In 8 of the 24 cases the missiles passed through both lobes, and escaped from the cranium at the opposite side of the head; 1 of the patients died and 7 recovered. In 9 of the 24 cases the missiles were not removed; 6 of the patients died and 3 recovered. In 14 instances the occipital lobes were penetrated; of the patients, 6 died. Of the entire number, in 3 the missile passed completely through and out of the skull; 1 patient died and 2 recovered. In 5 of the entire number the missiles were removed; 2 patients died and 3 recovered. In 6 of the entire number they were not removed; 3 patients died and 3 recovered. The cerebellum was penetrated in 6 instances, in 3 of which the ball passed completely through and escaped from the skull. All of these patients died. Of the remaining 3, in 1 the missile was removed and the patient died. Of the 2 in which the missiles were not removed, 1 patient died and 1 recovered. The frontal and parietal lobes suffered in 4 instances, and 2 of the patients died. Of the entire number, the balls were removed in 3 instances; 1 patient died and 2 recovered. In one case the ball was not removed; this patient died. In 6 instances the frontal, temporal, and sphenoidal lobes were penetrated

conjointly. In each of these instances the missile escaped primarily. Three of the patients died and 3 recovered. The frontal, temporo-sphenoidal, and occipital lobes were involved simultaneously in 8 instances; 6 patients died and 2 recovered. In 3 of the 8 cases the missiles escaped primarily; 2 patients died and 1 recovered. In 2 instances the missiles were removed; 1 patient died and 1 recovered. The balls were permitted to remain in 6 instances, and all the patients died. Two examples of conjoined perforation of the parietal and occipital lobes were found, of which 1 ended fatally and 1 in recovery. In the fatal case the ball had escaped primarily. The ball was removed in the successful case. The temporo-sphenoidal and occipital lobes were implicated in 4 instances, and 2 patients died. One of these results followed the primary escape of the missile. The other ball was removed, and the patient recovered. Of the 2 in whom it was not removed, 1 died and 1 recovered. In 1 case of the 140 the ball traversed the temporo-sphenoidal lobe, pons, and crura cerebelli; this patient died. The following table of the 140 cases will enable the reader to note the facts more readily than can be done from the text:

| LOBES OF BRAIN IMPLICATED. | BALLS REMOVED AND ESCAPED PRIMARILY. | | | BALLS NOT REMOVED. | | |
|---|---|---|---|---|---|---|
| | No. | Died. | Recovered. | No. | Died. | Recovered. |
| Frontal | 33 | 17 | 16 | 27 | 13 | 14 |
| Parietal | 6 | 1 | 5 | 5 | 4 | 1 |
| Temporo-sphenoidal | 15 | 3 | 12 | 9 | 6 | 3 |
| Occipital | 8 | 3 | 5 | 6 | 3 | 3 |
| Cerebellar | 4 | 4 | 0 | 2 | 1 | 1 |
| Frontal and parietal | 3 | 1 | 2 | 1 | 1 | 0 |
| Frontal and temporo-sphenoidal | 6 | 3 | 3 | 0 | 0 | 0 |
| Frontal, temporo-sphenoidal, and occipital | 5 | 3 | 2 | 3 | 3 | 0 |
| Parietal and occipital | 2 | 1 | 1 | 0 | 0 | 0 |
| Temporo-sphenoidal and occipital | 2 | 1 | 1 | 2 | 1 | 1 |
| Temporo-sphenoidal, pons, and crura cerebelli | 1 | 1 | 0 | 0 | 0 | 0 |
| Total | 85 | 38 | 47 | 55 | 32 | 23 |

It is to be seen with a glance that the missiles were removed or escaped primarily in 85 of the 140 cases. Of the 85 patients, 47, or 55·3 per cent., recovered. In 55 of the 140 cases the missiles were allowed to remain unmolested; of the patients, only 23, or 41·8 per cent., recovered. This showing places the rate of recovery when the missiles escape primarily and are removed 13·5 per cent. higher than when they were allowed to remain unmolested. The rate of recovery under similar circumstances was 17 per cent. as shown by the series of 236 cases selected from Dr. Wharton's collection. The difference of percentage between these two series of cases is too small to be of special practical utility. However, the great care that was exercised by Dr. Arnold in the collection of the 140 cases makes the deductions that can be derived from them especially valuable. Dr. Arnold read the history of each case carefully and established the facts on which the conclusions are based by topographical measurements. In many instances the facts were verified by comparing them with the report of the autopsies of the cases. Only such of the 140 cases as possessed a reasonably complete history in all important respects were reported. It is interesting also to note the frequency of primary escape of missiles from the skull, and the relation which the escape bore to the frequency of recovery.

*Tabulated Statement of the Cases in which Missiles escaped primarily:*

| FROM | No. | Died. | Recovered. |
|---|---|---|---|
| Frontal lobes | 3 | 1 | 2 |
| Parietal lobes | 0 | 0 | 0 |
| Temporo-sphenoidal lobes | 8 | 1 | 7 |
| Occipital lobes | 3 | 1 | 2 |
| Cerebellar lobes | 3 | 3 | 0 |
| Frontal and parietal lobes | 0 | 0 | 0 |
| Frontal and temporo-sphenoidal lobes | 6 | 3 | 3 |
| Frontal, temporo-sphenoidal, and occipital | 3 | 2 | 1 |
| Parietal and occipital lobes | 1 | 1 | 0 |
| Temporo-sphenoidal and occipital lobes | 1 | 1 | 0 |
| Temporo-sphenoidal, pons, crura cerebelli | 1 | 1 | 0 |
| Total | 29 | 14 | 15 |

It is noticeable, from observation of the preceding statement, that a majority of the patients recover when the missiles escape primarily. The difference, however, is but a slight one, still this difference is an argument in favor of removal. It appears, by comparison of the two tables, that the results are much better when the missiles are removed by the surgeon than when they escape primarily. The greater force of the missile and the greater injury inflicted by it in the latter instance are substantial reasons for the dissimilarity of the results.

It can be stated, in view of the preceding results, as a principle that a ball should be removed from the brain. It is now proper to inquire as to the causes of death in connection with these forms of injury. Abscess of the brain was the cause of death in 42 (18 per cent.) of the entire number of cases of the first series (236). In 13 of the 42 cases (31 per cent.) abscess followed removal of the ball at various periods of time. In one instance it occurred seven years after removal. Usually, however, its occurrence was closely associated with the time of the removal itself. In the remaining 29 cases of abscess (69 per cent.) the missiles were not removed. In these cases the abscesses formed at various intervals of time—from a few days to thirteen years. In three of the latter instances abscess formed seven years after the receipt of the injury.

We will inquire now as to the subsequent condition of patients in certain cases of so-called recovery. Fourteen were more or less afflicted with headache. Of these, in two only had the missiles been removed. Eight suffered from some form of paralysis of the trunk or limbs, and in but one of these had the missile been removed. Six suffered in a degree from mental impairment; in two of these the ball had been removed. In three instances partial or total blindness followed, in all of which the missiles remained in the brain. Epilepsy resulted in three cases, in one of which the ball had been removed. Sudden death while under excitement followed in three cases, in none of which the ball had been removed. In one case in which the ball had not been removed death followed a year after from pressure on important parts within the cranium. Of the 66 cases in which the missiles were removed from the brain, 27 (41 per

cent.) ended in complete and permanent recovery. Of the 170 cases in which the missiles were permitted to remain in the brain, but 20 per cent. of the patients are reported to have recovered without sequels. It does not matter whether or not a ball may become encysted so long as it appears from the majority of cases that a larger percentage recover when this form of missile is removed than when it is allowed to remain unmolested and amenable only to the efforts of Nature. It is doubtless true that in certain individual instances a patient might survive longer if a ball were allowed to remain unmolested, yet sooner or later, in the majority of these cases, disaster will occur. An encysted ball may gravitate toward the base of the brain, and, if it does not cause disturbance or death *en route*, it will be quite certain to do so at a later period. The possibility of a ball becoming encysted, and the method of its occurrence, can have but little practical bearing in the light of past experience, and the possibility of its occurrence or non-occurrence should not be given serious weight at the present time, except the consideration be coupled with recommendations which will lead to a far more frequent encystment than has heretofore taken place.

If a ball should be removed, how should it be done?

Mr. Thomas Longmore says in Holmes's "System of Surgery," vol. ii, p. 188: "If the site of lodgment . . . is obvious, it should be removed with as little disturbance as possible, but trephining for its extraction when the place of lodgment is not known . . . is an unwarrantable operation." I think all judicious surgeons of the present time will concur in this assertion. The removal of a ball from the brain is divisible into certain steps:

1. Ascertaining its location.

2. The selection of the most feasible route by which to reach it when located.

A ball may be located by probing the canal it has made in the brain-structure, if it has taken a straight line and is still lodged in the line of the course primarily taken. If, however, it has infringed in its course on a prolongation of the dura mater, or if the course has deviated for any other reason than this one, the missile is manifestly inaccessible to the touch of a probe that is introduced at the entrance wound of the ball. To attempt to locate a ball in the brain by passing a probe of any pattern or material whatever along a devious track is not only unsurgical, but dangerous and culpable. It therefore follows that the surgeon should be able to determine at what point the ball-track deviates from a straight course at all times. This requires a delicate and cautious hand, a large, light probe, and the aid of gravity when it can be consistently utilized. The aluminium probe recently suggested by Dr. Fluhrer combines both the necessary lightness and the proper size for the purposes of exploration. A probe which is to be introduced into the brain should be quite as large at or near its middle as at the advancing extremity, since the form of the body of the probe serves to guide the advancing end correctly at all times, with reference to the center of the wound. The bulbous-end probe with a stem-like handle—Nélaton's, for instance—is not the proper instrument to introduce into the brain, for it may be carried astray unless the stem is kept exactly at the middle of the opening in the brain made by the ball. The ordinary small probe employed for the purpose of exploring other portions of the body should not be introduced into the brain for the purpose of locating a ball. Flexible probes, too, should likewise be avoided, for no one can tell the number of the false tracks which they may make by reason of the inability of the surgeon to control the advancing end, or calculate as to its exact situation.

Having selected the proper probe, then, when possible, place the head in such a position as to gain every advantage in the insertion of the probe along the tract of the wound that the force of gravity can offer. The probe is passed along the track of the missile, as long as it passes easily, until finally the ball, the opposite side of the cranium, a prolongation of dura mater, or a change in the course of the track is encountered. The character of the obstacle arresting the advance of the probe may be determined by the firmness of the opposition, the direction taken by the probe, and the distance it is inserted. If the ball is touched, the opposing force will be slighter than if the probe impinges on the opposite side of the cranium. If a prolongation of the dura mater or a sudden curve in the ball-track is met with, the absence of the metallic and bony nature of the obstacle will be manifest. In either instance only a slight degree of force should be employed. If the ball is touched, it may then be removed with a suitable forceps passed along the tract of the wound to its location. If the ball is near the opposite side of the cranium, say within an inch or so of it, and can be located from without, it should then be removed through a counter-opening, especially when difficulty is experienced in grasping it with a forceps through the line of entrance. It is far better that a ball be removed by a short route through sound brain-tissue than that the already injured brain-tissue in the course of its track be further lacerated in almost vain endeavors to seize and remove it. The former method not only limits the amount of brain injury, but affords at once an opportunity for the establishment of through-and-through drainage. If the ball has gone straight through to the opposite side of the skull and has ricocheted from the point of impingement, the establishment of a counter-opening at this point not only permits of thorough drainage, but affords the only rational route by which to seek for the ball at its final location. It is proper to say at this time that the direction a ball may take after striking the inner table of the opposite side, and the distance it may go afterward, are purely matters of conjecture. No practical rule for the guidance of the surgeon can be laid down in these cases. The ball should be sought for, however, in the direction of the inclination of the skull at the point of impingement. The distance the ball will go from this point will depend, of course, largely on the momentum and the amount of the resistance encountered. It is often somewhat difficult to determine the location at which to trephine so as to make the counter-opening at the point of actual or perspective impingement of the missile. In a case of my own in which the point of impingement was so low on the opposite side of the head that the situation of the arrested end of the probe could

not be well judged by the eye, I resorted to the following plan, which pointed out the location at once, and can not fail to do so at all future times: A perfectly straight, long probe of large size was carried carefully along the track of the ball till the extremity was arrested by the opposite side of the skull. About four inches of the probe then remained outside of the skull. A string was then attached to the extreme end of the outer portion, and was caused to pass across the convexity of the cranium in several directions (Fig. 1) to the side opposite the point of entrance. The

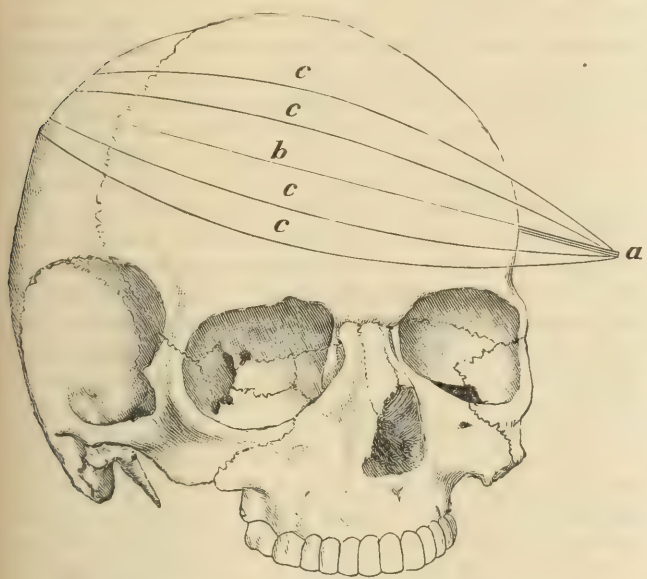



FIG. 1.—*a*, the extra-cerebral portion of a probe; *b*, the line taken by the probe through the brain; *c c c c*, lines placed parallel with the probe with the aid of a string.

portion of the string corresponding to the extra-cranial portion of the probe was caused to be parallel with this portion of the probe in each instance while being carried across to the opposite side of the cranium. The point of crossing of the lines on the opposite side corresponded of necessity

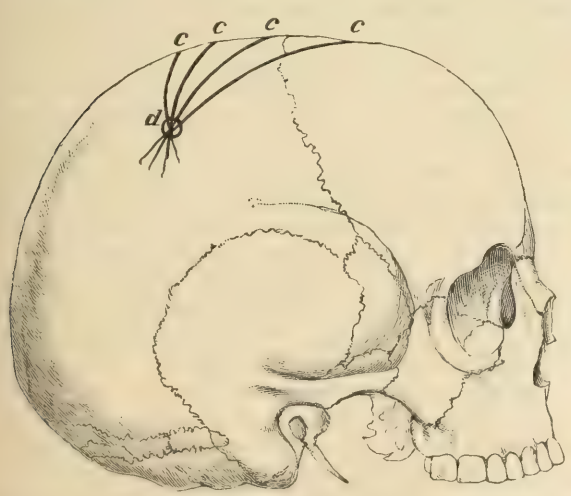



FIG. 2.—*c c c c*, lines converging on opposite side of head; *d*, point to trephine.

to the actual or perspective location of the distal end of the probe, as the parallelism of the lines with the probe was preserved in each instance (Fig. 2). Thus the proper situation for making a counter-opening through the skull was indicated unerringly at once. In my own case the inner surface of the button of bone that was removed bore the imprint of the ball impingement.

The modifications of the functions of the special areas and nerves of the brain that may result from a gunshot wound of it are entitled to respectful consideration as means of determining the *course* taken by the missile. They are not to be relied on, however, in locating the resting-place of the missile. Their condition ought always to be interrogated at the onset, and, in fact, should be carefully scrutinized during the entire observation of the case. The later manifestations of these areas will be more distinct and trustworthy than the manifestations following soon after the receipt of the injury, because the shock and the inflammatory state will obscure or obliterate them in the latter instance. At the present time the induction balance and the telephonic probe are the agents which, above all others, have reduced the localization of a missile within the cranium to a scientific certainty in the majority of cases. I will leave the description and the explanation of the practical use of these implements to the gentleman who is to follow, Dr. Girdner, whose name is indissolubly associated with each of them. In concluding this portion of the subject, let it be said at once that a ball that can not be located should be permitted to remain unsought. Finally, force should never be used in probing a ball-track in the brain for the purpose of locating the missile. Fragments of bone that may be scattered along the tract of the wound should be removed with forceps when discovered. The fragments of skull found in and about the wound should be preserved and carefully fitted together and compared with the area of the opening in the skull to determine if other fragments have escaped notice. Finer fragments in the course of the wound will escape with the discharges, and the head should be so placed as to facilitate their escape at the most dependent point of the wound.

*Good Drainage of the Wound.*—Good drainage can be secured best by making a counter-opening and by enlarging somewhat the bony rim of the point of entrance. In the case of my own already mentioned, after the counter-opening had been made, numerous carbolized horse-hairs were passed along the track of the ball and allowed to protrude from both openings of the wound. With this material for drainage of the brain, individual hairs can be withdrawn as healing advances, as has been done for a long time in other parts of the body. This method will provide continuous drainage until the withdrawal of the last few hairs will permit the final healing of the wound. If a counter-opening is not made, then the external wound should be kept open, and the discharge from it facilitated by a dependent position of the lower end of the track. If the brain-substance protrudes, it can be retained in place by a thin sheet of aseptic metal, with a small opening in the center to correspond with the opening of the wound of the brain. If the dependent end of the wound tends to close, its patency can be maintained by inserting into it through the

opening in the plate a small, short, fenestrated drainage-tube. The upper open end of the tube may be sufficient for the purposes of drainage without the fenestra. The introduction into the wound and through it of a gentle stream of antiseptic fluid with the first dressing, and afterward when necessary, should be practiced. Salicylate-of-sodium solutions and Thiersch's fluid are highly commended for the purpose. A counter-opening at the seat of impingement of the ball enables the surgeon to continue the search for the ball with the least possible injury to the brain-structure. If the ball is not found at the seat of impingement, it will have ricocheted from this point in a course that is best indicated by the direction of the inclination of the inner table of the skull at the point of impingement. However, this indication is too problematical to permit free probing of the brain in the absence of other evidence of the course taken by the ball. A careful examination of the brain at this point will probably reveal the direction taken by the missile, which should be followed carefully as in the former instance. In the case of my own this plan was observed, and, although the signs indicative of the secondary course of the ball were plainly to be seen in the brain-substance, still it was not practicable to touch the ball with a probe. The autopsy revealed the fact that the probe had gone the entire distance traveled by the ball from the point of impingement, yet the ball had not been touched by the probe because it had dropped or gravitated between the borders of a deep sulcus which ran nearly at right angles to the secondary track of the ball. The ball could not have been touched by a straight probe without damaging the, as yet, healthy brain-substance directly between it and the counter-opening. The counter-opening will drain not only the primary, but the secondary track of the ball as well, if the force of gravity will permit. It will likewise favor the discharge of pus that may be formed as a result of the presence of the ball or the injury of the brain. The ball itself may be aided to gravitate toward the counter-opening, especially if it has remained unmolested. Good drainage must be sought for at all times; in fact, if good drainage is not established, little benefit need be expected from other steps of treatment.

*Combating Inflammation.*—This indication need not occupy our time now, for the means employed to meet it at the present offer but little of a novel nature when compared with those of the past. Finally, the strictest antiseptic technics must be employed with every step, whatever plan of treatment is selected. I respectfully submit the following conclusions for your consideration:

1. A bullet should be removed from the brain as soon after its reception as its situation can be determined and the patient's condition will permit.

2. A bullet should be removed from the brain at a later period if symptoms supervene and it can be located.

3. A bullet that has been located in the brain and has not been removed should be removed before the supervention of symptoms, when it assumes a migratory character.

4. No effort should be made to remove a ball from the brain if it can not be located.

## CONSIDERATIONS BEARING UPON THE ÆTIOLOGY OF NON-UNION OF FRACTURED BONES.*

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In addition to the patients with ununited fractures who have been presented before this society during the past few years, I desire to present another one, the account of whose case is as follows:

H. B., aged fifty years, on January 13, 1887, while alighting from a street car, stumbled and fell, and the wheel of a passing truck rolled over his elbow and arm, producing a comminuted fracture of the lower end of the left humerus, involving the elbow joint, and an oblique fracture of the same humerus at about the junction of its lower and middle thirds. He at once came under the treatment of my colleague, Dr. C. S. Benedict. During the first week after the accident the arm was simply supported by coaptation splints and bandaged to the side, while the forearm was supported in a sling. At the end of a week a plaster-of-Paris splint was applied, extending from the tips of the fingers to and including the shoulder joint. At the end of eight weeks no consolidation had taken place at either of the fractured points. The humerus was then freely manipulated and the surfaces of the fragments were rubbed together, and again immobilized. The result of this was practically nil, and, after two weeks, daily percussion, after the method of Thomas, was instituted and kept up for ten days for ten minutes each sitting. Considerable local soreness resulted, but without perceptible effect on the fractured bone. Upon suspending the percussion all immobilizing apparatus was removed, and the patient was instructed to discard his sling and try to use the hand and forearm as much as possible.

Three weeks later, being three months and a half after the original injury, consolidation at the articular end had taken place, with considerable motion at the elbow joint, but the condition of the shaft of the humerus was unchanged. He was then, April 30, 1887, operated upon by me at the Hospital of the Post-graduate School. Upon exposing the seat of fracture a typical false joint was found to have been formed. The ends of the two fragments were each covered with a thick, well-formed fibrous layer, and the broad, oblique surfaces entering into the new joint were closely held together by a capsule-like envelope of dense fibrous tissue, which restricted the motion in the false joint to only a slight rocking. Each end was refreshed by the removal of a thin slice from it with a saw, and the two were then secured in apposition by three sutures of silver wire which perforated the bones. In the dressing, drainage was provided for by strands of catgut. The arm was immobilized by a plaster case, which included the entire limb. The operation wound healed by first intention, except at one of the points occupied by the drainage-strands, where a sinus persisted. At the end of two months, during which immobilization was maintained, no tendency to unite was discoverable at the seat of fracture; no callus had been thrown out; the loosening of the wires again permitted some rocking motion, while a persistent sinus had been added to the case.

The extended immobilizing case was now discarded. Short splints for coaptation and support were applied to the humerus only, and the patient was allowed to use his arm at will.

On September 24th, being about five months after the first operation, his condition remained unchanged, except that a second sinus had formed. The general health of the patient

* Read before the New York Surgical Society, March 28, 1888.

was good. I now again exposed the bone by incision; the wires, being loosened by absorption of the bone or by being broken, had for a long time been simply useless foreign bodies imbedded in the part; they were removed; a small exfoliated fragment of bone was also removed; the ends of the bones, which were bare and devoid of any appearance of reparative power, were thoroughly scraped, as was also the whole cavity in which they lay; the wound, after proper cleansing, was stuffed with a sterilized sponge, dusted with iodoform. The dressing was completed by the application of an absorbent pad and a side-splint. At the end of ten days the primary dressing was removed; the deeper portion of the sponge was firmly adherent; this sponge was left undisturbed for five days longer, when the greater portion of it—all that had not become invaded by granulation tissue—was cut away. The portion of sponge thus left in the tissues, which was of considerable amount, caused no subsequent disturbance. The wound, now a superficial granulating surface, healed rapidly after this and proceeded to complete cicatrization.

Meanwhile an abundant callus developed about the seat of fracture, and at the end of four weeks pronounced consolidation was evident. At the end of eight weeks the amount and firmness of this callus were still greater, but its full ossification was evidently delayed, for a slight lateral bending could still be impressed upon the humerus at the seat of fracture. No antero-posterior bending could be made, on account of the greater massing of the callus in front and behind than at the sides, thus buttressing the bone more strongly in front and rear. The arm was, however, strong and useful, and the patient was able to resume work at his trade, that of a carpenter.

The patient I now present, and upon examination there may be felt the abundant masses of callus described, and still the slight lateral mobility may be brought out. The mobility of the elbow joint is nearly normal.

In connection with this case I would like to raise this question, viz.: To what extent are defects of immobilization responsible for delayed or non-union after fractures of the long bones? or, in other words, Is the occurrence of non-union after fracture presumably an evidence of imperfect or improper treatment?

The opinion of Celsus, incidentally given in the only allusion to non-union of fractured bones made by that ancient author, in the sentence which reads, "When the bones happen not to unite, because they have been often opened and often moved," has been repeated by Malgaigne in his teaching that "when union fails to occur, the treatment is most frequently to blame for it," and both express the generally received opinion, lay as well as professional, that failure of union on the part of a fractured bone is *prima facie* evidence of neglect or improper treatment. P. Bruns ("Deutsche Chirurgie," Lief. xxvii, II. Hälfte, p. 579) is more guarded in his statement than Malgaigne, saying that consolidation is now and then abnormally delayed or wholly deficient in some cases of fracture, notwithstanding the apparently unexceptionable conduct of the patient and correct treatment by skillful surgeons, without any adequate cause being discoverable, adding, however, that, notwithstanding these admissions, the *sole* cause of non-union is certainly often enough improper or imperfect treatment. The natural result of this doctrine is to expose every surgeon under whose care a fractured bone has been in which union is delayed or fails altogether to the charge of malpractice and to a loss of confidence in his professional skill, if not to a suit at law.

It is doubtless true that in the history of very many cases of ununited fracture defective immobilization can be proved to have been present. On the other hand, it is equally true that in an immense number of instances gross defects of immobilization are common without interfering with the steady consolidation of the fracture. Such are fractures of the ribs and of the clavicle in general, and a large proportion of fractures of the humerus and of the femur. Gunshot fractures of the shaft of the humerus in a marked degree present obstacles to securing adequate immobilization in their treatment, especially in the field in time of war, and yet, out of 2,900 cases of shot fracture of the shaft of the humerus treated expectantly, as recorded in the "Medical and Surgical History of the War of the Rebellion" (Part II, vol. ii, p. 673), in six only did non-union result. The only case of delayed union after fracture of the clavicle which I have yet met with was that of an apparently robust young man in whom unusual care to immobilize the fracture had been taken by the surgeon under whose treatment he had been by the application of a plaster bandage. Nevertheless, at the end of four weeks, when I first saw him, no callus had been thrown out, and the fragments were as movable as if the fracture had just been sustained. Under my advice all dressings were discarded, and the patient was bidden go to work. At the end of two weeks he returned with an abundant ossifying callus uniting the fragments. I heard nothing more of him thereafter.

The frequency with which false joints have developed in fractures occurring among sailors on shipboard, who in some cases are many weeks without receiving skilled attention, has been noted (Norris, Curling, Harrison, Bruns), and these cases have been considered as illustrative of the effects of lack of immobilization, particularly as in many instances consolidation took place after reaching port under proper hospital care. No consideration of these cases can be complete, however, without taking into account also the defective hygiene of such sailors both before and after injury—the character of their diet, their crowded and imperfectly ventilated sleeping accommodation, and their long confinement on shipboard—all which tend to create constitutional conditions not conducive to repair of injuries of any kind.

The frequent failure of passive and active movements to prevent ankylosis at the elbow, for instance, after excision of the joint surfaces, the invariable repair of fractures of the lower extremity of the radius in the many instances in which that fracture receives no treatment at all, the healing of fractures of the ribs and of the clavicle—these all are doubtless due to the extent and activity of the nutritive processes in the cancellated tissue involved in the injuries named.

The dense compact tissue of the shaft of the humerus or the femur presents conditions less favorable for nutritive activity than the parts just mentioned. It is to be expected, therefore, that whatever causes, local or general, may be present in an individual case tending to lessen reparative

energy would be more likely to determine absolute failure of repair in these bones than in others. The relative proportion of such failures may be calculated from the statistics compiled by Bruns (*op. cit.*, §§ 4 and 113), which include 19,455 fractures of the arm and forearm, thigh and leg. From the figures given by this author I find that, if the relative frequency of non-union after fracture of the bones of the forearm is taken as the unit of comparison, non-union in fractures of the bones of the leg is three times as frequent, and of the femur and humerus each six times as frequent, the proportion of cases of non-union to the entire number of cases of fracture of the particular bone being nearly the same in each of these two last-named bones.

Granted, therefore, that fractures of the shaft of the femur and of the humerus are more frequently followed by non-union than those of other bones, and that the construction of the tissue of the shaft of these bones is such as to render them more powerfully affected by any causes that tend to hinder repair, the question recurs, Ought defects of immobilization to be considered as the sole cause of arrest of repair in any considerable proportion of cases? From the sphere of this question I would exclude cases of exaggerated neglect and intentional free movements of the fragments. The question of defective immobilization in most of these cases has simply to do with the thoroughness of attempts of reposition of the displaced fragments and their retention by sufficiently efficient apparatus, of extension and counter-extension, the use of this or that kind of retentive apparatus, the inclusion or non-inclusion of neighboring joints in the immobilizing appliances, and such like matters. Certainly, in the great majority of cases, the results of such imperfect treatment are limited to the production of excessive callus and to deformity and shortening of the bones. That in some cases where immobilization has been incomplete non-union has resulted does not necessarily imply that this result was due to the defective immobilization. Very pertinent to this point is the testimony of Girdner ("Annals of Surgery," 1887, vi, p. 30), that, in the treatment of fractures in insane patients, whose restlessness made it difficult to properly adjust and immobilize the fragments, he was always able to obtain bony union, except in cases of general paresis, in which class of patients, although they were, as a class, more manageable than patients with most other forms of insanity, osseous union was the exception, and greatly delayed union, soft fibrous union, or, more frequently, complete non-union, was the rule. May it not be that, in a much larger proportion of cases than has hitherto been acknowledged, a more severe inquiry would elicit other causes, either local or constitutional, to which the non-union would be properly referable rather than to the defective immobilization? The observations of Macewen as to the agency of a leaflet of the torn fibrous capsule of the patella, by becoming interposed between the fragments in cases of fracture, in producing the failure of bony union which is common after fractures of that bone, are suggestive that similar strips of periosteum may become torn up and interposed between fragments, and interfere with union in fractures of other bones more frequently than has hitherto been recognized. In a case of compound comminuted fracture of the humerus recently under my care I found large fragments entirely stripped of their periosteum, and it is easy to conceive of the stripping up of portions of periosteum to a less extent in less severe injuries, and yet sufficiently extensive by their entanglement between the fragments, to delay or entirely prevent union.

As to constitutional causes, Otis ("Hist. of the War of the Rebellion," *loc. cit.*) quotes Neudörfer as explaining the rarity of non-union after gunshot fractures of the humerus by the statement: "Pseudarthrosis, as a rule, is an evidence of a constitutional disease of the blood, which, among soldiers generally, and especially at the years in which they take the field, is rarely to be found." Bruns, again, in speaking of the ætiology, in general, of non-union of fractures, declares that "the cause of pseudarthrosis remains entirely undiscoverable in very many cases." And Packard ("Internat. Encyclop. of Surg.," iv, 43) states that non-union "may occur under the best treatment, and in persons seemingly of good health."

If, then, constitutional conditions indisputably determine non-union in many cases, and in the vast majority of instances defective immobilization fails to prevent union, it is more reasonable to refer failure of union, when it does occur, even in those cases in which the immobilization has been defective, to the coincidence of constitutional causes, however difficult of demonstration, rather than to the defective treatment. It is easy to conceive, also, of cases in which the reparative energy of the tissues is weak, but in which, nevertheless, repair would ultimately take place under favorable conditions. In such cases defects of immobilization in the early history of the case might be sufficient to overwhelm the feeble local reparative power, and determine ultimate absolute non-union. But it is plain that even in these cases the treatment is only one of the causes that have produced the result.

Constitutional conditions, if they exist, tending to retard the union of fractured bones, should declare themselves in more than one bone in the same individual if multiple fractures co-exist, or if different bones are fractured at different times, unless, indeed, it is maintained that the constitutional state was a temporary one, as is undoubtedly the case in some instances, as from pregnancy, scurvy, and certain acute diseases. I can cite from my personal observation two cases bearing upon this point.

The first was in the person of a healthy young man, twenty-five years of age, who sustained a fracture of the right femur through the upper part of the middle third from a fall from a wagon upon the frozen ground. Some years before he had fractured the other femur; after due treatment in the usual length of time for that former fracture he had resumed use of the limb, which was apparently healed, but a gradual bending of the femur at the site of injury followed until a (∫)-like bend had been produced which caused an unsightly and prominent projection upon the front of the thigh, and shortened the limb more than three inches. In this position full consolidation finally took place. The new fracture, which came under my care, was treated by Buck's extension and plaster-of-Paris bandages. In the ninth week sufficiently firm union had apparently taken place to make it prudent for him to begin to walk upon it. In the

twelfth week the firmness of the union was still apparently satisfactory, but a slight outward curvature at the upper part of the thigh was noticeable. The shortness of the opposite limb caused a manifest strain to fall upon the femur at this point in walking and accounted for the bowing which had taken place. Two weeks later a further marked increase in the bowing had occurred. Crutches were advised. At the end of seven months he returned to me with a still greater degree of outward bending; meanwhile he had been an inmate of a hospital, but had received no special treatment for the rectification of the deformity. I now had constructed for him a modification of a common hip-joint extension brace whereby the limb was kept extended, the weight of the body in walking was supported by a perineal crutch, and a broad band of elastic webbing was made to exert constant inward traction at the point of bending. Rapid straightening of the limb was effected by this device, with the result of lengthening it two inches. At the end of a month the femur had regained its natural direction. He was dismissed with the injunction to continue the use of the brace for a time. I have not seen him since.

The point of interest about this case in this connection is the existence of a constitutional condition in an apparently healthy young man which at two different periods, some years apart, occasioned delay in firm ossification of a fractured femur.

The second case is in the person of the patient now before you, whose history after fracture of the humerus has been rehearsed. Twelve years previous to this latter injury he fractured his left leg. At the end of sixteen weeks, he states, no union had taken place. He was then encouraged to use the limb, with the support of proper splints, and gradually, as he walked upon it, consolidation took place, though with considerable deformity.

The result of the considerations which I have now presented is to make me feel that there is room to question the soundness of the teaching that imperfect immobilization is *often* the sole cause of non-union, or even the chief cause thereof. It seems to me rather that the weight of evidence is such as to justify the assignment to constitutional states, and to local conditions not within the control of the surgeon, a yet larger rôle in the ætiology of pseudarthroses than is generally recognized.

## THE PAPILLITIS OF SUNSTROKE.

By L. A. W. ALLEMAN, M. D.,
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Although the literature of the subject is extremely meager, a sufficient number of cases has been reported to establish the fact that certain intra-ocular lesions—notably papillitis—are met with in sunstroke.

This papillitis of sunstroke, resulting, as I believe it does, from a disturbance of the central nervous system by the excessive heat, furnishes a most interesting subject for consideration, and seems to be most strongly confirmatory of the theory that papillitis may be produced by a disturbance of the vaso-motor innervation.

I shall first give the notes on a case of papillitis following sunstroke which recently came under my own observation, and then briefly review some of the cases previously reported.

Case I.—T. J., a blacksmith, aged twenty-eight, presented himself at the Eye and Ear Dispensary of the Germantown Hospital on July 23, 1887, complaining of dimness of vision in the left eye, and giving the following history:

Three weeks previous to his visit to the dispensary, and during a period of intensely hot weather, he had been engaged in shoveling coal into the furnaces at the Midvale Steel Works. The heat in the furnace-room was excessive, and at noon on the second day on which he had been thus employed he had been overcome by the heat and compelled to quit work. He was very dizzy, and fell several times while returning home.

On the following morning he noticed that the entire left side of his body was slightly numb, and that vision in the left eye was impaired, all objects on the left side seeming to be enveloped in a mist. He at no time suffered from headache, the numbness subsequently disappeared, and he complained of nothing but the ocular trouble for which he presented himself.

The pupil of the right eye was normal, that of the left eye moderately dilated and sluggish. Vision in R. E., $\frac{20}{20}$; L. E., $\frac{0}{30}$. An ophthalmoscopic examination of the right eye showed the media clear and the fundus normal. In the left eye the media were clear, but the disc presented a marked papillitis, being greatly swollen and prominent, its outlines indistinct and showing the characteristic "woolly" appearance of papillitis. The veins were full, and the arteries slightly diminished in caliber. The periphery of the retina was normal in appearance.

As, unfortunately, the patient did not again visit the dispensary, the progress of the case could not be noted.

Dr. Hotz has reported * seven cases of sunstroke attended with ocular troubles, from which the following cases are selected:

Case II.—Mr. A., aged twenty-nine, was prostrated by excessive heat in July, although he was not exposed to the direct rays of the sun. He became dizzy and fell. When he recovered consciousness he had lost the use of his left arm, and suffered from violent frontal headache.

To his right eye the air seemed to be in a wavering motion. Two months later headache ceased, and the sight of the right eye became very dim.

Examination, August 22d, L. E., V. = $\frac{20}{30}$. Fundus normal. R. E., fingers at six feet; hemianopsia, the temporal half of the visual field being completely obscured. Media clear. The nasal half of the disc red, and so swollen that its boundary can not be discovered.

*September 11th.*—Retina and optic disc normal in color. Perception restored in temporal half of the field of vision.

*October 6th.*—V. = $\frac{20}{70}$, with $-40 = \frac{20}{20}$.

Case III.—T. M., laborer, aged forty-eight. In July, after working in the sun and drinking freely, became suddenly dizzy and lost sight in the lower halves of the fields of vision.

Examination, November 7th, R. E., V.=$\frac{20}{50}$; L. E., V.=$\frac{20}{100}$. Slight epithelial opacities in both corneæ, of which the patient could give no information. Pupils very small but active. Optic discs very red, slightly swollen; boundaries quite indistinct. Veins full, arteries about normal.

*March 3d*, following.—R. E., V. = $\frac{20}{50}$; L. E., V. = $\frac{20}{80}$.

Case IV.—T. S. H., merchant, aged thirty-two. Examination August 24th. Suffered from sunstroke in previous year. Since then he has been troubled with the perception of an apparent wavering motion of the air, and the sight of the left eye

* "Amer. Jour. of the Med. Sci.," July, 1879.

has gradually failed. R. E., V. = $\frac{20}{30}$. Fundus normal. L. E., fingers at ten feet. Disc very red, streaked, and swollen, its outlines indistinct. Surrounding retina cloudy.

*September 15th.*—L. E., V. = $\frac{20}{30}$. Retina clear; disc slightly flushed, but its boundaries well defined.

Case V.—M. J. B., farmer's wife, aged thirty-four. In July became overheated while cooking; she did not, however, become unconscious. Severe headache followed, and the sight of the left eye began to fail.

Examination, September 17th. R. E., V. = $\frac{20}{30}$; L. E., V. = perception of light. R. E., general hyperæmia of fundus; L. E., papilla swollen, outline of disc very indistinct, general cloudiness of whole fundus, but most marked in the region of the disc and outer portion of the field.

Dr. Katzenbach * has also reported an interesting case of sunstroke:

The patient, a merchant, aged thirty-nine, abstemious in habits and with no history of venereal disease, while surf-bathing on August 2d was overcome by the heat. His respirations were slow and shallow, pulse very feeble and flickering, temperature subnormal, and sphincters relaxed. Upon regaining consciousness he complained of intense headache, photophobia, clouded and double vision. The pupils were normal; the ocular muscles were not impaired in action; he rapidly became very deaf, but suffered no pain in the ears.

An ophthalmoscopic examination was made, and retinal hæmorrhages and swelling of the optic discs were discovered.

The appearance of the ears was normal. An examination of the fundus, made a week later, showed a very marked improvement in the intra-ocular symptoms.

W. H. Kesteven † reports a peculiar case, interesting in this connection:

A woman, while exposed to the heat of the sun, was suddenly seized with an acute pain in the head, and saw everything green and red. A careful examination, made two days later with Holmgren's wools, showed that "she could detect red and green when strong shades were shown her, but blue, yellow, and gray she could not tell as such, but called them all green." This color defect was present in only one eye. An ophthalmoscopic examination of the fundus showed that the vessels were tortuous and the discs somewhat swollen and prominent.

The limited number of cases reported will scarcely justify us in drawing any very definite conclusions as to prognosis and treatment. In the cases of Dr. Hotz the treatment was chiefly with Heurteloup's leech to the temples and potassium iodide internally. He is inclined, from the progress of the cases remaining under observation, to give a very favorable prognosis.

If the origin of the trouble is, as I believe it to be, in a vaso-motor paresis, we may expect most excellent results from the descending galvanic current.

Direct exposure of the visual field to intense illumination by sunlight may, it is alleged,‡ produce an inflammation of the retina and optic nerve; but in the foregoing cases no severe or unusual exposure occurred, and in many instances the patient had been entirely protected from any glare of light.

We may then, I think, conclude that papillitis produced in some manner by sunstroke is not infrequently met with. It now remains for us to discover, if possible, in what way the papillitis is produced—whether it is a symptom or a sequela, a possible manifestation of the conditions known as thermic fever and heat exhaustion, or secondary to lesions which are present in these diseases.

Michel * believes that in sunstroke a "high degree of stasis in the cerebral veins and an œdema of the cerebral substance" exists, produced by a thickened condition of the blood, and that papillitis is due to this interference with the intracranial circulation. Hotz concludes that the papillitis is a secondary affection resulting from a primary lesion produced by the heat within the cranial cavity. He believes the headache, which in many of his cases was a prominent symptom, shows a meningeal irritation, and that in some cases there may have been present a serous exudation at the base of the brain.

These disturbances, being communicated to the sheaths of the optic nerves, gave rise to the intra-ocular lesion. Neither of these explanations is entirely satisfactory. No changes peculiar to sunstroke are found in the blood, and, although some hyperæmia of the brain may at times be present, this is not a sufficient cause for the production of an inflammation of the nerve-ending. Gowers, † indeed, distinctly affirms that no marked vascular alterations in the eye are seen corresponding to changes in the cerebral circulation.

That a meningitis may follow sunstroke and that a papillitis may follow such a meningitis is undoubted. But this explanation will not satisfy the conditions in the foregoing cases. The meningitis occasionally caused by sunstroke is, as a rule, a meningitis of the convexity, and a meningitis of the convexity rarely produces an inflammation of the nerve.

Again, a meningitis requires time for its production, and when produced, time is again required for the propagation of the inflammation to the nerve. Neuritis is not an early symptom of meningitis. It is seldom seen, says Dr. Gowers,‡ before the end of the first week. Once he has seen it as early as the fifth day, but then in a case of tubercular meningitis.

In all the cases given above, visual disturbance was an early symptom, coming on immediately after the sunstroke, in some cases growing more marked, in others remaining about the same until the time of the examination, when a papillitis was discovered. We can not say positively that this papillitis had been present from the beginning in every case, but in the two cases where an examination was made early it was found: in Dr. Katzenbach's case on the seventh day, and in Mr. Kesteven's on the second. In these cases a sufficient time had not elapsed for the appearance of a meningitis which could have given rise to the papillitis. We must therefore seek some other explanation.

Sunstroke is a fever, and the phenomena which constitute the symptoms of sunstroke are due to the effect of the heat upon the great centers of the sympathetic nervous sys-

* "N. Y. Med. Jour.," December 3, 1887.

† "Trans. of the Clin. Soc. of London," 1882, xv, p. 101.

‡ "Diseases of the Eye," Stellwag, p. 175.

* "Lehrbuch d. Augenheilk."

† "Med. Ophthal.," 2d ed., p. 121.

‡ "Diseases of the Brain," vol. ii, p. 305.

tem. H. C. Wood, who has very thoroughly investigated the subject, seems to have established this fact beyond doubt. He shows* that, when a man is exposed to so high a temperature that the heat he is constantly producing can not be eliminated, his temperature will gradually rise, and he will suffer from a thermic fever. If, however, the center which controls the formation of heat should become exhausted by its efforts to control heat-production, or be paralyzed by the excessive temperature, heat will then be very rapidly produced, the temperature will rise with terrible rapidity, and the patient will be suddenly prostrated. Should the heat paralyze, not the inhibitory but the vaso-motor center, heat-production will be lessened, and its dissipation greatly increased; the patient will then present the phenomena of heat exhaustion.

To account for the ocular trouble, it seems by far the most probable hypothesis to assume that this same disturbance of the nervous system which produces the general symptoms—such as nausea, vomiting, headache, giddiness, numbness, and convulsive movements—extends at the same time to the vaso-motor apparatus of the eye, and then manifests itself as that nutritive disturbance which we recognize as papillitis; or, as Pagenstecher † puts it, "the irritation conveyed through the nerve-tract of the sympathetic to the disc induces the changes of the nerve-fibers, the hyperæmia, and even the development of new vessels, and in this manner a swelling and obfuscation of the disc and the adjacent parts of the retina are brought about."

Let us compare the condition of sunstroke with another morbid process in which we frequently meet with a papillitis—namely, cerebral tumor. We find they have a certain group of symptoms in common.

The papillitis, chromotopsia, clouded vision, disturbance of other special senses, nausea, vomiting, vertigo, headache, numbness, and convulsive movements, sometimes epileptoid in character, are all frequently found at some time in the course of the case, both in sunstroke and in cerebral tumor.

To account for these symptoms in cerebral tumor, says Hughlings Jackson,‡ we must find some hypothesis capable of explaining not only the condition of the disc, but also all of the symptoms which the tumor produces, called the symptoms of gross organic disease; and the hypothesis which, to his mind, best answers these requirements is that the tumor, not as a pathological product of any special nature, but in its general character as a foreign body, produces an irritation which gives rise both to the papillitis and the accompanying symptoms.

This theory differs little from that attributed to Benedikt, that the tumor, by its presence, excites a widespread neurosis of the sympathetic fibers, and this neurosis manifests itself in the symptoms above mentioned; the sequence in papillitis being, according to Jackson, "tumor, changes of instability, effects produced by the latter on the muscular walled arteries of the optic nerve and centers."

The symptoms in cerebral tumor and sunstroke seem to me to be sufficiently similar to point to a common origin—in one case the irritation of the sympathetics by the tumor acting as a foreign body, and in the other a similar irritation by the excessive heat.

Why this irritation, when projected upon the optic nerve, should give rise to an inflammatory process, is as impossible for us to explain as why the exposure of the extremities to cold or dampness should in some instances give rise to an inflammation in some remote and presumably healthy organ.

Nor can we comprehend why, in sunstroke, the nervous phenomena, such as numbness and paresis, should be unilateral, and why, in some instances, a monocular and in others a double papillitis should be produced; nor, again, why a tumor in one hemisphere should produce a papillitis on the opposite side.

The problems do not, however, appear any less difficult of explanation by the light of any of the various theories advanced to account for the origin of papillitis. But whether or not we are inclined to accept the theory of vaso motor neurosis as offering the most probable explanation of the origin of the inflammation of the nerve-ending in cerebral tumor, it seems to me to be the only way in which we can possibly account for the presence of a papillitis immediately after sunstroke, and by far the most credible explanation of the origin of the lesion in all the cases given above.

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* "System of Medicine," Pepper, vol. v, p. 395.

† "R. L. G. H. Reports," vol. vii, part ii, p. 162.

‡ "Medical Times and Gazette," March 19, 1881.

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## FOUR CASES OF PERNICIOUS ANÆMIA.

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During my residence in this institution two cases of pernicious anæmia have been under my care. Another case, which I believe to have been of the same nature, although a diagnosis was not made during life, occurred under the treatment of Dr. Thomas R. Savage, and I assisted at the autopsy of a case occurring in town. Two of the patients dying in the asylum were examined post mortem, and in each instance microscopical examination was made of the diseased organs. The pathological changes found, with the results of treatment in the remaining case, are perhaps of sufficient interest to warrant publication.

Case I.—G. K., a carpenter, aged thirty-two, native of Germany, married, was received as a patient on March 1, 1882. He had made an attempt at suicide three years previously by throwing himself in front of a railway train, and had probably not been of sound mind at any time afterward. For some time he had been noticed to be pale, and had complained of ill health. Two weeks before his admission he made a second attempt at suicide by swallowing a quantity of ammonia liniment.

At the time of his admission he was evidently suffering from melancholia; was in moderate flesh, weighing 143½ pounds, but very feeble. Puse, 104. Skin pale and of a yellowish tint. During the month of March he became still more anæmic, failed perceptibly in strength, and began to be troubled with œdema of the feet and ankles. On March 29th his blood was examined. It appeared very thin and pale when drawn, and under the microscope was found to be very deficient in red corpuscles, which were very unequal in size and irregular in shape, very few

preserving the circular outline. They showed little tendency to cohere in rouleaux. (A hæmocytometer was ordered, with a view to quantitative estimate of red blood-corpuscles, but, as it had to be imported, was not received during the patient's lifetime.) On the 3d of April an ophthalmoscopic examination was made, and hæmorrhages were found in both retinæ. Nothing abnormal was found in the urine. Fowler's solution was prescribed in three-drop doses, three times a day, increased on the 10th to five drops, on the 17th to six drops, which was continued until June 10th, when it was omitted on account of diarrhœa and gastric irritability. The blood was examined from time to time, and the proportion of red corpuscles evidently decreased during the progress of his disease. His weight increased to 180¾ pounds, but the increase was due in great measure to œdema and effusion into the serous cavities. Death took place on the 14th of June.

At the autopsy, general œdema was found, with abundant effusion into the pleuræ, pericardium, and peritoneal cavity. Subcutaneous fat was well developed. The muscular substance of the heart was pale and flabby, and the wall of the left ventricle was thinned; the valves were healthy. The liver was enlarged and fatty; its weight was 5 pounds 12½ ounces. The spleen weighed 1 pound 9½ ounces, and was dark and friable. The kidneys weighed 8 and 8½ ounces, respectively; they were pale in color. The stomach presented numerous ecchymoses in the mucous membrane, which was evidently thinner than normal in its whole extent.

Microscopical examination showed a moderate degree of fatty degeneration of the heart, liver, and kidneys, and great atrophy of the mucous membrane of the stomach, which was transformed into a fibrous tissue, infiltrated with leucocytes, of not more than one fourth of the thickness of the normal mucous membrane, and in many portions presenting scarcely a trace of glandular structure. Brunner's glands, in the pyloric region, were unaffected.

Case II.—Jane B., a single woman, aged thirty-eight, was received as a patient on March 26, 1883. She became insane at the age of sixteen, and had never been of sound mind since. She was decidedly corpulent, and her circulation was feeble, but no valvular lesion of the heart could be discovered. She had repeated attacks of depression, during which she imagined that her food was poisoned. In March, 1884, after an attack of this nature, in which she had eaten but little for a number of days, she was noticed to be very pale, with a yellowish tinge to the complexion. Her appetite improved, but the anæmia and weakness increased, and on the 28th of March her blood was examined and found to present changes similar to those mentioned in the preceding case. Estimated by Gowers's hæmocytometer, the number of red corpuscles was 780,000 in a cubic millimetre, or 15·6 per cent. of the normal proportion. The red corpuscles were very irregular in shape and unequal in size, and showed little tendency to cohere. Temperature, 101° F.; pulse, 116. There was some nausea, but no emaciation. There was great shortness of breath on any exertion. Fowler's solution was prescribed in three-drop doses, increased gradually to eight drops three times a day in the course of four weeks. Full doses of pepsin with hydrochloric acid were also administered, to supplement the deficient digestive power of the stomach. On the 31st of March an abscess was found to be forming under the chin, which was opened April 3d, and was followed by erysipelas of the right side of the face. From this time on she steadily improved; she ceased to be troubled by nausea, took food better, and gained in strength. Numerations of blood-corpuscles showed steady gain as follows: April 11th, 20 per cent. of the normal number; April 21st, 23 per cent.; May 20th, 46 per cent.; May 27th, 62 per cent. The patient was now fully convalescent, and progressed uninterruptedly to recovery. The administration of arsenic was continued for some months, and caused marked pigmentation of the skin, which, however, passed away entirely on suspension of the drug.

She continued to enjoy her usual health until September, 1887, when she was again attacked with similar symptoms to those of the previous illness. At this time she was under the care of Dr. F. H. Welles. On the 17th of October he notes as follows: "For the past few days she has seemed to fail quite rapidly in strength, and now appears very anæmic. Lips pale, conjunctivæ gray, pulse feeble and rapid, complains of many vague pains and aches, refuses food, but takes about three pints of milk per day. Sol. potass. arsenit., 0·2 c. c., prescribed. . . . 23d. Her symptoms rather increasing in severity. She is to-day transferred to the infirmary. Her face has assumed a lemon-color." From this time she gradually failed in strength; diarrhœa set in and she died on the 4th of November. No examination of the blood was made during this illness. Unfortunately, permission to make a post-mortem examination could not be obtained.

There can, I think, be no reasonable doubt as to the diagnosis in the foregoing cases. In the following case a diagnosis was not made during life, and the notes are not so definite on some points as might be desired. I only saw the patient at the autopsy, and base my opinion of the nature of the case largely upon the gross and microscopical post-mortem appearances:

Case III.—E. S., a patient in the female department of the asylum, under the care of Dr. Thomas R. Savage, was attacked about the 20th of June, 1878, with obstinate vomiting, which lasted for about six weeks, during which time she had several attacks of hæmatemesis, and was nourished mainly by the rectum. Subsequently the irritability of the stomach diminished, so that she could take a fair amount of food. Notwithstanding that she did not emaciate, her strength gradually failed, and she died on the 11th of September. At the autopsy the skin was of a yellowish color; adipose tissue present in rather more than usual amount. No visceral lesions of importance were discovered, but there was very marked atrophy of the mucous membrane of the stomach, in which microscopical examination showed an almost complete absence of glandular structure.

Case IV.—Mr. B., a citizen of Kalamazoo, died in April, 1881. The diagnosis of pernicious anæmia was made by Dr. H. O. Hitchcock, of Kalamazoo. The prominent features of the case were shortness of breath, extreme pallor, and nausea. At the post-mortem examination the adipose tissue was abundant; skin of a yellowish color. The bones were of soft consistence, and the marrow was of darker color than normal. Heart and kidneys presented evidence of a moderate degree of fatty degeneration. Other viscera appeared healthy, with exception of the stomach, which showed marked thinning of the mucous membrane. On microscopical examination, the marrow of the bones was found to be increased at the expense of the osseous tissue. There was some fatty degeneration of the heart and kidneys, and the mucous membrane of the stomach was greatly atrophied, although the destruction of glandular tissue was not so great as in the preceding cases. It would, however, be safe to say that in no part of the organ which was examined did the secreting tissue equal one fifth of that in a healthy stomach. Brunner's glands were not perceptibly affected.

Fenwick appears to have been the first to call attention to atrophy of the stomach in a class of cases evidently iden-

tical with the pernicious anæmia of Biermer ("Lancet," 1877, No. 10). In my cases the gastric disease would seem sufficient to account for the symptoms, although it might not, perhaps, be justifiable to assert that it was the primary lesion. As Fenwick, in the article above referred to, states that atrophy of the stomach is a frequent complication in cases of cancer, even of remote organs, it may be that in pernicious anæmia it is in some way a result rather than a cause of the general malnutrition.

My second case would seem to illustrate the benefit of the use of arsenic. Within a very few days after its administration was begun the patient, who up to that time had steadily failed, showed evidence of improvement, which went on without interruption to complete recovery.

## THE REMOVAL OF THE SPINAL CORD.

By E. R. AXTELL, M. D.,
RESIDENT PHYSICIAN, CINCINNATI CITY HOSPITAL.

Every pathologist who has attempted to remove the spinal cord has, no doubt, sighed as the magnitude of his work loomed up before him. No matter how skilled one may be with post-mortem implements, the present method of removing the cord has ever been and ever will be most tedious and laborious, and, until an easier method is found, our pathology of spinal-cord affections will be retarded; only those who are most patient, and with more time than the average pathologist has to spare, being able to derive fresh knowledge from study in this wide-reaching field.

The present method of removing the cord—the method now almost universally adopted—has been given us by the German medico-legal authorities (see Dr. T. P. Smith's translation of Virchow), and consists briefly of the removal of the cord by opening the vertebral column from its posterior aspect.

"The skin and subcutaneous fat are first to be divided exactly over the spinous processes; the muscles are then to be removed from the sides of these latter and from the arches of the vertebræ. . . . Then, by means of a chisel, or a vertebral saw, the spinous processes, together with the adjoining portions of the vertebral arches, are to be detached and removed. The dura mater is now exposed, and, after being examined, it is to be carefully slit open longitudinally. . . . The roots of the nerves are next to be divided on both sides by a longitudinal incision; the lower end of the cord is to be carefully taken out, its anterior connections are next to be gradually separated, and, finally, the superior extremity is to be removed from the occipital foramen." This is all well enough, and some excellent specimens have thus been obtained, but, as a very general rule, the removal of the cord to the majority of pathologists is a herculean effort, and only done under the greatest stimulation.

Every institution will furnish numerous instances in which most interesting cases of spinal-cord trouble have not been examined post mortem owing to the inaccessibility of the cord, or where a small portion was made to answer for the entire cord. Thus we are daily losing valuable contributions to the pathology of spinal troubles. If the cord could be removed quickly and easily, an impetus would be given to this study that would be of great good. Our pathology of myelitis, softening, atrophy, sclerosis, ataxia, apoplexy, tumors, and palsy might be greatly widened, and with increased knowledge of pathology comes increased knowledge of treatment.

And in what direction can a remedy come? But one way presents itself, and on superficial thought the way looks not difficult. A pathologist sees at every autopsy a small, delicate white mass of spinal cord peeping from its long, narrow bed as the higher nervous organs are being removed, and almost involuntarily is tempted to grasp it and seek to draw it out. Yet how futile such an effort would be! Yet does not this instructive movement suggest a remedy?

Could we but separate the spinal cord from its bony attachments—even at the loss of its coverings—would not much be gained? Once separating it, it could readily be withdrawn and examined. But how could such a separation be effected?

The spinal canal is long, and in its course is many times curved. At various sections it has different shapes and different diameters. And this canal contains the cord. This is a flattened cylinder about sixteen inches in length, and extends in the adult to the lower border of the first lumbar vertebra. In its course it presents two enlargements, the cervical and the lumbar. Yet "it does not *nearly* fill the canal in which it is contained, its investing membranes being separated from the surrounding walls by areolar tissue and a plexus of veins" ("Gray," 10th ed., page 612).

Now, is not the way clear? Is it not possible to divide the cord from its attachments without injuring the cord in the least? Can not a thin, hollow, vertebrated cylinder be made to do duty?

The brain having been removed, the opening of the spinal canal is at hand. Now, with such a cylinder, with sharp biting saw-teeth on the first segment, is it not plausible that it could be made to embrace the cord and to divide its attachments on slight rotation? The entire cord could be rendered "taut" by slight extension on the projecting portion. One by one the spinal nerves could be divided—the cylinder being gradually pushed downward—conforming to the curves of the canal just as Sayre's vertebrated probe conforms to the curves of a sinus. When the *filum terminale* had been reached, some slight mechanism might be introduced to cut the nerves here transversely, or they might be divided by a knife introduced between the vertebræ, the spinous processes of which in this region are horizontal in direction.

The entire cord now rests in the cylinder, and upon withdrawing this, the whole and perfect cord is before us, having been neither pressed upon nor bent in its extraction. And not alone the cord need be present, but, by having a cylinder of good size, the membranes, especially the arachnoid and pia mater, may be left intact.

Thus could the cord be extracted most readily and without difficulty. The need of such a method is most obvious.

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## MEDICAL MEN AS OFFICERS OF THE COURT.

The recent work of Vibert, of Paris, on the medico-legal aspects of railway injuries still further emphasizes the truth of Sterne's saying "that they order these things better in France." M. Vibert, who has the title of Medical "Assessor," seems to occupy the position of adviser to the court in suits for damages received by means of tramways, railways, and other vehicles.

The medical jurisprudence of France has always been distinguished for acumen, ability, and impartial justice, and she has set an excellent example to other nations in this matter. There is no doubt that the ends of justice would be better served in this country by the permanent employment of a medical adviser to all courts of record where trials for damages and criminal suits turn upon the medical testimony in the case. The country would be spared much of the apparent conflict of medical evidence if the lawyer's questions to medical witnesses on all matters of opinion were submitted to the scrutiny of a court expert, and the not uncommon spectacle of two or more alleged "experts" on the witness-stand, one after another, testifying to opinions diametrically opposite would be a rare event. Not alone to the medical profession would the court expert be of service, but to the more important cause of justice and right dealing. A law providing for the appointment of a public medical referee, who should act as court adviser on all medical questions, would be of great advantage to the people.

The present practice has resulted in bringing discredit on the profession, and in some cases the defeat of justice, by developing biased testimony. In many of our most widely known trials the lawyers start out on a hunt for "experts" holding an opinion favorable to their side of the question, and they alone are subpœnaed. Such being the common practice, both sides to the controversy bestir themselves, and the consequence is, as already stated, two diametrically opposite opinions, and in such cases the jury often go wrong. Had there been a medical referee in the Guiteau case, for example, much time and money would have been saved, and justice reached more speedily. Such a position would need to be filled with great care, and, the responsibility being great, the compensation should be commensurate, and no man should be appointed to such a place except by the votes of those qualified to judge of his capacity. A medical expert to our highest city court, for instance, recommended for appointment by the Academy of Medicine, would at once command respect for his attainments and deference to his opinion. The world in general is said to move; why should not the wheels of justice move in the direction indicated?

## *MINOR PARAGRAPHS.*

### CARBON DIOXIDE AS A REMEDY FOR DYSPNŒA.

Our Paris correspondent writes that the treatment of certain forms of dyspnœa by the inhalation of carbonic-acid gas, as proposed by M. Weill, has made some progress. He has his patients breathe pure carbonic acid with Limousin's apparatus, or any of those used for breathing oxygen. They use it for from two to five minutes once or twice a day, taking from two to four litres of gas. The patients that our correspondent has seen treated were mostly those who had advanced lesions of the lungs or chronic forms of laryngitis. Most of them were subject to a continued oppression, with attacks of dyspnœa from time to time; some, as often as from four to twenty times a day, would be taken with dyspnœa and cough. When the gas was given during the attack, it seemed to cut short the oppression, and the palpitations that followed were very much diminished, the cough stopped, and the respiration fell to half what it had been, while the patient experienced at once a feeling of well-being. When the inhalations are practiced between the attacks they have a similar effect on the respiration, and the patients breathe freely; but, besides this, they have an action in preventing the paroxysms and in diminishing their frequency and intensity. Patients who had had twelve attacks during a day have only four or five, sometimes only three, and these attacks are so short that they can bear them very easily. Again, they can lie down at night, which some of them had not been able to do. Others slept and took food, which they could not do before the treatment. There seems to be an abolition of the reflex sensibility of the pharynx and larynx from using this gas which might be taken advantage of in operations on the throat. In fact, this new analgesic method can be applied to all the mucous membranes, and, as the gas can be inspired without danger to any one, it makes another agent to add to those used in the inhalation treatment of chest troubles, which is now such a rage among physicians.

### THE "OMAHA CLINIC."

We have received the first number of a monthly journal of sixteen pages, edited by Dr. J. C. Denise, with the assistance of Dr. James Carter and Dr. J. E. Summers, Jr. The number contains four original articles, editorials, college notes, proceedings of societies, a summary of progress in therapeutics, and a budget of medical items. Its *raison d'être* is thus explained: "It is our judgment that this section of the country should have a medical journal of its own, and we proceed to furnish it, to the best of our ability." This first number of the "Clinic" bears evidence of ability on the part of its editors, and the price, $1 *per annum*, places it within reach of all for whom it is intended—"the four thousand earnest workers in this noble calling, in the Western States and Territories." We wish the new journal success.

### ITEMS, ETC.

**The Practice of the late Dr. E. G. Loring** has, we are informed, been transferred, with the case books, to Dr. William Oliver Moore, who will carry it on at his residence, No. 5 East Thirtieth Street.

**Changes of Residence.** — Dr. Landon Carter Gray has moved from Brooklyn to No. 6 East Forty-ninth Street, New York City.

Dr. H. N. Vineberg has moved from No. 123 East Fifty-ninth Street to No. 229 East Sixtieth Street.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 1, 1888:

| DISEASES. | Week ending Apr. 24. | | Week ending May 1. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 11 | 5 | 11 | 9 |
| Scarlet fever | 212 | 26 | 209 | 38 |
| Cerebro-spinal meningitis | 3 | 5 | 6 | 7 |
| Measles | 75 | 8 | 93 | 6 |
| Diphtheria | 149 | 45 | 162 | 59 |
| Small-pox | 10 | 7 | 17 | 7 |

**The Health of New York City.**—During the four weeks ending Tuesday, April 24th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhus, 2 cases; typhoid fever, 37 cases and 15 deaths; scarlet fever, 692 cases and 111 deaths; cerebro-spinal meningitis, 19 cases and 20 deaths; measles, 223 cases and 21 deaths; diphtheria, 550 cases and 144 deaths; small-pox, 81 cases and 20 deaths.

**The "Cincinnati Lancet-Clinic"** announces that it will issue a daily edition during the session of the American Medical Association, on the 8th, 9th, 10th, and 11th inst.

**The Medical Department of the University of Pennsylvania.**—At the commencement exercises held on Tuesday, the 1st inst., the degree in medicine was conferred on one hundred and fourteen candidates. A portrait of Dr. R. F. A. Penrose was presented to the trustees by Dr. H. N. Hall, of the graduating class.

**A Powerful Emetic.**—An apothecary in Lewiston, Me., is said to have received the following order: "Mister Druggist: Please send ipecac enough to throw up a four-year-old girl."

**The "Philadelphia Medical Times."**—It is announced that Dr. Frank Woodbury has withdrawn from the management of the journal, which will hereafter be conducted by Dr. W. F. Waugh.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 15 to April 28, 1888:*

STERNBERG, GEORGE M., Major and Surgeon. Having been instructed by the President to proceed to the island of Cuba, for the purpose of continuing his investigations of the methods of preventing the spread of epidemic diseases, will, in connection with his present duties, report to the Secretary of the Treasury for further instructions. S. O. 89, A. G. O., April 18, 1888.

EWEN, CLARENCE, Captain and Assistant Surgeon. Granted leave of absence for six months, with permission to go beyond sea. S. O. 85, A. G. O., April 13, 1888.

BAILY, J. C., Lieutenant-Colonel and Assistant Medical Purveyor. Will transfer the public funds for which he is responsible, and the charge of the Medical Purveying Depot in New York City, temporarily to Captain HENRY JOHNSON, Medical Storekeeper. S. O. 92, A. G. O., April 21, 1888.

BAILY, JOSEPH C., Lieutenant-Colonel and Assistant Medical Purveyor. Granted leave of absence for twenty days on surgeon's certificate of disability, with permission to apply for an extension. S. O. 92, A. G. O., April 21, 1888.

Par. 13, S. O. 89, A. G. O., April 18th, is revoked by Par. 1, S. O. 93, A. G. O., April 23d, and STERNBERG, GEORGE M., Major and Surgeon, U. S. Army, is directed to proceed to the island of Cuba for the purpose named in the letter of the President, addressed to the Secretary of War on the 17th inst. Upon the completion of this duty he will return to his proper station, and submit his report to the President on or before June 25, 1888.

VICKERY, R. S., Major and Surgeon. Granted leave of absence for four months, with permission to apply for an extension of two months and to go beyond sea. S. O. 95, A. G. O., April 25, 1888.

By direction of the President, Surgeon REMUS C. PERSONS, U. S. Navy, is assigned, temporarily, to the charge of the Army and Navy General Hospital, Hot Springs, Ark., during the absence, on leave, of Major RICHARD S. VICKERY, Surgeon, U. S. Army, surgeon in charge. S. O. 96, A. G. O., April 26, 1888.

WOOD, LEONARD, First Lieutenant and Assistant Surgeon. Granted one month's leave of absence, with permission to apply for an extension of two months. S. O. 41, Department of Arizona, April 18, 1888.

ANDERSON, CHARLES L. G., First Lieutenant and Assistant Surgeon. Granted one month's leave of absence from June 1, 1888. Resignation accepted by the President, to take effect July 1, 1888. S. O. 92, A. G. O., April 21, 1888.

*Change of Station.*

ARTHUR, WILLIAM H., Captain and Assistant Surgeon. Ordered from Fort Niagara, New York, to Fort Bowie, Arizona, to take effect on the expiration of his present leave of absence.

BLACK, CHARLES S., First Lieutenant and Assistant Surgeon. Ordered from Fort Davis, Texas, to Fort Sidney, Nebraska. S. O. 86, A. G. O., April 14, 1888.

The operation of Par. 17, S. O. 79, c. s., A. G. O. (so much thereof as relates to George E. Bushnell, Captain and Assistant Surgeon, U. S. Army), is suspended until May 1, 1888. S. O. 90, A. G. O., April 19, 1888.

CROSBY, WILLIAM D., First Lieutenant and Assistant Surgeon. Ordered for duty at Jefferson Barracks, Missouri, after being relieved by Assistant Surgeon William H. Arthur, and upon the expiration of the leave of absence granted him in S. O. 60, A. G. O., March 14, 1888. S. O. 86, A. G. O., April 14, 1888.

*Appointment.*

RAFFERTY, OGDEN. To be assistant surgeon, with rank of first lieutenant, March 26, 1888.

*Promotion.*

GIRARD, JOSEPH B., Captain and Assistant Surgeon. To be surgeon, with the rank of major, March 22, 1888.

**Society Meetings for the Coming Week:**

MONDAY, *May 7th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; Boston Medical Association (annual); St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn, City Medical Association; Chicago Medical Society.

TUESDAY, *May 8th:* American Medical Association (first day—Cincinnati); Medical Society of the State of North Carolina (Fayetteville); New York Medical Union (private); Medical Societies of the Counties of Albany (semi annual) and Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Camden (annual—Camden), Morris (annual), and Sussex (annual), N. J., County Medical Societies; Norfolk, Mass., District Medical Society (election—Hyde Park); Franklin, Vt., County Medical As-

sociation (annual); Baltimore Gynæcological and Obstetrical Society.

Wednesday, *May 9th:* American Medical Association (second day), New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society; Pittsfield, Mass., Medical Association (private); Franklin (annual—Greenfield), Hampshire (annual—Northampton), and Worcester (annual—Worcester), Mass., District Medical Societies.

Thursday, *May 10th:* American Medical Association (third day); Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *May 11th:* American Medical Association (fourth day); New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *May 12th:* Obstetrical Society of Boston (private).

## Letters to the Editor.

### HOUR-GLASS CONTRACTION OF THE UTERUS.

Scipio, Ind., *April 18, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In your issue of April 14th is a letter commenting on the case of hour-glass contraction of the uterus reported by me on March 24th. As I am better acquainted with the facts relative to the case than the author of this letter, I deem it not imprudent to correct some of the misstatements made in his letter, and, with a charitable feeling toward him, beg him to reconsider my article and I think he will become "reconciled."

He speaks of my applying my hand to the abdomen after the birth of the child, "with the view of ascertaining the condition of the uterus." My statement was this: After giving the child over to the nurse, I replaced my hand on the lax abdominal wall to follow down the contracting uterus, etc., not for the purpose of examining its condition. In speaking of the pain and hæmorrhage, he suggests that they "showed perverted action in the womb, and furnished aid in the diagnosis which an internal examination would have rendered entirely conclusive, and led to the adoption of obvious measures, etc." Certainly; and the diagnosis was made and proper measures carried out, but not till the lady was anæsthetized. Although my attention was soon directed to the character of the pain, yet my suspicions as to the nature and gravity of the trouble were not fully aroused previous to an examination.

Every practitioner of any experience has frequently seen the placenta expelled by one continuous pain, lasting for several minutes, and accompanied with considerable hæmorrhage.

The half, instead of "full," dose of ergot did not aggravate the symptoms in the least. I confess the ergot was contraindicated, but it was given before a diagnosis was confirmed.

Probably no person has ever officiated in a case of childbirth, if examinations were made, without learning that immediately after the child is expelled the vaginal and uterine canals seem continuous as one, and that a high vaginal examination always shows some portion of the placenta presenting, unless retained above a constriction, although at the time it may be almost or entirely within the uterus. Thus, by a vaginal examination, I found the placenta presenting high up in the canal, not down in the vagina; nor did I find it in the upper segment of the womb adhering to the membranes, as the doctor misunderstands (?). It was in the lower segment, and the membranes at its upper margin were caught by the constriction. Language misconstrued will serve to "perplex" almost any person.

Now, as the literature on this abnormal condition is so "sparse," I would beg of my brother practitioner a report in detail of his case.

Pray tell us, doctor, how many gallons of blood the lady lost in that "profuse hæmorrhage" which had been going on "for several hours" prior to your arrival.

Charles W. Phillips.

## Proceedings of Societies.

### NEW YORK SURGICAL SOCIETY.

*Meeting of March 28, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**Successful Operation for the Radical Cure of Hernia.**—Dr. C. McBurney presented a patient upon whom he had operated for the radical cure of hernia. His method of operating (described in detail in a paper read at a recent meeting of the society—"New York Medical Journal," January 21, 1888) consisted in exposing the external oblique aponeurosis above the external ring, incising the aponeurosis so that the neck of the sac could be ligated at its very origin. The entire inguinal canal was thus laid open. The upper wall of the wound was then formed by the skin, the external oblique aponeurosis, and the conjoined tendon. These tissues were firmly sewed together with catgut. The skin and aponeurosis forming the lower wall were also sewed together. The open character of the wound was thus insured. The wound was then packed with iodoform gauze, and healing by granulation took place in from four to six weeks. The patient was not allowed to wear a truss. Some patients had been kept under observation as long as two years, and no return of the hernia had been noted in a male subject. The advantages stated for this method were: 1. The ease and simplicity of the operation. 2. The thorough removal of the peritoneal sac. 3. The wound was open so that drainage was not required, and abscess could not occur.

**Simultaneous Ligature of the Right Carotid and Subclavian Arteries for Innominate Aneurysm.**—Dr. McBurney presented a patient whom he had shown to the society a year and a half before. Previous to the operation there had been a pulsating tumor, measuring three inches in its transverse diameter, which had ascended as high as a point a quarter of an inch above the crico-thyreoid membrane, and below elevated the sternum, the clavicle, and the first and second intercostal spaces; it had been clearly an aneurysm, involving the innominate artery. The right subclavian and carotid arteries had been ligated simultaneously, when the pulsation had at once ceased, and the patient had speedily regained his voice, which had been almost lost. There had been no change in the size of the tumor since the patient was last presented, a small tumor still existing; but the wall of the sac was much thickened and lateral expansion was absent. The patient was shown to the society this second time, as the length of time that had now elapsed demonstrated the permanence of the cure.

Dr. H. B. Sands thought that there was still some lateral pulsation.

Dr. McBURNEY said that there was certainly no more than there had been eighteen months before.

Dr. SANDS referred to the case of a patient operated upon by the president in which lateral pulsation had seemed to persist, but at the autopsy marked thickening of the sac had been found; there had been no actual lateral expansion, but merely a lifting of the tumor with each pulsation.

The PRESIDENT thought that the lateral pulsation in the case under discussion was more apparent than real. If the sac was grasped at its upper part, it would be found that the entire tumor was lifted as the blood passed through it.

Dr. SANDS believed that such patients after operation ought to be guarded against any imprudence, since there were many cases in which careful after-treatment was followed by great improvement. In the only successful case of ligation of the innominate for aneurysm (by Dr. Smythe, of New Orleans) the patient had died ten years later from the aneurysm.

The PRESIDENT stated that in his case the patient had died of phthisis twenty-one months after the operation.

**Spontaneous Everted Dorsal Dislocation of the Hip, probably due to Rheumatism.**—The PRESIDENT exhibited a patient, fifty-four years of age, who, two years before, after suffering for some time with rheumatic pains in the smaller joints, had wrenched his right hip while leaving a horse-car. A month later the hip had become tender and swollen, so that he had been obliged to remain in bed for several days; then one night, while getting into bed, he had felt something give way in the joint, and since that time the limb had been stiff, although he could walk on it. Both knees now contained effusions, and there was grating when the patella was rubbed against the condyles. No other joints were swollen or roughened. The right lower extremity was parallel to the other as he lay in bed, and was considerably everted and shortened an inch and a quarter. The trochanter was displaced upward, backward, and inward, and the outer aspect of the hip was noticeably flattened. The tissues below the anterior superior spinous process were slightly raised, and on pressure a sensation of deep, firm resistance was given, which was not found on the opposite side. The muscles of the thigh were wasted. Voluntary motion was lost, and passive mobility was greatly restricted; flexion and adduction were almost entirely lost; rotation and abduction reduced about one half. A slight grating sensation could be felt. The only other condition which could exist was fracture of the neck of the femur, and of this accident there was no history.

**Traumatic Osteomyelitis of the Femur, followed by great Thickening of the Os Innominatum.**—The PRESIDENT showed a male patient, thirty-one years old, who two years before had fallen backward in a sitting posture upon a sharp-pointed iron rod, a quarter of an inch in diameter, which had entered his body at the margin of the anus. He had at once suffered much pain in the left hip, and been taken to his bed; a week later a large abscess had been opened on the left thigh just below the perineal fold. During the first month he had had several hard chills and much fever, and he had noticed the present deformity of the thigh and shortening of the limb. Eight months later another abscess had been opened on the inner and outer aspects of the thigh; both these openings were still present, communicated with each other, and were discharging considerable pus. For the last year he had been able to walk about and attend to business. The left lower extremity was about two inches shorter than the right, and was greatly deformed at its upper and outer portion by a marked swelling. The trochanter could be felt, but was not so clearly outlined as usual, and appeared to be thickened. It was displaced upward and outward so far that the outer and upper portion of the thigh was very prominent, and was so rounded and filled out that, at first sight, it suggested an osteo-sarcoma. There had been no change in the deformity during the last year. The anterior portion of the ilium and pubes was so thickened that it extended from a point two inches above Poupart's ligament to an equal distance below. Exploration through the rectum showed that the cavity of the lower pelvis was considerably encroached upon by thickening of the os innominatum.

In reply to a question by Dr. F. LANGE, the reporter said that fever had been present for a month after the injury, but that it had ceased after the abscess on the inner side of the thigh was opened. The patient was in bed for a month, during which time the present deformity appeared. There was almost complete ankylosis of the hip joint. In reply to a further question, he stated that a probe introduced into the sinuses did not reach bone.

Dr. LANGE thought that the head of the femur was separated from the shaft, but remained within the acetabulum as a necrotic body; it seemed to him to be a case of osteomyelitis of the hip joint. He had seen cases in which there was even more thickening than in the present instance, although the necrosis was limited to the head of the femur. The speaker had presented to the society a few years before a boy who had had abscesses in the iliac fossa, the head of the femur alone being necrosed. It was not necessary in these cases to assume the presence of necrosis in the ilium itself.

In reply to a question by the president, Dr. LANGE said that he could not state whether the removal of the head of the bone would put an end to the process or not. Several years ago he had excised the hip joint in a boy for similar disease, and had removed several sequestra from the ilium. The patient had improved, but had died some years later of amyloid degeneration. At the autopsy it was found that the entire ilium was thickened, and was the seat of softening, rarefying osteomyelitis, but there was no necrosis. In the case under discussion it must be inferred from the nature of the deformity that there was a separation of the neck of the femur.

The PRESIDENT said that there must have been a fracture or dislocation at the time of the accident.

**Non-union of Fractured Bones.**—Dr. PILCHER read a paper on this subject. (See page 486.)

The PRESIDENT said that the occasional interposition of periosteum between the fragments of a fractured patella had been pointed out long before Macewen's paper was published. In the specimen presented by the reader the original separation of the periosteum could not be alleged as the cause of non-union, as the periosteum was so closely attached to the overlying soft parts that it could not fall in between the fragments, as the fibro-periosteal covering of the patella sometimes did.

Dr. C. K. BRIDDON said that he believed statistics had proved that non-union was more frequent in the lower end of the humerus than elsewhere, that it had been attributed to the distribution of the nutrient arteries, and to the disturbance of the parts in the movements of respiration, which latter would equally apply to ribs, clavicle, and scapula, where union rarely failed. He cited a case where a gentleman had fractured the lower end of the humerus from the application of very insignificant force. There had been constitutional vice in the case, but the site of fracture had been the seat of slight obscure pain for some months previous to the accident. An unfavorable prognosis as regarded union had been given, and the bones had never united; every means short of operative interference had been used; absolute immobilization, followed by needling and the application of the constant and interrupted currents; no more severe measures had been instituted, because the patient had been suffering from advanced cardiac disease. The arm, when incased in a removable metal splint, was as useful as before. In

his experience a syphilitic history had been obtained in most of these cases, and antisyphilitic treatment had been beneficial. One cause of non-union might be the long-continued immobilization of the limb with plaster of Paris, especially in the case of the thigh when it was fixed for three or four months; in the latter instance the limb sometimes atrophied, and the skin exfoliated. He would under these circumstances advise the daily removal of the apparatus and the use of massage, and would advise the patient to walk about; use of the limb sometimes assisted union. He had never obtained any good results from Thomas's method of percussion. The speaker did not wish to be understood as opposing the practice of immobilizing the limb in cases of fracture, but only as objecting to too prolonged fixation. He thought that it might even be better to leave detached fragments of bone at the seat of fracture *in situ*, since consolidation might still take place if the wound was thoroughly aseptic. Macewen's investigations into the process of osteogenesis went to prove that the periosteum only furnished the blood-supply, that the source of bone growth was in the bone cells themselves, and that small pieces of completely detached bone in a perfectly aseptic wound formed centers for reproduction, and were not to be regarded as foreign bodies.

**Modification of Malgaigne's Hooks for Fracture of the Patella.**—The President showed Dr. W. K. Otis's modification of Malgaigne's hooks. (For a description of this instrument, see vol. xlvi, page 734.)

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of April 11, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

**The Loofah, a Vegetable Skin-Scrub for Aseptic Operations.**—Dr. John B. Roberts said that the necessity of scrubbing the integument thoroughly with soap and water, in order to remove dirt and secretion, before operating aseptically upon the part, had recently compelled the provident surgeon to carry with him to operations a bristle brush, such as was used for cleaning hands and finger-nails. He had recently saved himself the expense of supplying brushes for emergency operations, and avoided the inconvenience of carrying away from the patients' houses such wetted brushes, by using portions of the peeled and macerated fruit of the loofah or towel gourd (*Luffa Ægyptica*). A few of these segments were carried in his operating case at all times, and, when once used, were thrown away. According to the London "Chemist and Druggist," this gourd was grown extensively in the West Indies as well as in Africa and Arabia; but he had been told it could be cultivated in Philadelphia gardens. It was a cucurbitaceous plant, with fleshy fruit which resembled, in shape and size, the Indian clubs used for calisthenic exercises. When the epidermis, mucilaginous pulp, and seeds were removed from this fruit, there remained the fibrous network or skeleton, which, when dried, acted as well as a scrubbing brush for the skin. This dried skeleton, when wet, was harder than a sponge, though perhaps rather softer than a bristle brush, and acted exceedingly well as a skin-scrub for obtaining an aseptic condition of the skin. He had been able to get with it sufficient friction not only thoroughly to cleanse the skin, but also to produce an erythema in a few moments. This could hardly be accomplished by so soft an article as a sponge, which was, on account of its softness, unsuited for a surgical cleanser.

The prepared skeleton, or loofah, as it was called commercially, was cut, transversely to its long axis, into pieces about two inches long, which, if desired, might afterward be split longitudinally. For his own use, he preferred the unsplit segment, which seemed to have a rather rougher and harder surface, and better removed the dirt and secretions from the crevices of the skin. As the entire loofah could be bought for a few cents, these segments—of which from five to ten could be made from each—cost not more than two cents apiece; to throw them away after using was, therefore, no great extravagance.

It would be understood, he trusted, that this material was available for scrubbing the skin of the patient, but it was not suitable for cleansing the spaces under the surgeon's nails; for that purpose he always carried a toilet nail-brush. His advocacy of the loofah was for cleansing the skin of patients at whose houses a brush for cutaneous purification was often not readily obtainable, though a new and clean scrubbing brush, such as was used for floors, would be perfectly satisfactory.

**Ovarian Cyst of the Right Side.**—Dr. J. W. White exhibited a cyst which he had removed on the previous day from a patient in whom a diagnosis of pregnancy had been made and persisted in by an irregular practitioner. After removal of the cyst, at the suggestion of Dr. Joseph Price, he removed the other ovary in the hope of checking the development of a uterine fibroid which was discovered during the operation. The cyst and its contents weighed between fifteen and twenty pounds.

**Vesical Calculus.**—Dr. White also exhibited a large vesical calculus, and the bladder, kidneys, and ureters from the body of a patient who had died in advance of a proposed operation for the removal of the calculus by suprapubic cystotomy. The autopsy showed the existence of pyonephrosis, and Dr. White congratulated himself that he had escaped the necessity of recording a case of ether-death, or a death from shock, to one of which causes the fatal termination would have been ascribed, and, as the specimens showed, unjustly, had the case lived long enough to have come to the operating table. The history was as follows: About five days ago a young man was brought to his office suffering with abdominal pain, but apparently in fair health otherwise. He had a good complexion and there had been no emaciation. The pain was referred to the hypogastrium and the head of the penis, and the symptoms in general were those of stone. A large calculus was discovered immediately the sound passed the prostate, preventing further motion of the instrument. The patient was sent to the German Hospital and placed on a milk diet, rest in bed, etc., and arrangements were made to do a suprapubic cystotomy at 2 P. M., on Tuesday the 10th inst. On Monday the pulse was 82, temperature 99°, and the patient was very comfortable except for the fact that diarrhœa had set in, ten or twelve passages with straining having occurred in the twenty-four hours. But as this so often resulted from a sudden change to milk diet and a rectal tenesmus constantly accompanied vesical tenesmus, little was thought of it. The diet was changed and hourly five-drop doses of deodorized tincture of opium ordered. The urine had a heavy deposit, blood, and considerable pus, but that was to be expected with a large calculus. There was no œdema, and, as stated, the general health appeared good. The patient, however, suddenly sank, and died in the night, without operation. The autopsy showed a stone as large as a duck's egg in the bladder, the tissues being considerably inflamed and hypertrophied, and the caliber of the viscus much reduced. The kidneys exhibited extensive pyonephrosis, very little of their substance being left, and that principally as the dividing walls of the multilocular cysts into which the organs were converted. The ureters were much dilated—so much, indeed, that at first they were supposed to be part of the small intestine.

There were various ways in which pyonephrosis might be produced from vesical calculus. There might be extension of inflammation through a cystitis involving ureters, etc., or it

might originate as hydronephrosis through the vesical orifice of the ureter damming back the urine. Or the obstruction might be caused by the hypertrophy of the vesical tissues occluding the ureters, or from the frequent urinations due to a phimosis, rendering necessary, of course, equally frequent contraction of the bladder-walls upon the ureters. This case was evidently of long standing, and was believed to have originated as a hydronephrosis due to damming back of the urine by the hypertrophy of the bladder-walls, causing the great dilatation of the ureters shown in the specimens.

(*To be concluded.*)

# Reports on the Progress of Medicine.

## DISEASES OF CHILDREN.

By L. EMMETT HOLT, M. D.

**The London Scarlatina Epidemic.**—The "Lancet" (November 26th) states that during August, September, and October 3,000 patients were admitted into the various hospitals of the city. The mortality was about 7 per cent. A considerable reduction would have been made in this provided the patients had been removed from their homes earlier in the disease. Thus, of 81 deaths in two hospitals, 24 were within forty-eight hours after admission, these being mostly hopeless cases when treatment was begun. Some form of renal disease was the cause of 12 per cent. of the deaths. Including the number of malignant cases in which the kidneys were involved, the number would be somewhat greater. Albuminuria in a considerable degree, or for some time, was present in 15 to 20 per cent. of the patients. Convulsions as complications of nephritis were neither frequent nor serious. Pulmonary complications were present in 16 of 113 fatal cases, usually pneumonia, pleurisy being quite rare and empyema not noted. Laryngitis was a cause of death in 8 per cent. of the cases, and in two membrane was noted. Joint affections were less frequent but more serious among children than among the adults affected. Throat complications were very common and severe. In 12 per cent. of the fatal cases sloughing of the tonsils or the cellular tissue of the neck took place. Isolation should be insisted upon for the entire period of desquamation. Statistics compiled regarding the duration of desquamation in over 2,000 cases, collected in a period extending over five years, shows the lowest average to be in 1879–'80; here in 704 patients it was 56 days; the highest average (1880–'81) in 413 cases being 74 days. Eight weeks should, then, be looked upon as about the minimum period.

**The Treatment of Scarlet Fever by Carbolic Acid; a Prophylactic and Curative Measure** (Arthur Wigglesworth, "Lancet," October 8th).—This treatment the author has been using now for several years, and the article embraces an experience of nearly three hundred cases. No case has been fatal; only three cases of albuminuria have occurred, only one of glandular suppuration, and none of aural or nasal complications; none of secondary fever or cardiac disease. A rapidity of recovery in severe cases not before seen has been obtained. He administers carbolic acid, liquefied by the addition of 10 per cent. of water, freely diluted in syrup of orange-peel and water. To be efficacious it must be given early in the disease, at short intervals, and in full doses. Three minims of the acid are given to children every two hours day and night for the first three days; after that the interval may be lengthened. To adults the dose given is five or six minims; he has given as much as eight minims, but considers that a maximum dose. It should be given up to the point of producing deep discoloration of the urine. If this is not produced we may be sure the patient is not getting the doses ordered. Failures with the method result from its being begun too late or too small doses being given. The drug is also administered in smaller doses, one minim three times daily, to the other members of the household who have not had the disease. This is stated to be an efficient prophylactic even where intercourse is not prohibited.

**Ascending Paralysis as a Sequel of Whooping-cough** (Möbius, "British Med. Journal," August 13, 1887, from "Centralblatt für Nervenheilk.").—Six weeks after the beginning of the attack, as the pertussis was subsiding, the loss of power came on gradually. There was complete paralysis of both lower extremities, with absence of knee-jerk on both sides, the plantar reflex was gone on one side and indistinct on the other, the electrical reactions were nearly normal, and there was no disturbance of sensibility. As the legs began to improve and the child was able to stand the arms became affected, with the muscles of the head and neck, and finally the diaphragm. There was no atrophy or anæsthesia, the tendon reflexes were gone in both arms, and the bladder and rectum were normal. The face was at times cyanotic. Gradual improvement then took place, and two months after the beginning of the attack no loss of power could be made out, although the tendon reflexes did not return for some weeks longer. The abdominal and intercostal muscles were unaffected. The diagnosis made was multiple neuritis. The patient was three years old.

**Rickets and Syphilis** ("Rhachitisme et syphilis"; Cornby, "Revue mens. des maladies de l'enfance," November).—The writer has discussed at length and with great thoroughness the question of the relations of these two diseases, and has effectually refuted the arguments of Parrot, who maintained that they were identical. They correspond neither pathologically nor clinically. The case is cited of a mother who, six years after the birth of a child who was markedly rhachitic, contracted syphilis from her husband. Her next child had hereditary syphilis, but no signs of rickets. One such case controverts the identity theory completely. It is not rare to find evidences in the same patient of both syphilis and rickets, yet, of six hundred cases of rickets examined by the writer, only ten showed cicatrices from syphilis. Hutchinson's teeth he has never seen in rickets. The only cases of interstitial keratitis seen were where scrofula was also present. The different effects of treatment in the two diseases is another point of contrast. Mercury and iodide of potassium have never enjoyed the reputation of being of any value in rickets.

**Icterus Neonatorum** (Silbermann, "Archiv für Kinderheilkunde," Bd. viii, H. 6).—This vexed question has been discussed anew by the author in a very exhaustive paper. The following are his conclusions: 1. It is hepatogenous, due to resorption. 2. The stasis in the biliary circulation exists in the capillary and interlobular bile-ducts, which are compressed by the branches of the portal vein. 3. This stasis is brought about by a change in the circulation occurring soon after birth, and is one of the results of a general alteration in the blood plasma. 4. This blood change, called forth by the extensive breaking down of red globules soon after birth, is essentially fermentative. 5. The jaundice is more marked the weaker the child, as the blood-fermentative changes are greater than in a strong child. 6. From the destruction of many red blood-globules there results a rich amount of material for the formation of bile pigment, which, as a result of the process, accumulates in the vessels of the liver.

**Diphtheritic Paralysis of the Pneumogastric** (Alfred Suss, "Rev. mens. des maladies de l'enfance," July and August, 1887).—In this article will be found a careful study of this whole subject. The following are some of the conclusions arrived at: Functional disturbances of the pneumogastric are quite frequent in the course of diphtheritic paralysis. The cardiac symptoms are slowing of the pulse, sometimes followed by acceleration and smallness, and almost always precordial distress and very violent pain. The respiratory symptoms are dyspnœa, great irregularity of both inspiration and expiration, and occasionally Cheyne-Stokes respiration. Gastro-intestinal symptoms may be present—such as violent colicky pains and vomiting of food and mucus. When all these symptoms are associated, death is all but certain, and the course is very rapid, rarely lasting a day. When only cardiac or pulmonary symptoms exist, recovery often takes place—how often it is impossible to say precisely. All these accidents most frequently come on during the course of paralysis of the soft palate, and generally when it is passing off. Hence the prognosis in such cases must be guarded. The only treatment of any efficacy is electricity (faradism) applied to the precordial region or to the posterior part of the chest. The author considers it established beyond all contradiction that the heart clots found so often, and of which so much has been made by many

writers, have nothing to do with the symptoms described above; they are most frequently of post mortem formation. Lesions of the medulla, which, moreover, have never been found, are inadequate to explain the symptoms and, most of all, their curability. Finally, the changes in the terminal filaments of the pneumogastric—*i. e.*, those which make up the cardiac, pulmonary, and abdominal plexuses—are the only lesions which afford a satisfactory explanation of the symptoms. These lesions have not thus far been demonstrated post mortem.

**Rectal and Dermal Alimentation of Wasting Infants** (Sansom, "Medical Press," July 27th). There is good evidence to believe that cod-liver oil is absorbed when rubbed into the skin. The rectum is more available than the cutaneous surface for supplementary alimentation. Everything employed should be predigested. Peptone enemata are made as follows: "Two tablespoonfuls of raw beef or mutton; to this add two tablespoonfuls of water and let stand one hour; add gradually then four tablespoonfuls of milk heated to boiling. The temperature of the mixture will then be about 140° F.; now add a teaspoonful of liquor pancreaticus (Savory and Moore's) and a pinch of sodium bicarbonate. Let the whole stand for six hours, and then heat to boiling." After straining it may be set aside for preservation. The amount prepared will suffice for several enemata. Not more than two ounces should be given at once, and this only through a soft-rubber catheter. Equal parts of cod-liver oil and warm milk may be shaken up together and administered as an enema. Diarrhœa is by no means a contra-indication to the use of enemata, since these in some cases exert a sedative action on the bowels which is of decided advantage.

**Noma** (Woronichin, "Jahrbuch für Kinderh.," xxvi, H. 2).—The article contains a very full discussion of the subject, historically and pathologically. The true cause of noma is not yet known. Its localization upon the mucous membrane of the cheek, and in most cases upon one side only, is determined by nervous influences. This is supported by experimentation on dogs. The removal of a portion of the infra-orbital nerve produced an ulceration of the lip on that side. This seemed to be due to successive traumatisms upon parts anæsthetic. The teeth cause the injury in many cases. Full reports of 46 cases are appended, being all that occurred in the Elizabeth Hospital during seventeen years; 22 were in in-patients in a total number of 8,286 treated, or 1 in 376; 24 were in out-patients in a total number of 207,259, or 1 in 8,635. Following measles there were 8 cases, scarlatina 4, whooping-cough with pneumonia 3, pneumonia alone 3, typhoid 2, chronic entero-colitis 2, intestinal catarrh with atrophy 2, and several other affections 1 each. The disease was more frequent in the winter and spring. Its seat was the right cheek in 13 cases, the left in 7. Twelve of the cases were during the third year of life; 27 patients were girls, 19 were boys. Of 22 patients treated in the hospital only 3 recovered.

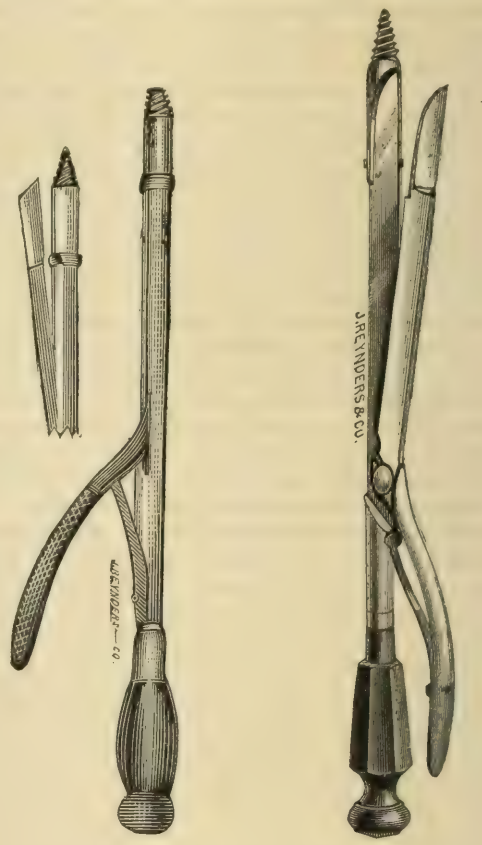
**Acute Gastritis of a Severe Type in Infancy** (Gastritis gravis acuta im frühen Kindesalter. Seibert. "Jahrb. für Kinderh.," 1887, Bd. xxvi, H. 3).—Three rather remarkable cases are fully reported. The first patient, a healthy infant of eleven months, was suddenly taken with fever, which rose rapidly until it reached 40·4° C. [nearly 105° F.]. In the course of two or three hours it dropped to normal without treatment. Such paroxysms were repeated several times in the twenty-four hours, the only other important symptom being vomiting. After careful watching it was evident that the exciting cause was the milk of a wet-nurse who was discovered to have imbibed stale beer quite freely. The attacks ceased promptly after two days, as soon as a change in the diet was made. The second case was in a baby four months old, who was taken with a chill and high fever which had ranged from 39·5° to 40·5° C. [103° to 105° F.] for a week when it was first seen, the child being nursed frequently and irregularly during this time. When it was removed from the breast the temperature fell from 41·3° to 37° C. [106·5° to 98·6° F.]. The father, a physician, fearing collapse, ordered the breast again, and the temperature rose to 40·2° C. [104·5° F.] in a short time. Subsequent nursings three times daily produced a corresponding number of exacerbations in the fever. It was not until the child was removed from the breast completely that the temperature remained normal, the symptoms having lasted nearly three weeks. Beer-drinking in the nurse was here the probable cause. The third patient was fourteen months old. A meal of indigestible food was followed by vomiting and high fever. On the fourth day articular rheumatism was manifest, which yielded promptly; then the intermittent fever and swelling of the spleen led to the suspicion of malarial disease. Quinine controlled the temperature, but the vomiting did not stop until death, at the end of five weeks. The author concludes (1) that severe gastritis in infants is quite a rare disease, and is very liable, especially at the outset, to be confounded with typhoid fever, malarial fever, or meningitis; (2) the cause is improper breast-milk, due to beer-drinking, etc., or other nourishment partly changed; (3) the treatment consists in prompt change in diet, otherwise it is symptomatic.

# New Inventions, etc.

## A MODIFIED THOMAS'S PERFORATOR.

By Edward A. Ayers, M. D.

Although the line of advance in the management of obstetrical cases requiring operative delivery by craniotomy or some form of laparotomy is in the direction of Sänger's Cæsarean section, yet craniotomy must continue to be performed in many cases. There are important objections to all the perforators now in use which I think are removed in the present model. Smellie's, Simpson's, Blots's, and Hodge's perforators are all liable to slip beyond the point selected for entrance into the skull and wound the cervix. Their action in enlarging the opening is likewise uncertain, and the cervix can not easily be protected. The German trephine, though certain in its action, has the great objection that belongs to the Thomas instrument—*i. e.*, can not easily be cleansed. It can only be used, moreover, on the cranial vault. Of the Thomas perforator, Professor Lusk ("The Science and Art of Midwifery") says: "Mechanically considered, Thomas's instrument is beyond reproach. It is, however, somewhat more difficult to keep in order than those previously mentioned." I have, as shown in the ac-



companying cuts, so remodeled the instrument that all parts of it can be easily and thoroughly cleansed, while at the same time it has lost none of its mechanical excellences. In using the instrument, by holding the index finger over the blade as well as the point of the gimlet, there can be no danger of wounding the maternal tissues by unintentionally pressing the handle and elevating the blade. The spring under the handle can be easily removed for cleansing. I have used the instrument once. The patient had no febrile reaction.

126 West Forty-fifth Street.

# Miscellany.

**The late Dr. Agnew.**—At a meeting of the Medical Society of the County of New York, held April 23d, Dr. D. B. St. John Roosa offered the following resolutions, which were preceded by a eulogy of the deceased:

*Resolved*, That the Medical Society of the County of New York, in the death of Cornelius R. Agnew, M. D., LL. D., mourns the loss of one of its most distinguished members, who had by his professional achievements brought honor to his native city and country in every land where medical and surgical science is cultivated.

*Resolved*, That we bear our testimony to the justness and integrity of a life devoted to his fellows, and to the qualities which have made him, under the most trying circumstances that can occur in the history of a medical organization, one of our most trusted and wise counselors.

*Resolved*, That the memory of his professional career will ever be an incentive in our endeavor to elevate and maintain a high standard of professional life and character, and that we mourn his loss as that of an exemplar in uprightness and in advancing medical science.

The resolutions were seconded by Dr. E. C. Harwood, and were passed unanimously by a rising vote.

At a recent meeting of the Health Department of the city the following resolutions were passed:

*Whereas*, It has pleased Almighty God to remove Dr. C. R. Agnew from this life; and

*Whereas*, The late Dr. C. R. Agnew had endeared himself to all by his disinterested public spirit and his unswerving fidelity to just principles of public health; be it therefore

*Resolved*, That the death of Dr. C. R. Agnew has deprived the people of this city of a vigilant and wise advocate of its sanitary rights and requirements, and also deprived this department of a conscientious, impartial, and fearless counselor.

*Resolved*, That these expressions be spread in full on the minutes of this department, and that the president be directed to express to the family of the deceased the sympathy of this department in their sad bereavement.

**The Medical and Chirurgical Faculty of Maryland** held its ninetieth annual meeting at Baltimore on Tuesday, Wednesday, Thursday, Friday, and Saturday, April 24th, 25th, 26th, 27th, and 28th. The address of the president, Dr. I. E. Atkinson, was on the subject of "Medical Charities." He referred to the various ways in which medical charity was dispensed and expressed the opinion that indiscriminate charity tended to pauperize the recipients. A comparison of the medical charity of Baltimore with that of New York city was not flattering to the former. The fault, he thought, was with the givers rather than with the recipients. The corresponding secretary, Dr. J. T. Smith, then presented his report, which was followed by that of the treasurer, Dr. W. F. A. Kemp, who stated that the finances of the Faculty were not in so satisfactory a condition as it was desirable they should be, although the deficiency that existed last year had been somewhat reduced. In a subsequent report it was announced that the entire sum had been made up by means of voluntary contributions and from the rental of the Faculty's hall in which the pharmaceutical exhibit in connection with the meeting was made. After the reports of the executive committee, the examining board for the western shore, the committee on memoirs and other committees, the chairman of the section in surgery, Dr. Christopher Johnston, Sr., read his report. He referred to the great advances in surgery, but the major portion of the paper was devoted to the consideration of tetanus and erysipelas. In speaking of tetanus he entered somewhat exhaustively into its ætiology, referring particularly to the equine origin of the disease. His conclusions were that it was contagious. The microbic origin of erysipelas was thoroughly considered, as also the different phases and characters of the disease, which he regarded as infectious. The paper was exceedingly interesting, and, although somewhat lengthy, was listened to with much attention. Dr. R. W. Johnston read, as a supplementary report on surgery, a paper on the "Treatment of the Sac in Inguinal Hernia." He favored obliteration of the sac, reviewing the various operations employed for the radical cure of hernia and giving preference to that of Macewen. In the discussion which followed, Dr. J. E. Michael spoke strongly in favor of the use of silver sutures in the closure of the wound, expressing his belief that the cicatricial tissue, in which the wire would become encysted, would add much to the strength of the resulting union. Dr. J. W. Chambers advocated the use of carbolized silk sutures. Dr. Richard Gundry, of the Maryland Hospital for the Insane, read as the annual address a paper on "Some Problems of Mental Action." He considered the effects of inheritance, environment, and individual peculiarities, and cited numerous instances illustrative of the different classes. He spoke particularly of the inhibitory power of the will, if it can be aroused, in restraining particular tendencies, and to a certain extent changing the character of the individual; and of the good effects of muscular exercise in controlling violent tendencies of manner or speech. The address was both interesting and instructive.

The section in practice reported through its chairman, Dr. B. C. Williams, who presented no formal paper. He referred in his remarks to the effect on the *personnel* of the Ninth International Medical Congress through the absence of many distinguished Americans who withdrew from the Congress, which he thought, however, was an era in American medicine. He spoke of the great prevalence of and mortality from measles and pneumonia in Baltimore, and expressed the opinion that the profession of the city should take these diseases into serious consideration and study. He also referred to an existing epidemic of serous diarrhœa which he thought might be due to some atmospheric cause, and it might be looked upon as a foreshadowing of a more serious epidemic during the coming season. He recommended the tincture of yellow jessamine in cases of cerebral congestion and in supra-orbital neuralgia, the remedy to be given in twenty-drop doses every two hours until its toxic effects became apparent as indicated by drooping of the eyelids. Dr. Preston read the formal portion of the report of the section in practice in a paper on "Pericæcal Inflammation." Dr. L. E. Neale, for the chairman of the section in obstetrics, made the section's report in a paper devoted to a consideration of the Cæsarean section *versus* craniotomy in the living child. The sections in Ophthalmology; Psychology; Anatomy, Physiology, and Pathology; and Materia Medica reported through their respective chairmen, and the following volunteer papers were read: "Oxygen as a Therapeutic Agent," by Dr. R. W. Monroe; "Urgent Needs of the Medical Profession," by Dr. J. H. De Wolfe; "Some Thoughts on Bloodletting as a Therapeutic Agent," by Dr. W. Winsey; "A Case of Urethral Stricture with Severe and Unusual Complications," by Dr. C. O'Donovan; "Excision of the Larynx, with the Report of a Case," by Dr. J. H. Branham; "Dietetics in Febrile Diseases," by Dr. H. Saltzer.

The following officers were elected for the ensuing year: President, Dr. John Morris; vice-presidents, Dr. J. E. Michael and Dr. T. B. Evans; recording secretary, Dr. G. Lane Taneyhill; assistant secretary, Dr. Robert T. Wilson; corresponding secretary, Dr. Joseph T. Smith; reporting secretary, Dr. W. B. Canfield; treasurer, Dr. W. F. A. Kemp.

**The Missouri State Medical Association** held its thirty-first annual meeting at Kansas City on April 17th, 18th, and 19th. The attendance was larger than that at any previous meeting. Among the scientific papers offered was the report of a "Case of Gunshot Wound of the Stomach and Liver," by Dr. H. C. Dalton, of St. Louis, in which laparotomy was performed. The wounds in the stomach were closed by Lembert's suture, and that of the liver was closed by a deep suture of

catgut. The patient was fed by the rectum for ten days, and made a good recovery.

Dr. J. P. Parker, of Kansas City, presented an elaborate paper on "Trachoma," which he thinks to be bacterial in origin. He cited Rahlmann and others to prove that the so-called follicular conjunctivitis, Egyptian ophthalmia, and trachoma were different grades of the same disease, presenting distinctions in symptomatology. He recommended the anti-bacterial plan of treatment. In some cases he squeezes out the follicles and applies a solution of corrosive sublimate or, if there is considerable catarrhal secretion, nitrate of silver, but if the disease has been of long duration and there is exuberance of papillæ, he thinks there is no remedy worthy of so much confidence as sulphate of copper.

He condemns excision of the retrotarsal folds, as recommended by Galezowski and others.

In cases with pannus, after all other remedies have failed, he applies finely powdered jequirity, but he advises that the cases be selected with care and be under the complete control of the surgeon, with everything favorable to due care of the eye.

**Treatment of Lepra of the Eye by the Galvano-cautery.**—Secondi ("Rec. d'ophthal.," Aug., 1887) proposes to substitute a compact cicatricial tissue for the leprous granulomata through the medium of cauterization by the galvano-cautery. He excises the granuloma wherever it is possible, and destroys all the spots of corneal infection. He then does an iridectomy as a prophylactic against the intercurrent glaucomatous irido-chorioiditis. The reaction following the cauterization is always very intense, of rapid evolution, and with a tendency to the formation of a compact cicatrix, and the parasitic elements existing in the organism consequently have not time to become incorporated in the cicatricial granulations. The new cicatricial tissue forms a barrier to the plasmatic circulation of the cornea, and thus hinders the spread of the disease.

**The Health of Boston.**—During the week ending Saturday, April 28th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: Diphtheria, 26 cases and 7 deaths; scarlet fever, 15 cases and 2 deaths; typhoid fever, 5 cases and 2 deaths; measles, 55 cases and 1 death. There were also 35 deaths from consumption, 22 from pneumonia, 12 from heart disease, 14 from bronchitis, and 4 from marasmus. The total number of deaths was 186, against 191 in the corresponding week last year.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending April 26th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending April 7th corresponded to an annual rate of 19·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 14·8, and the highest in Manchester, viz., 29·7 in a thousand. Small-pox caused 14 deaths in Sheffield, 1 in Halifax, 1 in Leeds, and 1 in Manchester.

*London.*—One thousand five hundred and ninety-three deaths were registered during the week, including measles, 16; scarlet fever, 20; diphtheria, 16; whooping-cough, 89; enteric fever, 20; diarrhœa and dysentery, 17. The deaths from all causes corresponded to an annual rate of 19·4 in a thousand. In greater London 1,977 deaths were registered, corresponding to an annual rate of 18·7 in a thousand of the population. In the "outer ring" 27 deaths from whooping-cough; scarlet fever, 5; and diphtheria, 8, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending April 7th in the sixteen principal town districts of Ireland was 27·2 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 9·6, and the highest in Drogheda, viz., 46·5 in a thousand. In Dublin 188 deaths were registered, including 4 from whooping-cough; measles, 5; scarlet fever, 3; typhus, 2; and enteric fever, 3.

*Scotland.*—The deaths registered in eight principal towns during the week ending April 7th corresponded to an annual rate of 21·8 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 11·2, and the highest in Aberdeen, viz., 26·1 in a thousand. The aggregate number of deaths registered from all causes was 551, including 10 from measles; scarlet fever, 3; diphtheria, 4; whooping cough, 26; fever, 5; and diarrhœa, 3.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,129,676, during the month of February, 1888, corresponded to an annual rate of 29·9 in a thousand. The lowest rate was recorded in Dordrecht, viz., 21·5, and the highest in Utrecht, viz., 37·7.

*Singapore.*—Three hundred and twenty-nine deaths were registered during the month of February, 1888, including 3 from cholera; small-pox, 8; and fever, 89.

*Marseilles.*—One thousand one hundred and nine deaths were registered during the month of March, 1888, including small-pox, 7; enteric fever, 25; diphtheria and croup, 54; and measles, 34.

*Martinique.*—The United States consul, under date of April 3d, reports that "from the 15th up to the 31st of March there have been 466 new cases of small-pox at St. Pierre and its environs, and 101 deaths therefrom. At Port de France the disease has almost entirely died out, and here it seems to be diminishing. It still rages in the outlying districts in the country, but I can not get the statistics."

There were 734 cases and 193 deaths reported from March 1st to 15th, inclusive.

*Santiago de Cuba.*—One death from yellow fever at the military hospital is reported for the week ending April 14, 1888.

*Havana.*—Seven deaths from yellow fever and 15 from small-pox are reported for the week ending April 14th.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Glasgow | April 7. | 545,678 | 246 | .. | .... | .... | .... | 1 | 2 | 1 |
| Warsaw | March 31. | 439,174 | 203 | .. | .... | 5 | .... | .... | 4 | 4 |
| Amsterdam | March 31. | 389,916 | 176 | .. | .... | .... | .... | 1 | 1 | 2 |
| Amsterdam | April 7. | 389,916 | 148 | .. | .. | .... | .... | .... | .... | 3 |
| Munich | March 31. | 275,000 | 149 | .. | .... | .... | .... | 1 | 3 | 4 |
| Edinburgh | March 31. | 262,733 | 115 | .. | .... | .... | .... | 1 | .... | 4 |
| Palermo | April 7. | 250,000 | 105 | .. | .... | .... | .... | .... | 8 | 3 |
| Belfast | March 31. | 227,022 | 183 | .. | .... | .... | .... | 1 | .... | 2 |
| Genoa | April 7. | 179,407 | 96 | .. | .... | 4 | 3 | .... | .... | .... |
| Trieste | March 24. | 154,500 | 112 | .. | .... | 1 | .... | .... | .... | 4 |
| Trieste | March 31. | 154,500 | 110 | .. | .... | 4 | .... | .... | .... | 1 |
| Stuttgart | April 7. | 125,510 | 58 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | March 31. | 122,000 | 43 | .. | .... | .... | .... | .... | 1 | 1 |
| Barmen | March 31. | 109,000 | 43 | .. | .... | .... | .... | .... | .... | 2 |
| Leghorn | April 8. | 101,718 | 56 | .. | .... | .... | .... | .... | .... | .... |
| Merida, Yucatan | March 27. | 48,832 | 43 | .. | .... | .... | .... | 2 | .... | .... |
| Merida, Yucatan | April 3. | 48,832 | 39 | .. | .... | .... | .... | .... | .... | .... |
| Cienfuegos | April 9. | 40,573 | 22 | .. | 1 | 7 | .... | .... | .... | .... |
| Gibraltar | April 1. | 23,631 | 11 | .. | .... | .... | .... | .... | .... | 1 |
| Curaçoa | April 7. | 25,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Saguà la Grande | April 7. | 15,605 | 7 | .. | .... | 2 | .... | .... | .... | .... |
| Antigua | April 1. | 15,847 | 13 | .. | .... | .... | .... | .... | .... | .... |
| Cartagena, Colo. | April 7. | 13,000 | 8 | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | April 7. | 7,428 | 3 | .. | .... | .... | .... | .... | .... | .... |

United States.

*Boston, Mass.—Small-pox.*—A case of small-pox was admitted to the U. S. marine hospital near Boston, April 26th. The disease was contracted in New York. An additional case was reported in Boston on the same date.

*Key West—Small-pox.*—Three cases and 1 death are reported for the ten days ending April 14, 1888.

*Ship Island Quarantine Station—Small-pox.*—The medical officer in charge reports that a new case developed on the 15th instant among the crew of the Norwegian barkentine Professor Lintner, now in quarantine.

The Secretary of the Treasury has issued the following order:

"In accordance with the terms of the act of Congress, dated March 5, 1888, authorizing the selection of an island in the Gulf of Mexico, or in such pass in the Mississippi Delta as may be selected by the Secretary of the Treasury, for quarantine purposes, and the board ap-

pointed for the purpose of selecting said site having recommended North Chandeleur Island, it is hereby ordered that so much of said island as may be necessary is hereby set apart for quarantine purposes: *Provided*, That the reservation necessary for the purpose of maintaining a light-house shall not be interfered with."

*Sapelo Quarantine Station.*—The medical officer in charge reports under date of April 20, 1888, that the American schooner Lillie F. Schmidt, from Charleston, with small-pox on board, has put into Sapelo, and did not therefore go North as she had previously intended.

*Portland, Me.—Small-pox.*—Two cases of small-pox were reported under date of the 23d instant.

*Cape Charles.*—Quarantine was opened at this station on the 21st instant.

*Florida—Yellow Fever.*—The following official reports are published for the information of health officers:

U. S. Marine-Hospital Service,
District of the Gulf,
*Port of Key West, Fla., Surgeon's Office, February 10, 1888.*

General: I have thought for some weeks that it might be proper for me to make you a personal report in regard to some rumors that cases of yellow fever are occurring upon the main-land. The information coming to me being mainly from local sources, and noticing that the report of Dr. Wylly in the Weekly Abstract of January 20th was rather uncertain, I have hesitated to do so, not wishing to appear as an alarmist.

It seems probable, however, that yellow fever is latent in Florida, and, with the approach of warm weather, danger may be apprehended from its spread northward. Cases of black-vomit are said to have occurred at Sanford, and a lady died a few days ago at Tampa with "acute Bright's disease," while a relative here asserts positively that it was yellow fever. A private letter from Dr. Caldwell states that there will be trouble "when the flowers bloom in the spring"; so that, taking it all together, there seem to be some grounds for apprehension. The weather has not been sufficiently cold to kill out the disease, while some of the local physicians either do not know or do not care to recognize yellow fever when they see it, which adds to the danger of its vivification. Possibly a quiet inspection from Palatka to Manatee, in a month or so by a competent man, would serve to give you the exact condition of affairs in this section before the opening of the regular quarantine season; but I wish to report the current opinion in this quarter, rather than to make any recommendations.

With respect, very sincerely yours,

A. H. Glennan,
*P. A. Surgeon, M.-H. S.*

Dr. John B. Hamilton,
*Surgeon-General, Marine-Hospital Service, Washington.*

Plant City, Fla., *March 13, 1888.*

General: There is yellow fever at this place, and evidently at other places in the State, of which due report will be made.

Suppressive measures are being instituted here. The death-rate is low, and cases generally recover in a short time. The greatest desire is held by the health authorities to not have publicity given to the facts in the case, although rumors are spreading rapidly. No panic exists, and the only anxiety is in relation to the news reaching the general public. It is hoped that the press of Florida will not make prominent notice of the state of affairs.

Drs. J. P. Wall, King Wylly, F. H. Caldwell, J. Y. Porter, and others, advise that no public notice be given until a chance is given for complete checking of the fever here where it is most prevalent. In their view I join for many reasons, and trust that your office will consider this confidential.

The stress of duty and temporary loss of my valise prevent me from writing in detail, and from penning a formal letter.

I hope to take the next steamer for Key West.

Frost this morning.

I am, very respectfully, your obedient servant,

R. D. Murray.

Surgeon-General John B. Hamilton,
*U. S. Marine-Hospital Service, Washington, D. C.*

U. S. Marine-Hospital Service,
District of the Gulf,
*Port of Key West, Fla., Surgeon's Office, March 17, 1888.*

General: I have the honor to state that, in obedience to M.-H. S. letters Nos. 3079 and 3080 (G. W. S.) of February 16, 1888, I came to this port by way of Florida, and in my passage through the State visited De Funiak, Tallahassee, Jacksonville, St. Augustine, Palatka, Sanford, Apopka, Lakeland, Plant City, and Tampa. Having gained sufficient information, in order to lose no more time I did not visit Kissimmee, Bartow, Dade City, Micanopy, Gainesville, and Manatee, as I wished to. A full investigation would have consumed six weeks, which time I could not consider at my disposal.

That I sought for unfavorable facts and had no right to make my mission known, made it difficult to get prompt information. The rumors of doubtful fevers, and the frost and ninety-day theories, compelled nearly all to be reticent, or, at least, unwilling talkers.

I could get no hint of yellow fever on the line of the railroads through the north end of the State. Some rumors were floating at Sanford of the disease having been at Pensacola during the autumn.

At Jacksonville a continued fever, affecting the highest circle of society *only*, has been prevalent for over two months, resulting in from 6 per cent. to 8 per cent. of deaths, which presents the general characteristics of enteric fever. This name is given by Dr. R. P. Daniel, who has treated most of the cases, and is concurred in by Drs. C. J. Kenworthy, J. D. Fernandez, and A. W. Knight. I fancy that Dr. N. Mitchell considers some of the cases more seriously, and know that Dr. J. C. L'Engle (not a practitioner) holds the idea of a yellow-fever wave overspreading the city.

Similar cases had lately occurred in St. Augustine and Mandarin. In spite of local prejudices and a few unproved charges which arouse suspicion, I think the fever at Jacksonville is enteric, but few doctors in South Florida will join in my opinion.

Dr. J. G. Ames claimed that Palatka had cases of yellow fever in the autumn, but was now free from all suspicion or risk of infection.

Drs. Caldwell and Wylly, at Sanford, insist that the town of Sanford had from 100 to 150 cases in the autumn with 6 deaths, and that mild cases are still occurring as late as my visit—the 6th and 7th—and later, one on the 13th. Georgetown and Mellonville, villages near Sanford, present suspicion. Dr. Herndon bitterly condemns the views of Drs. Wylly and Caldwell, while Dr. Montgomery unwillingly assents to it.

Apopka and the thickly settled region around it seem to be free from all hints of past or recent fever.

No suspicion is thrown upon the Indian River country.

Lakeland, the junction of the South Florida and Florida Southern Railroads, is prostrate, in a business point of view, from the presence of imported cases during last fall, but it was impossible for me to get any clew to recent cases from Drs. Perry, Derio, Marshall, Hart, Preston, and Vineyard.

At Plant City, junction of Florida Railway and Navigation Railroad with South Florida Railroad, twenty-two miles east of Tampa, cases have occurred since October 5th—say, 120 cases and 9 deaths. The last death (the ninth) on March 11th; the last case sickened the same day.

On March 8th Mr. Calhoun convalesced at Box Springs, Talbot County, Ga., from yellow fever engendered during one month's stay in Plant City, he having left for his home about February 27th.

Tampa is declared free from fever by Drs. J. P. Wall and J. A. Jackson, but, as there has been no radical system of cleansing in vogue, the place is by no means above doubt. The lady referred to by Dr. Glennan as dying of acute Bright's disease—*i. e.*, the wife of Dr. Bruce—evidently died of yellow fever about the 20th of January.

At the urgent request of Drs. Wall and Caldwell I disembarked from the steamer Tampa on the night of the 12th, and returned to Plant City to supervise some sort of cleaning up of the town. Many acres of dead wood, brush, and rubbish were cleared off and burned; thorough fumigation of every house in the place was begun; lime and copperas were generally scattered about, and bichloriding of all houses and bedding where sickness had occurred was arranged for. Three days of hard work and inhalation of sulphur and pine smoke gave me a bronchitis from which I still suffer. Micanopy, on the Florida Railway

and Navigation Railroad, north of Plant City, and Bartow, south of Lakeland, are presumably danger points at present.

It is evident to me, painful as the idea is, that the lines of railroad from Tampa to Jacksonville are at various points infested by *fomites* which will, at the proper time, give all the trouble prophesied by Dr. Caldwell. The region south of the South Florida Railroad seems to be more secure, except Manatee, but is by no means safe.

I can not think the spasmodic and imperfect cleaning of towns will serve to obviate the recurrence of fever, for there is no power or panic to enforce, or even advise, a general and systematic riddance of all supposable *fomites*, retained air, and niduses. Two weeks' prompt work *now* would minify or avert the danger, but there is no common center of authority or confidence to advise sanitation or to subdue the bitterness of last season's quarantines, follies, and failures.

The Governor will not, it is said, call a meeting of the Legislature. The medical association will not meet till May. The helpless State Health Protective Association is exploded and bankrupt. I wished for privilege to visit more towns to beg for prompt action, but, not caring to ask for it or to take it, will try by private letters to arouse the town authorities to work while some chance offers to avert a summer of terror and death.

I can not see any good to come from a publication of my opinions. Savannah is already warned, and all the chief cities are on the lookout.

Passed Assistant Surgeon Glennan is entitled to much credit for his forethought and courage in informing you of the expected and perhaps inevitable damage to the State.

I am, very respectfully, your obedient servant,

R. D. MURRAY,
*Surgeon.*

Surgeon-General JOHN B. HAMILTON,
*U. S. M.-H. S., Washington, D. C.*

JACKSONVILLE, FLORIDA,
*April 16, 1888.*

SIR: Of course you have known of the existence of yellow fever at Plant City this winter; there have been cases throughout the winter, but it has been only until recently that there has been any alarm, and that occasioned, I presume, by the advent of warm weather. I can not say as to what may be the status of affairs there now, but sent the secretary of my board, Dr. Knight, down to-day, and shall be thoroughly posted by the latter part of the week. I am in somewhat of a quandary as to just what shall be done, providing Dr. Knight reports a prevalence of the disease, as I have no doubt he will. I do not think it advisable and shall not quarantine at present. The lesson of last year taught the many difficulties of quarantining at such a distance. It is my opinion that each infected locality should, by an effective cordon, be isolated. This the counties of Florida can not do, hence, if such a plan is to be adopted, some one with authority and the means for carrying out such requirements as may be deemed best—yourself must take the matter in hand.

I will make a few general statements. Last fall yellow fever probably existed at many points along the lines of the South Florida Railroad and Florida Railway and Navigation Railroad, and may be developed at any of these points later in the season. The State, as you know, has no State board of health, hence every county acts for itself, thus inflicting upon the community quarantines which fail to meet the requirements for various reasons, and destroy commerce. You are familiar with cases of this kind, and I wish your advice as to what should be done. I have made but few statements as to the conditions here, because I know you are already acquainted with them. Any suggestions you may make I shall be happy to receive. Our board represents the most powerful county in the State, and carries great weight. I am anxious that everything possible to avert a spread of the disease shall be done, and if you can suggest some plan our board will try to carry it into effect. I shall write Governor Perry to-night. Pardon this hastily written letter.

Respectfully,

NEAL MITCHELL, M. D.,
*President Duval County Board of Health.*

Surgeon-General HAMILTON.

[Extract.]

HOUSTON, TEX., *April 8, 1888.*

"I have learned from private sources that yellow fever still exists in Tampa. No mention being made in your weekly abstracts, upon which I greatly rely, I have decided that a direct question to you whether or not such is the case would relieve me of all doubts upon the subject."

R. RUTHERFORD, M. D.,
*State Health Officer.*

Dr. Knight's report has not yet been sent by Dr. Mitchell, but an interview with Dr. Knight, published in the "Times-Union" of April 25th, states that he found two cases of yellow fever at Plant City, one of which was convalescent and the other likely to prove fatal. The doctor stated that great activity in the carrying out of the sanitary measures was manifest in the towns visited by him.

*Bartow.*—The municipal authorities deny either that yellow fever is now present, or that there has been any yellow fever at that place.

## ANSWERS TO CORRESPONDENTS.

*180.* For an explicit reply to your inquiry, we would refer you to this Journal for March 24, 1888, p. 334.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### THE RELATION OF PERFORATING INFLAMMATION OF THE VERMIFORM APPENDIX TO PERITYPHLITIC ABSCESS.

BY REGINALD H. FITZ, M. D., BOSTON,
PROFESSOR OF PATHOLOGICAL ANATOMY IN HARVARD UNIVERSITY, AND VISITING PHYSICIAN TO THE MASSACHUSETTS GENERAL HOSPITAL.

THE account of the case of recovery after laparotomy for peritonitis following perforation of the vermiform appendix, recently published by Professor Henry B. Sands, M. D. ("N. Y. Med. Jour.," 1888, xlvii, 197), will be welcomed by all interested in the diagnosis and treatment of the latter affection. Certain of the accompanying remarks, however, are open to criticism. They met with opposition at the meeting of the society before which his paper was read, and the practical importance of the subject makes further consideration seem desirable.

To appreciate Dr. Sands's position it is necessary to understand what he means by perityphlitis. The following are his words (Sands, *op. cit.*, p. 199):

"I shall use the word perityphlitis in its broader sense, including under that designation all inflammatory processes starting from the cæcum or vermiform appendix which lead to the development of a circumscribed tumor. Cases in which ulceration or gangrene causes a slowly spreading septic peritonitis, as well as those in which acute peritonitis is set up by the direct entrance of fæces into the peritoneal cavity, belong to a separate category, and should be considered by themselves."

Although these two categories comprise "allied disorders," the one is called perityphlitis, the other perforative peritonitis. The author inclines to the view that inflammation of the appendix is the source of the former, and states that its perforation or gangrene is the cause of the latter. It does not appear that he recognizes the weight of the evidence that the severer cases of inflammation of the appendix usually terminate in perforation or gangrene of this organ. Nevertheless, in the "broader sense" of the term, his use of perityphlitis is restricted to cases of inflamed appendix which produce tumors and is excluded from those which result in peritonitis by perforation or gangrene.

Each of his categories comprises two subdivisions. According as the tumor is inflammatory or an abscess, so are there two varieties of perityphlitis. Their clinical course is so alike that, at an early period, a mechanical exploration offers the only means of distinction. "The lapse of a week is generally required before the diagnosis in this respect begins to clear up." Nothing is said with regard to the relation of the inflammatory tumor to the peritonæum, but we are told that the abscess is extraperitoneal.

It is maintained that, for practical purposes, it is important to determine that the perityphlitic abscess is outside the peritonæum. But it is stated as irrelevant to the discussion to consider "whether, in the very beginning, such abscesses are sometimes intraperitoneal." Those who oppose his views in this matter, on the contrary, are deeply interested in knowing whether most of the abscesses from an inflamed appendix are not intraperitoneal at the outset, and believe it unwise to wait long enough to permit them to become extraperitoneal.

Their position may be stated somewhat as follows: The abscess from an inflamed appendix is almost invariably the result of its perforation or gangrene. The exceptional cases are so isolated that they are most rationally regarded as due to errors or deficiency of observation. If, then, the perityphlitic abscess, so called, is the result of the same anatomical condition as the acute or subacute perforating peritonitis, and the appendix usually lies free in the peritoneal cavity, it is probable that the abscess resulting from its perforation or gangrene will lie in the same cavity. These views have been very ably presented by Weir (N. Y. "Med. Rec.," 1887, xxxi, 652).

Dr. Sands has been unable to find any evidence concerning the intraperitoneal seat of the abscess in the writings of With and Fitz. I am familiar only with the abstract of the paper by the former ("London Med. Rec.," 1880, viii, 213), and am unable to speak definitely concerning his sources of information. In my paper ("Trans. of the Assoc. of Am. Phys.," i, 1886, 107; "Am. Jour. of the Med. Sci.," xcii, 1886, 321) the evidence was furnished by post-mortem examinations conducted by myself, and the analysis of the detailed reports of two hundred and fifty-seven cases of demonstrated perforating appendicitis. The facts thus obtained were compared with those derived from the study of two hundred and nine cases of so-called typhlitis and perityphlitis. In the latter series there was no actual demonstration of the primary seat of the disease. The comparison of the results suggested in the most striking manner that these affections were not simply allied, but were identical.

From the position assumed by Dr. Sands it is obvious that he requires the evidence for the conclusion that the resulting abscesses early in the disease are, as a rule, intraperitoneal. His own experience will satisfy him of the truth of the statement that "the more protracted the course of the disease, the greater is the probability of the destruction of the peritonæum forming the wall of the abscess. With the perforation of the parietal peritonæum may occur extensive necrosis, purulent and fæcal infiltration of the abdominal walls" ("Trans. of the Assoc. of Am. Phys.," i, 1886, 117).

Case II of his table ("Annals of the Anat. and Surg. Soc.," ii, 1880, 267) states: "Case not seen until late. Integument extensively undermined." Case VI, "Incision at the end of third week. . . . Tumor much higher than usual." Case XIV, "Tumor suddenly collapsed on ninth day; abscess probably ruptured into bladder." Case XVI, "Incision by Dr. Stimson down to subperitoneal fat; no abscess discovered. . . . Patient became worse after operation, until, eleven days afterward, abscess broke into wound, affording immediate relief." Case XX, "Tumor in iliac fossa, fluctuating at outer margin of rectus. Incision on twelfth day." Case XXIII, "On ninth day abscess burst into intestine."

It is not even necessary to consult Dr. Sands's experience previous to 1880 for an illustration of the eventual de-

struction of the parietal peritonæum by the abscess. In October, 1887 ("N. Y. Med. Jour.," *loc. cit.*, p. 203):

"After the usual incision, . . . the peritonæum was found to be lying upon the wall of the abscess, over which it could be freely slid, whereupon I abandoned further operation. , . . At the time of the operation the man was very ill, and I feared he might die unrelieved. Forty-three hours later, however, the abscess ruptured into the wound, and he afterward made a speedy recovery. Last December I operated in the same manner. . . . In this case the abscess did not break into the wound until thirty-nine days after the operation."

It is gratifying, under these circumstances, to learn that "no harm came from the delay beyond the postponement of the desired relief."

If the abdominal cavity is examined during the first week of a fatal case of inflamed appendix, there is almost invariably found a purulent peritonitis, circumscribed or diffuse, or both. If sharply circumscribed, the condition is commonly called a perityphlitic abscess. The pus usually lies within the peritoneal cavity; the walls of the abscess are formed by adhesions between the parietal and the visceral peritonæum. The canal of the appendix generally communicates with the cavity of the abscess by a perforation of the former. There is rarely any evidence of pus in the subperitoneal connective tissue.

The following abstracts from my notes will illustrate these statements:

*Death on the Second Day.*—Fitz. Small intestines in pelvis and right iliac fossa matted together by recent fibrinous adhesions. Pus in pelvis. Appendix perforated.

*Death on the Third Day.*—Meigs ("Phila. Med. Times," iv, 1873–'74, 675). Appendix perforated; center of a large abscess limited by adhesions, but which had recently burst into genereal peritoneal cavity.

*Death on the Fourth Day.*—Fitz. Appendix perforated, apparently surrounded by omentum. Intestines glued together; adhesions firmest in right iliac fossa.

Loomis (N. Y. "Med. Record," viii, 1873, 378). Wall of abscess in left iliac fossa formed by omentum, cæcum, bladder, rectum, and abdominal wall. Perforated appendix entered abscess cavity, which contained sources of offensive pus.

*Death on the Sixth Day.*—Gobrecht ("Trans. of the Coll. of Phys. of Philadelphia," N. S. ii, 1853–'56, 511). Rectal *cul-de-sac* shut off by agglutinated sigmoid flexure, small intestines, and fundus of bladder, forming an abscess containing more than a teacupful of pus. Appendix perforated.

Elliot ("N. Y. Jour. of Med.," 3d s., v, 1858, 332). Sero-purulent fluid escaping from a cavity in right lumbar region formed by peritoneal adhesions. Appendix perforated.

Fitz. Perforated appendix and circumscribed peritonitis.

*Death on the Seventh Day.*—Fitz. Omentum spread smoothly over coils of small intestine, adherent to them and anterior abdominal wall by easily separable fibrinous adhesions. In pelvis a sero-purulent, rather thick fluid. Perforated appendix adherent to pelvic wall. No perityphlitis. (1877.)

Hallowell ("Am. Jour. of the Med. Sci.," xxii, 1838, 127). Cæcum adherent to posterior wall of bladder, to peritonæum lining internal iliac muscle, and to rectum. All matted together, and forming the tumor felt through the parietes during life. Appendix adherent to anterior and lower surface of cæcum.

Burne ("Med.-chir. Trans.," xxii, 1839, 49). Sigmoid flexure and coils of small intestine adherent to each other and to cæcum, the lower and outer surfaces of which were adherent to corresponding abdominal parietes. Perforated appendix under outer half of cæcum.

The following are some of the notes relating to the condition of the parts in question during periods later than the first week:

*Death on the Eighth Day.*—Soule ("Pacific Med. and Surg. Jour.," x, 1867–'68, 115). Eight to ten ounces of thick, creamy pus hemmed in by inflammatory adhesions in right lumbar and inguinal regions. Appendix gangrenous.

*Death on the Twelfth or Thirteenth Day.*—Burne ("Med.-chir. Trans.," xxii, 1839, 55). Peritoneal abscess, size of egg, outer and under side of colon. Walled in by adhesions of the outer part of the ascending colon to the corresponding portion of the lateral parietes of the abdomen. The ascending colon forms the anterior and inner wall of the abscess. Perforated appendix opened into the abscess.

Beach ("N. Y. Med. Jour.," xiv, 1871, 397). Abscess between adherent cæcum, ileum, and appendix. Latter perforated.

*Death on the Fifteenth or Sixteenth Day.*—Fitz. The incision for a perityphlitic abscess, made along Poupart's ligament, entered a circumscribed abscess in the vicinity of the anterior superior spine of the ilium. This communicated with the general peritoneal cavity through the soft, yellow adhesions which united portions of the ileum to the anterior wall of the upper part of the cæcum and to the abdominal wall. The cavity thus opened communicated, by a minute hole between adherent coils of intestine (the ileum), with another (pelvic) abscess described below. On opening the abdomen by the central incision, the intestines were found adherent to each other and to the abdominal wall by rather firm fibrinous adhesions, which were easily torn. The peritonæum in general was thickened and opaque, with abundant fibrinous false membrane. Several of the lowermost coils of the ileum adhered firmly to each other, to the rectum, cæcum, bladder, and pelvic wall. A circumscribed cavity was thus formed, with a wall of thickened, dense, and somewhat trabeculated tissue, of a bluish slate-color. Its contents were composed of a little gas, and some ounces of fœtid, dirty-gray, opaque fluid. In addition were found some three inches of the detached, thin, flattened, discolored, partly macerated vermiform appendix, and a fæcal concretion, partly calcified, as large as a pea. The stump of the appendix, half an inch long, adhered to the brim of the pelvis, and its cavity opened freely into that just described.

*Death on the Eighteenth Day.*—Peacock ("Trans. of the Lond. Path. Soc.," xx, 1870, 182). Firm adhesions between cæcum, ileum, and parietal peritonæum surrounding a large cavity filled with much offensive pus. Cavity extended into pelvis; but fibrous tissue external to peritonæum free from disease. Perforated appendix surrounded by abscess.

*Death on the Twenty-fifth Day.*—Traube ("Berl. klin. Woch.," vi, 3, 1869). Abscess in right iliac fossa, of the size of a fist, bounded behind by the psoas and iliacus, in front by coils of intestine. Appendix ulcerated and perforated.

*Death in the Fourth Week.*—Fitz. In right lumbar region several coils of small intestine were adherent to the mesocolon by recent adhesions. In detaching these, a recent, circumscribed purulent peritonitis was observed, the cavity containing half an ounce of pus. Appendix almost wholly destroyed.

*Death after Some Weeks.*—Joffroy ("Bull. de la soc. anat.," xliv, 1869, 512). Circumscribed purulent peritonitis in right flank and iliac fossa. Perforated appendix contained a pin. Peritonitis about appendix not affecting wall of right iliac fossa.

*Death in the Eighth Week.*—Fitz. The appendix lay behind a loop of the ileum, given off just above the valve, which was quite firmly adherent to the peritonæum of the right iliac fossa and to the posterior wall of the pelvis. A circumscribed abscess, long and flat, holding perhaps an ounce, was found between the intestinal loop and the parietal peritonæum. The canal of the appendix communicated directly with the cavity of the abscess, the lower end of the former being detached and separated by an interval of half an inch; the detached portion firmly adherent to the abscess wall. The wall of the appendix was thickened and dense, constricted at its upper part. Above the constriction was a dilatation, with an ulcer of the mucous membrane as large as the thumb-nail, through which a perforation into the abscess-cavity, one fourth of an inch in diameter, had taken place.

Fitz. Appendix adherent to mesentery by recent adhesions and perforated. Minute abscess as large as a pea. Portal thrombosis and multiple hepatic abscesses.

*Death at end of a Year.*—Parrott ("Bull. de la soc. anat.," xxx, 1855, 54). Three attacks. Abscess incised during the third attack; considerable quantity of bloody pus escaped. Fistulous tract remained, and a year later a pin was extracted from it. Eleven days later, death. Cavity, of the size of a large nut, between perforated appendix and omentum, communicated with the fistula and abdominal cavity.

Within the past few years the evidence that the early stage of the so-called perityphlitic abscess is a circumscribed peritonitis, and that the abscess, when first seen, is intraperitoneal, is, fortunately, being furnished by surgical operations as well as by post-mortem examinations.

*Laparotomy at end of the Second Day.*—Sands ("N. Y. Med. Jour.," xlvii, 1888, 197). Limited peritonitis affecting parietal peritonæum and that of commencement of the large and adjacent coils of the small intestine, which were covered with pus and recent lymph. Appendix perforated. Recovery.

*Laparotomy on the Third Day.*—Krönlein ("Arch. f. klin. Chir.," xxxiii, 1886, 514). Omentum, adherent to intestines and parietal peritonæum in right iliac fossa, covered a great quantity of pus which extended into the pelvis. Appendix perforated. Death.

Bryant (N. Y. "Med. Record," xxxi, 1887, 22). Signs of inflammation more intense in right iliac fossa than elsewhere. Appendix perforated. Death.

*Lateral Incision on the Fourth Day.*—Cabot (unpublished case). Peritonæum raised; incised; drainage; death. At autopsy, coils of ileum adherent to each other and to ascending colon, which adhered to lower edge of liver and abdominal wall. Appendix gangrenous, not perforated.

*Laparotomy on the Fifth Day.*—Barlow and Godlee ("Med. Times and Gaz.," 1885, ii, 852). Early general peritonitis and lymph in vicinity of cæcum surrounding a collection of fœtid pus. Appendix thickened. Recovery.

Weir (N. Y. "Med. Record," xxxi, 1887, 655). Abscess at brim of pelvis contained five to six ounces of pus. Appendix perforated. Recovery.

*Lateral Incision on the Fifth Day.*—Keen ("Med. and Surg. Reporter," liv, 1886, 165). Obscure tumor opened and found to contain nearly a pint of pus. Recovery. (This case is included to show what the contents of the perityphlitic tumor may be in the first week; not as evidence of the intraperitoneal seat of the abscess.)

*Laparotomy on the Sixth Day.*—Homans ("Boston Med. and Surg. Jour.," cxiv, 1886, 388). Beneath the healthy bowel were found the adherent intestines, which were separated and the abscess emptied. Recovery.

Cabot (Surg. Rec., Mass. Gen. Hosp., MSS., 1886). Exploration with the fingers opened an abscess in the right iliac fossa, from which a considerable quantity of foul-smelling pus was evacuated. Death. The autopsy showed a cavity shut off by adhesions between the omentum, intestines, liver, and ascending colon. Appendix perforated.

*Laparotomy on the Seventh Day.*—Elliot ("Boston Med. and Surg. Jour.," cxviii, 1888, 92). Abscess at brim of pelvis, circumscribed by adherent intestines; two to three ounces of pus removed. Recovery.

Bontecou ("Jour. of the Am. Med. Assoc.," x, 1888, p. 106). A pus cavity extended into the pelvis, but appeared to be walled in by adherent intestine at the upper and inner border. The contents were pus and fæces. The symptoms suggested an appendicular source, and aspiration showed pus. Recovery took place.

*Lateral Incision on the Eighth Day.*—Richardson ("Boston Med. and Surg. Jour.," cxviii, 1887, 88). Peritonæum raised from right iliac fossa, punctured, opening enlarged. Eight ounces of fœtid pus evacuated from the tumor. Recovery.

Vickery ("Boston Med. and Surg. Jour.," cxviii, 1888, 40). Operation by Harrington. Peritonæum of right iliac fossa raised; aspirated with negative result, although a slight tender swelling was felt high up by the finger in the rectum. Abscess burst into the rectum on the thirtieth day. Recovery.

*Laparotomy on the Twelfth Day.*—Harrington (MSS. notes). Adherent intestines covered a large abscess in right iliac fossa extending into the pelvis. Fœtid pus. Death.

The evidence above given is of the sort which led the writer to maintain that in cases of so-called perityphlitis and perityphlitic abscess there was present during the first week a circumscribed peritonitis of greater or less extent. The adhesions which limit the process are soft or firm. When firm they are more likely to suggest a tumor; when soft, a tumefaction, since the tension of the inclosed product is likely to be greater in the former than in the latter instance. There is rarely any evidence at this period of the extraperitoneal abscess as defined by Sands. The possibility of its occasional occurrence is admitted.

The seat of the appendicular abscesses during the second week is again a question of fact to be decided rather by post-mortem examinations than by surgical operations, especially if the latter consist in an external wound of two inches, which grows narrower as it increases in depth, the opening into the abscess not being larger than will readily admit the forefinger (Sands, "Annals," *loc. cit.*, p. 261). The positive evidence on record is cumulative with reference to the usual intraperitoneal seat of the abscess during the second week. Those who assume the contrary are called upon to present the evidence, above criticism, in proof of their position.

Should it appear that all abscesses of appendicular origin, opened in the second week, were extraperitoneal, this fact would not militate against the probability, derived from such evidence as is herein given, that most of these abscesses were intraperitoneal during the first week. As two thirds of the collected fatal cases of inflamed appendix, under whatever term they may have been designated, proved fatal during the first eight days, the only chance for the

patients' lives would have been in an operation during the first week. Since one half of them died in the latter half of this week, it is evident that an operation to have saved life must have been performed during the first half of the first week.

The disagreement between Dr. Sands and those with whom he differs is not so extreme as may be supposed. It relates essentially to the time of operating for relief. He believes with them that an early operation is imperative in cases of peritonitis from perforation or gangrene of the appendix, when no tumor is to be made out. If he will inquire into the condition of the appendix when a tumor is present, he will find, almost invariably, that it is perforated or gangrenous, provided he can obtain satisfactory evidence of its condition. Since he favors the early operation in the perforative peritonitis without the tumor, he must eventually advocate the same operation when he is convinced that the tumor as well as the tumefaction is evidence of a perforative peritonitis.

It is the duty of every physician to be mindful that, for all practical purposes, typhlitis, perityphlitis, perityphlitic tumor, and perityphlitic abscess mean inflammation of the vermiform appendix; that the chief danger of this affection is perforation; that perforation in the great majority of cases produces a circumscribed, suppurative peritonitis, tending to become generalized; that, in the light of our present knowledge, the surgical treatment of this lesion offers the best chances for the life and future health of the patient, and that the progress of the disease needs to be watched with knife in hand.

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## THE USE OF THE DILATOR AND INTRA-UTERINE STEM IN THE TREATMENT OF DYSMENORRHŒA AND STERILITY

(RAPID DILATATION).*

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It is the purpose of this paper to show that dilatation, if maintained, is a safe, satisfactory, and reliable substitute for all the cutting operations upon the cervix heretofore used to overcome stenosis, obstruction, and flexion of the cervical canal, and at the same time to show that it is entirely free from the dangers and objections urged against these operations. But do not confound this operation with divulsion, which is to be classed in the same category with division and discission, and which with them should be denounced as barbarous mutilation.

Perhaps, for a better understanding of the terms, it will be well to say here that by division is meant Sims's posterior incision of the whole structure of the cervix up to the vaginal junction, which includes the tissues at the internal os to a considerable extent, and sometimes the fibers anteriorly. Discission is deep incision of the whole cervical canal in several directions, including both the external and internal os. And by divulsion we mean forcible rupture of the fibers of the cervix, usually with scarification of the constricting fibers in every direction, and a consequent tearing and lacerating of the tissues, the latter being a favorite with a prominent specialist in New York, who uses an instrument which he says must be capable of exerting a pressure of two hundred pounds. Should we consider this a justifiable procedure? It is plainly the surgeon's duty always to imitate or restore nature, but never to deface her; nor is he justified in submitting his patient to any more risk than is actually necessary to accomplish the result aimed at.

These operations are extremely apt to be followed by disastrous consequences, either immediate or secondary, and, being unnecessary, should be stricken from all works on diseases of women. It is really astonishing that they still have advocates, who appear to be blind to their dangers and failures, when there is a better, safer, more natural, and perfectly satisfactory operation in dilatation. If immediate and permanent relief follows properly performed dilatation, where exists the necessity or even the excuse for these more dangerous methods? When such a rash and unjustifiable procedure as divulsion is described synonymously with dilatation by most writers upon this subject, it is not strange that we find some who object to rapid dilatation in any form. They say "we fear the dilator; it is a dangerous instrument." I grant it is, in careless hands. So is the razor; but it is a necessity. Should we condemn an instrument because some have gone too far and abused it?

If the dilator is used as I have advised and urged, with extreme care and with just enough force to accomplish a moderate amount of dilatation, the process will be only an imitation of nature, and entirely devoid of danger. It was intended that the cervical canal should dilate. It is what takes place in labor; it is what takes place in abortion; and, although to a lesser degree, the same thing occurs at every menstrual epoch. This mild dilatation, however, would be insufficient in many cases, indeed in most cases, unless something were done to maintain it. For this purpose I have devised this little instrument, which I call an intra-uterine stem.

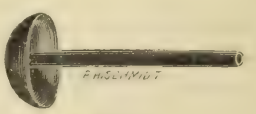


Fig. 1.

It is only two inches long, while the virgin uterus is two inches and a half, and is perforated through its center with a considerable-sized channel, which allows free drainage from the uterine cavity while it is in position. It terminates in a cup-shaped shoulder which prevents further entrance, and, by fitting the cervix nicely, the suction produced aids in its retention.

This is introduced after the dilatation is complete, and retained in position by a cotton tampon. It is retained usually about a week, the patient meanwhile being confined to bed. There are three sizes, 10, 12, and 14 of the Eng-

* Read before the Medical Society of the State of North Carolina at its thirty-fifth annual meeting.

lish scale. The first size is used for the first twenty-four or forty-eight hours, then it is replaced by No. 12, and again in a day or two there will be enough relaxation to allow the introduction of No. 14.

The advantage and importance—nay, the actual necessity—for the use of the stem in the treatment of these cases is evident to any one who will give the matter serious thought. The resilience of rubber (the most resilient of all substances) may be overcome by constant stretching. But it would be a tedious process to overcome the resilience of a piece of rubber tubing at a given point by repeated interrupted stretchings, as compared with a lesser force constantly applied. As an illustration, one end of this little



Fig. 2.

piece of rubber tubing has been stretched over a hard substance which is larger than its caliber, and has been left there until it has lost its resilience in part and assumed the size and shape of the body over which it has been stretched. This is permanent because its power of resistance has been overcome by a force constantly applied.

The stem placed in the cervix after it has been dilated prevents recontraction by exerting a constant pressure upon the constricting fibers. During the first twenty-four or forty-eight hours the stem will be grasped firmly by the cervix; but later relaxation occurs, and a larger size can be introduced, which could not have been done at first without carrying the dilatation further. Can there now be any doubt of the necessity for the stem?

Dr. John Ball, of Brooklyn, ten years ago, in a paper read before the Medical Society of the State of New York, recognized the necessity of a stem to maintain the result gained by the dilator. But his stem was a rude affair, impracticable and dangerous, because it allowed forces operating outside of the body to act directly upon the uterus; besides, it plugged the canal and prevented drainage; and it was abandoned. Another stem has been devised, which is two inches and a half long, curved, and grooved on the side for drainage, but the collapse of the mucous membrane into the groove stops it up and defeats its object. It is used only by its originator for flexions and as a drainage-tube.

To those who object to the stem as dangerous I would say that at one time they did not hesitate to use a sponge or laminaria tent, which blocks the canal, prevents drainage, and provokes constant irritation by its expansive power as long as it is retained. The stem is absolutely clean, allows free drainage, and provokes no irritation if the patient is kept quiet. In an experience of over three hundred cases, I have yet to see one objectionable symptom follow its use.

I first advocated the use of the stem after dilatation in a letter to the "Medical News" of November 15, 1884, page 558. And again in an article of considerable length in the same journal of April 18, 1885, page 431, and gave illustrative cases. In March, 1886, I read a paper on this subject before the Section in Obstetrics and Diseases of Women and Children of the New York Academy of Medicine, which appeared in the "Medical News" of April 3, 1886, page 375. I may appear persistent, but there are some whom I have not yet convinced of the correctness of my principle.

*Indications for the Stem.*—1. The stem is used after dilatation for stenosis to maintain the dilatation and prevent immediate recontraction, which is sure to follow if it is not used.

2. To splint up a flexed uterus after it has been straightened and the flexion overcome by the dilator.

3. To permanently remove obstructions due to hypertrophy or inflammatory thickening, and the consequent hyperæsthesia of the lining membrane of the canal, which it does by the constant pressure it exerts while in position.

4. To secure free drainage from the uterine cavity.

By far the most important indication for the use of the dilator and the stem is to secure free drainage from the uterine cavity of the normal secretions, and of the increased secretions of disease, such as uterine catarrh or leucorrhœa, and thus to forestall and prevent diseases of the Falloppian tubes and ovaries. Remember that every month a woman has a congestion of the pelvis and generative organs which Nature has intended to be relieved by a free flow of menstrual blood. If this flow is natural and escapes freely, the congestion is relieved, and she is better for having properly performed one of her natural functions. If, however, there is any obstruction to this flow at the cervical canal, it accumulates and distends the uterine cavity until the organ resists and contracts to expel it. Repeated efforts on the part of the uterus finally overcome the obstruction temporarily; but such an unnatural and imperfect menstruation tends to continue the congestion rather than relieve it, and, sooner or later, pelvic pain, leucorrhœa, and backache will be manifested as an evidence of this condition. Disastrous consequences are easy to infer after years of such periodically unrelieved congestions.

A uterine catarrh or leucorrhœa produced by congestion consequent upon obstruction of the cervical canal calls unmistakably for dilatation and the subsequent use of the stem to remove the hypertrophy of the canal which is the barrier to free drainage. These discharges, being dammed back, distend the uterine cavity, and are forced back into the tubes, producing inflammations there (such as salpingitis), and sometimes escaping into the peritoneal cavity, producing septic peritonitis. The origin of a great many pelvic troubles, often thought obscure, may be traced to this condition of the cervical canal. The remedy is dilatation maintained, and lifting of the heavy, congested uterus to its proper place in the pelvis by a well-adjusted pessary as soon after the operation as it can be borne.

There is urgent necessity for investigating such symptoms as leucorrhœa and painful menstruation when they first occur in young girls before they produce structural changes in the pelvic organs. Especially is this necessary before marriage, because these conditions are always aggravated after marriage unless immediately relieved by pregnancy. And if this remedy is delayed too long the inflammation will have already extended to the Falloppian

tubes and ovaries, and conception is impossible. Any mother who neglects a daughter complaining of these symptoms has no one to blame but herself if she develops a tumor or ovarian or tubal disease which can only be cured by removal of the diseased structures.

When dysmenorrhœa is associated with stenosis or acute flexion, the indication for dilatation is evident, but when the os is apparently patulous it is not always an easy matter for one of limited experience to determine just when there is enough obstruction in the canal to demand it. If dysmenorrhœa exists in either a married or an unmarried woman, and there is a discharge from the os, which is eroded, and the passage of the sound through the internal os gives pain, even if there appears to be no obstruction, there will be enough inflammatory hypertrophy of the lining membrane of the canal to produce obstruction and hyperæsthesia when it is congested for menstruation, and dilatation should be done. If it has existed long enough to produce tenderness in the ovarian regions, with thickening and enlargement, there is less danger in the operation than in the neglect of free drainage for the discharge.

*The Operation.*—The Sims position and speculum are imperative in doing this operation, especially where there is flexion. And an anæsthetic is essential, because it produces relaxation, and because the operator can work less hurriedly and with greater care when there is no apprehension of giving pain, to say nothing of the suffering saved the patient. Dilatation should never be done at the office and the patient sent home.

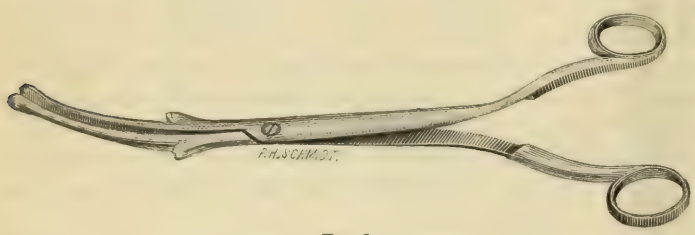



Fig. 3.

The dilator shown here is a modification of the Palmer instrument. The blades are made stouter and broader on their lateral surfaces to prevent digging into the tissues, and the shoulder has been made more abrupt. The thumb-screw attachment has been removed. Any instrument capable of exerting more power than this should never be used.

I never use force in introducing the dilator. If the canal will not admit the beak after gentle manipulation (which is not always the case), I use successive sizes of conical cervical bougies (Hanks's), commencing with the size which the canal will admit without force, and when a No. 11 can be passed the dilator will enter freely. The cervix is seized with an angular tenaculum, which allows more room than a straight one and does not tear out, and is steadied while the dilatation is done without using the screw attachment on the handles; because, should the instrument slip backward (which it is very prone to do), the tissues would be lacerated before the pressure could be removed. When the dilatation has been carried as far as appears necessary (and there is no rule to govern this, for the amount varies with each case), the instrument is removed, and larger sizes of cervical bougies, from Nos. 13 to 16 or 18, are passed successively to insure the completeness of the dilatation, and to prepare the way for the stem.




Fig. 4.

In introducing the stem, the angular tenaculum, which is here shown, is actually necessary to secure a proper direction of the stem, as, with the straight tenaculum, the cup shoulder of the stem impinges against its shank, and deflects the point of the stem from its course before it has entered the internal os (which is the important point), and pressure upon it while the cervix is fixed with the tenaculum pouches the canal in front of the internal os, and the traction upon the cervix elongates or stretches it until it reaches the cup shoulder, and gives the appearance to the stem of being up in position when it is not. A failure will be the result unless this is detected.

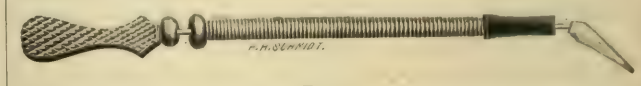



Fig. 5.

The applicator shown is also very necessary in introducing a straight stem, as the curve near the point allows the stem to pass the internal os with more ease, and the sliding spiral on the shank may be moved with the thumb, and the stem, when in position, may be pushed off the bulbous point which holds it during introduction. The stem is removed every day, cleansed and replaced, and is used for one week. The patient may get up on the day after its final removal.

Too much must not be expected of the operation alone. Subsequent treatment is frequently necessary to relieve existing conditions dependent upon the cervical obstruction. Mild cases, treated early, may need little or no attention after the removal of the cause; but in cases of long standing, with inflammatory complications resulting, appropriate treatment is necessary to effect a complete cure, and the operation must be looked upon as an initial step in this treatment. Failures after this operation may be traced to a neglect of this precaution. If treatment is discontinued as soon as the actual dysmenorrhœa is relieved, and the pelvic pain and uterine catarrh due to congestion or inflammatory changes are allowed to go on, while they may or may not cause the patient much annoyance, they are often sufficient to prevent conception.

It is best to use a well-adjusted pessary after these operations (where there is nothing to contra-indicate it) to lift the uterus to its original place in the pelvis, which will aid materially in relieving congestion.

I will append a few cases selected from my case-book to show the different conditions for which this operation is appropriate and effectual.

The first five cases are illustrations of primary or congenital stenosis:

Case I. *Stenosis of both External and Internal Os.*—Mrs. Emily H., widow, aged thirty-five years, commenced to menstruate when eighteen years old, with great pain from the first. She was married when twenty-one years old, and was married for about three years without conceiving. Her dysmenorrhœa was very much aggravated, and in addition she suffered with severe pelvic pain, leucorrhœa, and backache. Examination showed both external and internal os very small, the probe causing sharp pain as it passed the internal os. Dilatation was done under ether, June 14, 1886, and the stem used for one week. She has never suffered any pain with menstruation since, and is entirely well.

Case II. *Stenosis with Pin-hole Os.*—Miss E., aged nineteen years, suffered with dysmenorrhœa since puberty at fourteen years, and it finally became so intense as to be unbearable. A very small cervix was found with pin-hole os and the small uterine probe was passed with difficulty, causing great pain. Dilatation was done under ether, October 23, 1884. Her subsequent menstruations were free from pain, and six months after the sound could be passed with ease.

Case III. *Stenosis at the Internal Os.*—Mrs. M., aged thirty-three years, married ten years, has suffered with dysmenorrhœa since puberty, which was very early. Although her suffering was severe before marriage, it was bearable; but afterward it became so much worse as to render her life one of constant misery. The anticipation and dread of the next period rendered her almost a monomaniac upon the subject during the interval. She had previously sought relief in Edinburgh, London, and New York, and persistently refused to allow the knife to be used. No other remedy was offered her. She was sent to me by Dr. Wakefield, of Jacksonville, Fla., after seeing my first paper on this subject. He stated that he had been obliged to use morphine hypodermically to relieve her suffering, and as this lost its effect he had been frequently obliged to resort to chloroform inhalation to relieve convulsive attacks produced by the severe pain. She was operated upon under ether, May 25, 1885. There was marked stenosis of the internal os. Her dysmenorrhœa has been completely and permanently relieved. Dr. Wakefield wrote me only a few months since that she was in excellent health, and had had no return of the pain.

Case IV. *Stenosis after Persistent Treatment with Sponge Tents.*—Miss Virginia G., aged thirty-five years, commenced to menstruate when thirteen years old with severe pain, which lasted as long as the flow. Every succeeding menstruation was attended with pain of the same character. When eighteen, she lifted something and felt that she had hurt herself. At the next period the pain was very much more severe. Eight years previous to consulting me she was treated with sponge tents every month for four or five months with some temporary relief. When the treatment was discontinued, the pain became as severe as before. The treatment by tents was recommenced and continued for two years and a retroflexion pessary used. For a year previous to seeing me she had no treatment, and her dysmenorrhœa was as bad as ever.

Examination revealed a retroflexed uterus with a pin-hole os, which would only admit a small uterine probe. The same probe passed the internal os with considerable difficulty and caused severe pain. Dilatation was done under ether, April 5, 1887. The introduction of the dilator was out of the question until successive sizes of uterine bougies had been passed to prepare the way. The tissues were rigid and dense and the dilatation was difficult, but was carried to a point where a No. 10 bougie could be passed. Twelve months have elapsed and she has never since experienced the least pain during menstruation, and an ordinary-sized sound can now be passed freely and without giving pain. She has worn a pessary since the operation.

Case V. *Stenosis associated with Epilepsy.*—Miss K., aged eighteen years, commenced to have epileptic spasms when about twelve years old. Her menstruation appeared scantily and with much pain two years later, and with it the epileptic attacks increased in frequency. She had noticed that the attacks were more apt to occur just before and just after menstruation, which was still scanty. Examination showed an undeveloped uterus (only two inches) with marked stenosis. Pelvic contents normal in other respects. Dilatation done under chloroform, February 7, 1887. She had two slight attacks while wearing the stem—the first the day following the operation and the next on the third day—but none after. Her next period was free from pain, normal in quantity, and there was no return of the epileptic attacks. More than a year has now elapsed, and she is enjoying excellent health still.

The next two cases will illustrate secondary or acquired stenosis:

Case VI. *Extreme Stenosis following Miscarriage.*—Mrs. E. S., aged twenty-seven years, married ten years, has menstruated since she was ten years old without pain until after having a miscarriage at five months, when one year married. After this she suffered with severe and constantly increasing dysmenorrhœa, and never became pregnant again. For a year previous to the operation she had convulsions at every menstrual period, until the flow became freely established. Examination showed the uterus in normal position, but it was actually impossible to pass the probe through the internal os. The uterus was sensitive and enlarged. Dilatation was done under ether November 16, 1885, and great difficulty was experienced in introducing the dilator. In fact, it could not be done until a cotton-wrapped flexible applicator was first forced through. The cervix was so rigid and tough that it sprung the blades of the dilator, and it was difficult at first to introduce a No. 10 stem, which was grasped by the cervix as in a vise. In four days, however, a No. 14 stem was introduced with perfect ease. She has menstruated since without any pain whatever, and no convulsions. One year after the operation I could pass the sound or an applicator wrapped with cotton with perfect ease and without giving pain. There had then been no return of the dysmenorrhœa.

Case VII. *Stenosis from Cicatricial Contraction following Division of the Cervix.*—Mrs. N., aged forty, married twice, with one child fourteen years old. She was treated by Dr. Emmet when first married, and her pregnancy was the result. She suffered no dysmenorrhœa at that time. It developed subsequent to the birth of her child, and in 1882 she was treated by a distinguished physician of Washington, D. C., who did Sims's posterior division of the cervix in his office and sent her home. She was worse after this operation. In Galveston, Texas, she was treated in 1885 with sponge tents repeatedly without permanent benefit. And in the spring of 1886 she was treated in Boston by bougies at stated intervals. The treatment was so painful and the result so unsatisfactory that she abandoned it after a few months' trial. When she consulted me, in December, 1886, she declared herself worse than ever before. Dilatation was done under ether, December 29, 1886, and there was found marked stenosis of the internal os from cicatricial contraction following the division of the cervix. The dilator could not be introduced without previous dilatation with conical bougies. After the dilatation was completed the edges of the posterior slit were pared and brought together with silver wire sutures and the stem introduced. The result was perfect and satisfactory one month later, when she left the city. She has since written me that she has no pain during menstruation

The next case will show the effect of dilatation upon a conical cervix:

Case VIII. *Stenosis from Anteflexion with Elongated Cervix.*—Miss A. B., aged twenty four, has menstruated since she was fifteen years old, at first without pain. But for three years past she has been having pain with every period, and every year it has increased in severity. Lately she has suffered severe pain, accompanied with backache for two or three days preceding the flow, which is very profuse. This continued during the whole period, which usually lasted a week. Examination showed constriction at the internal os, anteflexion of the body, and a conical cervix which was greatly elongated, the os being near the vulva. Dilatation was done under ether, January 3, 1887. The constriction offered great resistance to the introduction of the dilator, and the dilatation was accomplished with difficulty with my strong dilator. The stem could not be introduced until it had been previously curved by heating over a spirit lamp. A straight stem was used two days later, however, when a larger size was introduced. A pessary was used soon after the operation to prevent a recurrence of the malposition, and to lift the uterus in the pelvis. Her subsequent periods were normal and free from pain and backache. When seen last, in November, 1887, she was enjoying excellent health, and was still wearing a pessary. The condition and position of the os were normal.

The next three are cases of dysmenorrhœa due to flexions of the uterus producing either stenosis or obstruction.

Case IX. *Anteflexion producing Obstruction at the Internal Os; Conical Cervix.*—Mrs. S., aged twenty-seven years, married one year, has menstruated since thirteen years old, with very little pain before marriage, but it increased after marriage, and she did not become pregnant. Three months before consulting me she jumped from a carriage and felt that she had hurt herself, and since then the dysmenorrhœa has been very much worse, and she has had constant pain in the right side. On examination, I found a conical elongated cervix, and small external os, which was extensively eroded. There was a slight obstruction at the internal os, the sound producing pain as it passed, and the uterus was anteflexed. Dilatation was done, February 15, 1887, under ether. She made a good recovery after appropriate treatment for the granular cervix and endometritis. The dysmenorrhœa and pain in the side were immediately and permanently relieved. She became pregnant after treatment was discontinued, and was confined, January 3, 1888, less than a year after the operation.

Case X. *Anteflexion, Obstruction at Internal Os, and Endometritis; Cap-brim Cervix.*—Mrs. C. H., aged twenty-four years, married two years, sterile, has menstruated since fourteen years old, always with pain, until the flow was freely established. The dysmenorrhœa was much aggravated after marriage. Examination showed anteflexion, obstruction at internal os, the passage of the probe producing acute pain, and a condition of the cervix which has never been described before—viz., the anterior lip of the cervix projected forward like the brim of a cap, and something like what is seen in a bilateral laceration of the cervix which has stood for a long time. But in this case the projecting lip was thin and the cervix behind it was eroded. There was descent of the uterus, which was heavy, and this condition was probably produced by pressure upon an habitually full rectum. Dilatation was done under ether, February 27, 1886. Her dysmenorrhœa was immediately relieved, and a pessary, with appropriate local treatment, soon relieved the eroded condition of the cervix and the endometritis. She became pregnant in June, 1887.

Case XI. *Retroflexion and Obstruction associated with Reflex Asthma.*—Miss R., aged eighteen, was thrown from a carriage when ten years old and injured her back. She recovered sufficiently to lead her parents to suppose there would be no further trouble. When menstruation appeared, it was with an effort, very scanty, and associated with some pain. For two years previous to the operation she had been under my observation, and at almost every period something had to be done to establish the flow. A few days before she would have an attack of asthma, which resisted all treatment, and which would increase in severity every day until menstruation was established, when it would gradually subside and disappear. The flow was scant, and often retarded for a week or more, and the patient was a constant sufferer from backache, leucorrhœa, and dysmenorrhœa. At the period preceding the local interference there was a decided convulsive attack, followed by complete nervous prostration, which decided the future action. Examination revealed an acutely retroflexed, undeveloped uterus low in the pelvis, with obstruction at the point of flexion. Dilatation was done under ether, April 10, 1886. A pessary was used to maintain the corrected position of the uterus, and her subsequent periods for a year were normal, and the asthmatic attacks did not again appear. After this a course of electricity by the faradaic current was necessary to develop the uterus, as the flow commenced again to be insufficient.

Case XII. *Anteflexion, Obstruction at the Internal Os, and Concomitant Enlargement of Left Ovary.*—Miss K., aged twenty-one years, has menstruated since she was fourteen years old, with no pain for the first two years. When sixteen years old she commenced to have pain, mostly before the flow made its appearance, and during the last two years it has been very much more severe than formerly. For six months past the pain has been so severe as to compel her to go to bed and take something to bring on the flow. She has complained also of severe pain in the left ovarian region during the interval, which is very much worse just before menstruation. This continued during the flow, and for some time after, being only slightly relieved by it. Examination showed the uterus anteflexed, low in the pelvis, and sensitive to the touch, but freely movable; and there was enlargement of the left ovary, which was exquisitely sensitive. The external os was patulous, but eroded; and the passage of the sound through the internal os caused excruciating pain, but there was apparently little obstruction. Dilatation was done, November 26, 1887, under ether. The left ovary was examined at the time, and found to be of about the size of a walnut. She menstruated December 17th freely without pain, and there was very much less pain in the ovary. She was treated with applications of cocaine to the vagina during the next interval, and she had little or no pain. Her next period was not preceded by the usual pain in the left ovarian region. Treatment was continued during January. When examined March 1, 1887, there was no perceptible enlargement of the ovary, and no undue sensitiveness about the uterus, which was normal. She has had no pain since.

The following three cases will show how hypertrophy and thickening of the lining membrane of the canal may produce dysmenorrhœa and prevent drainage of the discharges from a co-existent endometritis or catarrh, and how this condition is relieved by dilatation:

Case XIII. *Obstruction at the Internal Os, with Endometritis and Granular Erosion of the Cervix.*—Mrs. C., aged about twenty-seven, married five years, sterile, was sent to me by Dr. Wakefield, of Jacksonville, Fla. She had suffered with dysmenorrhœa since puberty, but it had been very much aggravated since her marriage. She was for some time under the care of a

specialist in Cincinnati, but was not benefited by his treatment. For a year previous to consulting me her suffering at every period was indescribable. Examination showed a very sensitive uterus, low in the pelvis, a granular erosion of the external os, and a chronic endometritis. The passage of the sound through the internal os produced excruciating pain, but there was apparently very little obstruction. Dilatation was done under ether, September 14, 1885. Her next period was entirely free from pain. Dr. Wakefield wrote me a year later that she continued to menstruate without pain, and very recently he wrote that he believed she was pregnant. The delay of the latter result was probably due to her persistent refusal to undergo after-treatment.

Case XIV. *Obstruction at the Internal Os, Chronic Endometritis, and Erosion of the Cervix.*—Miss M., aged twenty-six years, commenced to menstruate when twelve years old. She always had dysmenorrhœa, and when eighteen had to discontinue her studies because of ill-health due to excessive dysmenorrhœa, backache, and leucorrhœa. For three years previous to the operation her symptoms were very much aggravated. The pain preceded the flow, and was somewhat relieved by it, but severe backache followed. Examination showed the uterus low in the pelvis, greatly congested, and there was chronic catarrh of the uterus and erosion of the cervix. The sound produced severe pain as it passed the internal os, but there was not much apparent obstruction. Dilatation was done under ether, February 5, 1887. She menstruated on February 18th without any pain or inconvenience, and her subsequent periods were free from pain. A pessary was used, and the local trouble received treatment. She is now enjoying excellent health.

Case XV. *Obstruction at the Internal Os, Endometritis, and Sciatica.*—Mrs. M., aged thirty-five years, married eight years, sterile, had very little dysmenorrhœa until after she was married, when it increased in severity. For a year previous to the operation she was troubled with sciatica, which was worse just before and during the menstrual period, and which resisted all treatment. Examination showed a heavy sensitive uterus low in the pelvis, with chronic endometritis, and some obstruction at the internal os, the sound producing severe pain as it entered. Dilatation was done under ether, November 6, 1885. Since the operation she has had no dysmenorrhœa or sciatica. She became pregnant one year after.

In conclusion, I would say that I have never been obliged to repeat the operation since I adopted the use of the stem, and have never failed to permanently cure the dysmenorrhœa; while other operators, who do not use the stem, frequently find it necessary to repeat the dilatation.

I regard the statistics of sterility as deceptive and unreliable, inasmuch as it is impossible to keep all patients under observation after operation. In consequence, some are counted upon the negative side before a sufficient time has elapsed to render conception improbable. Of those operated upon, where sterility existed and where conception could have been expected, about one third have conceived.

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**Foreign Universities.**—Professor Nussbaum having vacated the post of prosector of anatomy at Bonn, says the "Lancet," Dr. Schieferdecker, of Göttingen, has been appointed to it. The professorship of botany at Göttingen has been conferred on Dr. Peter, curator of the botanical garden in Munich, who was a pupil of the late Professor Robert Caspery's.

# DESULTORY REMARKS ON THE RECTUM,

## CONSIDERED AS A FIELD FOR SPECIALISTS, ETC.

By WILLIAM BODENHAMER, A. M., M. D.

The following random reflections are the result of reading an article in a late medical journal under the head "The Rectum as a Field for Specialists, etc.":

The rectum, which naturally possesses considerable crookedness and which can never be straight, has from time immemorial been considered as an obscure and an obscene region, once said to be a sort of land of the Cimmerians, where quacks alone lived and thrived, and where humbug darkened the air—a *terra incognita*, as it were, in the dominion of surgery, but into which the surgeon heretofore was loath to venture and cultivate—hence it was almost entirely abandoned to the representatives of the Cimmerii.

But this hitherto dark and loathsome region is now being changed as by magic, and rapidly becoming resplendent, respectable, and inviting, so that multitudes are impressed with the idea that it is a real El Dorado, and but little less alluring than Paradise itself; that it possesses a rich and fertile soil and salubrious climate; hence the present rush of the crowd to it, in order to dispossess the Philistines, and to possess, to occupy, to hold, and to cultivate it themselves, and their posterity after them.

It is now for the first time proclaimed in some of our medical periodicals that the rectum, like the uterus, is justly entitled to be considered a proper field for specialists, ready to be cultivated by their industry and genius. Indeed, the rectum, like the uterus, is already eagerly sought after and cultivated by numberless practitioners everywhere, and of every grade and shade, so that the rectum may now be considered as completely specialized.

It has heretofore always been an enigma why the malformations, injuries, and diseases of the rectum and anus should not be practiced as a specialty, and special hospitals established for their treatment. Let no one say that these maladies can, as a general rule, be treated just as scientifically and successfully by the general practitioner and in our general hospitals. It might just as well be said that the diseases of the eye, the ear, the skin, the lungs, the uterus, and the throat might just as well be treated by the general practitioner and in our general hospitals. If so, why have we special practitioners and hospitals for these diseases, and none for those of the rectum and anus? Why are special professors appointed in our medical colleges for different classes of diseases, and none specially for the diseases of the rectum and anus? Are not these diseases equally as important, as numerous, as painful, and as serious as some of those named, which have those commendable and liberal privileges extended to them?

And, furthermore, the rectum is worthy of all consideration from the well-known fact of its peculiar nervous endowment, which differs essentially from that of any other portion of the intestinal canal, and from the fact that it, with its terminal orifice, is a focus or point of origin for numerous and marvelous reflex nerve phenomena, the subject of which is of the highest interest and importance even in the pathology, diagnosis, and treatment of diseases gen-

erally, and which has been much neglected by the profession generally. It is these reflex influences or disturbances which give the diseases of the rectum and anus their importance as causative factors in the production of various secondary affections, and it is through the reflex function of the spinal cord that most of the effects produced by these diseases are brought about. Sometimes both the spinal cord and the brain are involved in these reflex actions. It is a fact which can be substantiated that in many of the derangements, if not diseases, of the contiguous organs—as the uterus and its appendages, the bladder, the urethra, the prostate gland, the vesiculæ seminales, etc.—the primary affection or cause will often be found in the rectum or anus, in the form either of an anal fistula, an anal fissure, a hæmorrhoidal or a polypoidal tumor, an ulcer, a preternatural pouch, a degenerated sacculus, etc. Numerous cases of this kind have come under the observation of the writer, as well as under that of others. Painful and important as the affections of the rectum and anus are, it is very doubtful whether the sympathetic secondary disorders which follow in their train, and to which they give rise, are not equally, if not more, painful and of greater import. Indeed, there is scarcely any organ in the body that is beyond the sphere of their reflex influence, and that does not sometimes sympathize in their derangements.

Such, then, is the importance of rectal reflexes that a disease of the rectum or anus may even be the primary cause of insanity. A case of this very kind came under the observation of Dr. William C. Wile, of Danbury, Conn., and he reported it to the late International Medical Congress. The case was that of an insane patient who had hæmorrhoids, and who, upon the removal of the hæmorrhoids, was cured of his insanity (New York "Medical Record," September 10, 1887, p. 291). This is the first case on record, so far as the writer's knowledge extends, in which insanity has been attributed to hæmorrhoids, and its cure to the removal of that affection. Now, if the diagnosis of Dr. Wile in this case is strictly correct, and if it is true that anal and rectal diseases may even be the primary cause of insanity, why would it not be both right and proper that every insane patient, whether in an asylum or not, should have his or her rectum and anus carefully and minutely explored by an expert rectal specialist, to ascertain to a certainty whether some affection of the rectum or anus might not be discovered to account for the aberration of mind, and, if found, to remove at once both the cause and the effect by rational treatment?

It is proper here, however, to remark, on the contrary, that almost every species of alienation or aberration of mind has, by some of the most eminent authorities, both ancient and modern, been attributed to the cure, the removal, or the suppression of hæmorrhoids. For the cure of insanity some have even recommended the practice of inducing or exciting artificial hæmorrhoids in those in whom none existed by the application of irritating substances within the anal orifice. According to these authorities, hæmorrhoids are really a therapeutical remedy for the treatment and cure of insanity.

Hippocrates declares that in maniacal affections, if varices or hæmorrhoids supervene, they remove the mania: "*Insanientibus si varices aut sanguinis profluvium per ora venarum quæ in ano sunt* (*hæmorrhoides dicuntur*) *accesserint insaniæ solutio*" ("Aphorismorum," liber aphor. xxi, sec. 6).

Heister says that he had seen a man who at first became hypochondriac in consequence of the suppression of hæmorrhoids. He then was tormented by other symptoms, which terminated in pain of the head (clavus). ("Acta naturæ curiosorum," lib. vi, obser. 161.)

M. Esquirol says that melancholia and dementia are the most frequent results of the cure of hæmorrhoids in some persons ("Maladies mentales," etc., 8vo, Paris, 1838).

M. Larroque entertained the same opinion as M. Esquirol ("Traité des hémorroïdes," 8vo, Paris, 1812).

M. Lacoste was also of opinion that the cure of hæmorrhoids in some persons might result in melancholia or dementia ("Essai sur les tumeurs hémorroïdales," 8vo, Paris, 1820).

This doubtful question, however, whether hæmorrhoids will cause or cure insanity, or whether they will do neither, the writer must leave to the learned medical casuists to determine.

And, furthermore, it is also a well-known fact that rectal lesions, through reflex influence, simulate diseases of the contiguous organs, of which many instances could here be given, some of which have fallen under the observation of the writer, as well as under that of others. For instance, in females it frequently occurs that the irritation or inflammation of a hæmorrhoidal tumor, an anal fissure, an occult anal fistula, etc., communicates itself through reflex action to the vagina, especially exalting the sensibility of the recto-vaginal septum to such a degree that coitus can not be consummated at all, or without the most intense suffering. Such cases are sometimes mistaken and improperly diagnosticated by superficial observers.

Alix reports a remarkable case of hæmorrhoids in which the suffering patient had been treated for a long time for a supposed disease of the uterus without any benefit ("Observata chirurgica," append., p. 400, 12mo, Altenbergii, 1774).

Mr. Cockburn also reports an interesting case of a lady who suffered intolerable pain during the act of coition, and who had been treated for cancer of the uterus, when it was subsequently found that her disease was in the rectum, in the form of hæmorrhoids ("Inability of Coition from Hæmorrhoids," in "Medical Essays and Observations," 5th edit., vol. 11, p. 228, 8vo, Edinburgh, 1771).

It may be proper here also to speak of the rectum, and some of the uses, if not natural functions, to which that very convenient, useful, and profitable organ may be put; verily, it may be employed for almost any purpose, and might with propriety be considered as a factotum, or a kind of combination utensil. It is now very properly used for medication and for alimentation; so that physic or food may be addressed to either end of the alimentary canal, and either end of this conduit, within certain limits, may perform the dual function of ingestion and egestion. The gynæcologist now, more than ever before, makes use of the

rectum for diagnostic and other purposes. The bladder, in complete retention of urine, is sometimes punctured *per rectum*. Lithotomy is sometimes performed *per rectum*. Impregnation is known to have been effected *per rectum* in cases of malformation, and even accouchement in such a case is known to have been effected through the same medium. Anæsthesia has been effected *per rectum*, but it, like too many other therapeutical novelties, had its rapid rise, its grandeur, and its decadence. Gaseous enemata *per rectum* have been resurrected, after having been dead for a century, and now rising again, but they may soon experience their decline and their second death. But it is not necessary to enumerate any further the many uses to which the rectum may be put, nor the therapeutical remedies or surgical measures that are daily and hourly being introduced for the relief of this now besieged and tortured organ; the writer, however, will merely call attention to what a recent writer says upon the function of the rectum: "I am not aware," says he, "that any writer has yet suggested, or attempted to demonstrate, the probability of any other function pertaining to the rectum than that of defecation" (New York "Medical Record," Aug. 15, 1885, p. 173).

This writer, by the use of the word *defecation*, doubtless means the act merely of extruding the fæces from the body. But the rectum, besides the function of expelling its contents, possesses equally the office of retaining and controlling its contents, for it is in no sense an avenue or a rapid transit merely for the excremental matter. The rectum also possesses the function of fæcation—that is, the entire separation of all the remaining nutritive principles from the innutritive matters that may be found in it. The first are absorbed and the last are rejected. The process of fæcation commences in the cæcum and terminates in the rectum. By the term *fæcation* is meant that function of the cæcum, the colon, and the rectum by which the alimentary mass, after having been deprived in the small intestines of almost all the chyle and a portion of its more aqueous parts, is in the large intestines entirely changed in character and consistence, being regularly formed, and acquiring the peculiar fæcal odor, and thus presenting the distinctive characteristics, of fæces. It can, therefore, be easily demonstrated that the rectum has other highly important functions besides that of defecation merely, but time and space will not now permit any further discussion on this particular subject.

Now, if what has been presented in favor of considering the rectum as a proper field for specialists is not sufficient to establish that fact, the writer would like to know h ether there is any necessity whatever for specialism in any disease, or in any other class of diseases. It may, however, be well to remark here that with regard to specialism in medicine the fear is that too many who practice it are not competent, being mere specialists. They are not qualified by experience to practice medicine in general, which is positively a prerequisite, a *sine qua non*, to the successful practice of a single branch of the science. To render the specialist competent to practice in any one branch of medicine, he requires not only a regular education and a general knowledge of the various branches of the science, but ingrafted upon this a minute, accurate, and professional knowledge of the peculiar branch of practice in which he is engaged. Truly the best specialist is the one who has previously practiced medicine in general for some time, or who has taken advantage of a thorough course of clinical instruction in a post-graduate medical school. The general practitioner, as a rule, is considered to possess greater advantages in general medical knowledge and experience than the mere specialist, and can not under any consideration be dispensed with; consequently he is the more important and useful generally of the two. Now, it is not every upstart that can raise and fall the eight notes merely that is competent to teach and to practice music scientifically and successfully, or that is capable of constructing a gamut; neither is every medical tyro who has just passed through the green-room qualified to practice a specialty intelligibly and successfully.

It can not be denied, however, that specialism in medicine is productive of vast good, provided, as has already been observed, the physician or the surgeon practicing any one branch has, in the first place, that general knowledge and scientific attainment which are absolutely necessary for the efficient practice of medicine in its most comprehensive sense.

With regard to the learned or the educational qualifications requisite for the study and the practice of medicine, it may be observed that, while the laudable efforts that are being made to elevate the standard of medical education are resulting in good, it is nevertheless strange that in some parts of our country it is still recognized in practice, if not in theory, that good common sense or mother-wit is all that is requisite to qualify a student to study and to practice medicine, learning not being essentially necessary. Now, it may be observed of common sense that it is an excellent ingredient when well mixed with learning, and is then indeed commendable, but they place too high a value upon common sense alone, making it superior, as it were, to learning, which is even a higher estimate than that placed upon it by that very profound philosopher, Sancho Panza, ex-Governor of Barataria, whose axiom is, "*An ounce of common sense is worth a pound of learning.*"

"It is remarkable," as an eminent author says, "that the science of medicine, by some singular perversion of fact, is regarded by so many generally as one of very easy attainment by almost anybody; but it nevertheless is one which, as the practitioner often finds when too late to remedy, requires learning, study, much patient toil and hard-earned experience, and which, even at the end of a long and laborious life, is often left still unlearned."

In conclusion, the writer would respectfully invite both medical teachers and students, if they have not already done so, to read and study well that very ancient and very remarkable brief treatise on the law of Hippocrates. His rules and precepts for the education and edification of a physician are, in the opinion of the writer, the most admirable ever written; indeed, it is doubtful whether there is any production extant on education to qualify for any profession equal to the rules and precepts which Hippocrates gives for the qualification of the physician. His rules for the attainment of this noble purpose he presents under six prerequisites or qualifications, as follows:

1. Natural talents. Is his genius adapted to the science and the art? Has he received from nature an exquisite discernment, a sound judgment, a character in which mildness and firmness are combined?

2. A good education, so that he may be able and prepared to study the whole circle of science; ignorance proves but a poor foundation, and an empty treasury at all times; he must be a master of his profession, and not a nominal physician merely.

3. He must have a competent instructor.

4. Early study; the student must begin the study in early youth.

5. The student must have industry; he must combine the love of labor with the desire and emulation of all that is amiable and praiseworthy.

6. He must have ample time, so as to continue long in the study.

The writer has given the foregoing brief synopsis as a mere outline, and refers the reader to the law itself ("Hippocratis lex," "Hippocratis opera omnia Graece et Latine ab Anutio Foesio," tome i, p. 1, folio, Genevæ, 1657).

Now, if these very ancient and excellent rules and precepts of Hippocrates were at once adopted in all our medical colleges, and strictly adhered to and firmly enforced, a very great reformation in the science and practice of medicine would soon be perceptible.

27 East Forty-sixth Street, *April 16, 1888.*

## WOUND OF THE STOMACH.

*RECOVERY.*

By C. C. JONES, M. D.,
SNOW HILL, ALABAMA.

On September 12, 1887, Enos B., a colored lad, nineteen years old, got into an altercation with his brother, who stabbed him with a pocket knife, emptying the contents of the stomach through the wound externally.

Enos had, only a little while before, indulged in a full meal of potatoes, meat, bread, and gravy. He walked nearly half a mile after receiving the wound. I saw him about two hours afterward. I found him lying on a pallet, with a gaping wound, over two inches in length, made diagonally across the lower margin of the epigastric region to the left, and from it protruded a large mass of omentum, the air rushing in and out at each respiratory act. He had no exhausting hæmorrhage or alarming shock. His pulse was fairly good.

It was not possible to determine the extent of the internal injury without enlarging the wound and exploring the abdominal cavity. After cleaning the patient, my friend, Dr. B. W. Watson, who had called with me to see him, kindly administered chloroform. The abdomen was well bathed with warm carbolized water. The external wound was enlarged to about three inches or three inches and a half. The stomach, being wounded, was drawn down and partially out and emptied of its remaining contents by gentle squeezing. After contracting, the wound in the stomach measured three fourths of an inch. This was closed by interrupted sutures of fine carbolized silk placed one eighth of an inch apart. The knots were cut close. The stomach was washed off in the carbolized water and returned into the abdomen. Further explorations found no lesions. The abdominal cavity was freed from blood and food. The omentum still protruding was also cleansed (which was no small job) and returned to the cavity.

The external wound was closed by interrupted sutures in the usual way. Over this was placed a carbolized compress, and over all a broad bandage, encircling the body, was tightly drawn. He soon rallied from the anæsthetic and vomited, bringing up a small quantity of grumous fluid—no blood.

A hypodermic of one fourth of a grain of morphine was administered and the patient left with strict instructions not to take anything unless thirst became intolerable, when he might be given a spoonful or two of cold water.

I saw him the following morning. He had rested well; no pain, no tympanites. Had passed urine without difficulty. Temperature, 101° F.; pulse, 90.

The following day the temperature and pulse returned to the normal and remained so. It was not practicable to resort to rectal alimentation, however desirable it might have been in this case. The family had not the facilities for doing it, nor a sensible nurse to whom it could be intrusted. So, after twenty-four hours, I had to permit my patient to venture on a little milk and lime-water. It agreed with him, and was then allowed in small quantities every three hours.

On the third day his bowels were moved by an enema and afterward remained regular, acting every other day. The wound healed kindly. The sutures were removed on the eighth day. In two weeks he was allowed a semi-solid diet and permitted to walk about. In two months he was able to resume his ordinary labors, not having suffered any more discomfort from his wound than is to be expected from a cut finger or simple wound of any part, barring, of course, the restricting of his diet.

This case helps to illustrate the importance of enlarging abdominal wounds or making exploratory incisions into the abdomen, under the best antiseptic precautions, for the purpose of ascertaining and rectifying as far as possible all lesions of the abdominal viscera. In this way, no doubt, many lives can be saved that have heretofore been sacrificed to false teachings or the timiidty of the profession.

## THE MOST IMPORTANT ANTISEPSIS.

By L. BARKAN, M. D.,
BROOKLYN.

The healthy human organism may within certain limits be considered an apparatus for self-disinfection. Innumerable quantities of germs surround, pervade, and pass through it without leaving any appreciable trace of their contact. Fortunately, not all of these germs are virulent, many of them are innocuous, and even the dangerous ones vary in degree of harmfulness.

In the light of recent bacteriological researches, we are justified in assuming that most of the constitutional diseases are due to infection by some characteristic bacillus, but it would be erroneous to infer that every one of these bacilli, by its invasion of the human system, in each individual case produced the characteristic systemic disturbance of which it is known to be the cause. Could all these invisible hordes of tormentors and slayers enter the system at the point of attack, then our populous cities would be but vast hospitals, and no single individual would reach the number of years which now constitute the prime of life.

A healthy and well-nourished body is endowed with great powers of resistance to the action of most, if not of all, species of bacilli, thus rendering itself aseptic by virtue of its own healthfulness. A few references to actual experiments will suffice to show the correctness of this view. Professor Traube experimented in 1876 by injecting a quantity of pus into healthy dogs. After twenty-four hours he found no trace of it in the system; his results, however, were different when the quantity was increased. Dr. Trudow inoculated fifteen rabbits with tubercle bacilli; ten of them, which were kept in damp, impure air and on improper food, developed tuberculosis. The five others were permitted to run about in good, pure air, and were well nourished; of these, only one died of a resultant tubercular affection, and four remained well. The experiments of Brown-Séquard, which were made before those of Dr. Trudow, yielded still better results, since of all the animals inoculated with the tubercular virus, not one was lost. He ascribed these results to their being kept in a well-aired open place, supplied with abundant nutriment.

In patients who had only recently developed symptoms of phthisis, Brown-Séquard, Stokes, and Blake aborted the disease by the same treatment of saturating the system with pure air and good food. It must be apparent, therefore, that the power of self-disinfection depends chiefly upon two factors: 1. Thorough impregnation with oxygen of the air. 2. Generous alimentation. These agents must be relied upon to give to the blood that richness, vitality, and vigor which enable it to ward off an invasion of bacterial foes, and by the aid of which they can be most speedily repulsed and driven from the system, even though they have entered the circulation at a vulnerable spot. In addition to these two important factors, several other hygienic requisites must not be overlooked, such as congenial temperature, sunshine, clean dry soil, pure water, moderate exercise, etc., all of which are valuable as accessories to produce the full beneficial effect of pure air and abundant food.

The power of self-disinfection is greatly impaired whenever a serious illness, aggravated by febrile symptoms, takes possession of the body, but it is gradually restored when the illness subsides. Of all the duties of the physician, none is more important than to aid the prostrate organism in its struggle to recover the lost power of self-disinfection, not only by antiseptic chemicals, which are of excellent service wherever their application is admissible, but also by surcharging the system with pure air and nourishing food.

Trite as it may seem, I can not abstain from dwelling upon the necessity for thorough instruction of the attendants in the detail of this work, particularly if the nurses lack professional training. If the physician will explain that all discharges must be quickly removed and all vessels disinfected; define the details by which, according to the location of the sick-room, the most effective ventilation can be accomplished without exposure of the patient; take the trouble to lay down strict rules of what and how much the patient must eat and drink during stated intervals; and insist upon having a full record kept of the food ingested, he will find himself amply repaid, both by the better condition of his patient and the clearness with which he can trace the effect of his treatment. I do not mean that the rules as to particular articles of diet must be inflexible; on the contrary, considerable latitude must be allowed in this respect according to the circumstances, the age, and peculiarities of the patient. But it is necessary that such food be selected as is most nourishing and digestible, and that a fixed minimum quantity be prescribed for ingestion during every twenty-four hours, at least during the critical periods of the disease. Up to within a few years ago the physician was almost powerless to nourish his patient during those periods when the stomach, weakened from fever and suffering, rebelled against its work. Indeed, it is pitiable to think how many lives have been lost from sheer lack of some food which the enfeebled digestive apparatus could prepare for assimilation, so as to tide over the dark hours of the struggle and put the exhausted organism once more on the road to health—to a gradual and complete self-disinfection. But of late years a most important weapon in defense of human life has been placed in our hands with the invention of peptonized foods, particularly that class of preparations known as "beef peptones." Unlike the ordinary meat extracts, they contain not only the stimulating portions, but also the nourishing, life-sustaining albuminoids of the beef in the predigested form known as "peptones," in which they are nearly ready for immediate absorption and assimilation. Thus they combine the two cardinal requisites for reconstruction of tissue: highest nutritive value and greatest digestibility.

Unfortunately, the great body of the profession fail to recognize the importance of peptones for the prevention of the marked loss of tissue in prolonged febrile movements and in other conditions in which digestion is impaired. Having used beef peptones (generally Rudisch's "sarco-peptones") in a great number of cases during the last four years, particularly in typhoid fever, dysentery, cancer of the stomach and rectum, phthisis, scarlet fever, diphtheria, anæmia, vomiting of pregnancy, gastric troubles of all kinds, nervous dyspepsia, Bright's disease, ulcers of the stomach, peritonitis, and cholera infantum, I have come to the conclusion that beef peptones are more nutritive than milk, that the stomach retains them when it tolerates no other food, that infants and aged people can be nourished by them when milk is rejected, and that there is no therapeutic or dietetic agent which in disease will repair bodily waste as quickly, as effectually, and with as little assistance by the digestive organs as beef peptones. I am confident that in many of my own cases, both of children and of adults, a fatal termination has been averted by the timely use of beef peptones.

Appreciating the fact that good air and good nourishment must be chiefly depended upon to check the destructive work of bacilli in the living organism, and possessing in beef peptones a valuable agent to support vitality in the decisive hours of this mighty contest, I now assume charge of the most serious cases with a feeling of greater power and usefulness than heretofore. The records of my case-book will bear out my belief that by a more general adoption of these views and of the dietetic agent mentioned, many valuable lives could be saved or prolonged.

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## CANCER AND ERYSIPELAS AS ANTAGONISTS.

Whatever novelty there may be in the theory of bacteriotherapy, the device of fighting one disease with another is nothing new; indeed, it is daily exemplified on the grandest scale in the practice of vaccination. To set our destroyers at war with one another is an alluring piece of strategy, but our satisfaction with it must be tempered by the reflection that our own bodies necessarily constitute the battle-ground, and that even an attenuated virus may sometimes do serious mischief. On the whole, however, the good achieved by the plan far outweighs its drawbacks, and any enlargement of its field is calculated not only to attract scientific interest, but also to raise hopes of immediate strides in the work of obtaining the mastery over disease. Such being the case, too much importance can hardly be attached to an experiment recently made by Dr. Axel Holst, of Christiania, who, as he relates in the "Centralblatt für Bakteriologie und Parasitenkunde," has attempted to cure cancer by inoculating the patient with erysipelas, acting under the advice of Dr. Malthe and Dr. Koren.

The patient was a woman, about forty years old, who had had a cancer of the right breast removed in the spring of 1887. In the course of a few months, recurrence had taken place in the scar, and the skin had rapidly become the seat of extensive carcinomatous disease, so that by August almost the whole of the integument of the right side of the front of the chest presented a raw surface with subjacent cancerous lumps, accompanied by glandular swellings above the clavicle. As to her general condition, however, the woman was still in blooming health. Two attempts were made to inoculate the open surface and the adjacent unbroken skin with beef-peptone-agar-agar cultivations of Fehleisen's *Streptococcus erysipelatos*, and the second one was successful. For two months and a half the favorable effect was very striking; islands of epidermis formed, considerable marginal cicatrization took place, and the whole open surface underwent a sort of shrinking. Unfortunately, however, the improvement now ceased, the new cicatricial tissue gave way, the lymphatic glands began to enlarge again, a tumor appeared in the other breast, the inner aspect of the arm became involved, and the patient's general condition went from bad to worse until it was seriously questioned whether she would not have been better off if she had been let alone. One noteworthy feature of the case was that the erysipelas never altogether subsided, but became chronic.

The experiment must, of course, be counted as a failure, but there is this consolatory feature about it, that the case was one of the most unpromising for the success of treatment of any sort. Possibly in more favorable cases the final results may yet be made satisfactory, notwithstanding Neelsen's observation, cited by Holst, of a case of mammary cancer in which a casual attack of erysipelas seemed to hasten the course of the malignant disease.

## THE CHOICE OF A WET-NURSE.

This is a question that often involves the practitioner in responsibilities and perplexities that ought to be lightened for him as much as possible, but it is one on which the text-books are for the most part not very explicit. It was recently treated of somewhat in detail by Professor Budin, of Paris, in a clinical lecture, published in the "Revue générale de clinique et de thérapeutique."

The first point mentioned by M. Budin—and it is a point by no means uncalled for—is that, when the physician goes to an agency to select a wet-nurse, he should make up his mind to carry off the best one, and not allow his patient's natural preference for a good-looking one to interfere with this resolution. The nurse should be between twenty and thirty years of age, and from two to four months should have elapsed since her confinement, so that she may be practically past the dangers of pelvic inflammation and of trouble with the nipples or the breasts, and her child may be old enough to show whether it is syphilitic or not. But she should not be too long past her confinement, for then her milk is apt to contain too much fatty matter, although there are numerous exceptions to this rule, and some women's milk is excellent at the end of fourteen months. In Paris, a woman who has before gone through the period of lactation is rightly preferred, both because she is more experienced in giving suck, and because the guarantees of her fitness are stronger. If she is from the country, she should have been long enough in town to have become acclimatized.

While it is true that robust women generally make the best wet-nurses, it is not rare to see thin and puny women do well, provided their appearance is not due to disease. The color of the hair is of little consequence, but a good state of the teeth is important, for without it mastication and digestion are apt to be imperfect. The neck should be examined for glandular enlargements. The breasts are to be judged of, not by their size *en masse*, much of which may be due to subcutaneous fat, but by the actual volume of the gland, in which the granular acini should be readily perceptible to the touch, and over which the skin should glide easily. The venous circulation in the skin of the breasts and between them should be free, the nipple should be neither too large nor too small, and the milk should flow readily. The milk may appear clear or thick, according to the time of the examination. If the breast has not been emptied for some time, it will be watery; after a little time it will become thicker. But the examination of the milk is of little consequence compared with that of the nurse's child, care being taken to make sure that the child shown is really her own, and not one borrowed for the occasion, also that it has had no food but its mother's milk. If it is hearty and well developed, with firm flesh, if its genitals and anus are free from redness, and if

its passages are of good color, the chances are that the mother will make a good nurse.

Incidentally, M. Budin alludes to a question that is not likely to come up often in this country—that of whether a married woman or a single one is to be preferred. Each, he says, has advantages and disadvantages; if the girl's morality is the more doubtful, the married woman is the more expensive, to say nothing of possible annoyance from her husband. He states that wet-nurse agencies are better managed in Russia than in France. Although the expense is greater, the patron is entitled to three changes within a period of two months, without additional charge, so that it is for the interest of the establishment to provide a good nurse at the outset. When it is practicable, it is better to engage the nurse beforehand; she may be made to come with her child a week or two before the lady's confinement, so that time may be allowed for a leisurely inquiry into her capability. This advice, of course, is intended for cases in which it is known that the lady is not to nurse her baby herself.

The health of a wet-nurse should be attended to after she enters upon her duties. She should take frequent baths; she should go out every day; her ordinary food and mode of life should not be changed too suddenly, and particularly too much meat and wine ought not to be given to a woman from the country. If her milk shows signs of failing, a change need not be made at once; with a little patience, supplementing the supply with cow's milk or ass's milk, an abundant flow will often set in again. The re-appearance of the menses will do no harm.

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## COLD AS A CAUSE OF DISEASE.

In the older text-books of medicine exposure to cold figures prominently among the causes of a great number of diseases, both acute and chronic, especially inflammatory affections. One can hardly have kept an eye on the medical literature of the last ten or fifteen years, however, without having become aware of the tendency to restrict the scope of this ætiological factor more and more. This has doubtless been owing in great part to the increasing extent to which the germ theory of disease has met with acceptance, but probably it has been due also in some degree to the growing recognition of the fact that many acute attacks are but the result of antecedent disease—a recognition which may perhaps be said to have culminated in the present skepticism as to the existence of such a disease as idiopathic peritonitis. It is only here and there that this change of ætiological doctrine has dawned on the laity, and patients still go on recounting that on a certain occasion they "took cold," and alleging that that is the cause of their ailment, whatever it may be. Even the medical mind is hardly prepared for so entire a dethronement of cold as a cause of disease as Dr. William H. Ransom lately sought to effect in a presidential address delivered before the Medico-chirurgical Society of Nottingham, England, an abstract of which is published in the "Lancet" for April 21st.

It would be unfair to judge of the length to which Dr. Ransom went by the fact that he closed a list of diseases of which cold had been alleged as the special cause with the expression "and with more justification frost-bite, chilblains, and chapped hands"; for he doubtless did not mean to question the agency of cold in the production of those accidents. Still, his denial of the justice of imputing diseases to the agency of cold was more thorough than any other that we remember to have seen. He founds his argument largely on the fact that many of the affections commonly imputed to cold are not more prevalent in cold seasons than at other times, or in high latitudes than elsewhere, on an alleged tendency to underrate the numerical force of the instances in which exposure to cold fails to be followed by disease, and on the theoretical improbability that an agency acting on the external surface should be capable of lighting up an inflammation now of one internal organ and now of another. Other arguments are advanced, and the whole article is written in a most philosophical way; in particular, it gives a pithy and excellent outline of the definition of inflammation as "the reaction of a living tissue to an injurious irritation." But we think we have adequately stated the main points in the position taken. To the general drift of the address we have no objection to make, for it is in consonance with the new light that is being shed on ætiology at the present time; but perhaps Dr. Ransom has erred in inferring that, because cold is not the *sole* cause of a certain illness, it is not *a* cause.

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## CORPULENCE AND ITS ATTENDANT EVILS.

Professor E. Heinrich Kisch, of Prague, has contributed to the "Deutsche Medizinal-Zeitung" an article on the cosmetic therapeutics of corpulence, and he justifies himself in viewing the evils of corpulence from the cosmetic point of view with the reflection that it is commonly not the involvement of the general health that leads corpulent persons to seek for medical advice, but the disfigurement that obesity entails. Foremost among the blemishes to which it gives rise he ranks excessive size of the breasts in women, which, as he has often observed, leads them to undergo dietetic and medicinal courses of treatment so severe as to bring about a sort of marasmus. He alludes to the advice given by Galen and Cælius Aurelianus to the Roman ladies thus affected to use poultices of Lemnian earth, and adds that the fashionable ladies of Paris endeavor to restrict the growth of their breasts by compressing them with hemispherical cases. But he has not found compression to be of any avail, and he advises against the internal use of preparations of iodine, for, although it reduces the size of the breasts, it does it at the expense of the general health. Local applications are more to be recommended, especially an ointment composed of about fifteen grains of iodoform deodorized with Tonka beans, half an ounce of vaseline, and two drops of oil of peppermint. This is to be rubbed into the breasts, and they are then to be swathed with linen moistened with a warm solution of one part of alum and five parts of acetate of lead in a hundred parts of distilled water, impermeable paper being laid over the whole. The dressing should be changed night

and morning, and its use should be continued for several weeks. To prevent flaccidity and wrinkling of the breasts as the fat disappears, he prescribes frictions with some aromatic spirit and suspension of the organs with a bandage.

It is in the abdomen that corpulence is the most obstinate. Here iodine applications are of little avail, and massage is most useful. The author commonly prescribes frictions with a solution of potassium iodide in twenty parts of vinegar of squill and the constant use of a girdle, preferably of deerskin. The excessive sweating of the corpulent is best treated by the local and general application of cold water perfumed with simple or aromatic vinegar. The use of protective pieces of rubber, oiled silk, etc., in the armpits is injurious, because it interferes with the vaporization of the secretion and causes it to soak and irritate the epidermis. Irritations of the skin from chafing, as under pendulous breasts and in the fold of the groin, may be mitigated or prevented by dusting the parts several times a day with a powder composed of one part of salicylic acid and fifty parts each of Venetian talc and rice-starch. Over-activity of the sebaceous glands, comedones, rosacea, and brownish, rusty pigmentations are apt to accompany corpulence, and they are to be treated by measures aimed at the corpulence itself, especially careful regulation of the diet. For the baldness that is often associated with an excessive development of fat in young persons the author states that he knows of no good remedy.

## *MINOR PARAGRAPHS.*

### THE LATE DR. AGNEW.

The current number of the "Archives of Ophthalmology" contains an exceedingly appreciative obituary notice of the late Dr. Cornelius Rea Agnew, signed by the editor, Dr. Knapp. "All his professional work," says the notice, "both private and public, was distinguished by a spirit of caution, neatness, and deliberation. He was one of the most adroit surgeons. The writer of these lines, who often had the privilege of witnessing him at his work, never saw him do a clumsy operation."

### PRECAUTIONS AGAINST THE SPREAD OF INFECTIOUS DISEASES IN PUBLIC INSTITUTIONS.

On the 7th inst., the president of the city Board of Health, acting under instructions from the board, addressed a circular letter to the managers of the general hospitals and dispensaries, calling attention to the necessity of suitable facilities for isolating patients with infectious diseases. This action is wise, for too great pains can not be taken in the direction indicated. It is also well that the board refrains from insisting on any specified provisions, at least for the present, but leaves them to the thoughtfulness and public spirit of the managers of the various institutions.

### MEDICAL MEN IN GENERAL LITERATURE.

We have often commended the efforts occasionally made by members of the profession to write of other than medical subjects. We wish they were more frequent. One of the latest that have come to our notice is the opening article in the current number of "Scribner's Magazine," entitled "In the Steamer's Track," by Dr. William Perry Northrup. It is a spirited sketch of the cruise of a new York pilot-boat, and of her company's brave but unsuccessful attempt to make port with a derelict bark. We hope that Dr. Northrup will yet essay something more intricate, for this little story gives ample token of his ability to do so successfully.

### THE RELATIVE FREQUENCY OF AMPUTATION IN THE MALE AND FEMALE.

In a pamphlet issued by Mr. A. A. Marks, the well-known manufacturer of artificial limbs, there are some interesting statistics in regard to the relative frequency of amputation in the two sexes. Out of a total of 8,606 cases in which artificial limbs have been furnished, he finds the records of 3,500 sufficiently full to enable him to make the following estimates: Eighty-five per cent. of amputations are of legs and 15 per cent. of arms. Of legs, 49 per cent. are right, 46 per cent. left, and 5 per cent. both. Seventy-eight per cent. of amputations occur in males and 22 per cent. in females. In the latter, amputation of the right leg is more frequent than that of the left, and the proportion of double amputations in males is nearly twice that in females.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 8, 1888:

| DISEASES. | Week ending May 1. | | Week ending May 8. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhus fever | 0 | 0 | 1 | 0 |
| Typhoid fever | 11 | 9 | 12 | 1 |
| Scarlet fever | 209 | 38 | 213 | 32 |
| Cerebro-spinal meningitis | 6 | 7 | 5 | 6 |
| Measles | 93 | 6 | 134 | 10 |
| Diphtheria | 162 | 59 | 186 | 46 |
| Small-pox | 17 | 7 | 17 | 4 |

**The late Dr. Agnew.**—The following is an extract from the minutes of the annual meeting of the Alumni Association of the College of Physicians and Surgeons, held on the 9th inst.:

*Resolved*, That the following memorandum be entered upon the minutes of the present meeting, and that a copy of the same be sent by the secretary to the family of the deceased and to the New York "Medical Record" and the "New York Medical Journal":

It becomes our sad duty to record the death, on Wednesday, April 18th, at his residence in this city, of our associate, Cornelius Rea Agnew. He was the first president of this association after it became incorporated, in 1873, and he served it faithfully in this capacity for a number of years. He held the same office, for the second time, at the time of his death. It was largely through his influence that the association was changed from a formal and only feebly active society into an agency for the direct and vigorous promotion of the interests of the college in its work of medical education. From the very first up to the time of his death he never ceased to contribute time, earnest thought, and liberal offerings of money toward the attainment of this object. It is a pleasure for us now to think that he had the satisfaction, before he died, of witnessing the first fruits of his own planting and unwearying cultivation. Without his energetic and untiring co-operation and wise counsel it is highly probable that a few spasmodic efforts at the beginning would have soon given place to the lifelessness that characterized the earlier period of the association's existence.

To his sorrowing widow and children we would extend our

sincere and heartfelt sympathy, begging them to accept from us the assurance that the memory of their distinguished husband and father will be warmly cherished by the numerous alumni of the College of Physicians and Surgeons in the City of New York.

[Signed.] A. H. Buck,
G. G. Wheelock.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending May 5, 1888:*

Oberly, A. S., Medical Inspector. Granted six months leave, with permission to visit Europe.

Hord, W. T., Medical Director, and Woolverton, T., Surgeon. Ordered as delegates to represent the Medical Department of the Navy at the meeting of the American Medical Association, May 8th, at Cincinnati, Ohio.

Bradley, George P., Surgeon. Ordered to Navy Yard, Brooklyn, N. Y., without delay.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the four weeks ending May 5, 1888:*

Hutton, W. H. H., Surgeon. To proceed to Biloxi, Miss., on special duty. April 21, 1888.

Long, W. H., Surgeon. Granted leave of absence for fourteen days. April 21, 1888.

Sawtelle, H. W., Surgeon. Granted leave of absence for seven days. April 21, 1888.

Urquhart, F. M., Passed Assistant Surgeon. Granted leave of absence for seven days. April 10, 1888.

To assume temporary charge of Cape Charles Quarantine Station. April 17, 1888.

White, J. H., Passed Assistant Surgeon. Relieved from quarantine duties at Sapelo Station. April 21, 1888.

Williams, L. L., Passed Assistant Surgeon. Relieved from duty at Marine Hospital, Boston, Mass.; to assume charge of Cape Charles Quarantine Station. April 17, 1888.

Bratton, W. D., Passed Assistant Surgeon. Relieved from duty at Marine Hospital, San Francisco, Cal.; detailed as Medical Officer, revenue steamer Bear, during summer cruise. April 19, 1888.

Bailhache, P. H., Surgeon. To proceed to New York for temporary duty. May 1, 1888.

Hutton, W. H. H., Surgeon. Detailed as president of board to report as to quarantine establishment at North Chandeleur Island, Gulf of Mexico. May 4, 1888.

Wyman, Walter, Surgeon. Granted leave of absence for fourteen days. May 4, 1888.

Stoner, G. W., Surgeon. Detailed as chairman of board for the physical examination of candidates for appointment and promotion, Revenue-Marine Service. May 5, 1888.

Mead, F. W., Passed Assistant Surgeon. Detailed as recorder of board for the physical examination of candidates for appointment and promotion, Revenue-Marine Service. May 4, 1888.

Carter, H. R., Passed Assistant Surgeon. Detailed as recorder of board to report as to quarantine establishment at North Chandeleur Island, Gulf of Mexico. May 4, 1888.

Devan, S. C., Passed Assistant Surgeon. Relieved from duty at Sapelo Quarantine; to assume charge of the service at Savannah, Ga. May 3, 1888.

White, J. H., Passed Assistant Surgeon. Relieved from duty at Savannah, Ga.; to assume charge of Sapelo Quarantine Station. May 3, 1888.

**Society Meetings for the Coming Week:**

Monday, *May 14th:* New York Academy of Medicine (Section in Surgery); New York Ophthalmological Society (private); Lenox Medical and Surgical Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *May 15th:* Florida State Medical Society (Gainesville); Illinois State Medical Society (Rock Island); Missouri State Medical Association (Kansas City); New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and St. Lawrence (annual), N. Y.; Ogdensburg, N. Y., Medical Association; Hampden, Mass., District Medical Society (annual—Springfield); Baltimore Academy of Medicine.

Wednesday, *May 16th:* Iowa State Medical Society (Des Moines); Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

Thursday, *May 17th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *May 18th:* Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *May 19th:* Clinical Society of the New York Postgraduate Medical School and Hospital.

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OBITUARY NOTES.

**Chauncey L. Mitchell, M. D.,** of Brooklyn, died on Tuesday, the 8th inst., in the seventy-fifth year of his age. Dr. Mitchell was a native of Connecticut. He took his medical degree from the College of Physicians and Surgeons in 1836. At the time of his death he was one of the consulting physicians of the Long Island College Hospital and St. John's Hospital. He was highly esteemed as a practitioner and as an occasional contributor to medical literature.

**John B. McIntyre, M. D.,** died on Sunday, the 6th inst., at the house of his brother, Dr. Burnett C. McIntyre, in New York. The deceased was a graduate of the College of Physicians and Surgeons of the class of 1877.

**Edward Swift Dunster, M. D.,** of Ann Arbor, Michigan, professor of obstetrics and diseases of women and children in the University of Michigan, died on Thursday, the 3d inst., at the age of fifty-four years. The immediate cause of his death is said to have been pneumonia. Dr. Dunster was born in Maine, took his college course at Harvard, and obtained his medical education in New York. He served as a medical officer in the Army of the Potomac, and after the war he entered upon practice in New York, where he was for several years one of the editors of this journal, and for two years, from 1869 to 1871, its sole editor. Having taught in various capacities in Dartmouth College, the University of Vermont, and the Long Island College Hospital, he was appointed to his chair in the University of Michigan in 1873. In every position that he occupied he made himself felt as a man of the utmost force and worth, and he was widely recognized and admired for his insight into the requirements of medical education and the principles of ethics, and for his skill and energy in expounding his views. He was also highly esteemed for his personal qualities.

# Proceedings of Societies.

## AMERICAN MEDICAL ASSOCIATION.

*Thirty-ninth Annual Meeting, held in Cincinnati on Tuesday, Wednesday, Thursday, and Friday, May 8, 9, 10, and 11, 1888.*

The meeting was called to order by Dr. W. W. Dawson, ex-presidents Davis, Brodie, Richardson, and Sayre on the platform. Addresses of welcome were made by the mayor and by Dr. C. G. Comegys. Dr. Comegys spoke of the early medical history of Ohio, and gave sketches of Dr. Daniel Drake and Dr. Benjamin Dudley, of the Transylvania University, and of the developments of medical education in Cincinnati.

**The Mission of the American Medical Association** was the title of the president's address, which was then delivered by Dr. A. Y. P. Garnett, of Washington. He said he had been specially moved to select this subject by the fact that at no period since the formation of the association had its enemies been so bold, so reckless, and so unscrupulous in their efforts to destroy its influence and power. The paternal relation held by this organization to the entire medical profession of the United States imposed upon it duties and responsibilities of the gravest character. It stood before the world as the chosen custodian of all that pertained to the preservation and advancement of professional interests, as well as to medical science *per se;* it was intrusted with the delicate and difficult task of elevating and maintaining the medical character of the country upon the highest moral and intellectual plane. Its annual meetings must not be regarded as solely for the purpose of considering the science of medicine in either its theoretical or its practical aspect and supplemented by the pleasures of social intercourse. While there was ample cause to be gratified with the rapid progress made by some departments of medicine in this country within the last decade, still very little had been effected in the direction of a general reform in the medical schools. What could the association do to further raise and promote a higher standard of medical education in the United States, to curtail the number of medical schools, and thereby gradually restrict to a conservative limit the annual hosts of graduates turned loose upon the public by those institutions? The initial step must be taken by this body in some mandatory form. For a long period all measures brought before it having for their object an interference with or material modification of the systems pursued by the medical colleges were met by a determined and successful opposition on the part of those members who represented such institutions. While it could not be denied that there were medical colleges in this country unsurpassed by those of Europe in their essential appointments and facilities for the education of medical students, the equally undeniable fact remained that we fell far behind them in the systems of study pursued. He submitted the following suggestions:

Proposition 1. That a standing committee, to be called a committee on legislation, be appointed for each State and Territory and the District of Columbia, to consist of five members of the medical profession in good standing, three of whom should have no official connection with any medical school or college, whose duty it should be to carry out as far as possible the following instructions:

*First.* That each one of said committees, or a majority thereof, should attend the sessions of their respective Legislatures, or from time to time as their duties might require, for the purpose of using all honorable means looking to the reduction of the number of medical schools in the United States, and a consequent diminution in the annual number of medical graduates; that as a practical measure to this end they should urge the passage of a law requiring that in the future granting of charters for creating medical schools, there should be a clause in every such charter requiring that all schools or colleges thus created demand a full term of four years' study before granting a diploma to any student thereof, and that no student should be admitted to matriculate who had not passed a satisfactory examination, both oral and written, in the ordinary branches of academic study; and, further, that any college failing to show a greater number than fifty matriculates annually for three consecutive years should forfeit its charter and be abolished.

*Second.* That they use all diligent effort to secure an ordinance creating in each State and Territory where no such board at present existed, and the District of Columbia, a board of medical examiners, which should have no connection with any medical school, and which should be required to examine all applicants for license to practice medicine in their respective States or Territories and the District of Columbia; and that any person who might be detected in practicing any branch of the healing art without a license granted by said board should be subject to such penalties as the law might provide. That this committee be authorized by statute to select and nominate to the governors of the States and Territories and the District of Columbia seven competent and learned members of the medical profession to constitute said board of examiners, who should have the exclusive power to issue licenses to practice the art and science of medicine and surgery.

*Third.* That the chairmen of said committees of five be required to submit at each annual meeting of this association a report embracing a full statement of what had been accomplished by each.

Proposition 2. That the faculties of the several medical schools within the limits of the United States be once more urgently requested to call a convention at some central point for the purpose of consultation and adopting some general and uniform system of medical education more comprehensive and rigid in its requirements, and more in accord with the spirit of the age and the advanced progress of medical science, suggesting a four years' term of study and the requirement of a preliminary education, including some knowledge of the classics. That any college or school which should refuse to enter into such an arrangement as might be decided upon by said convention should be excluded from all connection with the American Medical Association, and its alumni not recognized as members of the regular profession.

He was aware that these suggestions embraced some very radical and seemingly impracticable changes; but, as they pointed, in his judgment, to the right direction, he trusted that they might not prove to be seeds sown upon barren soil.

In his further remarks the president spoke of the success of the Ninth International Medical Congress, and referred with regret to the lack of adequate subscriptions to the Rush monument.

"In concluding this address," he said, "I desire to offer to you, gentlemen, my congratulations upon the proud and enduring position now occupied by this association. Resting, as it does, upon the solid foundation of a moral, intellectual, and scientific basis, it has steadily from its birth gained in strength and influence and won for itself the support and approval of our brethren throughout the length and breadth of this country—to-day more powerful, more self-reliant, more progressive, and stronger in the affection of its members than at any former period of its existence. Let us indulge the hope that those of our earlier friends whose allegiance and interests have been temporarily alienated from us may ere long so subordinate the

discrepancies of individual judgment and impulses of resentment to the fraternal agencies of a common calling and the pacific demands of a common science as to feel justified in once more uniting with us in our efforts to maintain and perpetuate the power, influence, and usefulness of this wise, conservative, and philanthropic organization." [We are indebted to the "Journal of the American Medical Association," in which the address will appear in full, for advance sheets of its issue for this week, which we have been enabled to compare with our own dispatches.]

**The Address in Medicine.**—On Wednesday the address in medicine was delivered by Dr. ROBERTS BARTHOLOW, of Philadelphia. The speaker first alluded to the fallacies of the sects in medicine, instancing those set forth in an advertising pamphlet recently published by a St. Louis drug-house. As a rule, he said, the profession were not sufficiently versed in therapeutics. The multiplicity of drugs was to be deplored; the official list in the pharmacopœia should be abridged. The administration of crude vegetable drugs was often not followed by definite results, for they might contain antagonistic elements. Alkaloids and other active principles should be used instead. In this connection, allusion was made to the "dosimetric" method, which, said the speaker, contained no new truths, was superficial, and was not based on the physiological action of drugs, as all therapeutics ought to be. A drug having an elective action on a tissue exerted a medicinal influence on that tissue. Electricity, although abused by charlatans, was unrivaled in its proper sphere. Its value was based on two established facts, the power of the galvanic current to influence the circulation and its electrolytic action.

**The Trustees of the "Journal"** reported that the issue now amounted to 4,572 copies sent to members and subscribers, and 425 sent out in exchange. The "Journal" now had its own office and type, and its receipts were in excess of its expenses. The intention was to enlarge the editorial corps shortly, and bring the "Journal" out in a new dress. It was asked that the association place the exchanges and the review copies of books at the editor's disposal, instead of having them sent to the library of the Smithsonian Institution.

**The Committee on Dietetics** made a preliminary report, in which, after recommending a continuance of its work, dyspepsia was declared to be the national disease, and was attributed largely to faulty alimentation. Medication should be subsidiary to dietetics in the treatment of disease. The great mortality among children was largely preventable, and therefore criminal. Venders of impure milk should be tried for manslaughter. Empiricism in the use of modified starch foods before dentition should be overcome. Over-work, worry, whisky, and badly cooked food were destroying the race, and it was the duty of the profession to arrest their action. Proprietary foods were condemned, and their investigation by State authority was urged. Dietetics could not be built up into a special system of cure. The report was supplemented by a brief report from the sub-committee on infant feeding. On motion, the committee was continued, with power to add to its membership and, if necessary, to be constituted a section. It was also instructed to investigate proprietary foods, and report at the next meeting.

**Amendments to the By-laws** were proposed by Dr. N. S. DAVIS, of Chicago. The first looked to the installation of applicants into full membership on payment of the initiation fee; the second, to shortening the term of a trustee's service; and the third, to substituting for the nominating committee a general standing committee having the same and increased powers. The first and second were adopted. The third was made the special order for the next morning.

**Charlatanry and the Religious Press.**—The SECRETARY read a memorial from the Arkansas State Medical Society relating to advertisements of quack nostrums in religious newspapers. Personal certificates from clergymen and the editorial indorsements of those newspapers gave quackery a standing with the community which it would not otherwise have. Members of the medical profession were in the habit of treating clergymen gratuitously, and this was the way in which they were rewarded. To accept such advertisements for the support of the paper was doing evil, that good might result, and was inconsistent with the moral pretensions of the clergy. The cooperation of the association and that of State societies were invoked to secure a suppression of the evil. A resolution was passed approving of the memorial.

Dr. S. W. GROSS, of Philadelphia, presented an invitation from the Philadelphia County Medical Society for the association to hold its next meeting in Philadelphia. Referred.

**A Proposed Neurological Section.**—Dr. GEORGE M. BROWN, of Virginia, presented a communication to the effect that the study of insanity ought to be encouraged by the establishment of a neurological section, and that the association urge the establishment of professorships of the branch in medical schools. Adopted.

**Report of the Committee on Nominations.**—The committee reported as follows: For president, Dr. W. W. Dawson, of Ohio; for first vice-president, Dr. W. L. Schenck, of Kansas; for second vice-president, Dr. Frank Woodbury, of Pennsylvania; for third vice-president, Dr. H. O. Walker, of Michigan; for fourth vice-president, Dr. J. W. Bailey, of Georgia; for treasurer, Dr. R. J. Dunglison, of Pennsylvania; for secretary, Dr. W. B. Atkinson, of Pennsylvania; for librarian, Dr. C. H. A. Kleinschmidt, of the District of Columbia; for trustees, Dr. E. M. Moore, of New York, Dr. J. H. Hollister, of Illinois, and Dr. J. M. Toner, of the District of Columbia; for members of the judicial council, Dr. W. A. Phillips, of Kansas, Dr. A. M. Pollock, of Pennsylvania, Dr. W. C. Van Bibber, of Maryland, Dr. J. F. Hibberd, of Indiana, Dr. C. S. Wood, of New York, Dr. J. McF. Gaston, of Georgia, Dr. —— Taylor, of New York, and Dr. G. L. Porter, of Connecticut. The report further recommended that the next meeting be held at Newport, Rhode Island, beginning on the first Tuesday in June, 1889; that the address in medicine be delivered by Dr. William Pepper, of Pennsylvania; the address in surgery by Dr. P. S. Conner, of Ohio; and the address in State medicine by Dr. W. H. Welch, of Maryland.

**The Address in Surgery** was then given by Dr. E. M. MOORE, of Rochester, New York. The surgeon, he said, depended more upon his individuality than upon his surroundings, and a surgical education should take cognizance of this fact. In former times the supernatural had hampered the rational development of surgery; to-day surgery sustained definite relations to the natural sciences, and the present treatment of wounds had been evolved in accordance with their laws. Hippocrates had not performed amputation as now understood; the operation dated back only three hundred years. Paré's ligature was the beginning of rational surgery; from the time of its employment the evolution of hæmostatic methods had progressed up to the time of Esmarch and Kœberlé. The water dressings of Galen and Liston were still somewhat in vogue, and until within late years the methods of operation had made the open treatment necessary. The perfecting of the ligature had wrought some change, but the mortality was still high. After alluding to the great benefits that had followed the introduction of antiseptic methods, the speaker contrasted the former treatment of gunshot wounds, which were considered as poisonous, and treated by cauterization and the removal of the bullet, with that now adopted, when the bullet was recognized as innocuous and

left. In abdominal wounds the experience of Parke and Senn had pointed to definite operative procedures. Gratification was then expressed that maudlin sentimentality had not yet triumphed over vivisection. Enterectomy was now a successful operation in cases of gangrenous hernia. The essayist reported two cases of rupture of intestines from external violence without apparent injury to the abdominal wall. The beneficent results of tenotomy were then pointed out, but the speaker also remarked that the early zeal displayed concerning it was an illustration of the evil tendency of enthusiasm over a single idea. The speaker then quoted at length from a paper on compound dislocations of the ankle joint which he had read at last year's meeting of the New York State Medical Association. Surgery had been specially progressive under antisepticism, and Lister's name had added a word to the language. Mercuric chloride was the best germicide, as shown in Macewen's thousand reported cases of osteotomy without a bad result, and in Volkmann's tables of compound fractures of the thigh. But its progress had been most pronounced in laparotomy; in certain cases this was the most dangerous of operations, but to-day it had the best record among major operations. Antiseptic laparotomy had begun when Keith lost his tenth patient after nine successes. The essayist still used opium in peritonitis. Supravaginal hysterectomy had found its culmination in Péan's method of treating the stump. Prince's plan for sterilizing air was a valuable supplement to Listerism. Septicæmia would soon be as rare as scurvy. The future of the profession would be largely surgical.

**The Rush Monument.**—Dr. A. L. Gihon, of the navy, chairman of the committee of the Rush monument, read a report recommending that individual members of the committee should constitute themselves local committees to receive and forward money for the fund. Subscriptions of one dollar were solicited, but larger sums would be accepted. The treasurer of the Rush monument fund, Dr. J. M. Toner, of Washington, reported that remittances had been received from eight States and from the medical corps of the army and navy, and that the fund now amounted to $710. The Pennsylvania State Medical Society had voted $500, payable in annual installments of $100; California had contributed $105; and last month Michigan had voted $100, which had not yet been received.

## NEW YORK NEUROLOGICAL SOCIETY.

*Meeting of April 3, 1888.*

The President, Dr. C. L. Dana, in the Chair.

**Exophthalmic Goitre.**—Dr. A. D. Rockwell gave the histories of two cases illustrating results which could not infrequently be obtained by treatment. The first case was that of a young woman who for a year and a half had presented the three symptoms, protrusion of the eyes, swelling of the neck, and increased frequency of the pulse. The neck had measured 14 inches and the pulse had varied between 140 and 160 or above. The respiration had been 35 as a rule. After four months of treatment, consisting of dietetic regulation, internal medication, and applications of electricity to the neck, the size of the goitre had been reduced one inch, the exophthalmia had diminished, and the pulse had been lessened 60 beats. The patient's whole physical condition also had been changed, so that she could engage in the occupations and the enjoyments of life. At the end of treatment the pulse was 75 or 80. It had intermitted from the first, and it still retained this characteristic. Five years had elapsed since the discontinuance of treatment, and there had been no relapse.

The second case was that of a man still under treatment. Out of thirty cases in the speaker's experience this was the second in which the disease had occurred in the male. The case was also of an incomplete type; there was no enlargement of the thyreoid. There was some exophthalmia, also a peculiar puffiness of the lids. When the patient was first seen the pulse had been 105. It was now 85, having been reduced 20 beats. The case illustrated the power of treatment to reduce the pulse. In the majority of cases amelioration of the symptoms was obtained, in others there was no improvement, but in still others, amounting to a considerable proportion, decided benefit resulted. Quite a number of cases had been approximately cured. The first case exhibited was an instance of this kind.

The President asked whether Dr. Rockwell felt confident of his diagnosis in the second case.

Dr. Rockwell replied that the patient had been referred to him by Dr. Gruening, whom he had consulted for the protrusion of the eyes. Dr. Gruening had agreed to his diagnosis, also Dr. Hochheimer, the patient's physician. He could suggest nothing else which would account for the persistent frequency of the pulse.

**Acute Idiopathic Neuritis.**—Dr. W. M. Leszynsky presented a patient and read the history of the case, with records of the electrical tests.

Dr. Birdsall, while acknowledging the difficulty of following the details of a written history, had the impression that the case presented was one of periarthritis with neural involvement starting from the joint disease. Dr. Jacoby had reported a number of similar cases.

Dr. Jacoby was inclined to the same view, yet he had understood that there had been no antecedent joint trouble either in the shoulder or in the wrist.

Dr. Birdsall added that in some cases the pain, the joint involvement, and the paralysis appeared together. Especially in the case of the shoulder there was often no antecedent history of joint involvement.

The President referred to Dr. Jacoby's article, and asked whether the degeneration reaction had not been absent in his cases.

Dr. Jacoby replied that it had.

Dr. Birdsall added that, while this had also been the experience of Erb, in some of his own cases the degeneration reaction had been obtained.

Dr. Putnam Jacobi asked how the electric resistance had been measured.

Dr. Leszynsky replied that one electrode had been placed upon the hand and the other upon the back of the neck. In reply to the objections, he stated that there had been no antecedent history of joint trouble. At the time of the paralysis of the deltoid the patient could move the joint without pain. The suffering occurred in paroxysms, and with each paroxysm fresh paralyses developed. The circumflex was first affected, the paralysis of the deltoid occurring on the twelfth day, that of the supraspinatus and infraspinatus on the twenty-fourth day, and that of the triceps on the twenty-sixth day after a very severe attack of pain which required a large dose of morphine and chloral for its relief. Subsequently the subscapularis and teres major had been affected, and lastly the biceps, on the forty-fifth day of the disease. Repeated examinations of the condition of the joints had been made, and the possibility of joint affection had been excluded. The history was that of spontaneous degenerative neuritis. The picture responded completely to that in Allen's plates. The dorsal nerves had been unaffected. The electrical reactions of the ulnar and median also had been preserved.

Dr. Gibney had had the case under observation and had been unable to arrive at any decision in regard to it.

Dr. STARR asked for Dr. Gibney's opinion in regard to the lateral deviation of the spine.

Dr. GIBNEY thought that lack of muscular power and compensatory action would account for it.

**Syringomyelia.**—Dr. M. ALLEN STARR read a paper on this subject. Syringomyelia, he said, was a condition of the spinal cord in which abnormal cavities were present within the organ. The cavities were of two kinds. First, there was a dilatation of the central canal, constituting hydromyelia. Of this two specimens were shown, in each of which the cavity was easily seen by the naked eye and the complete epithelial lining was visible under the microscope. The tissue around the dilated canal was normal. Secondly, there was a destruction of elements of the spinal cord, constituting syringomyelia. The first stage of its pathology was the infiltration of the spinal cord near the central canal with round cells, connective-tissue nuclei, or gliomatous cells. A specimen showing this condition was exhibited. The next stage was the production of a felt-like connective tissue with numerous nuclei through the spinal cord, but especially near the central gray substance, pushing aside or destroying the medullary elements. This gliomatous mass had a tendency to break down in its center, leaving a fissure or cavity the walls of which were formed by the felt-like connective-tissue mass. The formation of such a cavity was the third stage of the pathological process. Specimens were shown illustrating these three stages, the specimens being from Schultze's cases and obtained partly from Schultze and partly from his pupil, Dr. Van Giesen. In some specimens the cavity was wholly independent of the central canal, which was pushed forward. In another the new cavity opened into the central canal, which appeared to have been dilated. In still others no trace of the central canal was to be seen. The gliomatous infiltration about the cavity was evident in all the specimens. The size of the cavity varied greatly, from a small fissure to a large cavity around which only a thin rim of medullary tissue remained. The cavity in some cases extended only through a few segments of the cord. In other cases it reached through its entire length. A diagram was shown representing its extent in a horizontal section of the spinal cord, the cord being divided into squares, and forty-eight cases being tabulated. The number of each case being placed in every square affected in the case, the greater number of squares numbered about the central area of the cord indicated the frequency with which this area was involved. The lower cervical and upper dorsal regions of the cord were the parts most frequently affected. The contents of the cavity were usually serous fluid, but they might be bloody or thick and hyaline. The clinical features of the disease were presented by means of a collection of typical cases accompanied by autopsies. They were found to be: first, progressive muscular atrophy with paralysis affecting some or all of the muscles of one limb and usually extending to the opposite limb and to the trunk, sometimes attended by reaction of degeneration in the paretic muscles; secondly, vaso-motor and trophic disturbances in the affected limb, consisting of cyanosis, coldness, bullous eruptions, ulceration and abscess, and even atrophy and fragility of the bones and a diminution in the excretion of sweat; thirdly, peculiar sensory disturbances consisting of the loss of the sensations of pain and of temperature in the atrophied part while the senses of touch, pressure, and location were preserved. The distribution of these symptoms in accordance with the situation of the lesion in the cord was then fully discussed. In half the cases cited the anterior horns had been involved and paralysis with atrophy been present. In two thirds of the cases the posterior horns had been involved and the peculiar sensory disturbances been observed. A case was then related in which the characteristic symptoms had been present and in which the diagnosis of syringomyelia had been reached by exclusion, all other forms of spinal disease having been shown to be impossible. The differential diagnosis from amyotrophic lateral sclerosis, tabes, anterior poliomyelitis, meningitis, intraspinal tumor, and neuritis was considered in connection with this case. The paper closed with a reference to the ætiology and treatment of the affection, regarding which little seemed to be known.

Dr. SHAW said that about five weeks previously he had been consulted by a German stevedore, who, by his occupation, was much exposed to cold. The patient's complaint was that he had been unable to feel and protect himself from anything hot. The anæsthesia was especially marked in the right hand, but was present to some extent in the other also. As in Dr. Starr's case, there had been a burn on the right arm near the wrist, for which the patient could not account. There was no ataxia and no atrophy. There were no pupillary symptoms, and the optic nerve was normal. It seemed to him that this might have been a case of cavity of the cord similar to those in the cases described. He inquired, however, whether the origin of the condition was invariable. Might there not, for instance, be a cavity in the cord from malacia secondary to caries of the spine?

Dr. SACHS had looked up the literature in connection with that of tumors of the cord, and he had also seen a number of cases diagnosticated by Schultze in Heidelberg. The clinical phenomena in Dr. Starr's case resembled those in Schultze's cases without doubt. He inquired, however, whether the diagnosis between syringomyelia and intramedullary tumor was not difficult, especially at an early date. The duration of the condition would give a decisive indication at a later stage, as intramedullary tumors seldom lasted so long as two or three years. The difficulty of diagnosis was further increased by the fact that the symptoms so much resembled those of progressive muscular atrophy that the sensory manifestations might easily be neglected in favor of this diagnosis.

Dr. BIRDSALL said that a number of cases had come under foreign observation, and it was but to be anticipated that similar cases would be found here. He recalled from his own experience three cases presenting motor symptoms of the atrophic type, vaso-motor and some sensory symptoms, which he thought might be due to cavity in the cervical portion of the cord; he had not yet arrived at an exact conclusion in the matter. There had been in these cases, too, a cessation in the advancement of the disease. More careful observations would, he thought, lead to less frequent diagnoses of the typical diseases. There would be found many combinations of symptoms which did not correspond to these types.

Dr. BOOTH also recalled a case of marked atrophy of the arm and hand with anæsthesia, so that burns were not felt.

Dr. FISHER asked whether any explanation had been advanced of the remissions, a marked feature in this disease. Was the absence of the reaction of degeneration a diagnostic sign; also would the sudden accession of paralysis from breaking down serve to distinguish the condition from that of progressive muscular atrophy?

Dr. PUTNAM JACOBI referred to the fact that in the cases cited a gliomatous tumor had served for the inception of the condition. She asked whether all cases of syringomyelia were referred to this origin. She also referred to the existence of vacuoles in the cord in pseudo-hypertrophic paralysis and in tetanus, and to the condition of porencephalia in the brain. In five cases of pseudo-muscular hypertrophy there had been found dilatation of the central cavity or cavities in the posterior horns, although the correlation of the lesion with the paralysis had not been established.

Dr. Peterson referred to a case at the Manhattan Hospital in which, in 1878, Dr. Seguin had diagnosticated cavity of the cervical enlargement of the cord. The patient had presented atrophy of the left hand and arm, with anæsthesia of the left arm, the thorax, and the left leg.

The President suggested that many cases diagnosticated as pachymeningitis should probably have been classed as cases of this disease. Dr. Starr had assumed that all cases of syringomelia were gliomatous in origin. Might there not be a formation of cavities from some other cause? He referred to a specimen in which similar cavities had resulted from a central myelitis. There had been two cavities in this case—one an inch and a half long, and the other not so large. Dr. Miller, of the University Medical College, had shown him the cord of an ox in which, too, there had been a large cavity without a surrounding infiltration.

Dr. Starr said that the stationary condition in his case could be explained by the fact of the glioma having broken down and advancement having ceased. The process had been arrested. It was not possible to diagnosticate between intramedullary tumors and syringomyelia, except, as had been suggested, by the duration of the case. The lesion had been discovered accidentally in all of the cases cited. The same had been true of multiple sclerosis on its first recognition. Then it had been diagnosticated by exclusion, all cases not presenting typical symptoms being referred to it. Now, syringomyelia received consideration also in the diagnosis of the anomalous cases. It might be of assistance to bear in mind that twenty-four out of the fifty-six cases had presented a cavity in the anterior, and thirty-two in the posterior part of the cord. The chances were therefore in favor of the symptoms of progressive muscular atrophy, or accidental analgesic areas. In the examination it was necessary to distinguish between analgesia, with loss of the temperature sense, and general anæsthesia. Intermissions were not uncommon in other conditions. In locomotor ataxia it was not uncommon for the symptoms to retreat, and the patient to get better for a time. He had seen the ataxia disappear, and return after several months. The reaction of degeneration did not appear to be an important diagnostic point. The majority of the cases had been diagnosticated as progressive muscular atrophy—a condition in which this reaction was not found. The condition of porencephalia referred to was a condition of childhood and fœtal life; he did not think that it was ever found in the adult. The ages of the patients with syringomyelia had been from twenty-five to forty years. In all of the cases observed the previous state had been that of infiltration with gliomatous cells. Destruction did not occur during this stage; the elements of the cord were simply displaced.

## Book Notices.

*A Practical Treatise on Diseases of the Skin.* By John V. Shoemaker, A. M., M. D., Professor of Skin and Venereal Diseases in the Medico-chirurgical College and Hospital of Philadelphia, etc. With Colored Plates and Other Illustrations. New York: D. Appleton & Company, 1888. Pp. viii–633. [Price, $5.]

For a number of years the author of this work has been well known to the medical profession as a prolific writer, an enterprising worker in dermatology, and an ardent therapeutist. How much he has written is apparent from the fact that no fewer than twenty-nine of his own papers are referred to in this book. His experience as a teacher has taught him what most medical men want to know about skin diseases, and has aided him in presenting his subject in so practical a manner that the book can not fail of being very useful to the general practitioner of medicine. We know of no treatise on dermatology which is fuller than this one in suggestions as to treatment. Just here lies, we think, the strong point of the book; and just in this direction we believe that Dr. Shoemaker intended to put forth his best effort. Symptomatology is also well presented; diagnosis is usually excellently given, and pathology concisely.

In special criticism we would offer the following: Diet is said to be quite as important as medicine in the treatment of skin diseases; but little special attention is given to it in the work. Oatmeal and buckwheat are condemned (upon what grounds is not stated), as giving rise to pruritus, erythema, and eczema. The author's idea of diet seems to be embodied in the oft-repeated formula, "meat, milk, eggs, and fruit." In the therapeutics we note the high praise given to the administration of medicines hypodermically on account of the great promptness of their action. Arsenic, mercury, and cod-liver oil are used in this manner in cases in which they are indicated. This plan may be serviceable in hospital practice, but we doubt if private patients could be induced to call on their physicians every day to have their skin punctured, to say nothing of paying their fee daily. Chlorate of potassium is recommended in pustular and scrofulous diseases. The oleates are treated of at length, five pages being devoted to their consideration. The treatment of the various diseases of the skin is given very fully, though of some of them it is meager. Epilation in favus and ringworm is regarded as "injurious to the hair follicle, painful to the patient, and a relic of medical barbarism of the last century." Instead of epilating, the use of the oleate of copper or of mercury is commended, the first being considered the most valuable of antiparasitics. We fail to find mention either of acne frontalis or of dermatitis herpetiformis, and the ulcerative scrofuloderm secondary to enlargement of the lymphatic glands is regarded as the only scrofuloderm. In the pathology of the diseases of the skin we are surprised to find no mention of the recent bacteriological discoveries of the Germans; for instance, no notice being taken of the *Staphylococcus aureus* and the *Staphylococcus albus* as active factors in the production of pustular diseases.

The book is furnished with an admirable index of twenty-three pages, and a formulary of fifty-nine pages which is conveniently arranged, and contains a list of medicated plasters and soaps not readily accessible elsewhere. Typographical errors are very few. The illustrations are not very numerous. The wood-cuts are generally good, though it would be difficult to tell whether the man upon page 166 had a pustular eczema or, what was intended, a tubercular syphiloderm. The lithographs are not artistic. The man figured in the plate of rosacea has no neck, and his head is sliding off from his coat collar. The blue color of the hand affected with eczema has never been seen by us in that disease. But these flaws are of small moment in comparison with the many excellences of the work. We congratulate the author upon it, and we have no doubt but that the book will take a high rank among the text-books upon dermatology.

### BOOKS AND PAMPHLETS RECEIVED.

A Treatise on Dislocations. By Lewis A. Stimson, B. A., M. D., Professor of Clinical Surgery in the University of the City of New York, etc. With One Hundred and Sixty-three Illustrations. Philadelphia: Lea Brothers & Co., 1888. Pp. xx–17 to 539. [Price $3.]

Dissolution and Evolution and the Science of Medicine: An Attempt to Co-ordinate the Necessary Facts of Pathology and to Establish the

First Principles of Treatment. By C. Pitfield Mitchell, Member of the Royal College of Surgeons, England, etc. London: Longmans, Green, & Co., 1888. Pp. xvi–246.

A Compend of Human Physiology. Especially adapted for the Use of Medical Students. By Albert P. Brubaker, A. M., M. D., Demonstrator of Physiology in the Jefferson Medical College, etc. Fourth Edition, revised and enlarged. With Illustrations and a Table of Physiological Constants. [Quiz Compends, No. 4.] Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 174. [Price, $1.]

Accidents and Emergencies. A Manual of the Treatment of Surgical and other Injuries in the Absence of a Physician. By Charles W. Dulles, M. D., Fellow of the College of Physicians of Philadelphia, and of the Academy of Surgery, etc. Third Edition, revised and enlarged. With New Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 123. [Price, 75 cents.]

Guide to the Health Resorts in Australia, Tasmania, and New Zealand. Edited and compiled by Ludwig Bruck, etc. Centennial Edition. "Australian Medical Gazette," 1888. Pp. 183.

The Pathology of Hay Fever. By S. S. Bishop, M. D., of Chicago. [Reprinted from the "Journal of the American Medical Association."]

A Letter to the Registrar-General on the Increase of Cancer in England and its Cause. By John Francis Churchill, M. D. London: David Stott.

Notes on Tobacco-Amblyopia. By Edgar A. Browne, F. R. C. S. E., etc. [Reprinted from the "Liverpool Medico-chirurgical Journal."]

An Address on the Treatment of the Gouty Constitution. By I. Burney Leo, M. D., F. R. C. P., etc. [Reprinted from the "British Medical Journal."]

The Neural and Psycho-neural Factor in Gynæciac Disease. By C. H. Hughes, M. D., etc. [Reprinted from the "Alienist and Neurologist."]

Should Physicians be Pharmacists? By Charles L. Mitchell, M. D. [Reprinted from the "Philadelphia Medical Times."]

Dr. G. Beck's therapeutischer Almanach, 15. Jahrgang, 1888, i. Semester. Bern: Schmid, Francke, & Co, 1888. Pp. 60.

# Reports on the Progress of Medicine.

## SURGERY.

BY MATTHIAS L. FOSTER, M. D.

**Surgery of the Urinary Organs.**—Mr. Harrison, in his lectures before the Medical Society of London ("Brit. Med. Jour.," Jan. 7–21, Feb. 4, 1888), objects to the term urethral fever, as misleading, inasmuch as it seems to connect the symptoms with the precise part rather than the process by which they are produced. He proposes the term "urine fever," as it is produced by the presence of urine in a recent wound, and is probably due to the absorption of some poisonous compound, such as an alkaloid, which is derived either from urine or tissue or wound decomposition, or all combined. This he bases on the following: "1. The presence of urine in relation with a recent wound is necessary for the production of urine fever. 2. The mere contact of urine with a wound is not sufficient for its production. 3. The retention of fresh urine within the area of a recent wound is almost invariably followed by its development in a greater or less degree. 4. Where urine is placed under such circumstances as last mentioned, the liability to urine fever is greatly diminished when it is sterilized by local or general means. 5. The retention of fresh urine, blood, and the *débris* of damaged tissue in the confines of a recent wound for a certain time, at a temperature of about 100° F., could hardly be possible without chemical changes taking place in the constituents referred to. 6. The common origin for urine fever is rendered probable by the uniformity of symptoms attending it, which are identical, whether following a surgical operation or an accidental wound." Certain drugs, by their elimination through the urine, such as quinine, seem to render it less capable of exciting this fever.

Strictures of the urethra he holds to be due to inflammatory exudation thrown out to resist leakage of some of the constituents of the urine through the mucous membrane of the urethra, where from any reason the epithelium is damaged so as to render the canal not urine-tight. Among his reasons for believing this are the secondary implication of the mucous membrane in the stricture-forming process, the density and contractility of the plastic exudation, the character of the cicatrix produced in the healing of a recent wound constantly submitted to the action of more or less pent-up urine, and the form in which the stricture tissue is deposited. After rupture of the urethra, formation of a stricture can, he maintains, be prevented by performing perineal section and preventing the infection of the wound with urine.

Regarding the prostate, he considers it the muscular retentive apparatus of the male bladder, and that its intermittent glandular action is subservient to this continuous physical action. Its fibers are spread out like a funnel, with the apex downward, forming a strong support for the bladder. In the adult man an exceptional degree of pressure is made upon the outlet of the bladder, as the perpendicular axis of the "urine pressure" falls directly upon the outlet, and not partly on the pubic bone, as in the female. Where there are no such physical functions to perform, as in extroversion of the bladder, the prostate as a muscle exists only in a rudimentary form, though the sexual sense may be normal. Hypertrophy first appears for a distinctly conservative object. Projecting nodules he considers structural upheavings of a frequently contracting muscular ring developing in the line of least resistance, and assuming a more lowly organized form than that which was in the first instance developed. To prevent prostatic hypertrophy, and the complications arising from it, care should be systematically taken to preserve the muscular power of the bladder, and to aid it artificially when necessity arises. The timely use of the catheter he warmly commends as warding off changes which unfortunately do not always cease when they have become precisely compensatory.

Recurrence after litholapaxy he places at one in seven. This is the weak point of the operation. He ascribes this largely to the condition of the bladder, which is often in a state of chronic inflammation, predisposing to the deposit of phosphates. As in such cases the calculus is the result rather than the cause of the trouble, he advocates their treatment by lateral lithotomy and drainage of the bladder, with careful cleansing for from four to ten weeks, in order to restore the mucous membrane to a healthy condition.

**Washing out the Ureters and the Pelves of the Kidneys through the Bladder.**—The same author ("Lancet," March 10, 1888) narrates two cases presenting symptoms of nephritic calculus in which, after determination of the absence of any calculus in the bladder, that viscus was filled with tepid water, and pressure made upon it with the evacuator employed in litholapaxy. After a few manipulations, small pieces of calculus appeared. One patient stated that he felt something "moving in his back." He was led to consider the possibility of distending the ureters in such a case, a proceeding impossible in the normal condition, by observing the destruction of the provision to prevent regurgitation in cases of obstruction from stricture and prostatic enlargement, together with the damage done to the valve-like arrangement of the ureters by the passage of calculi.

**Vesical Tumors.**—Sir H. Thompson, in his recent lectures on vesical tumors ("Brit. Med. Jour.," Jan. 7–14, 1888), adds little or nothing to what he has already advanced upon this subject. He refers to the danger of death from hæmorrhage in cases of papillomata of the bladder, the so-called villous growths, the most common of vesical growths. Simple mucous polypi, myomata, and dermoid tumors are rare, as are also scirrhus and sarcomata. Epitheliomata are more common. He favors the suprapubic operation, reserving the perineal for exploration in those cases in which microscopic evidence of the presence of papilloma is absent, but in which the symptoms strongly indicate it. If the extent and physical characters of the tumor thus found indicate a better chance of removal by the suprapubic method, he advocates its immediate employment, the perineal incision not interfering with the distension of the bladder.

**Rare Misplacement of the Testis.**—Maynard ("Brit. Med. Jour.," Jan. 28, 1888) reports this unusual condition as found in a boy sixteen years old. One inch below Poupart's ligament on the right side, at the

superior internal angle of Scarpa's triangle, over the saphenous opening, there was a tumor which exhibited the characteristics of a testicle on examination. The examination was followed by an attack of inflammation like orchitis, and then a cord could be felt running from the tumor to the perinæum. The left testicle was found alone in the scrotum. The patient declined an operation.

**Suprapubic Prostatectomy.**—McGill ("Lancet," Feb. 4, 1888) describes three forms of prostatic enlargement projecting into the bladder—a uniform circular projection surrounding the internal orifice of the urethra, a sessile enlargement of the middle lobe, and a pedunculated enlargement of the middle lobe. The first variety is the more common. The projection acts as a valve which closes the urethra the more tightly the more intravesical pressure is made. To remedy this he recommends opening the bladder above the pubes and removing the projection. This is easily done in the second and third varieties, but in the first the operation is more difficult. He divides the ring longitudinally with scissors, one blade being passed into the urethra, and then removes the halves separately. Care must be taken not to leave any portion of the projecting valve untouched. Cicatricial contraction seems to be eccentric in character, so that the urethral orifice is rather enlarged than diminished by it.

**Operations on the Joints.**—In the Journal for November 26, 1887, there was a short account of an operation proposed by Tiling to preserve the ligaments about the knee joint in resection. Since that time he has developed his idea and put it in practice. In an article in the "St. Petersburger med. Wochenschrift," Nos. 33–34, 1887, he describes the operation as applied to the shoulder, elbow, hip, knee, and ankle joints.

In resection of the knee joint the skin incision is bow-shaped, beginning below and in front of one epicondyle, passing below the tuberosity of the tibia, and ending above and in front of the other epicondyle of the femur. The incision should be deepened on each side between the lateral ligaments and the ligamentum patellæ into the joint. The periosteum below and on each side of the tuberosity should then be divided, and the tuberosity having the attachment of the patellar ligament should be removed with a chisel 3 ctm. broad, directed upward and backward. The piece of bone removed must be at least 1 ctm. thick at its upper part. If the joint is now laid open by lifting up the chiseled-off tuberosity with the patella and patellar ligament, the points of insertion of the lateral ligaments into the epicondyles of the femur can be seen; or, if the first incision started in front of the epicondyles, they can be felt by passing the finger along the anterior borders of the lateral ligaments. The external is much less prominent than the internal epicondyle. The periosteum about these should be incised, and they should be removed with the broad chisel, 1 to 1½ ctm. in thickness being taken away. The joint can now be opened if the crucial ligaments are divided, as is usually done, as widely as by any other operation, and the extirpation of the diseased tissues can be proceeded with. After this has been done the epicondyles and the tuberosity of the tibia are replaced and secured with ivory pegs. The drainage and dressing are as usual. By this means three ligaments are preserved for the knee, which will be of indubitable value when a movable joint is obtained. The quadriceps extensor seems also better prepared to antagonize contracture of the flexor muscles than it is after any other operation. He has performed the operation on five patients.

*Hip Joint.*—To apply the same principle at the hip joint, Tiling makes an incision nearly parallel to Langenbeck's incision, carried down to the anterior border of the trochanter major. This is chiseled away with the muscles inserted into it, the chisel being directed from before backward, because no muscles come to it from in front for insertion. The trochanter and attached muscles are then laid backward, exposing the joint. After longitudinal division of the capsule and elevation of the periosteum of the neck of the femur the bone can be luxated and the trochanter minor struck off. The entire joint is then freely open. After removal of the diseased tissues the head of the femur, or, if this has been cut away, the rounded end of bone, is to be replaced in the acetabulum and the trochanter major fastened in its normal place with ivory pegs. To secure the trochanter minor in like manner is impracticable. One operation is reported.

*Ankle Joint.*—At the ankle joint the operation becomes quite complicated. Curved incisions are made on each side of the joint from the border of the tendons to the posterior borders of the tibia and fibula. Through these the astragalo-tibial joint is opened in front, the periosteum is cut through, and the malleoli are chiseled away at the level of the lower horizontal cartilaginous surface of the tibia. In all these steps care has to be taken to avoid wounding the sheaths of the tendons about the joint. On retracting the malleoli and connected tissues, the lateral and anterior portions of the joint are in view and convenient for removal of diseased tissues. But this is not true for the posterior portion of the joint. Tiling pronounces this part of the operation to be slow and difficult, especially in the lower portion, and leaves the details to the ingenuity of the operator. To get at the upper part of the posterior portion of the joint, he elevates the periosteum from the posterior surface of the tibia, partially luxates the astragalus backward, and retracts the soft parts. After removal of a diseased astragalus this difficulty does not exist. After the diseased parts have been removed, the malleoli can be replaced as before with ivory pegs. Two cases are given in which this operation was performed.

*Shoulder Joint.*—At the shoulder he proposes an incision from the outer border of the coracoid process toward the shaft of the humerus, and then directly outward about 10 ctm. This incision he carries only through the deltoid muscle, forming a flap, which is turned up, exposing the greater and lesser tubercles, which are chiseled off, and the tendon of the biceps, which is removed with the periosteum from its groove. The capsule is incised, the parts are retracted, and the joint is open. This operation he has not yet performed.

*Elbow Joint.*—At the elbow joint the triceps is divided two or three fingerbreadths above the point of the olecranon, and both epicondyles, with the muscular and ligamentous insertions, are chiseled off. These are drawn into the flexure of the joint, the radius and ulna are separated from the humerus, and the joint is thoroughly exposed. The remaining details are now familiar. This operation he has performed twice.

**Erasion of the Knee Joint.**—Shield ("Ann. of Surg.," Feb., 1888) urges the recognition of this term as applying to operations for removal of diseased tissues from the knee joint which are not sufficiently extensive to be worthy the name of excision. He finds great difficulty in producing an exact definition of the term, but describes the ideal operation as "opening the joint by such incisions as render free access to every part of its interior. Every fragment of unhealthy synovial tissue must be carefully removed. Diseased cartilage is to be pared away, and any carious bone removed with a gouge. After this the limb is fixed upon a splint, and the bone ends are sutured or not." It is then a modified excision, in which the cut surfaces of bone are smaller, the reparative process less severely taxed, the subsequent growth of bone less interfered with, and the operation is not more extensive than the local disease demands.

[We have an unfortunate superabundance of synonyms in the nomenclature of operations on the joints—terms once perhaps distinct, but which can now scarcely be said to have a shade of difference in meaning: Excision, exsection, resection, arthrectomy, and now erasion. The present writer makes arthrectomy synonymous with erasion. Tiling says, "Arthrectomie resp. Resection." That a distinct term is needed to designate the milder operation is evident, but its definition should be plainly made, and it should be held as not synonymous with any term which is considered by another writer synonymous with the term designating the severer operation.]

**Luxation of the Head of the Radius forward.**—Radestock ("Deutsche militarärztl. Zeitschrift"; "Ctrlbl. f. Chir.," No. 3, 1888) decides, as a result of a series of experiments on the cadaver, that this injury results usually from forced pronation, the ulna at the point of crossing forming a fulcrum, and the head of the radius being forced forward through the anterior portion of the capsule. Less frequently it may be produced by forced supination, the pressure of the bone lacerating the external lateral ligament and causing luxation outward. If the hand is then pronated, the luxation is changed from outward to forward. The annular ligament is torn, or the coronoid process of the ulna is torn off, and in either case the annular ligament is apt to interfere with the reduction of the luxation by interposing itself between the surfaces of the joint. To obviate the hindrances to reduction, the

writer recommends active and passive motion of the joint, combined with massage. If a sufficiently good result is not obtained in this manner, the head of the radius may need to be resected.

**Dislocation of the Radius and Ulna inward.**—An example of this rare accident is recorded in the "Brit. Med. Jour." for March 3, 1888, by Dr. Sinclair. The patient was thrown from a carriage and alighted on the olecranon of the left arm. The forearm was, when seen shortly afterward, midway between pronation and supination, flexed at the elbow to an angle of 135° and bent to the ulnar side. The head of the radius had great freedom of movement. The greater sigmoid cavity of the ulna articulated with the under surface of the internal condyle. Pain was severe, probably from pressure on the ulnar nerve. Reduction was easy by placing the knee against the upper part of the forearm, extending and then flexing the joint while the forearm was lifted outward.

**Interphalangeal Dislocations.**—Middleton ("Ann. of Surg.," Jan., 1888) describes four cases of these dislocations, which are rare and frequently difficult to reduce. He thinks that "in simple dislocations the best means to obtain replacement is direct pressure exerted by means of the thumbs on the dislocated part, and, failing to reduce in that manner, tenotomizing the extensor tendons, for it is only in dislocation backward that there is any difficulty in reduction, forward dislocation being impossible unless compound, in which case the extensor tendon is always torn." He favors tenotomizing also on account of the rest it affords the parts. In compound dislocations, when the cartilages are injured, he advises the removal of as much of the cartilaginous surface as possible.

**Dislocation of the Thumb forward.**—Simson ("Brit. Med. Jour.," Feb. 11, 1888) reports a dislocation of the first phalanx of the thumb forward, so that the base of the bone reached nearly to the center of the palm. Here it was held tightly by the two heads of the flexor brevis pollicis in the same manner as the head of the metacarpal bone is held in the common backward dislocation. Reduction was difficult, and was finally accomplished by placing the fingers of both hands on the dorsal aspect of the joint, holding the muscles forward and to the center of the palm; then, both thumbs being applied to its base, the phalanx was pressed upward and to the radial side, when the bone slid easily into place. This injury is of very rare occurrence.

**Gangrene of the Hand after Fracture of the Radius.**—Merkel records a case ("Ctrlbl. f. Chir.," 1888, No. 5) in which a simple fracture of the radius, which had been reduced and treated in the ordinary manner, was followed by gangrene of the hand, which necessitated amputation fourteen days after the accident. Several loose splinters of bone were found to have been driven into the soft parts, and these seem to have compressed the blood-vessels. This could not be demonstrated, however, on account of the decomposition of the soft parts.

**Flat-foot.**—Smith ("Practitioner," Jan., 1888) recommends arching the foot as much as possible by manual pressure during the setting of a plaster-of-Paris bandage. The sole of the foot can be bent over a small sand-bag or other firm pad. The sole should also be slightly inverted while molding the foot in the bandage. A few days' absolute rest is advisable both before and after the application of the bandage. The length of time during which the bandage must be kept on must vary with circumstances.

**Abortive Treatment of Syphilis.**—Mr. Hutchinson states that in his recent experience when mercurial treatment was begun early for the indurated chancre no secondary symptoms followed, although tertiary symptoms might develop ("Brit. Med. Jour.," Feb. 25, 1888). He defines the stages of the disease as primary before the blood becomes contagious, secondary while it is contagious, and tertiary after the contagiousness has ceased. Mercury is to be given in small doses and for a long period of time. To prevent the tertiary stage it might be necessary to use it before there was any infection of the blood—*i. e.*, probably before the induration of the sore and adjacent glands.

**Retropharyngeal Abscess.**—Burckhardt ("Ctrlbl. f. Chir.," No. 4, 1888) advocates an external incision along the inner border of the sterno-mastoid, passing down by the inner border of the sheath of the carotid vessels, as preferable to the usual operation through the mouth. He maintains that many difficulties of the operation and after-treatment can thus be done away with, and that probably the mortality, which he acknowledges to be slight, will be lessened by the adoption of this rather formidable operation.

**Turpentine as an Antiseptic.**—The enthusiastic statements of Grawitz and De Bary, as reviewed in the Journal for Feb. 11, 1888, regarding the antiseptic value of oil of turpentine, are denied by von Christmas-Dirckinck-Holmfeld ("Ctrlbl. f. Chir.," 1888, No. 3), who professes to have demonstrated by a series of experiments that oil of turpentine is not a germ-destroying agent of the first rank, and that, in comparison with corrosive sublimate and carbolic acid, so far from being their superior, it is by no means their equal. Several varieties of micro-organisms grow well after immersion in oil of turpentine for several hours.

**Treatment of Carotid Hæmorrhage.**—Treves ("Lancet," Jan. 21, 1888) is of the opinion that the ligature of main arteries to arrest bleeding in distant parts is often somewhat blindly advised and possibly too frequently carried out. The value of temporary compression of the main artery for such hæmorrhage has been demonstrated in the limbs, hence he suggests its application in the neck by exposing the artery and loosely tying around it a thick piece of soft catgut. By pulling upon the loop the circulation through the vessel is arrested, but is at once restored when the tension upon the loop is relaxed.

**Excision of the Tongue.**—Whitehead ("Lancet," Jan. 28, 1888) strongly advocates complete removal of the tongue with scissors through the mouth, in cases of cancer, as preferable to any other mode. Preliminary laryngotomy he does not favor, as he thinks it entails a new and unnecessary element of danger. Hæmorrhage he does not consider as severe as it frequently is after removal by the écraseur. Arterial hæmorrhage is stopped by torsion. After the removal, the raw surface is washed with a solution of the bichloride of mercury, and then painted with an antiseptic varnish, which dries immediately, leaving a firm coating on the wound. The varnish is composed of the ordinary ingredients of Friar's balsam, substituting a saturated solution of iodoform in ether for the alcohol. Patients are allowed out of bed and to take food the day following the operation. Open-air exercise, weather permitting, is allowed on the second day. When the entire tongue is removed, the patient can eat and speak better than when only a portion has been taken away. He takes the opportunity of disclaiming any knowledge of the gag figured as his and known by his name. He prefers Mason's gag to any other.

**Empyema.**—In order to avoid the admission of air into the pleural cavity during the operation for empyema, Rochelt suggests the following method ("Wiener med. Presse"; "Ctrlbl. f. Chir.," 1888, No. 1). He makes an incision in the usual manner down to the pleura, or removes a portion of a rib subperiosteally, and then plunges a trocar and cannula into the pleural cavity. Through this cannula he introduces a tube filled with an antiseptic solution and connected with an aspirator. The pus is then removed, and the pleural cavity washed out with a sublimate solution. After this he cuts off the tube at the level of the mouth of the cannula, and inserts into it a hard-rubber tube, one centimetre long, having a valve at the inner end, which closes at each inspiration, but opens on expiration to allow escape of pus and prevent the entrance of air. The external wound is then sutured and an antiseptic dressing applied.

**Thoracoplasty.**—This operation Mr. Gould has performed upon four patients with two successes, one partial success, and one death ("Lancet," Feb. 11, 1888). To meet the demands of cases of empyema which do not heal in spite of long-continued free drainage, in which the compressed lung has expanded as much as possible, the mediastinum has been displaced, the diaphragm has risen, and the chest-wall has fallen in until the ribs are in contact, and there yet remains a space which it is impossible to occlude by granulations, Estlander devised the operation of thoracoplasty, which consists of excising all of the ribs lying in the wall of the empyema and removing the thickened pleura. Mr. Gould does not employ the method of exposing the ribs to be excised by a flap, as recommended by Mr. Godlee, but finds a single vertical incision through skin and muscles down to the ribs sufficient. Hæmorrhage may be considerable. The operation is very severe and is justifiable only in such desperate cases as above described and when demanded to save life. Serious visceral disease or a very low condition of the patient's vital powers contraindicates the operation.

# Miscellany.

**The Medical and Pharmaceutical Congresses of Barcelona.**—In conjunction with the *Exposición Universal*, a medical congress and a pharmaceutical congress will be held in Barcelona, from the 9th to the 15th of September. The following named subjects are announced for discussion in the general sessions of the medical congress: 1. The epithelial tissue considered as a system, and its importance in physiology and in pathology. 2. The intimate working of the nervous system. 3. Antisepsis in general. How do antiseptics act. 4. The contagiousness and prophylaxis of tuberculosis. 5. The way to reconcile the spirit and the letter of penal law with the present state of phrenopathy. 6. The relative part played by the nature of parasitic microorganisms, the state of the individual, that of the tissue, and that of the region affected in producing variations in morbid processes of parasitic origin. 7. Hypnotism and suggestion from a governmental point of view. 8. In the present state of science, should the time required for recovery from injuries (in the medico-legal sense of the word) and their results count on a penal sentence? Is it advisable to form a medico-legal classification of injuries in the light of contemporary surgery? 9. Governmental measures proper to be adopted in Spain for preventing and remedying blindness and for ameliorating the physiological, moral, and social condition of the blind. 10. The present state of leprosy in Spain, and measures to prevent its spread. 11. The history of Catalanian medicine. For the Section in Medicine, the announcements are as follows: 1. Antisepsis in internal medicine. 2. The antipyretic treatment; its indications and contra-indications. 3. The ætiology and pathogeny of pneumonia. 4. The treatment of tuberculosis. 5. The precise indications for surgical interference in intestinal obstruction. 6. The part played by non-cardiac diseases in the production of asystolism. 7. The indications for surgical interference in pleural and pulmonary diseases. 8. The pathogeny of puerperal eclampsia. 9. The pathogeny and treatment of the intestinal catarrhs of children. 10. The identity or duality of scrofula and tubercle. 11. The distinction between the encephalic diseases of children. 12. When is it possible to localize diseases of the nervous centers? 13. The part played by syphilis in causing mental affections. 14. The applications of hypnotism and suggestion to the treatment of nervous diseases. 15. Is the general paralysis of the insane always incurable? 16. The micro-organisms of mineral waters; their influence on the chemical nature and the effects of the waters. 17. Does the nitrogen of mineral waters act by virtue of its withdrawing the organism from the action of oxygen or by some property of its own? 18. What part do galvanic and faradaic currents play in the treatment of diseases of the spinal cord, either on the seat of the disease or on the system? For the Section in Surgery the programme is as follows: 1. The modifications of the present doctrines of the origin of tumors made necessary by modern micro-biological studies. 2. An attempt having been made to remove a projectile from a gunshot wound, in what cases should it be given up and recourse be had to antiseptic dressing? 3. Is exploratory laparotomy justifiable in cases of penetrating wounds of the abdomen? 4. The law of accommodation in the mechanism of labor, and its results. 5. Obstetric antisepsis. 6. Involution (retraction) of the uterus, and the causes that may interfere with it. 7. The treatment of prolapsus uteri. 8. The surgical treatment of uterine cancer. 9. The comparative value of asepsis and antisepsis in ophthalmic surgery. 10. What method of extraction of cataract is generally preferable? 11. What modifications does our present knowledge of surgery call for in the treatment of wounds in the country? 12. What is now understood by herpetism? 13. Is mutilating leprosy a trophoneurosis? 14. Is syphilis transmissible to the lower animals? If it is, at what time, in what order, and in what manner do the manifestations corresponding to the different periods show themselves? Is there ground for the hope of accomplishing the attenuation of the syphilitic virus? 15. Lupus; its nature and treatment. 16. The value of electricity in the treatment of joint diseases. The following-named subjects are to be discussed in the Section in Hygiene and Demography: 1. The ætiology and prophylaxis of yellow fever and cholera. 2. The ætiology and prophylaxis of indigenous infectious diseases. 3. Practical measures for restricting the development of pathogenetic cryptogams. 4. Is the right of society to protect itself against contagious diseases absolute, or should something be yielded to the right of the sick person? What should be the line of demarkation between the two? 5. The influence of density of population on the health and longevity of individuals. 6. The origin, polymorphism, and heteroicity of microbes. 7. The chemistry of the diastases. 8. Do the modern buildings of Barcelona conform to the teachings of hygiene? If they do not, what changes should be made in houses already built, and what rules should be followed in building? 9. The physical and chemical differences in the same article of food coming from different parts of Spain.

**The late Dr. Agnew.**—At the last meeting of the Board of Governors of the New York Skin and Cancer Hospital the following preamble and resolutions were passed:

*Whereas*, By the hand of an overruling Providence this institution has lost in Dr. Cornelius Rea Agnew one of its original incorporators and an earnest supporter, as well as an efficient consulting surgeon,

*Resolved*, That the Board of Governors of the New York Skin and Cancer Hospital desire to express their profound admiration of the peculiar and noble traits of character possessed by Dr. Agnew, and the very great loss which the institution has sustained in his early removal from our midst.

*Resolved*, That this preamble and resolution be entered upon the records of the institution, and that a copy be sent to the family of Dr. Agnew and to the medical journals.

**The late Dr. Loring.**—At a special meeting of the Board of Surgeons of the New York Eye and Ear Infirmary, held May 2, 1888, the following resolutions were adopted:

*Resolved*, That in the sudden death of Dr. Edward Greeley Loring, Jr., the surgical staff of the New York Eye and Ear Infirmary have lost an able and skillful colleague, who for nearly fourteen years has been a surgeon in the Ophthalmic Department of the institution. His kindly and lovable personal qualities were most attractive, and in his death we feel keenly the loss of a genial, frank, and warm-hearted friend. In his professional attainments he was most eminent, enthusiastic in his devotion to his special field of work, and, as one of its most distinguished exponents, he was justly esteemed an authority. We greatly deplore the cessation of his labors, while still in the full enjoyment of his powers, which were enriched by a large and carefully digested experience. As an author he was remarkable for his acute observation and logical reasoning, while the clearness of his style gave evidence of the directness of his thought. By his death scientific ophthalmology has lost an ardent and successful disciple, while the community has been deprived of the services of a skillful counselor and practitioner. The surgeons of the New York Eye and Ear Infirmary desire thus to give expression to their feeling of affection and respect for his memory, and sympathizing sincerely with his family in their loss, offer them their respectful condolence.

*Resolved*, That this minute be entered on the records of the Board of Surgeons of the New York Eye and Ear Infirmary, and that a copy be sent to the family of Dr. Loring.

[Signed.] CHARLES STEDMAN BULL, GORHAM BACON, MORRIS J. ASCH, } *Committee.*

**The New York Academy of Medicine.**—The Section in Surgery meets on Monday evening, the 14th inst. The programme includes "Personal Experience with Electrolysis in the Treatment of Urethral Stricture," by Dr. F. Tilden Brown, and "On the Treatment of Fractures of the Lower End of the Humerus," by Dr. C. A. Powers.

The Section in Theory and Practice of Medicine meets on Tuesday evening, the 15th inst. Dr. T. H. Burchard will read a paper on "The Therapeutic Value of the Saratoga Waters," and Dr. W. B. Wood will read one on "Recent Clinical Results of the Pneumatic Cabinet."

**Hoff's Malt Extract.**—Mr. Leopold Hoff, of Hamburg, the proprietor and manufacturer of Hoff's malt extract, is now in this country, and we learn that he will stay for some time. Mr. Hoff will be remem-

bered as having introduced Hoff's malt extract into the United States in 1866, at which time his energy, the co-operation of a number of prominent New York physicians, and the excellence of the preparation led to its very extensive use, so that at the present time the agents, Messrs. Tarrant & Co., report that they are importing larger quantities each year. It is announced that Mr. Hoff has recently been elected a Fellow of the Royal Society of Science and Art, of London, by which a gold medal has been awarded to him.

**Preliminary Announcement of the Committee of Arrangements of the Congress of American Physicians and Surgeons.**—This association will hold its first triennial session in Washington, on the 18th, 19th, and 20th of September. The meetings of the congress will be held in the evenings, beginning at 8 P. M., and those of the societies composing the congress will be held during the daytime, according to the programme each may respectively provide. The sessions will be open to the profession. The Local Committee of Arrangements of the congress has secured places of meeting for the congress and each society in close proximity, so that the members of the respective societies can interchange attendance at pleasure, without inconvenience. It is the purpose of the Executive Committee of the congress to print the programmes of all of the societies, provided copies are supplied on or before August 15th. The Local Committee requests the secretaries of the societies to forward the names of those of their invited guests who have accepted their invitations, designating them as foreign and American. The Committee of Arrangements is composed of one member of each society represented in the congress, as follows: Dr. Samuel C. Busey, Association of American Physicians, Washington; Dr. J. Ford Thompson, American Surgical Association, Washington; Dr. R. T. Edes, American Neurological Association, Washington; Dr. E. C. Morgan, American Laryngological Association, Washington; Dr. W. W. Johnston, American Climatological Association, Washington; Dr. I. E. Atkinson, American Dermatological Association, Baltimore; Dr. A. Sydney Roberts, American Orthopædic Association, Philadelphia; Dr. H. Newell Martin, American Physiological Society, Baltimore; Dr. Samuel Theobald, American Ophthalmological Society, Baltimore; Dr. S. O. Richey, American Otological Society, Washington; Dr. A. T. Cabot, American Association of Genito-urinary Surgeons, Boston. Inquiries may be addressed to the chairman, Dr. Busey, at Washington, or to the representative member of each society on the committee. The Committee of Arrangements of the American Gynæcological Society, which will hold its next annual meeting in Washington at the same time, is composed of Dr. Busey, Dr. Taber Johnston, and Dr. King.

**The Health of the State of New York.**—According to the State Board of Health's "Monthly Bulletin," for March, 9,405 deaths were reported during the month, including in each thousand 11·20 from diarrhœal diseases, 8 from typhoid fever, 25·50 from scarlet fever, and 71·32 from diphtheria.

**The Health of Michigan.**—According to the State Board of Health's summary of returns for the month of April, diphtheria was reported from 20 places, scarlet fever from 43, typhoid fever from 15, and measles from 45.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending May 3d:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending April 14th corresponded to an annual rate of 21·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Portsmouth, viz., 16·8, and the highest in Manchester, viz., 34·9 in a thousand. Small-pox caused 11 deaths in Sheffield, 3 in Blackburn, 1 in Bristol, and 1 in Manchester.

*London.*—One thousand six hundred and ninety-two deaths were registered during the week, including measles, 12; scarlet fever, 17; diphtheria, 19; whooping-cough, 108; enteric fever, 9; diarrhœa and dysentery, 19. The deaths from all causes corresponded to an annual rate of 20·6 in a thousand. Diseases of the respiratory organs caused 444 deaths; different forms of violence, 52; and 9 suicides were registered. In greater London 2,075 deaths were registered, corresponding to an annual rate of 19·6 in a thousand of the population. In the "outer ring" 18 deaths from whooping-cough; scarlet fever, 5; diphtheria, 10, and measles, 5, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending April 14th in the sixteen principal town districts of Ireland was 26·9 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 9·6, and the highest in Lurgan, viz., 46·2 in a thousand. In Dublin 187 deaths were registered, including 7 from whooping-cough; measles, 3; scarlet fever, 1; typhus, 1; and enteric fever, 2.

*Scotland.*—The deaths registered in eight principal towns during the week ending April 14th corresponded to an annual rate of 20·8 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 14·7, and the highest in Perth, viz., 30·4 in a thousand. The aggregate number of deaths registered from all causes was 526, including 5 from measles; scarlet fever, 4; diphtheria, 3; whooping-cough, 20; fever, 8; and diarrhœa, 9.

*Buenos Ayres.*—The United States consul, in his dispatch dated March 1, 1888, inclosed a copy of a report on the health and hygienic condition of Buenos Ayres, from which it is learned that the population of the city (not including Flores and Belgrano, which have recently been annexed to it) is 424,873. The mortality for the year 1887 reached a total of 12,894 deaths, including cholera, 606; small-pox, 1,290; diphtheria, 975; measles, 126; typhoid fever, 279; and scarlet fever, 606. The deaths from infectious diseases amounted to 26 per cent. of the entire mortality. The consul states that "the people of this country have seemed to have a superstitious opposition to vaccination as an interference with Divine Providence, very few of them ever taking the precaution to be vaccinated, while the municipality have taken very few safeguards against its spread. It has now passed an ordinance making vaccination compulsory, and if it is properly enforced it is probable that the death-rate from that horrible disease will hereafter be reduced. . . . With an area of upward of 12,000 acres and over 50,000 houses, the city is absolutely without either drainage or sewerage, and this in the face of the fact that it has more than doubled its population during the last fifteen years. In the year 1874 a grand scheme of complete drainage for both streets and houses was inaugurated, and nearly fifteen millions of dollars have already been expended in its construction. The street sewers are now almost ready for use, and would be of some utility were it not that the principal outlet or siphon which is to receive the accumulations of the drains and carry them into the river Plate, about 12 miles below the city, has not yet been commenced. Besides this, not a single house has yet been connected with the street drains. . . . Under these circumstances, the wonder is not that the health of Buenos Ayres is not satisfactory, but that the death-rate is not greater than it is. In spite of the want of drainage, however, the city has all these years kept remarkably free from epidemics. Not since 1869, when over 20,000 inhabitants fell victims to the disease, has there been a single case of yellow fever here. In 1873-'74 and last year Asiatic cholera, imported on immigrant steamers, was somewhat prevalent in the city, as well as in other portions of the country, but on neither occasion was there any very decided development or alarming mortality. Perhaps the reason that Buenos Ayres has thus far been so fortunate in escaping yellow fever, which every summer is so fatal in Rio Janeiro, is the rigid and carefully guarded quarantine which, on the least suspicion, is maintained against vessels arriving from Brazil. Last year it was not successful in preventing the introduction of cholera from Italy, but, with the precautions which it is intended henceforth to adopt against arrivals from infected ports, it is not probable that Buenos Ayres will have a recurrence of that dread disease. Meanwhile the National Congress, at its last session, made provision for selling the unfinished city sewerage works to the highest and best bidder, with proper guarantees for their completion, the purchaser to have all the privileges of collecting sewerage rates that the municipality possessed. I understand that European capitalists are ready at once to assume the works and finish them before

another year shall have elapsed. If this be so, we may expect that Buenos Ayres will once more maintain the position, which for two centuries and a half it occupied, of being the healthiest city with the best climate of any port in the world."

*Callao.*—The United States consul, in his dispatch dated March 27, 1888, inclosed a copy and translation of the convention signed at Lima, on the 12th of March, by the delegates to the American Sanitary Congress convened under the auspices of Peru. The consul states: "I am informed by the Foreign Office that this convention must yet be approved by the Congresses of the contracting Republics, but it is understood that this approbation will be granted, since on the respective delegates were conferred full powers. The stipulation that no further closing of ports shall be resorted to is one of very great importance as regards commercial interests and personal convenience."

The convention contains seventeen articles, and, among other things, the contracting countries agree in declaring exotic pestilential diseases: yellow fever, Asiatic cholera, plague. An infected port, that in which any of said diseases may epidemically exist. A suspected port, that in which appears one or another isolated case of either of the three pestilential diseases; that which may have easy and frequent communication with infected localities; that which does not sufficiently protect itself against infected localities. An infected ship or vessel, that on board of which may have occurred a case of pestilential disease. A suspected ship or vessel, that proceeding from an infected or suspected port, may not have had on board during the voyage any case of pestilential disease; that which, although proceeding from a healthy port, may have touched at one infected or suspected; that which, during the voyage or in distress, may have communicated with a vessel of unknown infected or suspected procedure; that which may have had on board deaths from no determinate cause, or repeated cases of any disease whatever.

"For the proper carrying out of the sanitary service, an international regulation shall be issued uniforming general measures and those especially applicable to other countries. The contracting countries oblige themselves to establish the lazarettos that may be necessary, and permanent lazarettos are to be located on islands; to establish floating hospitals adjacent to the permanent lazarettos, for the treatment of persons attacked by exotic pestilential diseases on the vessels which may arrive or those already at anchor."

*Havana.*—Four deaths from yellow fever and 10 from small-pox were registered for the week ending April 21, 1888.

Mortality Table, Foreign Cities.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Paris | April 14. | 2,260,945 | 1,082 | .. | .... | 7 | .... | 10 | 4 | 39 |
| Warsaw | April 7. | 439,174 | 240 | .. | .... | 4 | .... | .... | 3 | 7 |
| Calcutta | March 10. | 433,219 | 240 | 35 | .... | 1 | .... | .... | .... | .... |
| Calcutta | March 17. | 433,219 | 251 | 74 | .... | .. | .... | .... | .... | .... |
| Amsterdam | April 14. | 389,916 | 179 | .. | .... | .... | .... | 2 | .... | 2 |
| Copenhagen | April 3. | 300,000 | 155 | .. | .... | .... | .... | .... | 3 | 5 |
| Edinburgh | April 14. | 262,733 | 104 | .. | .... | .... | .... | .... | 2 | 2 |
| Palermo | April 14. | 250,000 | 99 | .. | .... | .... | .... | 1 | 3 | 5 |
| Genoa | April 14. | 179,421 | 97 | .. | .... | .... | .. | .... | .... | 2 |
| Trinidad | March 31. | 178,270 | 43 | .. | .... | .... | .... | .... | .... | .... |
| Toronto | April 21. | 130,000 | 53 | .. | .... | .... | .... | .... | 1 | 3 |
| Trieste | April 7. | 154,500 | 100 | .. | .... | .... | .... | 2 | .... | 2 |
| Stuttgart | April 14. | 125,510 | 50 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | April 7. | 122,000 | 43 | .. | .... | .... | .... | .... | 1 | .... |
| Pernambuco | April 3. | 110,000 | 97 | .. | .... | .... | .... | 2 | .... | .... |
| Barmen | April 14. | 109,000 | 50 | .. | .... | .... | .... | .... | .... | 2 |
| Leghorn | April 15. | 101,718 | 39 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | April 7. | 65,028 | 38 | .. | .... | .... | .... | .... | .... | .... |
| Merida | April 17. | 48,832 | 29 | .. | .... | .... | .... | .... | .... | .... |
| Cienfuegos | April 16. | 40,573 | 12 | .. | .... | 4 | 1 | 1 | 1 | 1 |
| Port au Prince | April 11. | 40,000 | 20 | .. | .... | .... | .... | .... | .... | .... |
| Callao | March 31. | 34,000 | .... | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | April 15. | 23,631 | 7 | .. | .... | .... | .... | .... | .... | .... |
| St. Thomas | April 6. | 15,000 | 10 | .. | .... | .... | .... | .... | .. | .... |
| Paiti, Peru | March 31. | 4,000 | .... | .. | .... | .... | .... | .... | .... | .... |

United States.

*Philadelphia, Pa.—Small-pox.*—Eighty-two cases and 5 deaths were reported up to April 26, 1888.

*Florida.*—Dr. A. W. Knight, in his report referred to in the last Abstract, states that "on the 17th and 18th of April I was at Plant City, Fla. Two cases of yellow fever still remaining. One of these convalescent and out of danger. One case critical on 18th. No other cases there or at Lakeland, Seffner, Ybor City, or Tampa. Tampa and Ybor City unusually healthy. No cases at that date, either at Bartow or Micanopy. No excitement in any of the towns nearest Plant City. I visited these points per order of the Board of Health of Duval County."

*Key West, Fla.—Small-pox.*—One new case reported during the week ending April 21, 1888.

*Delaware Breakwater U. S. Quarantine.*—Quarantine was opened at this station on the 1st instant.

## ANSWERS TO CORRESPONDENTS.

*No. 181.*—For the purpose mentioned, we think a card catalogue should be made, and the pamphlets kept in numbered boxes, each box being provided with an index of its contents.

*No. 182.*—Treat them with the sulphurous acid of the pharmacopœia. For a method of rendering them aseptic, see the Journal for October 8, 1887, page 421.

*No. 183.*—One that is neither acid nor basic.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### OUR PRESENT KNOWLEDGE REGARDING MUSCULAR ATROPHIES AND HYPERTROPHIES.

BY LANDON CARTER GRAY, M. D.,
PROFESSOR OF NERVOUS AND MENTAL DISEASE IN THE NEW YORK POLYCLINIC.

THE muscles, the motor nerves, and the anterior column of gray matter, whence the motor nerves originate, constitute, anatomically and pathologically, a system apart, which may be termed the neuro-muscular apparatus. Disease of any one of the three component parts of this neuro-muscular apparatus—muscles, motor nerves, anterior column of gray matter—is so apt to extend into the two others, or be associated with them, that the close anatomical connection between the three is evidently the main material reason for as intimate a pathological relationship. It is, therefore, necessary to have a clear conception of the anatomy of these structures.

The anterior column of gray matter extends throughout the spinal cord and the upper enlarged intracranial end of the spinal cord, which is known as the oblong cord or medulla (medulla oblongata), and into the third ventricle. It is placed in different positions in these portions of the nervous system. In the spinal cord it is in the center, in the shape of so-called "horns," or "cornua." In the intracranial portion of the spinal cord—the medulla oblongata, the floor of the third ventricle, and the aqueduct of Sylvius—it is diffused into separate masses, so-called "nuclei." This anterior column of gray matter extends, therefore, from the cauda equina up into the anterior and lowermost portion of the third ventricle. It is always, without a known fact to the contrary, motor in its function, and gives origin only to the motor nerves. At the present day our knowledge is very exact concerning the levels in which the different motor nerves thus have their origin, commencing above with the third pair, or motor oculi, and passing down to the nerves of the lower extremities. Fig. 1 will show the intracranial portion of this gray matter, and should be carefully studied. It represents a longitudinal section through the center of the intracranial mass, showing the ventricular cavities and their relations. The nerve cells within this anterior column of gray matter are known as the ganglion cells. They are of considerable size and endowed with a distinct nucleus and nucleolus and with a number of protoplasmic prolongations running off from the body of the cell, known as processes. These processes are of two kinds. One branches and rebranches as it passes away from the cellular body, growing smaller as it goes, and is called the "protoplasmic process." The other does not branch as it passes away from the cell, but grows slightly larger, and has been seen by a great number of competent observers to take on a covering of myelin and pass to the periphery; hence, it is extremely probable that it represents the axis-cylinder of a peripheral nerve, and it is called the "axis-cylinder process." The termination in the muscles of the nerve-fibers thus originating has been carefully investigated by many of the best-known histologists of the day; most recently by Gessler in the green Italian lizard and the guinea-pig. Gessler states that the motor end-plate is essentially the same in the *Mammalia* and reptiles. This motor end-plate consists of a fine nerve-plexus, between or under which—for authors differ on this very immaterial point—lies a finely granulated mass, containing two varieties of nuclei—the one kind, the smaller, being granulated and of irregular shape; the other kind being larger, oval in shape, with double contours and a nucleolus. The former are known as the *Scheiden-* or *Geästkerne*, or, as Ranvier calls them, the *noyaux vaginaux* or *de l'arboration*, while the latter are the *Grund-* or *Sohlenkerne*, or *noyaux fondamentaux* of Ranvier. To this motor end-plate, lying upon the muscle, come the medullated nerve-fibers at a right angle, losing their medullary sheath as they pass into the nerve-plexus just described.

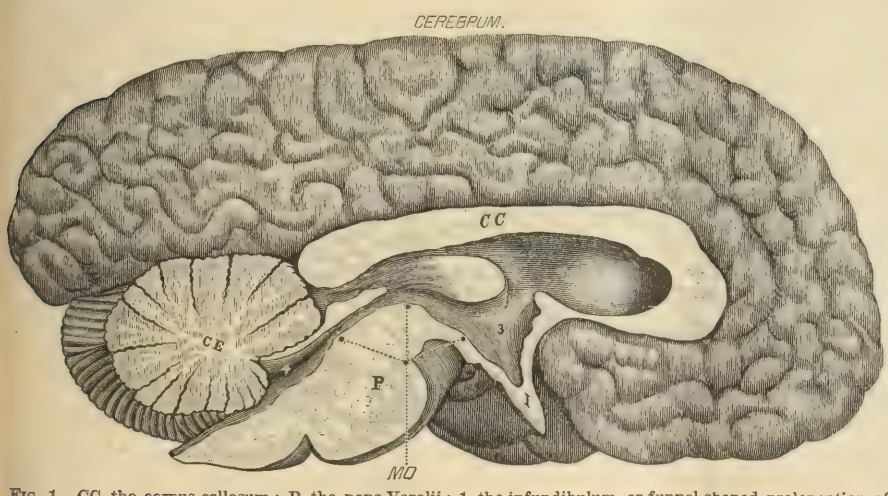



FIG. 1.—CC, the corpus callosum; P, the pons Varolii; 1, the infundibulum, or funnel-shaped prolongation of the third ventricle; 3, the third ventricle; 4, the fourth ventricle, the floor of which is formed by the upper surface of the medulla oblongata; CE, the cerebellum. From the fourth to the third ventricle is seen a channel, which is the aqueduct of Sylvius. The three diverging lines MO point to the surface whence arise the fibers of the motor oculi, the anterior line indicating the origin of the fibers to the iris, and the tensor of the chorioid; and in the floor of the third ventricle, the aqueduct of Sylvius, the fourth ventricle, and below, are the nuclei of the other cranial nerves.

There are reasons for supposing that these ganglion cells in the anterior column of gray matter are of two kinds in regard to their function; for these anterior columns are subject, on the one hand, to disease in which motor paralysis is the first and predominant symptom and, on the other hand, to other disease in which wasting of muscular fiber is the first and predominant symptom. It would, therefore, seem as if in the first case there were a motor cell, whose disease gave rise to paralysis, while in the latter case it seems impossible to deny that it is disease of a nutritive or trophic cell which has produced the primary wasting of muscular fiber. To be sure, in every case of disease of the cells of the anterior gray column there is sooner

or later certain to be both motor paralysis and muscular atrophy, without regard to which came first; and the two kinds of cells are thus always affected, although not simultaneously.

Disease in any one of the three component parts of this neuro-muscular apparatus — ganglion cells, motor nerves, muscles—will produce a motor paralysis and atrophy. This should be very easily understood. If the ganglion cells are diseased, the motor nerve will degenerate and the muscle will be paralyzed and will atrophy. If the motor nerve is diseased, the portion of nerve below the site of disease will also degenerate and the muscle will be paralyzed and will atrophy as before. If the muscle itself is diseased, it may be paralyzed, of course, and may atrophy. The three symptoms, therefore, of disease of the neuro-muscular apparatus are: 1, motor paralysis; 2, atrophy of muscles; 3, electrical changes brought about by degeneration of nerve and muscle.

We can now readily understand why there has been such dispute, when these three symptoms were present, as to which one was diseased of the three component parts of the neuro-muscular apparatus—ganglion cells, motor nerves, or muscles. The real objective point is the muscle. It is very dependent on the nervous system, and the nervous system is very dependent on it. Neither can do without the other. The muscle can not contract intelligently except by means of the nervous system. The nervous system can not express itself except by means of certain muscles, and can not exist except by means of certain others. The brain, sending down its mandates to the cells in the anterior column of gray matter, and thence through the motor nerves, can only communicate its various thoughts and emotions to the outside world through the muscles, and can only act through them; and the nervous centers that, in their mysterious way, supply nervous force to the muscles of the heart, respiratory structures, and arteries, can not maintain life without muscular action, as of the vascular apparatus. On the other hand, of what use would a leg or a heart be unless each was in intimate connection with the nervous system? So, after all, it is the muscle that is to be studied in disease of this neuro-muscular apparatus. Muscular—*i. e.*, *motor*—paralysis and muscular atrophy, then, with or without electrical changes, are the signs of disease in the neuro-muscular apparatus, *i. e.*, of disease either in the anterior gray column, in the motor nerves, or in the muscles.

*A priori* it is difficult to understand why disease attacking one portion of this anterior gray column, say that of the lumbar enlargement, should not travel up throughout the whole column, implicating all the centers of origin of the muscles of the trunk, neck, heart, respiratory structures, face, and head; or why disease should not always extend inward through the muscles as well as outward to them. Laws of disease, however, as yet unknown to us are at play here, as in other structures of the body; and we can only study the workings of these laws without attempting an explanation of them. We can certainly say that, during the first three years of life, the anterior column of gray matter in the dorsal cord is specially prone to one-sided disease. We can certainly say that that portion of the anterior gray column containing the nuclei of the facial, hypoglossal, and spinal accessory nerves is specially prone to disease that does not extend upward or downward. We can certainly say the same thing of the nuclei of the different nerves of the eyeball, the third, fourth, and sixth. We can certainly say that in certain individuals the muscles alone are diseased. But certain as we are in saying all these things, we can not attempt to explain why it should be so. It must, moreover, be remembered that these different results were seen before the pathology was known; so that the nomenclature, being representative of the purely clinical or locally pathological standpoint, is by no means consistent.

The diseases of the neuro-muscular apparatus are known as—

1. Myelitis of the anterior horns, or cornua.
2. Glosso-labio-laryngeal paralysis, or bulbar * paralysis.
3. Progressive ophthalmoplegia.
4. Muscular pseudo-hypertrophy.
5. Progressive muscular atrophy.

Of these, the first three—myelitis of the anterior horn, bulbar paralysis, and ophthalmoplegia—are due to lesions in the anterior gray column; the fourth, pseudo-hypertrophy, is indubitably of muscular origin; while the fifth, progressive muscular atrophy, is sometimes due to lesions in the anterior gray matter, sometimes to muscular lesion, sometimes to both neural and muscular lesions. Each of the three due to central lesion has an individual localization in the anterior gray matter. The first, myelitis of the anterior horn, arises from implication of the anterior gray matter of the spinal cord; the second, glosso-labio-laryngeal paralysis, arises from implication of the nuclei in the medulla oblongata of the hypoglossal, facial, and spinal accessory nerves; while the third, progressive ophthalmoplegia, is due to affection of the nuclei of the ocular nerves in the floor of the aqueduct of Sylvius and the third ventricle.

Myelitis † of the anterior horns, or cornua, is a motor paralysis affecting muscles of the extremities that are associated in function, and followed by atrophy and electrical alterations in the paralyzed muscles. Although it may occur at any time of life, cases having been observed at the extremes of three months and sixty-seven years, there are yet two periods of life which seem especially predisposed to it—viz., the three first years of infancy and the period between the eighteenth and fortieth years. It may be acute, subacute, or chronic. In all cases the paralysis is the first symptom, and is followed by atrophy in the course of a few weeks in the acute cases, or a longer time in the chronic ones. It is usually confined to one extremity in children, generally to a lower limb, while in adults paraplegia is the most usual form of paralysis.

Glosso-labio-laryngeal paralysis ‡ is a motor paralysis with muscular atrophy, affecting the motor cranial nerves and their muscles, especially the hypoglossal, certain filaments

* An adjective bestowed upon the medulla oblongata because of its bulbous shape.

† Synonyms are anterior polio-myelitis, essential paralysis of children, infantile spinal paralysis, atrophic paralysis of children.

‡ The synonym is bulbar paralysis.

of the facial, and certain filaments of the spinal accessory. Usually the atrophy is the first symptom that is noticed, although some authorities contend that the paralysis may be primary. The atrophy first shows itself in the muscles



Fig. 2.

of the tongue, then in the muscles of the lips and the lower face (seldom in the eyelids), and, finally, in the muscles of the larynx, pharynx, œsophagus, and heart. The lingual difficulty is evidenced, as has been said, by the atrophy of the tongue, giving the tongue a fissured and crenulated appearance, as if its substance had been chipped out in places and trimmed on the edges, as is seen in Fig. 2, in which the thinning of the organ causes it to curl over and have a fallacious increase in size. Furthermore, the increasing paralysis causes difficulty in the pronunciation of the letters which are mainly pronounced by the tongue, and some difficulty in deglutition. The affection of the lower face and lips is denoted by a wasting of their muscles, by difficulty in the pronunciation of the lip-sounds, and by alteration in the expression of the face.

Progressive ophthalmoplegia is manifested by a paralysis of the muscles of the eye, which are of two varieties —the exterior and the interior. The interior muscles are the sphincter of the pupil and the tensor of the chorioid, while the exterior muscles are the six well-known ones attached to the globe. The third pair, the motor oculi, supplies these interior muscles and four of the six external ones, as well as the levator palpebræ superioris. The four thus supplied are the internal rectus, turning the eye inward; the superior rectus and the inferior oblique, the two elevators of the eye; and the inferior rectus, one of the two depressors of the eye. Of the two others of these six exterior muscles, one, the superior oblique, is supplied by the fourth or trochlear nerve, while the other, the external rectus, is supplied by the sixth nerve, the abducens. It is the nuclei of these different ocular nerves which are affected in the so-called ophthalmoplegia, and the symptoms are thus the symptoms of paralysis of these exterior and interior muscles, together with the levator palpebræ superioris. As might be expected by reasoning beforehand, the paralysis may sometimes affect the exterior muscles, sometimes the interior muscles, and sometimes partially both.

Muscular pseudo-hypertrophy is a disease of early childhood, characterized by a deposit of fat around the muscular fiber, more especially in the muscles of the lower extremities, which come to have a hypertrophied appearance. The upper extremities are usually affected simultaneously with an atrophy, and the contrast between the seemingly sturdy legs and the wasted arms and shoulders is not likely to be forgotten when once seen. Attention is at first directed to the disease by the stumblings and falls and increasing weakness, which seem the more inexplicable because of the simulated robustness of the members.

Progressive muscular atrophy is a disease about which there has been much dispute and great confusion. The early writers were strongly of the opinion that it was always due to disease of the anterior gray column; Friedreich wrote a great tome upon the subject in 1873 to prove that it was always of muscular origin; and in the last few years facts have accumulated to prove that it has sometimes a muscular and sometimes a central origin. The great strife waged in regard to the pathology led to an attempt to throw light upon this subject by the study of so-called "types," or, in other words, to say that, when certain groups of muscles were affected, the disease must be of central origin, and that, when certain other muscular groups were affected, the disease must be of peripheral origin. This type-making business has been carried to such ridiculous extremes that there



Fig. 3.

are fully a dozen different groups which the pretended discoverers would have us know by their own names; nevertheless, we are warranted, both from a clinical and from a pathological standpoint, in accepting four types:

1. The hand type.
2. The juvenile type (Erb).
3. The infantile facial type (Landouzy and Déjérine).
4. The peroneal type (Charcot, Marie, Tooth).

1. *The Hand Type.*—In this the onset is generally in the right hand, occasionally in both hands. The short muscles of the thumb and the ball of the little finger are generally first affected—the so-called *thenar* and *hypothenar* eminences. It is usual for the atrophy to begin in the abductor pollicis brevis, and then be observable in the opponens and adductor. The complete atrophy of these thumb muscles produces a condition to which the name has been given of "ape-hand" (*Affenhand*). Fig. 3 shows this beautifully, besides the droop of the wrist due to ulnar paralysis. At about the same time, sometimes a little sooner, sometimes a little later, the interossei are implicated, as is to be seen by a sinking of the spaces on the back of the hand; when this atrophy has attained to a certain grade, it produces, together with a contraction of the antagonist muscles, the so-called "claw-hand" (*main-en-griffe, Klauenhand*).

Consecutively to the hand muscles, often after a long time, sometimes even after years, the forearm or upper-arm muscles are usually attacked. In the forearm it is apt to be the abductor and extensor pollicis longus, the supinators, and the flexors. In the upper arm the deltoid is almost invariably the first to waste, then the biceps, and, finally, the triceps last of all. But, sooner or later, the muscles of the trunk may be implicated, especially the trapezius, the pectorals, the rhomboids, and the latissimus dorsi. Atrophy is infrequent of the cervical or respiratory muscles, or of the diaphragm. After many years of duration the nuclei in the medulla oblongata may be affected, and then may ensue atrophy of the tongue and difficulty of deglutition, and death may result from inanition or respiratory disturbance.

2. *The Juvenile Type* (Erb).—This form was first described by Erb, in 1884, and differs essentially from the hand type in the location of its onset, which is almost always in the muscles of the shoulder and upper arm, far less often in the muscles of the pelvis and lower extremities, while, as has just been explained, the hand type primarily affects the hand muscles; and only secondarily, often after a long time, are the shoulder and arm muscles involved. The shoulder and arm muscles often atrophied are the pectorals, trapezius, rhomboids, serrati, latissimus dorsi, longissimus, sacro-lumbalis, forearm flexors, supinator longus, and triceps; and, in the lower extremities, the glutæi, quadriceps, peronei, and tibialis anticus.

3. *The Infantile Facial Type* (Landouzy and Déjérine).—It generally begins with an atrophy of the muscles of expression, which is thus described by Landouzy and Déjérine: "The face is in repose, the lips protruding, the brow like ivory, a seeming protrusion of the eyes; in efforts at mimicry the smile is sad (*rire en travers*), the movements of the lips are incomplete, and the immobility of the lips is in marked contrast to the animation of the eyes." When the face is wasted, it is the rule that the muscles of the shoulder and arms are involved next; but certain muscles usually remain intact—such as the supra-spinalis, the infra-spinalis, the infra-scapularis, and the flexors of the hand and fingers.

4. *The Peroneal Type* (Charcot, Marie, Tooth).—The French writers described this form in 1886, while Dr. Tooth states that he also called attention to it at the same time in his graduation thesis. As is indicated by the name I have given it, it first shows itself in the muscles of the leg, invading the hand, and then the forearm several years afterward.

The following table shows, side by side, the location of the atrophy in each of these four types:

| Hand type. | Juvenile type. | Inf. facial type. | Peroneal type. |
|---|---|---|---|
| Muscles of the thumb and fingers:<br>Abductor pollicis brevis,<br>Opponens,<br>Adductor,<br>Interossei,<br>Lumbricales.<br>Ape-hand.<br>Claw-hand.<br><br>Arm muscles:<br>Abductor and extensor longus pollicis,<br>Supinators,<br>Flexors,<br>Deltoid,<br>Biceps,<br>Triceps. | Muscles of the shoulder and upper arm:<br>Pectorals,<br>Trapezius,<br>Rhomboids,<br>Serrati,<br>Latissimus,<br>Longissimus,<br>Sacro-lumbalis,<br>Flexors of the forearm,<br>Supinator longus,<br>Triceps.<br><br>Muscles of the lower extremity:<br>Glutæi,<br>Quadriceps,<br>Peronei,<br>Tibialis anticus. | Facial muscles of expression.<br><br>In the shoulder and arm muscles these are intact:<br>Supraspinalis,<br>Infraspinalis,<br>Flexors of the hand and fingers. | Muscles of the leg, then the hand and forearm. |

The course of progressive muscular atrophy is gradual, and the duration is from five to thirty years. The chronic and fibrillary atrophy may not be detected for some time, until enough of the muscle has been affected to alter the contour and consistence, which latter is then found upon palpation to be softer and less resilient than in the healthy muscle. The paralysis is usually proportionate to the atrophy. It not infrequently happens that the loss of muscular strength first attracts the attention of the patient, and an examination then brings the atrophy to view. So-called "fibrillary contractions" are frequently present in all the types, and consist of minute movements of the muscular fibers, varying in extent from an occasional whipcord-like movement under the skin, likened by the patient to a pulse-beat, to a wide set of fibrillary movements that may set a whole group of muscles in tremulous movement. In many cases of progressive muscular atrophy the muscular atrophy is curiously conjoined with real or pseudo-hypertrophy—*i. e.*, an actual increase in the size of the muscular fiber, or a substitution of fat in the place of the muscular fiber or around it. This is well seen in Figs. 4 and 5, which are of a patient who has been in my hospital wards for some eight years, and whose case began with atrophy in the thumb muscles, as is shown in Fig. 3. Robust as this man seems, he can not raise himself from a sitting posture without great aid, and, when erect, can be literally pushed over by a light touch with the finger. Especially noteworthy are the con-

trast between the size of his shoulders and his upper arms and between his forearm and his upper arm; the great ridge in his dorsal and lumbar spine from curvature of the verte-



FIG. 4.

bral column anteriorly to compensate for the atrophy and paralysis of the anterior abdominal muscles; the pseudo-hypertrophic outgrowth on the left calf; and the many alternating atrophies and hypertrophies.

The electrical changes in these different diseases of the neuro-muscular apparatus are often very considerable. In order to understand them it is necessary to have some comprehension of the mode of reaction of a healthy nerve and muscle to the galvanic and faradaic current. For diagnostic purposes two currents, the galvanic and the faradaic, are used. When the faradaic current is applied to a nerve leading to a muscle, or to the muscle itself, a contraction of the muscle results, dependent upon the strength of the current used, very little difference being observed between the effect of the positive and that of the negative pole.

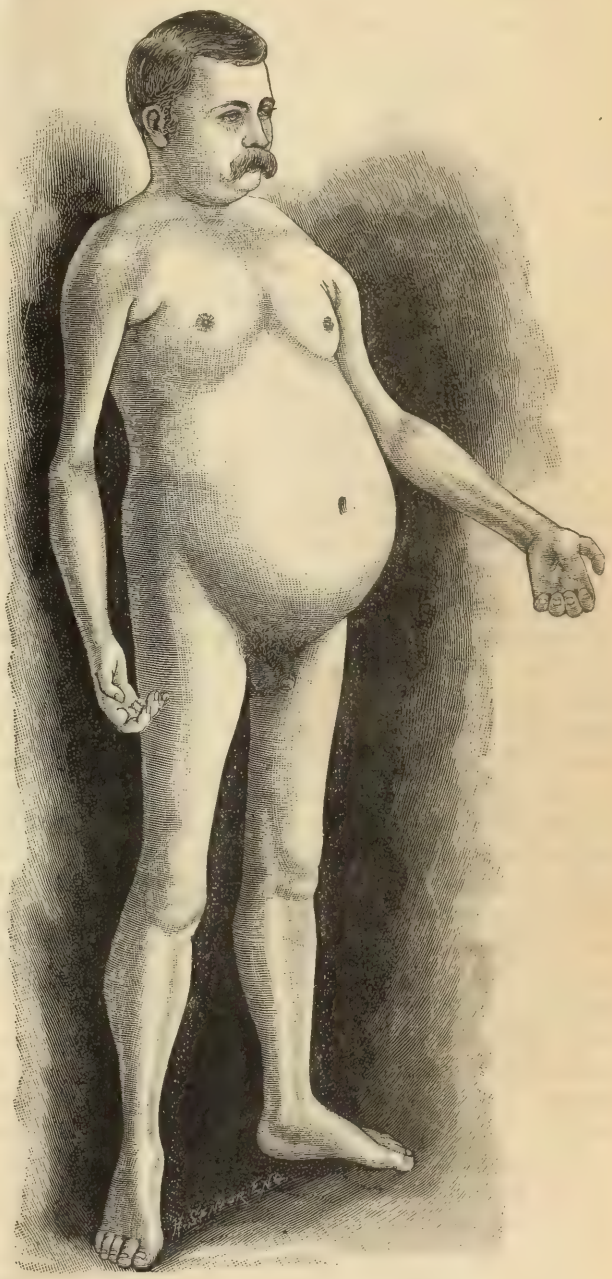


FIG. 5.

When, however, a galvanic current is applied to a motor nerve leading to a muscle, or to the muscle itself, the resulting contraction of the muscle will be very different accordingly as the positive or negative pole is employed. If we search for the weakest galvanic current that will cause a muscular contraction, we shall obtain it first with the negative pole, before we can obtain any contraction whatsoever with the positive. Nor is this all. This contraction thus obtained with the negative pole is only seen when we close

the circuit, and is not at all present when we open the circuit. Let the galvanic current now be made stronger, and we shall obtain an intensification of the contraction thus produced with the negative pole at the closing; and after a while we shall obtain a contraction with the positive pole, sometimes first at the closing of the circuit, sometimes at the opening of the circuit. Then, making the galvanic current still stronger, we shall obtain an intensification of what we have already obtained—viz., a contraction with the negative pole at the closing, and with the positive both at the closing and the opening. It will be noticed that so far we have obtained no contraction at all with the negative pole at the opening of the circuit. It is very important to remember that this will not be obtained in a healthy nerve or muscle until the current becomes so strong as to be painful.

From this it will be observed that the healthy muscle reacts first to the negative pole at the closing, and then to the positive pole either at the closing or the opening, and finally that the negative pole at the opening does not produce a contraction unless the current is so strong as to be painful. Suppose, then, that the negative pole at the opening gives us a muscular contraction in a certain case with the same strength of current that is sufficient for a contraction with the negative pole at the closing, is it not evident that the reaction of the healthy nerve and muscle is entirely altered? Or suppose that exactly the same strength of current gives us equally strong contractions with the negative closing and the positive opening and closing, is it not again evident that there is some alteration? In other words, any marked departure from this healthy formula of nerve and muscle is evidence of disease. At the same time that we get these changes with the galvanic current we should also have others with the faradaic, consisting simply of decreasing reaction to the current, so that larger and larger quantities would be required to produce a muscular contraction. But there are other electrical symptoms in these cases, which any one can understand who will take the trouble to study them in any case of neuritis in the human being, or in an artificial neuritis in the frog, rabbit, or guinea-pig that can be produced by section of the sciatic nerve. It will then be found that during the first ten days or two weeks there will be, in the motor nerve and in the attached muscle, decreasing reaction to both the galvanic and the faradaic currents. About the third week the nerve and muscle will begin to behave differently to each of the two currents. To the faradaic the nerve and muscle will display a constantly decreasing reaction, so that larger and larger quantities of electricity will be required, until it may happen that no contraction whatsoever can be produced. But, singular to say, at this period—*i. e.*, about the third week—the nerve begins to show an increasing reaction to galvanism, so that lesser and lesser quantities are required to produce a muscular contraction. At the same time a reversal in the healthy polar formula, such as has been above described, is apt to ensue, so that the negative opening may equal the positive closure, or the positive opening and closure may equal a negative closure. In the course of time this increased reaction to galvanism and the reversal of the polar formula may pass away, and the nerve and muscle may again decrease in its reaction to this current. During this whole period of altered electrical reactions the muscular contraction is more sluggish than in the healthy muscle. All these alterations in the reaction of the healthy nerve and muscle, either together or separately, are known as the reaction of degeneration. They consist, as will have been seen, of—

1. Decreased reaction to faradaism and galvanism.
2. Increased reaction to galvanism.
3. Reversal of the healthy polar formula.
4. Sluggish muscular contraction.

These should be studied with the same care and patience that are given to auscultation and percussion.

The pathology of these different diseases of the neuromuscular apparatus is very well understood at the present day. In three of the five diseases which have been enumerated—myelitis of the anterior horn, glosso-labio-laryngeal paralysis, and progressive ophthalmoplegia—the lesion consists of death or injury of the ganglion cells in the anterior gray horns of the spinal cord or in the motor nuclei of the medulla oblongata, the aqueduct of Sylvius, and the third ventricle. The changes in these ganglion cells vary somewhat according to the extent and kind of the disease. In some cases there is not a vestige left of the cells. In others they are more or less disintegrated, some processes being lost, others being altered in shape and size, while the nuclei or nucleoli may be destroyed, although these latter almost invariably persist when any vestige of the cell is left. In myelitis of the anterior horns and in glosso-labio-laryngeal paralysis the affection is generally confined to the cells, or other changes are evidently consecutive to these, such as increase in the size of the vessels, increased growth of the connective tissue, and shrinking of the cord or medulla oblongata on the affected side. But in progressive ophthalmoplegia the affection of the ganglion cells seems to be only part of a somewhat diffused myelitic process. When the ganglion cells are affected, the motor nerves and the attached muscles will be found to have undergone serious alterations. The nerves are apt to be thinner, grayish looking, and more transparent, their axis-cylinder and medullary sheaths will be found more or less disintegrated, and the connective-tissue sheath thickened and its nuclei increased in size and number. The muscles usually undergo an atrophy, which may be of two kinds: the so-called simple atrophy, in which the muscular fiber is simply decreased in size but its transverse striæ are preserved, while in the degenerative atrophy the transverse striæ are lost. But there may also be hypertrophy or pseudo-hypertrophy of muscle, the first consisting of actual hypertrophy of the muscle fiber, the latter being a conversion of the muscle fiber into fat, as well as a surrounding deposit of fat. In the fourth of the five diseases which have been enumerated, muscular pseudo-hypertrophy, the disease is purely of muscular origin, cases having been collected by Middleton and Schultze in demonstration of this fact. In progressive muscular atrophy there can be no doubt but that some cases are of central origin, others of muscular origin, while it would seem, from the history of some few cases, as if a third class were both of central and of peripheral origin. I have been able to col-

lect thirteen cases in which the disease was central, as was proved post mortem, while there have been but two autopsies of cases of purely muscular origin.

The diagnosis of these various affections of the neuro-muscular apparatus is made, in the vast majority of cases, with ease and certainty. In every instance the symptoms are purely motor; sensory, cerebral, vesical, and rectal symptoms being either temporary in duration or entirely absent. Of course, if the anterior gray column should be implicated in diffused disease extending into it from other parts of the nervous system, the diagnosis may become a very complicated one; but this may be met by bearing in mind the usual complications. These purely motor symptoms consist, as has been said, of motor paralysis, muscular atrophy or hypertrophy, and altered electrical reactions.

Whenever these three symptoms are present, disease of the neuro-muscular apparatus may be positively diagnosticated. It then becomes a question as to whether the lesion is in the anterior gray column, in the motor nerve, or in the muscles.

The symptoms upon which lesion of the anterior gray column may be affirmed are a sudden onset of paralysis, followed in the course of a few weeks by atrophy and reaction of degeneration; or the group of symptoms described under the head of glosso-labio-laryngeal paralysis; or the gradual paralysis of the different interior and exterior muscles of the eyeball, described under the heading of progressive ophthalmoplegia.

The symptoms upon which a diagnosis may be positively made of disease of the muscles alone are the group of phenomena which have been described under the heading of muscular pseudo-hypertrophy, and the infantile facial type of progressive muscular atrophy described by Landouzy and Déjérine.

Undoubtedly there are many other symptoms that have been vaunted by different authors as of importance in the differential diagnosis, but these are, in my opinion, the only ones upon which we can place absolute reliance. For instance, it has been contended that the form of progressive muscular atrophy which I have described above as the "hand type" always points to a spinal origin, yet cases of purely muscular disease have begun in the hands. And Erb would maintain a purely muscular origin for his cases of the so-called juvenile type, but, as Schultze very clearly points out, Erb's cases are of several kinds, some being evidently pseudo-hypertrophies, others belonging to the Landouzy and Déjérine type, etc., while not a single autopsy has been made in this juvenile form of Erb.

The altered electrical reactions of the so-called reaction of degeneration are only indicative of muscular change. This is indicated very clearly, it seems to me, by the fact that this reaction of degeneration has been found in cases of both peripheral and central origin, as well as by the researches of Gessler upon guinea-pigs and lizards that demonstrated the dependence of this reaction of degeneration upon muscular atrophy alone. Fibrillary contractions, supposed to be of so much diagnostic importance in the days of old, are found in cases of both central and peripheral origin, and are, therefore, of no importance in the differential diagnosis.

*Causation.*—The most frequent causes of the diseases of the neuro-muscular apparatus are infection, heredity, muscular strain, trauma, acute diseases, exposure to continuous cold, and warm weather. The later German authors are displaying a tendency to ascribe the acute form of myelitis of the anterior horn to infection, because of the simultaneous manifestation of the disease in two or three children of one family or one locality. There is no definite proof of this, however, and it is possible that it may be explained by the fact to which Dr. Weir Mitchell called attention several years ago—viz., the greater frequency of myelitis of the anterior horn during the warmer months of the year. Heredity is usually found in the infantile facial type of Landouzy and Déjérine, and plays a large part in all the types. Some authors would maintain that heredity is a diagnostic mark of the purely muscular forms, but the scientific evidence at our command does not warrant this assertion. Friedreich points out the relation of muscular strain to the resulting atrophy in case after case, and it is a very familiar clinical fact to me.

Progressive muscular atrophy has often been known to follow typhus, diphtheria, measles, acute rheumatism, parturition, and cholera; so that these acute diseases must have some unfavorable influence upon the neuro-muscular apparatus.

*Diagnosis.*—In making a diagnosis it must not be forgotten that other diseases of the spinal cord and its surrounding membranes or osseous structures may extend into the anterior horns, in which case the symptoms of motor paralysis and muscular atrophy may be superadded to the original symptoms of the invading disease. Such complicating diseases may be spinal hæmorrhage, transverse myelitis, syringo-myelitis, or locomotor ataxia. All of these, besides the characteristic features of each of them, will have marked sensory, vesical, and rectal symptoms. Should a spinal hæmorrhage take place to such a limited extent as only to involve one anterior horn, it might be impossible to make the differential diagnosis; but I know of no such case on record. In the early stages of syringo-myelitis—*i. e.*, formation of a gliomatous tumor and cavity within the substance of the cord—the affection might be limited to one anterior horn, and thus cause confusion, but the later history of the case will make matters plain.

A differential diagnosis must also be made from the acute exanthemata; meningitis, traumatic, from ear disease, or cerebro-spinal; meningo-encephalitis of children; neuritis, simple or multiple; lead palsy; joint atrophies; and hysteria.

It is possible to confound the early stage of myelitis of the anterior horn with meningitis. But in the latter the mental disturbance is much more marked and of longer duration; the cranial nerves may be seriously implicated, the sensory as well as the motor, which never happens in myelitis of the anterior horn; there is usually also the retraction of the head characteristic of meningitis; and the paralysis is almost invariably hemiplegic in distribution, while hemiplegia is extremely infrequent in myelitis of the

anterior horn, and this hemiplegic paralysis is never succeeded by atrophy, except from years of disease.

The ordinary neuritis of a mixed nerve generally causes considerable and continuous pain, œdema, and hot and glossy skin; and the chronic form is distinguishable by the disproportion between the pain and the paralysis and atrophy, as well as often by the fact that it is confined to one nerve-trunk, or even one branch of a nerve-trunk. In multiple neuritis, differentiation is made easy by the infectious history, in some cases the malarious neighborhood, the continuous pains in both lower extremities, the steady progress within a week or two of the bilateral paralysis and atrophy, at the same time that the painful symptoms persist.

The extensor paralysis of lead palsy, conjoined with the lead line on the gums, colic, and history of exposures to lead, ought never to permit of confusion in diagnosis.

Atrophy from joint disease is too easily recognized to need more than a mere mention.

It is only necessary to call attention to the possibility of hysteria simulating a myelitis of the anterior horn, because the lack of the atrophy and of the electrical alterations and the presence of an unimpaired tendon reflex will demonstrate that the anterior cornua are not affected, even though there may be some doubt as to the existence of a motor paralysis.

*Prognosis.*—The prognosis of these different forms of disease of the neuro-muscular apparatus varies. In myelitis of the anterior horn the rule is that there is always a certain incurable residue of paralysis. In the acute forms the amount of this can not be determined for several weeks, and not for months in the chronic forms. Glosso-labio-laryngeal paralysis is always fatal. Progressive ophthalmoplegia is sometimes recovered from, though the majority of cases are fatal. Muscular pseudo-hypertrophy is incurable. Progressive muscular atrophy usually runs a chronic course and ends in death after years of duration; but there is a doubt at the present day as to whether the purely muscular forms are not amenable to treatment. Schultze details a remarkable cure, and I have seen great improvement in several cases in which the muscular pain was so great as to seemingly warrant the diagnosis of diffused neuritis.

*Treatment.*—The treatment of all the different forms of disease of the neuro-muscular apparatus is essentially the same in its general principles, except that the acute forms of myelitis of the anterior horn may be accompanied by reflex disturbances calling for special treatment—such as fever, coma, convulsions, etc. In the main, however, the therapeutic items are these: Rest, electricity, massage, and drugs.

Rest is of prime importance to a muscle or nerve degeneration from any cause whatsoever. I have never yet failed to obtain some improvement by rest in any case of muscular atrophy if there was any muscular tissue remaining. The rest should be proportioned to the extent and acuteness of the disease. In wide-spread or acute atrophy rest should be absolute in bed for weeks, or a month. In more localized disease the rest need not be so radical. In every case, however, and at every stage, it should be borne in mind that fatigue is to be avoided.

The electrical treatment should be by means of galvanic, faradaic, and static currents, and should be addressed to the spinal cord, the motor nerves, and the muscles themselves. Galvanism of the spine should be by means of large electrodes, one being placed over the upper cervical region and the other in the lower dorsal, and the duration of the application should be from five to ten minutes, and the current should vary from five to thirty milliampères. It will be observed that I am no believer in the short applications and feeble currents that are so much vaunted by the German authorities. Patients become used to electricity as they do to any drug, with this difference—that the larger doses of electricity, unlike the larger doses of many drugs, will cause no ill effects. But the idiosyncrasy of each patient will vary in regard to the quantity of electricity that can be taken, and this must be ascertained. Usually, however, the strength will vary between the figures I have mentioned. Galvanism and faradaism should be applied to the affected nerves and muscles at what are known as the "motor points," a description of which can be found in any text-book of electricity. The motor points will indicate the nerve-trunks and the motor filaments going into the muscles, and it is precisely at these spots that galvanic and faradaic currents must be applied. Here the quantity of galvanism should be much smaller, and should vary from two to ten milliampères, care being taken not to cause any painful sensation. A gentle faradaic current will be quite sufficient, and the application should be from five to ten minutes. In some cases I have derived considerable benefit from an application of the gentle faradaic current from thirty to sixty minutes, flat sponge electrodes being fastened on to the affected muscles by means of elastic bands. Static electricity will be found of use in certain cases of greatly atrophied muscle, and, as Charcot has pointed out, contractions can sometimes be obtained by this form of electricity when it is impossible to obtain them by galvanism or faradaism.

Massage can be used with great advantage in the chronic forms, or in the chronic or later stages of the acute forms. It should always be limited in duration from five to twenty minutes, and should be very gentle, special care being taken not to gripe the muscle or irritate it mechanically in any way. Massage is, however, a very uncertain agent, in spite of all the praise that it is nowadays the fashion to bestow upon it, and it should be carefully determined in each individual case as to whether the manipulation of the muscle is beneficial or not. In some cases it is positively harmful, and in these it should be abandoned.

Except in the acute or subacute forms of myelitis of the anterior horn and progressive ophthalmoplegia, drugs are usually of little use, and we can only employ them empirically. Iodide of potassium, ergot (either in the form of the fluid extract or in that of ergotine), and strychnine may be used, but I am bound to say that I have never seen any tangible effects from them.

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## THOUGHTS ON THE SURGICAL TREATMENT OF PSEUDO-MEMBRANOUS LARYNGITIS.*

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Several months since, in conversation with a number of medical friends, the subject of surgical relief in the treatment of pseudo-membranous laryngitis was brought up, and I was a good deal surprised to hear the various opinions expressed in regard to the advisability of operative interference by gentlemen of long and large experience, of close observation, and of deliberate judgment. One thought that tracheotomy did little good in croup and diphtheria; another's experience led him to think that patients with these diseases stood a better chance of recovery without the operation than with it; another would be willing to operate if it was desired; still another, to show his lack of confidence in the benefit of the operation, would resort to it only when the patient was moribund. I believe these opinions express fairly well the feeling of a considerable number of the medical profession; and it seemed to me that the single point in the treatment of pseudo-membranous laryngitis that relates to the advisability of surgical interference in this condition might profitably be made the subject of discussion by this society this evening, for I can not help thinking that the general experience of the profession will warrant us in taking the position that if the opinions already cited were at all common in the profession, many patients would die whose lives might be saved, and a very great many more would suffer great distress that the surgeon is in a position to prevent or relieve. When an operation is proposed, we ought always, I think, to lay plainly before the parents or friends what the chances of recovery are without the operation, and what the subsequent history of the case is likely to be if the patient is not operated upon, that an intelligent choice may be made by those on whom the responsibility rests of accepting or declining the aid that the surgeon offers. The rather loose statement is made that many of these patients recover without any operation; but I have found it quite impossible to reach any reliable conclusion as to anything like an exact percentage of those that do so recover. In order to be examples of this exceptional termination, they must have, besides loss of voice and paroxysms of ever so severe breathing, a continuous labored respiration that is manifested by the at least moderate sinking in of the soft tissues above the sternum and at the epigastrium in inspiration. Where the breathing is obstructed, but short of the degree above mentioned, we have all certainly seen relief come either spontaneously or as the result of medical treatment. Personally, I have never happened to see relief take place from such a condition, nor have I heard of its occurrence in cases that I have seen in consultation, although I am well aware that it does occur. In order to get at some reliable data on this point and some others, as well, on the advisability of operating in these cases, I had a careful search made of the journals in the Surgeon-General's office at Washington, and, although I received a good deal of matter of interest on some points which are well enough understood—matter that would be entirely out of place in this paper—the only statement bearing on the point now under discussion was, "It has been estimated by some authorities that of those not operated on, not one in fifty recovers" (D. W. Cheever, "Med. and Surg. Rep., Boston City Hospital," 1870, p. 500). The context would seem to indicate that this statement related to *all* cases of laryngeal obstruction of a croupous or diphtheritic character. Lovett and Monro ("Am. Journal of the Med. Sciences," July, 1887, p. 166) state, on this subject: "Steiner has seen only three recoveries of this sort. Mackenzie

* Read before the New York Surgical Society, April 11, 1888.

sets the death-rate without operation at 90 per cent., and in thirty three cases of croup treated medically many years ago by Dr. John Ware, thirty died. On the other hand are arranged Lewis Smith, Meigs and Pepper, and Agnew, who believe that recovery without operation is more frequent than has commonly been supposed. The experience at the City Hospital [Boston] has been as follows: Forty cases of diphtheritic croup have been treated medically, and every one died. Dr. G. W. Gay, visiting surgeon, wrote, in 1886: 'Not a single case of pseudo-membranous laryngitis has ever recovered in this hospital without operation.' And he quotes Dr. D. W. Cheever, senior visiting surgeon, as writing to him in 1884: 'After reflection, I can not recall a case of membranous laryngitis that I have known to recover without tracheotomy.' Since Dr. Gay's article there have been two recoveries from moderate dyspnœa without operation." In addition to the experience above quoted, it is a thing to be prominently noticed that surgical writers, with few exceptions, make the statement that when medical treatment has failed to arrest the disease, and an already present asphyxia threatens to become complete, our only hope is in tracheotomy. Such an unqualified statement would certainly not be made by these writers if they had seen any considerable number of recoveries without operation. It seems to me, therefore, that with reference to this important point we may safely say that a very small percentage of cases end in spontaneous recovery—probably two per cent. would include all such cases; and that when recovery does take place in these cases it does so by what, in our ignorance of its causes, we call chance, a thing that we as surgeons can do nothing to favor, and that ought not to enter into consideration of what is the best thing to be done in the interest of the patient.

In regard to the history of the case, if the operation is not done, my experience has been that death is not nearly so painful as I was at first led to think. I make this statement with some hesitation, in view of the fact that many authors advise the operation on the ground that, even if the case has a fatal termination, the distress is less than without it. I am speaking now, of course, of those cases where dyspnœa is due simply to mechanical causes. Where patients have died from laryngeal obstruction alone the picture has always been the same—gradually increasing restlessness and dyspnœa, with paroxysms of spasm added at times, and threatening death; then the spasm is relieved in a few moments, but a very considerable amount of distress continues, and then a rather rapid development of unconsciousness, the coma continuing for several hours and the patient dying quietly, the breathing being still obstructed. And this is so uniform, in my experience, that I have been in the habit of telling the patient's friends that, even if the operation is not done, the patient will not choke to death with great struggling and distress, but will die unconscious and with comparative ease. I should be glad to know how far the experience of the members of the society gives support to this position. The same change takes place, of course, minus the laryngeal spasm, in those cases where death is due to extension of the membrane below the tube, and due to the same condition of imperfect aeration of the blood with its effects on the brain and on the circulation.

My own personal experience in the treatment of pseudo-membranous laryngitis by surgical interference comprises only twelve cases; and if I drew my conclusions from these cases alone, I should feel indisposed to urge operative aid, even though I might be willing to resort to it if desired. But one's personal experience, especially when limited to a few cases, should never be made the basis of dogmatic conclusions, but rather be put into the common fund of knowledge, from which broad and discriminating and exact deductions can be drawn. Of these twelve cases, in every one there was a condition of such well-marked and continuous dyspnœa, that had lasted at least two hours, that there could be no doubt in the mind of any surgeon who advocates the operation that each one was a proper case for surgical relief. In some the dyspnœa had lasted longer, and in several so prolonged had the dyspnœa been that the operation was done with the hope, but without the expectation, of a successful final issue. The ages varied between ten months and twenty-one years; the disease in seven cases was diphtheria and in five croup; the day of the disease, from the second to the sixth day; all were anæsthetized with ether or chloroform except one, an adult. In none was there dangerous hæmorrhage, and in three the hæmorrhage was not even troublesome. In all, except one case, the relief to the breathing was immediate and complete, although subsequent dyspnœa, from extension of the membrane below the tube, was developed in several of the cases. In every case, except one, the operation was in no way responsible for the death of the patient; but I am persuaded (but can not, of course, prove) that life was prolonged by it. The result in each case, except one, was death, and this case where recovery took place was one of croup in a male child, seven years of age, operated upon in St. Peter's Hospital, Brooklyn, on the sixth day of the disease. In one case of a child, six years of age, suffering with diphtheria, operated on on the fourth day, death took place in about fifteen minutes after the introduction of the tube, apparently from shock. In this case I believe the child would not have died so soon if the operation had not been performed. In every case in which I have performed tracheotomy I have given the relief to the breathing that could fairly be expected from the operation, and in no case, except in the case of death on the table, has there been any regret expressed on the part of the parents or friends that the operation had been done; but, on the contrary, there has been satisfaction felt and expressed that even temporary ease had been furnished.

I think the examination of large numbers of cases of either croup or diphtheria in which tracheotomy has been practiced will bear out the statement that, in the vast majority of cases, it does good immediately the tube is introduced, that the patients do better with it than without it, and that a very considerable number of patients are not only temporarily relieved, but ultimately recover from the disease. In advising the operation, we recommend a procedure that substitutes for a chance an exact surgical measure that will accomplish its object in all but a few cases.

And, while making this statement, I bear in mind all that is disagreeable, difficult, or dangerous in the performance of the operation in the way of hæmorrhage, complete asphyxia, etc., with which we are all familiar. The article in the "American Journal of the Medical Sciences," already mentioned, gives, in tabulated form, the percentage of recoveries in 21,853 cases of croup and diphtheria—6,135 recoveries and 15,552 deaths—or 28 per cent. recovered, and this varies from 24 per cent. among French authors to 31 per cent. among German authors. No allegation of anything approximating such a percentage of recoveries has ever been made, so far as I am aware, for any method of treatment without surgical aid. And we are advised by some to deprive our patients of a fair prospect of recovery on account of the risks of the operation, and offer them the small probability of spontaneous relief. These carefully prepared tables of statistics, however, are calculated to make us lose sight of one of the chief objects of tracheotomy, inasmuch as they all represent percentages of recovery from disease, and not relief from the condition of laryngeal obstruction. They are, of course, entirely different things. The operation is on the same footing as any of the medicinal agents that are used in the course of treatment, and the objection raised against tracheotomy, that only 28 per cent. of the patients recover, is just as forcible against stimulants and nourishment, excepting always its small risks; and the surgeon might with equal propriety argue against the use of means to check a pulmonary hæmorrhage, on the ground that 90 per cent. of the patients would die of phthisis, even if the hæmorrhage was checked.

It seems to me that if tracheotomy is resorted to, not as a last resort, but at an early stage of the disease—as soon as the breathing has become markedly and continuously obstructed—it can be as confidently expected to accomplish its purpose as most surgical operations. The only positive contra-indication to its adoption would be the presence of the cause of obstruction below any point where the tube could safely be introduced. But, with this exception, we are from time to time reminded, by resort to tracheotomy, that the operation is a justifiable one even in apparently hopeless conditions, and that lives are saved when death was the only termination that could reasonably be anticipated. Each case must be considered by itself, and our advice for or against an operation be given only after due consideration of every element in the case that could affect the prognosis, and there our responsibility, as regards the advisability of the operation, ends. My attitude toward these cases would be, not that there should be a good reason for doing the operation, but that every patient with severe and continuous dyspnœa is entitled to the benefit of tracheotomy unless there is good reason for not doing it.

A discussion of the subject under consideration would be incomplete if the matter of intubation were omitted; yet, from lack of any experience of my own on the living subject with intubation, I can only present some thoughts based on the observations of others. Our attention has been directed to the supposed advantages of intubation over tracheotomy, and it is maintained for it that it is easily performed and instantaneous in its results; that it avoids the making of a wound and the risks run through hæmorrhage, shock, subsequent pneumonia, inspiration of dry air, removal of the tube, and possible imperfect healing, etc., of the wound; that the tubes clean themselves, are easily coughed up if obstructed by membrane, require no skilled nursing, and involve no after-treatment; while there are some acknowledged dangers—such as injury to the larynx in introducing the tube, pushing membrane before the tube, and the passage of food through the tube. Some of these advantages are manifest enough—such as the rapidity of its performance, and the avoidance of all the risks of tracheotomy—but the evidence, I think, is still inconclusive that it is very easy of performance and free from shock, or that it has less risks of pneumonia; indeed, from what we know of pulmonary hæmorrhage, I should be disposed to think the danger was greater from particles of food passing through the tube than from blood trickling in from the tracheal opening, and, inasmuch as it is easy to furnish moist air through the trachea, the advantage of the laryngeal tube is more apparent than real. The testimony in regard to the removal of the tube is contradictory; if it is coughed up easily it has not much to recommend it, and if it is removed with difficulty artificially it becomes a much greater source of danger than the tracheal tube, and would require more skill to attend to it than even the trained nurse possesses. I can not understand how the tubes can clean themselves. That many of the objectionable features of intubation will be removal by those who are advocating its use so temperately, and its dangers in some measure be overcome, can not be doubted. Its statistics up to the present time, on the whole, fall rather below those of tracheotomy, except in very young children. And I think we are justified in indorsing the conclusion of Dr. Charles E. Sajous ("A Study of the Principal Objectionable Features in Intubation," "N. Y. Med. Jour.," July 23, 1887, p. 95). In comparing intubation with tracheotomy he says: "It does not compete with the latter, therefore, but stands second to it, to be resorted to when the former is not permitted. This secondary position it has about held for the past year, and since, as time advances, there does not seem to be an increase in the proportionate number of recoveries, the profession is gradually becoming accustomed to intubation in the light of an easier, but less promising, operation than tracheotomy."

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## APPARATUS FOR RECORDING LATERAL CURVATURES OF THE SPINE.

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I am aware of no apparatus constructed in America for recording and measuring the curves of the body and at the same time reducing them to convenient size. Various contrivances have been in use in Germany for these purposes. A very exhaustive article by Dr. Wilhelm Schulthess, of Zürich, appeared in the "Centralblatt für orthopädische Chirurgie" in April, 1887, in which he classifies all methods used up to that date for recording lateral curves of the spine into four groups—

1. With instruments by which measurements alone are made from fixed points either on the body or outside the body. Of such are the instruments of Heinecke * and Mikuliez.†

2. With instruments by which an outline is taken with or without measurements. Such are the instruments of Graucko ‡ and Ad. Pansch # and H. Virchow, ‖ and the instrument described by Schulthess in the article referred to above.

3. Methods by photography.

4. By the construction of casts of plaster of Paris.

Orthopædic surgeons are demanding each year, in both private and hospital practice, more accurate means than are at present used for the recording of the various deformities of the human body.

The pathology and the rational treatment of lateral curvature of the spine are better understood to-day than ever before, but there is no method in vogue by which the progress of such cases can be intelligently and conveniently followed.

Too often is the deviation of the line of the spinous processes of the vertebræ from a straight line made the sole criterion as to the existence or not of lateral curvature of the spine. The establishment of some fixed relations between deviation of the spinous processes of the vertebræ and rotation of the bodies of the vertebræ may greatly assist the general practitioner in detecting early cases of this insidious disease.

It is supposed, although not definitely proved, that rotation may precede and exist entirely independent of any lateral deviation of the spinous processes.

The cuts showing the apparatus to be described in this paper are sufficiently clear, and the apparatus itself is so simply constructed that a few words will suffice to explain its working.

The apparatus consists of three uprights (Fig. 1—1, 2, 3), all in one plane, and a fourth upright (4) opposite to (2) and in a plane at right angles. These uprights are firmly held by cross-pieces above and below. Between the uprights (1, 2) is a board movable up and down on brass bearings at each corner, which can be held fixed at any height by wire stops (Fig. 1, *a* and *b*). This board carries paper for the record, and also a pantograph. The construction and manner of working of the pantograph it is unnecessary to explain. A word is, however, necessary as to its application here. At the point (*c*, Fig. 1) is a pencil fixed firmly. The end of the long arm of the pantograph is arranged to carry a pointer either at right angles to the plane of the uprights (1, 2, 3), (see Fig. 2, *d*), or in the same plane with that of the uprights (see Fig. 4, *e*).

An extension piece is adjustable at right angles to the long arm, carrying a pointer swiveled for convenience to travel through an arc of 90° (see Fig. 1, *f*). The pantograph may be hung from a hook on the top of the board when not in use (Fig. 1, *g*).

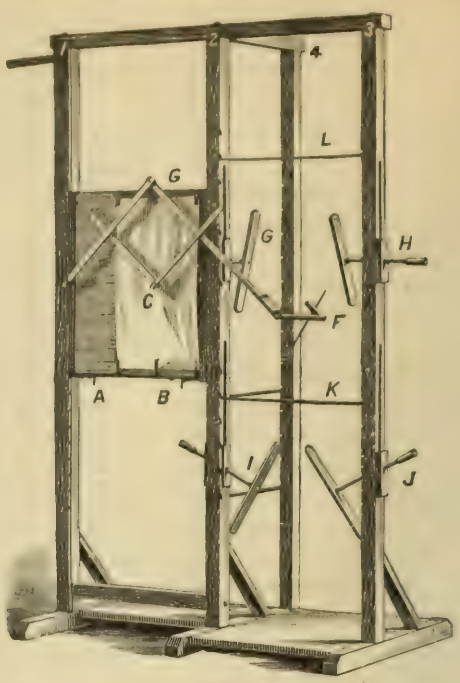



Fig. 1.

In the uprights 2 and 3 are slots in which run blocks (Fig. 1, *g*, *h*, *i*, *j*) holding threaded hand-screws of wood. Upon the ends of these hand-screws are plates. Placed between these same uprights are two rods of brass movable up and down (Fig. 1, *k*, *l*). Between uprights 2 and 4 are two similar brass rods.

Connected with the upright No. 1, on the side away from the board, is a simple sliding-rod with a scale attached for recording the height of the patient.

Now a word as to the manner of using the apparatus. The patient is stripped of all clothing to below the hips. The spinous processes of the several vertebræ and the inferior angle of each scapula are marked on the skin with a black crayon, the arms hanging naturally at the side. The patient then stands as is shown in Fig. 2. The four plates are adjusted by the screws so as to touch the patient lightly on each shoulder and hip. Any lateral movement is thus prevented. The two brass rods are so placed as to touch the neck and thighs, and thus to prevent any antero-posterior swaying of the body.

The patient is now fixed in position.

The board holding the pantograph is brought into proper position. The paper upon which the tracing is to be made is put in place upon the board.

The surgeon then steadies the pencil of the pantograph with the left hand, while with the right hand he touches with the pointer the black marks on the back corresponding with the spinous processes of the vertebræ and the inferior angles of the scapulæ. He then places the pointer upon the sides of the neck, and traces down the neck and over the top of each shoulder. To allow the pointer to adapt itself to the antero-posterior curves of the back, the pointer

* "Illustrirte Monatsschrift der ärztlichen Polytechnik," 1882, Heft 2.

† "Centralblatt für Chirurgie," 1883, 305.

‡ "Berliner klinische Wochenschrift," 43, 1881.

# "Anatomische Vorlesungen für Aerzte und ältere Studirende," 1. Theil.

‖ "Berliner klinische Wochenschrift," 28, 1886.

is fitted to a hole through the end of the pantograph, in which it slides with ease. This lengthening and shortening of the pointer permits the side of the neck to be reached

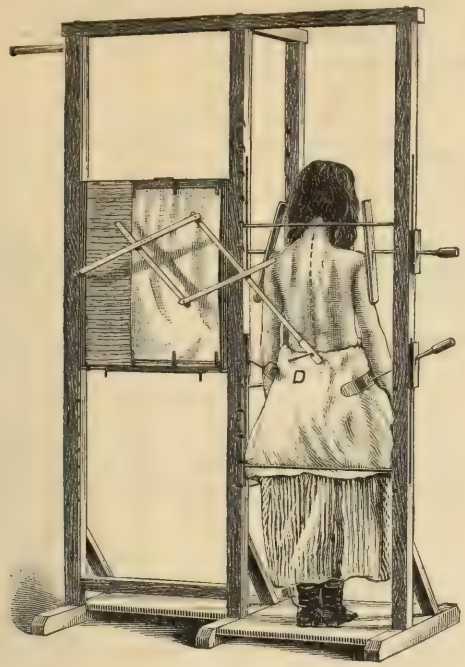



Fig. 2.

by the tip. The pointer is then placed where the inner side of the arm meets the body. The hips and the inner side of the arms are traced.

Now the patient stands as is represented in Fig. 3,

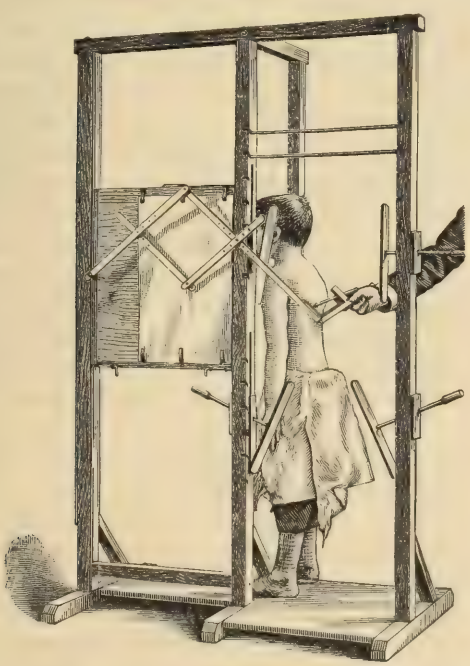


Fig. 3.

steadied by resting naturally against the brass rods between uprights No. 2 and No. 4. The right-angled extension piece is adjusted, and, by steadying the pencil, the surgeon carries, as before, with the right hand, the pointer downward from the seventh cervical vertebra the whole length of the back, keeping it always in contact with the skin. Cases of Pott's disease of the spine, with or without much kyphosis, may be thus recorded.

The patient next stands as in Fig. 4, leaning over, with hands outstretched, upon a flat surface of such a height as to bring the plane of the back horizontal. The side-pads are adjusted, and a support, not represented in the figure, is given to the shoulders on either side of the neck to prevent any swaying of the body forward and backward.

The pointer is placed in the long arm in the same plane as the plane of the paper for recording the curve, and at right angles to the plane of the back. Steadying the pencil as before, the right hand of the surgeon moves the pointer, in contact with the back, from one to the other posterior axillary folds. The patient is placed so as to bring

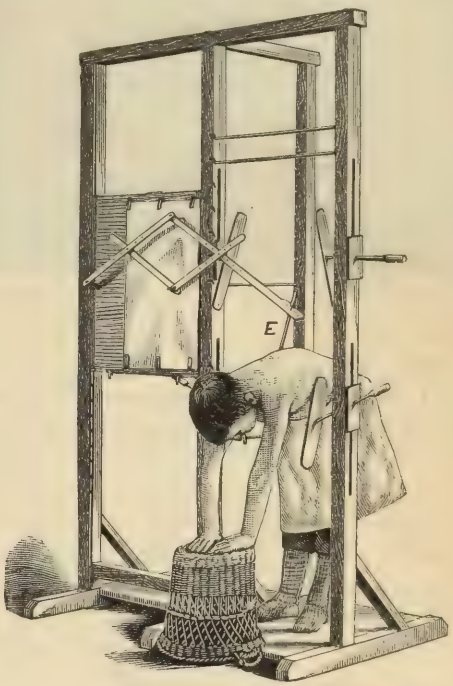



Fig. 4.

the tracing through the highest of the marks locating the inferior angles of the scapulæ.

Slight differences in the weight borne by the hands make little or no variation in the curves of the back. Thus is obtained the curve of rotation of the dorsal vertebræ. In the same manner may be obtained the curve of rotation of the lumbar vertebræ.

This apparatus, therefore, records

1. The lateral curve of the spinous processes of the vertebræ.
2. The outline and height and breadth of the shoulders.
3. The outline and height and breadth of the hips.
4. The relations between the arms in the natural position and the outline of the hips.
5. The distances of the scapulæ from the spines.
6. The antero-posterior curves of the back.
7. The curve of rotation in the dorsal region.
8. The curve of rotation in the lumbar region.

By adjusting the pantograph to different lengths of its

rods, the tracing of these various curves may be reduced in size, and thus be made convenient for records.

Measurements may be made of the back from these re-

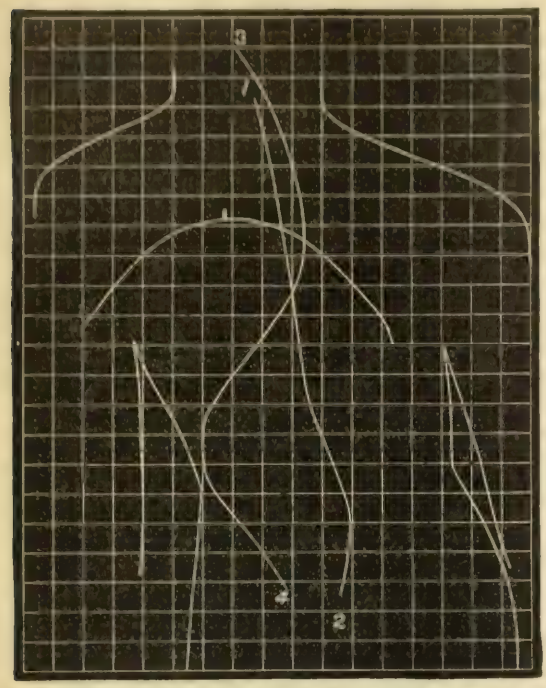



Fig. 5.—Hemiplegia, girl eleven years old. Each space represents one inch actual measurement. 1-2 = lateral curve; 3-4 = antero-posterior curve.

duced curves. For, suppose a given tracing is one third as large as life, and the paper upon which the tracing is taken is ruled into squares, each side of which is one third

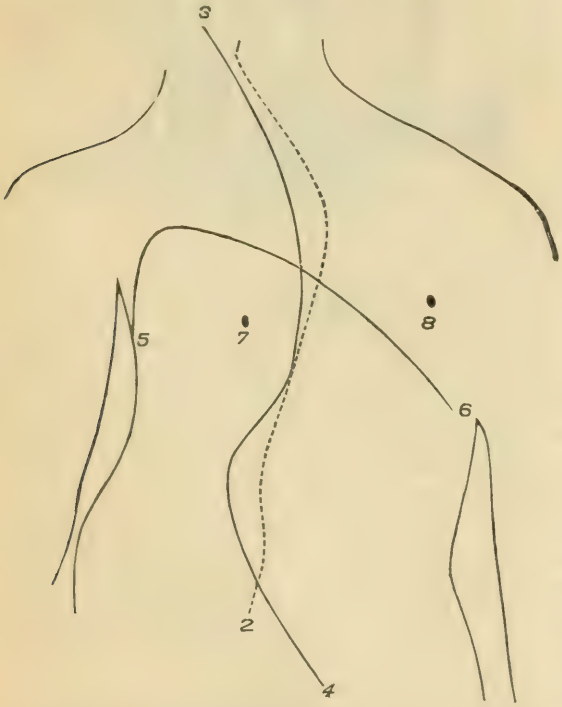



Fig. 6.—Lateral curvature, girl fifteen years old. 7 and 8 = the inferior angles of the scapulæ.

of an inch, then each square's side represents one inch of the life-size curve. This is illustrated in Fig. 5.

Figs. 6, 7, and 8 explain themselves, and are reduced tracings taken with the above-described apparatus. The curve 5–6 represents the reverse of the curve of rotation in the dorsal region—*i. e.*, the portion of the curve to the right of the figure corresponds to the actual curve on the left of the child, and *vice versa*. No lumbar curve was taken in these particular cases.

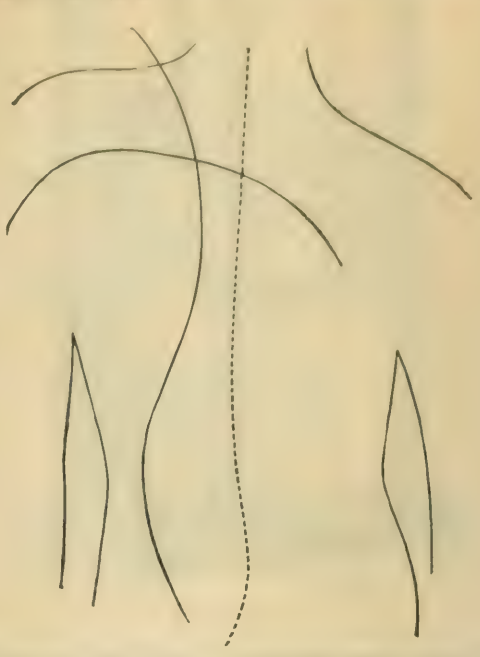


Fig. 7.—Recovery from morbus coxæ of left leg, girl twelve years old.

Perfect fixation of the patient in a position which shall always be a constant one is the great thing to be sought

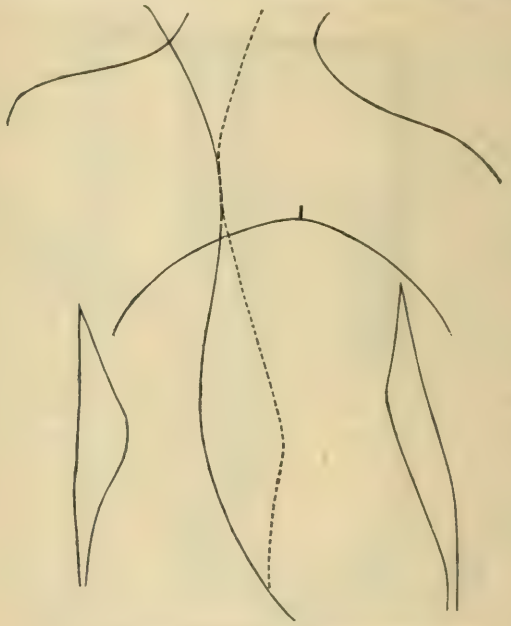



Fig. 8.—Lateral curvature, girl twelve years old.

for in accurate measurements and tracings. The present apparatus is not perfected, and is only the beginning of what is hoped will prove to be an accurate and ready method, especially in hospital practice, of recording cases of lateral curvature of the spine.

I wish to thank Dr. E. H. Bradford and Dr. H. L. Burrell, of the Children's Hospital, Boston, for many suggestions which have enabled me to finish this piece of apparatus, and for their kindness in allowing me to experiment at the hospital in its use.

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# THE PRESENT STATUS OF THE TREATMENT OF ROTARY LATERAL CURVATURE OF THE SPINE.*

By SAMUEL KETCH, M. D.,

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In bringing the subject of the present status of the treatment of rotary lateral curvature of the spine before you this evening it will be my object to discuss, and bring out a discussion of, a condition which I am sure has given rise to more theories and, as a result of these, more ingenuity in the means devised for the relief of a deformity presenting greater obstacles to success than any other encountered by the orthopædic surgeon.

In doing so it will not be my endeavor to present any new or startling hypothesis or to confront you with complex apparatus for the accomplishment of this purpose, but rather to show what has been or is being done, and to present our needs rather than our deeds. It is a fact well known to both the physician and the surgeon, lamentable as it seems, that as our knowledge of pathology and ætiology has increased, our therapeutic forces have not always kept stride with these discoveries. This being true in many instances where both pathology and ætiology are clear and without question, how much more true is it when even these elements are in dispute, and where, by the nature of the disease, few opportunities are given us for the clearing up of the problem! Although it is incompatible with the limits of this paper to give a lengthy account of the pathology and ætiology of rotary lateral curvature of the spine, it still will be well to enter briefly into some of the more important facts connected with this deformity.

In speaking of rotary lateral curvature of the spine, I wish most emphatically to be understood as referring here only to typical cases, in no sense including many curvatures which, while having the lateral element present and found in connection with many causes, are still not typical rotary curvatures.

First, then, it may be well to ask, What is a rotary lateral curvature of the spine? And this I would define briefly as follows:

A rotary lateral curvature of the spine is that lateral deviation of a portion or whole of the vertebral column which has as its most constant factor the rotation, torsion, or twisting of the bodies or segments of the bodies of the vertebræ, with accompanying or consecutive alterations in the shape of the thorax. Having thus briefly defined this deformity, the natural history of the disease will occupy our attention for a few moments. It can not have failed to impress itself strongly on those present that the progress of the typical lateral curvature is very slow, but nevertheless constant and progressive, and where we have the opportunity of studying its first manifestations (although this does not imply its origin), as in children, it gives no indications of assuming the distressing proportions which, untreated, many of the cases attain. This tendency to deformity, beginning with slight alteration of form, such as an elevated shoulder, slight prominence of the ribs, protuberant hip, with very little rotation (for I believe rotation to be one of the earliest symptoms), all of these unattended, as in inflammatory lesions, by Nature's warning—pain—is in itself considered as a rule unimportant by those not familiar with the nature of the disease, and not at all apt to result in the most malignant of deformities.

In using the expression malignant, I do so advisedly, for, while it is not intended to convey the idea of a fatal issue—as, for instance, we should employ the term in speaking of cancer—no other word sufficiently emphasizes the inveterate disposition of the deformity to increase. Furthermore, no deformity with which we are brought into contact exhibits in its slow, insidious progression, in its involvement of area, in its secondary effects on important internal organs, such decided alterations of form and such marked disturbances of function as rotary lateral curvature of the spine.

This, you will doubtless say, presents a picture of the worst cases of scoliosis, and this is undoubtedly true; but who among us would have the temerity to say when and where a rotary lateral curvature would end it left to its natural course? If it is true that the picture I have presented describes the worst cases, it will be also fair to ask, Why are they so? And I think the answer must be one of three. Either that they have presented themselves too late for the prevention of further deformity, or they have not received proper care, or they have had no treatment at all. It is true that many cases go to a certain amount of deformity and then cease, even if untreated, but this is not the ordinary tendency of the disease, and prognosis has not as yet reached such accuracy as will determine this self-limitation in a small number of cases. When it becomes recognized that what we are endeavoring to treat is but the effect of some cause, some irritation, if I may be allowed the use of such a term, the exact nature of which is as yet unknown to us, it will be seen that the problem of treatment embraces something more than the attempt to remove the mechanical results of such cause by the use of opposing mechanical means. This brings us directly to the present status of the treatment of rotary lateral curvature, and this may be tersely stated as consisting principally of two methods, or a combination of the two. I refer to the treatment by apparatus, or the conjoined use of apparatus and exercises.

I do not think in this connection it will be necessary to enter into a discussion of the treatment by complete recumbency or cutting (tenotomy) of spinal muscles, they being rarely employed at present, although both measures may be useful adjuncts at times.

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* Read before the Orthopædic Section of the New York Academy of Medicine, March 16, 1888.

The treatment by apparatus will be the first to receive attention.

It would be superfluous to go into an extensive account of all the varieties of apparatus used for the treatment of lateral curvature. They are, like the "sands on the seashore," innumerable, and, like the sands, have been buffeted by the angry waves of discussion until their merits are either acknowledged or their defects have rendered them useless.

At the present day, apparatus for the relief of lateral curvature may be described under two varieties—progressive or active, and fixative or passive. The first variety, or progressive apparatus, is the one where the lever or spring-action is employed with the idea of gradually pushing the spine into better position by pressure directed against the greatest convexity of the curve, the apparatus being so arranged that improvement, if any, can be constantly followed up by the surgeon, or, as used by some, for the simple purpose of retaining the spine in a good position by continuous, though moderate, pressure, the position having been previously obtained by proper exercises. I can not condemn too severely the faulty use of this principle in the treatment of lateral curvature by the use of heavy, cumbersome braces, the constant action and abnormal pressure of which often give rise to large excoriations and even sloughs of the skin, and I am sorry to say that this is constantly occurring, especially in cases sent for treatment to instrument-makers, to whom, unfortunately, many of these patients drift, and with whom they remain until it is too late to improve their condition. In my opinion, no active brace should be used in this class of cases for any other purpose than simply that of retaining the spine in an improved position, previously obtained either by appropriate manual exercises or combined manual and gymnastic movements. Under all circumstances these braces should be so constructed that their modification can be accomplished by the surgeon himself, and, furthermore, they should be light, easily removable to allow of inspection of the parts, and simple enough in their plan of action to be properly applied and adjusted by those having the home care of the patient.

The second class, or fixation apparatus, were originally constructed with the idea of firmly immobilizing the distorted spine in an improved position, the patient having been previously suspended or extended. This original plan has been modified to the extent of opening in front, and afterward lacing, the brace thus constructed, whether made of plaster of Paris, poroplastic felt, leather, or other substances, with the object of easy removal or renewal, and also in order to give proper exercise and attention to the subjacent parts.

Of exercises in the treatment of rotary lateral curvature the same remarks might be pertinent, so far as their number and variety are concerned, as have already been made in speaking of apparatus. There is, however, one thing in regard to them which I shall venture to bring before you. Conceding, as we all do, the undoubted value of proper exercises as adjuvants to our treatment, whether we use the force of gravity to pull the spine straight, by means of swinging, self-suspension, or a trapeze, or by automatic movements on the part of the patient, or by attempts to improve the general muscular tone—of all these I attach most importance to those exercises which have for their object the "unfolding" of the twisted vertebral column. These, I believe, can be applied with the greatest precision and benefit by means of the surgeon's hands. The importance of manual force has not been overlooked by surgeons in their attempts to relieve other deformities, and no appliance can rival the ease, proper application of pressure, and safety which manual exercises give us. Their success, however, as in all other orthopædic procedures, is a matter of detail, and these manual exercises should be given either by the surgeon himself or by an assistant whom he has personally and thoroughly trained.

Without entering into an extensive discussion of the comparative excellences of the two general varieties of apparatus which I have so hastily and imperfectly sketched, I shall at once proceed to the consideration of what is meant by a cure in speaking of rotary lateral curvature.

A cure of rotary lateral curvature would, to my mind, not only mean a restoration of the lateral deviation to the normal vertical position of the vertebral column, with its normal curves, but also the disappearance of that most constant factor and menace—the rotation—for as long as rotation exists we can not be said to have a normal spine.

As far as I have been able to judge from my own experience—and this has been based on the observation of a large number of cases, seen not alone in my own practice in public institutions, but also in the practice of other orthopædic surgeons—a cure would seem to imply one of two things: either the prevention of further deformity, or an amelioration of the condition originally observed. I hope, therefore, that I shall not be considered as detracting from the efforts of American surgeons when I state that, while I fully recognize the advances made in our treatment of joint and spinal diseases, especially of the inflammatory type, by no means that I have seen employed have I been able to convince myself of the entire disappearance of rotation in these cases. And this symptom must be prevented or removed before we can consider the vertebral column as restored to a perfectly normal state. Often do we see a marked lateral deviation completely removed, but here we have not had the factor of rotation to contend with, and consequently can not be said to be dealing with a typical deformity such as I have intended to discuss in this paper.

The question then presents itself, Are we able at the present day, and by our modes of treatment, to remove this rotation? And this I am compelled to answer in the negative. It may be maintained that cases have been treated where the rotation entirely disappeared. If this is so, are there any constant means by which this end may be uniformly accomplished, and can we honestly promise our patients that this can positively be removed by treatment?

Having thus criticised our ability to cure the disease, in the fullest expression of the term, by the means at present employed, you have a perfect right to ask what is proposed in the place of this treatment, and whether there are any means by which we can more perfectly accomplish our ends. And this I answer as follows: In the way of apparatus, nothing new, for all apparatus will find their efficacy in the proper application of mechanical laws; but in the way of prevention

I think a great deal can be accomplished. Proper prophylactic measures in other diseases, and their importance, are fully recognized and insisted upon by the profession, but their value seems to have been overlooked in all writings on diseases of the articulations. The application of prophylactic laws to articular disease and deformity lies rather in the arrest of and prevention of chronicity than in eradication. In the present state of our art this will be the nearest approach to prophylaxis possible. Therefore it is only by the earliest recognition of the symptoms, and an appreciation of their importance, that this end—prevention—can be accomplished.

About two years ago I had the honor of presenting before this section some "Remarks on Lateral Curvature, with Special Reference to its Occurrence in Children."* These remarks were based on an analysis of two hundred and twenty-nine cases seen at the New York Orthopædic Dispensary, the histories of which were collected from the records of that institution, representing those of applicants for relief during the years 1878 to 1885, inclusive. These cases presented the typical deformity, rotation being present in all. I divided these cases into three classes, as follows:

1. Those where the deformity was first observed from the first to the twelfth year, or the age of childhood.

2. Those where the deformity was first observed from the twelfth to the eighteenth year, or the age of puberty.

3. Those where the deformity was first observed from the eighteenth year and upward, or the age of complete development.

As far as the purposes of this paper are concerned, I shall simply refer to those occurring in the first class, or period of childhood.

During this period the deformity occurred in one hundred and twenty cases, the proportion in this period to the whole number analyzed being fifty-two per cent., or over one half of the total number of cases. In analyzing these cases, I called particular attention to the fact that I had been very careful to ascertain the age at which the curvature was first observed, and not, as had been frequently done, the age at which the patient first presented for examination. From this analysis it would appear that far the greater number of cases of rotary lateral curvature presented in children, and, from the nature of the symptoms at the time of examination, it was fair to conclude that even at this time the deformity had been present for a long period. From the results of the analysis made at that time, I formulated several conclusions, to two of which I will call your attention this evening:

1. That rotary lateral curvature is principally a disease of childhood, and may be either congenital or acquired.

2. That rotary lateral curvature should be looked for early in life, and, as a factor to early treatment, the careful inspection of children's spines becomes most important toward a prevention of the deformity.

It is with these strong convictions, based on a study and analysis of a large number of cases, that I have ventured to call your attention to the prevention or the prophylaxis of this grave deformity. I do not mean to say that even if the spines of children received the utmost care, that even if at the first appearance or suspicion of a lateral deformity the child were taken to a surgeon for treatment, we should not have lateral curvatures, but I am convinced that the inveterate deformities now seen in so large a number, and which are living protests against the inefficacy of late treatment, would be few and far between.

In conclusion, I can not urge too strongly the importance of the careful examination of children's spines, especially upon those who see many children in their practice, and upon those having charge of infant institutions; and to you, as teachers and specialists in this department of surgery, I would make an earnest appeal for the promulgation of such lessons as will convince both the profession and the laity of the utility of watchfulness and early treatment in the prevention of the marked deformity consequent upon rotary lateral curvature of the spine.

328 West Twenty-ninth Street, New York.

* "Medical Record," April 26, 1886.

## Correspondence.

### LETTER FROM LONDON.

*Uric-acid Diseases.—The Pathology of Rheumatoid Arthritis.—The Function of the Bile.—The Summer Session.—Teaching Students to Think.*

London, *May 1, 1888.*

At a meeting of the Royal Medical and Chirurgical Society last week Dr. Alexander Haig communicated the results of his investigations on uric acid in relation to disease. In a former paper he had endeavored to show that the chief value of the salicylates in uric-acid diseases lay in their preventing acids from causing retention of uric acid. Some drugs which had the opposite effect were considered in this second paper. They were chiefly lead, iron, and lithia, though the latter acted in an indirect manner. The relation of dyspepsia to the uric-acid headache, and the way in which it explained the periodicity of the attacks, were referred to. The presence of uric acid in the blood in chronic lead-poisoning was mentioned, and the action of lead in precipitating an attack of gout was held to accord with his views. Lead was one of the causes of epilepsy—a fact which was easy of explanation if epilepsy was due to uric acid. Iron caused a relapse in gout, and did harm in epilepsy and in uric-acid headache. He pointed out the grounds for his belief that some cases of epilepsy might be dependent upon uric acid, and called attention to the close clinical relationships between epilepsy and headache on the one hand, and between both and gout on the other. He suggested that epilepsy might be prevented by salicylates when it was due to accumulation of uric acid in the blood. He thought that fits of this class would perhaps be cured by diet, and he reminded his audience that it had been found that alkalies, given in combination with the bromides, enabled a smaller quantity of bromide to be used—a fact which strongly supported his view of the pathology of the disease.

Dr. A. E. Garrod, at the same meeting, made a further communication on rheumatoid arthritis, chiefly in regard to the muscular atrophy, deformities, and skin lesions, with special reference to their nerve origin. The skin changes he concluded were probably primary and perhaps the result of peripheral neuritis, while the muscular wasting and deformities were simply secondary to the joint affection; and he pointed out the

necessity for excluding cases in which sensory and motor disturbances were produced by pressure on the motor-nerve roots when the disease had attacked the vertebral column.

A very important discovery, nothing less than that of the function of the bile, was announced at a late meeting of the Physiological Society, but, as that society conducts its affairs somewhat differently from the other societies, and as its proceedings are more or less of a secret, I am not able to supply any great amount of information on the paper. The fact remains, however, that Dr. Martin and Dr. Dawson Williams announced that they had found that the presence of bile very materially increased the action of the pancreatic juice. I believe they will shortly make a full statement of their experiments to the Royal Society, and until then we must be content with the knowledge of the bare fact, but the only wonder is that it has not occurred to any one before to investigate the effect of the bile on the pancreatic juice, seeing that they are poured into the duodenum so close together.

The summer session opens to-day at our medical schools, and every year sees a growing tendency to make it a more important event; but a few years ago it was almost unheard of that a man should enter except in October; now at some of the smaller schools a considerable accession of numbers is always confidently expected, and this year that great and conservative institution, St. Bartholomew's Hospital, has followed the lead of its younger and smaller brethren, and announced on a fly sheet the advantages accruing to the student from commencing his professional studies in the summer months. The chief advantage: as it has always appeared to me, and it is a very real one, is that the student has the chance of learning something about the bones, and he is thus much more fitted to go into the dissecting-room when October comes round than if he only entered then for the first time.

Speaking of the students reminds me of a sensible article in last week's "British Medical Journal," entitled "Teaching Students to Think." In it the writer regrets that the work of the first two years in the medical school is so soon forgotten, so that when in the wards during the latter part of his career the student is quite unable to apply what he has been taught of anatomy and physiology at the earlier part of his career, and the writer in question thinks that the blame lies with the teachers quite as much as with the students. To my thinking he has got the saddle on the wrong horse altogether. The fault lies entirely, or almost so, with the examiners. So long as examinations are conducted as they are at present, so long will students simply make them the whole aim and object of their existence, learn their work in a parrot-like manner, and forget it as soon as they are through; and I don't blame them, for the all-important thing to them is to get through the examination. Common sense is a most excellent quality in a medical man, but it is a dangerous commodity for a student to deal in at the examination-table, and the students of the present day are therefore wise in their generation in sticking closely to the text-books rather than trusting to the light of nature.

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**Tracheal Ozæna.**—"According to M. Luc and some others, there exists," says the "Lancet," "a variety of tracheitis associated with nasal ozæna, but which, once established, evolves independently of the latter. The tracheitis is characterized by the fœtidity of its secretions, in which the microscope reveals the presence of micro-organisms similar to those found in the crusts from the nose in cases of ozæna. The scabs on the walls of the trachea do not proceed from the nose, but are autochthonous. The clinical characters of tracheal ozæna consist in expectoration, especially in the morning, of greenish sputa, thick, viscid, and exhaling the peculiar odor of ozæna, and the persistence of the fœtor of the breath after thorough cleansing of the nasal fossa. . . ."

THE
NEW YORK MEDICAL JOURNAL,
*A Weekly Review of Medicine.*
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.
NEW YORK, SATURDAY, MAY 19, 1888.

## THE BUREAU OF ANIMAL INDUSTRY.

If the theory of protective inoculation is to become well rounded and thoroughly settled, and if its practice is to reach perfection, it can only be as the result of exhaustive studies upon certain questions that are subsidiary to the leading idea. One of the most important of these questions is that of whether a virus may retain its pathogenetic power, and therefore its protective efficiency, after it has been deprived of living micro-organisms; in other words, whether the virulence of a liquid depends wholly upon its containing such organisms or upon the presence of soluble products of metamorphosis induced by the germs at some previous time. At a recent meeting of the French Academy of Sciences, M. Pasteur declared that the settlement of this question was "of capital importance," and he expressed his gratification that it had been accomplished in his laboratory. "*Ma joie est grande*," he is reported to have said, "*d'avoir pu être témoin de ce nouveau progrès réalisé dans mon laboratoire.*"

Pasteur must be conceded to have made the grandest contributions to the work of solving the problems connected with the ætiology and prevention of the infectious diseases, especially by his brilliant conception of the attenuation of viruses; but his statement that this particular question had been settled in his laboratory can not pass unchallenged, as is clearly shown in an admirable review of the subject, by Ferdinand Hueppe, in the "Fortschritte der Medicin" for April 15th. M. Chauveau supposed that he had proved the infecting quality of a virus free from living germs so long ago as 1880, but his demonstration has not been everywhere accepted as conclusive. He inoculated pregnant sheep, and showed that their lambs were born with an immunity to the disease (anthrax). His argument was that the micro-organisms of the virus with which the sheep had been inoculated could not have passed through the placenta and into the fœtal system, but only certain soluble chemical products. But other observers objected that the anthrax bacilli often passed from the maternal into the fœtal organism, and they rested their objection upon experiments made on guinea-pigs and rabbits. Chauveau replied that, whatever might be the case with those animals, such a transit of micro-organisms was very rare in the sheep; he therefore still maintained that probability sustained his explanation of the way in which the fœtal lambs had been infected. It is to be noted that M. Chauveau did not continue to assert the impossibility of the passage of the bacillus through the placenta, but only insisted upon its great rarity. His experiments, therefore, did not amount to a complete demonstration. This was at length furnished by our countrymen, Dr. D. E. Salmon and Dr. Theobald Smith, of the

Bureau of Animal Industry. In our issue for September 19, 1885, we published Dr. Salmon's article entitled "Immunity from Contagious Diseases," in which he gave an outline of the theory of infection held by him; and in the Journal for March 6, 1886, we gave a *résumé* of his and Dr. Smith's experiments subsequently reported to the Biological Society of Washington. In those experiments, performed on pigeons, with the virus of swine-plague, they avoided the element of uncertainty that had attached to Chauveau's supposed demonstration, and simply inoculated the birds with virus that had been subjected to a degree of heat sufficient to kill its micro-organisms. They reported further experiments at the Washington meeting of the International Medical Congress last year. Hueppe, in the article mentioned, gives them full credit for having settled the question, and we look upon it as a matter for congratulation that the decisive demonstration is to be attributed to our countrymen. The great practical importance of their researches should go far toward insuring adequate Congressional support of the Bureau of Animal Industry, and toward silencing those who are fond of reproaching Americans with an indisposition to scientific investigation.

### A NEW OPERATION FOR RETROVERSION OF THE UTERUS.

Among those who think it warrantable to resort to a surgical operation for the correction of a retroversion that is not amenable to treatment with pessaries there may be some who are not perfectly satisfied with that of shortening the round ligaments. Such persons will perhaps be interested in a new operation described by Dr. Schücking, of Pyrmont, in a recent issue of the "Centralblatt für Gynäkologie." Essentially, it is an attempt to fix the fundus in the deepest part of the peritoneal depression between the bladder and the uterus. A long sheathed needle, somewhat resembling an aneurysm-needle, with the eye opening at one edge near the point, is passed into the uterine canal and through the fundus, which is then brought down into the situation where it is to be "anchored." Care being taken not to wound the bladder or intestines, the point of the needle is pushed through into the vagina in front of the cervix. The two ends of the suture are then tied together, and the patient is kept in bed for a few days, after which the suture is removed, and support with a pessary is kept up for a time.

The author gives reports of two cases in which he has resorted to this procedure. The first one ended in failure, in consequence, as Schücking thinks, of his having removed the suture too soon—on the sixth day. In the second case the operation was somewhat modified, the suture being passed through the uterine wall a second time, at a point near the os internum. The patient was allowed to walk about on the tenth day, but the suture was not removed until the fourteenth day. The uterus was then found in a state of sharp anteflexion, and at the end of four months it was still in the same condition of anteflexion and had undergone some reduction in size; it had before been hypertrophied.

We can conceive of such a thinning of the tissue lying between the bladder and the neck of the uterus as to allow of the uterine fundus being bent down and fixed somewhere in the neighborhood of the junction of the anterior vaginal wall with the cervix, but we can not imagine any circumstances under which a woman would be benefited by having that feat performed upon her. Schücking's operation may lead to blessings as yet undreamed of, however, and we should not be surprised to learn of its being resorted to by others. But we can not refrain from giving it as our decided impression that it is not to be recommended.

## *MINOR PARAGRAPHS.*

### A NEW MEANS OF DIAGNOSTICATING PENETRATING WOUNDS OF THE INTESTINES.

Dr. Nicholas Senn, of Milwaukee, startled the Surgical Section of the American Medical Association with some experiments intended to show the value of hydrogen in the diagnosis of such wounds. Enemata of the gas were given to dogs for a few minutes, and it was then ignited at the animals' noses; a stab-wound was then inflicted, and it was ignited at the point of puncture. In like manner a pistol-shot wound was diagnosticated. The innocuousness of the gas itself was affirmed and demonstrated. The experiments were looked upon as of the greatest significance, and Dr. Senn was heartily congratulated.

### THE ACHIEVEMENTS OF SANITATION IN MASSACHUSETTS.

This subject was prominently considered by Dr. H. P. Walcott, of Boston, in his Address in State Medicine at the meeting of the American Medical Association last week. The vital statistics of Massachusetts, he said, showed a declining death-rate for the last thirty-six years, under the influence of State sanitation. The most marked decrease had been observed in the mortality from zymotic diseases; there had been a less decided reduction of that from constitutional diseases; that from local diseases had increased; and that from mental diseases and from violence had remained stationary. In 1876 there was not a single death from small-pox. Typhoid fever had diminished most in cities having a good system of sewerage and water-supply, and least in towns without such improvements. Diphtheria, which reached its maximum in 1877, had since declined until it now caused only one per cent. of the total mortality. Ovariotomy saved more lives than any other surgical operation, but, taking Somerville as a basis of calculation, the ascertained results of preventive medicine had saved more lives in ten years, among thirty thousand people, than ovariotomy would save in the same time among two millions. Great attention was given to small-pox, which had killed but 5,500 persons in Massachusetts in thirty-six years, and to cholera, which had destroyed only 2,000; but too little heed was given to scarlet fever with its mortality of 37,000 and to typhoid fever with its mortality of 45,000.

### THE MODERN INCREASE OF LONGEVITY.

In the course of a very interesting and suggestive annual oration before the Alumni Association of the Medico-chirurgical College of Philadelphia, published in the "Medical Register," the speaker, Surgeon-General Hamilton, of the Marine-Hospital Service, remarked incidentally that the idea of prolonging the lives of a whole nation by proper sanitary regulations was a modern one—a statement, he said, that was not invalidated by the reputed longevity of individuals among the ancients. It was easy to show that the general average duration of life was much greater now than in ancient times. Even in the course of

a decade an increase was to be noticed. He had recently examined the mortality statistics of Baltimore and the District of Columbia for the last ten years, and had found that in Baltimore the proportion of deaths of persons over seventy years of age to the whole number of deaths had risen from 0·064 to 10 per cent., and in Washington from 0·10 to 13 per cent.

### MEDICINE AMONG THE ARABS.

A writer in the "Progrès médical" gives some interesting facts from an article by Dr. Longo, published in the "Revue de l'Afrique française." It seems that, with the exception of a few men who have been educated in Europe, the Arabs, once famous in medicine, have no practitioners who are acquainted with the science of medicine—only "toubibs," who are generally itinerants, ready to undertake any surgical operation, such as trephining or enucleation of the eye, all the more readily from their very ignorance. It is humorously remarked that they excel in curing those who are destined to get well if let alone.

### THE "UNIVERSITY MEDICAL MAGAZINE."

This is the title under which, it is announced, the Faculty of Medicine of the University of Pennsylvania will issue a monthly journal, the first number of which is to appear on the 1st of October. It is to be conducted by an editorial committee consisting of Dr. George E. de Schweinitz and Dr. Hobart A. Hare, with an advisory committee made up of Dr. William Pepper, Dr. D. Hayes Agnew, Dr. William Goodell, Dr. James Tyson, Dr. William Osler, Dr. J. William White, Dr. Samuel D. Risley, Dr. Rush Shippen Huidekoper, and Dr. Horace Jayne. All these gentlemen are connected with the university, and it is to be inferred from the prospectus that the contributed articles will come largely from the members of its medical teaching corps. The new journal is to be published by Dr. A. L. Hummel. It will, of course, have special interest for the graduates of the school that it more particularly represents, but it will undoubtedly be of value to the whole profession.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 15, 1888:

| DISEASES. | Week ending May 8. | | Week ending May 15. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhus fever | 1 | 0 | 0 | 0 |
| Typhoid fever | 12 | 1 | 3 | 3 |
| Scarlet fever | 213 | 32 | 186 | 35 |
| Cerebro-spinal meningitis | 5 | 6 | 3 | 3 |
| Measles | 134 | 10 | 169 | 11 |
| Diphtheria | 186 | 46 | 193 | 52 |
| Small-pox | 17 | 4 | 20 | 6 |

**The Massachusetts General Hospital.**—Work was begun this week on a new ward to be devoted to abdominal surgery.

**Changes of Address.**—Since our issue of May 5th the following changes have come to our knowledge: Dr. Robert Campbell, to No. 376 West Thirty-second Street; Dr. J. Herbert Claiborne, to No. 10 East Twenty-eighth Street; Dr. John T. Metcalfe and Dr. Charles S. Ward, to No. 30 West Thirty-third Street; Dr. Ralph L. Parsons, to No. 21 East Forty-fourth Street; Dr. John Ridlon, to No. 337 West Fifty-seventh Street; Dr. Eben S. D. Shaw, to No. 158 Madison Avenue.

**A Naval Medical Examining Board** is now in session at the Naval Hospital, Philadelphia, for the examination of candidates for admission to the medical corps of the navy. There are eleven vacancies in the list of assistant surgeons. Permits for examination can be obtained on application to the Secretary of the Navy.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from April 29 to May 12, 1888:*

De Loffre, A. A., Captain and Assistant Surgeon. Granted leave of absence for six months on surgeon's certificate of disability, with permission to go beyond sea. S. O. 99, A. G. O., April 30, 1888.

Edie, Guy L., First Lieutenant and Assistant Surgeon, now under orders to report for duty to the commanding officer, Fort Douglas, Montana Territory, will accompany the 8th Cavalry from Department of Texas to Department of Dakota, and upon completion of this duty will proceed to Fort Douglas. S. O. 99, A. G. O., April 30, 1888.

McCaw, William D., First Lieutenant and Assistant Surgeon. Relieved from duty at Fort Leavenworth, Kansas, and ordered for duty at Fort Crawford, Colorado. S. O. 48, Department of the Missouri, May 1, 1888.

Rafferty, Ogden, First Lieutenant and Assistant Surgeon (recently appointed). Ordered for duty at Fort Clark, Texas. S. O. 98, A. G. O., April 28, 1888.

Lauderdale, John V., Captain and Assistant Surgeon. Ordered from Fort Clark, Texas, to Fort Davis, Texas. S. O. 98, A. G. O., April 28, 1888.

McKee, James C., Lieutenant-Colonel and Surgeon. Granted leave of absence for one month. S. O. 107, A. G. O., May 9, 1888.

Greenleaf, Charles R., Major and Surgeon, O'Reilly, Robert M., Major and Surgeon, and Skinner, John O., Captain and Assistant Surgeon. Detailed as members of a board of medical officers, to assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of members of the graduating class and of the candidates for admission to the Academy. S. O. 104, A. G. O., May 5, 1888.

Paragraph 11, S. O. 104, A. G. O., May 5th, is amended by Paragraph 4, S. O. 108, A. G. O., May 10, 1888:

Greenleaf, Charles R., Major and Surgeon, O'Reilly, Robert M., Major and Surgeon, and Skinner, John O., Captain and Assistant Surgeon, are detailed as a board of medical officers, to assemble at the U. S. Military Academy, West Point, N. Y., on June 1, 1888, to examine into the physical qualifications of the candidates for admission to the Academy, and, in connection with the superintendent of the Academy and commandant of cadets, the members of the graduating class.

Brown, Harvey E., Major and Surgeon. The leave of absence for seven days, granted by Orders No. 68, Fort Barrancas, Fla., May 2, 1888, is extended twelve days. S. O. 90, Division of the Atlantic, May 8, 1888.

Loring, Leonard Y., Captain and Assistant Surgeon. Granted leave of absence for three months, on surgeon's certificate of disability. S. O. 105, A. G. O., May 7, 1888.

Brown, Paul R., Captain and Assistant Surgeon. Granted leave of absence for six months, on surgeon's certificate of disability, with permission to leave the Division of the Atlantic. S. O. 107, A. G. O., May 9, 1888.

Benham, Robert B., Captain and Assistant Surgeon. To proceed from Fort Du Chesne to Fort Douglas, Utah, and report to commanding officer of that post, not later than 25th inst., to accompany battalion of 6th Infantry to Fort Lewis, Col.

Upon completion of this duty, will return to his station, Fort Du Chesne, Utah. S. O. 33, Department of the Platte, May 5, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 12, 1888:*

CABELL, A. G., Passed Assistant Surgeon. Detached from the Adams, and to proceed home and wait orders.

SIMONS, M. H., Surgeon. Detached from the Naval Academy, and ordered to the practice-ship Constellation.

HORWITZ, P. J., Medical Director. Granted leave of absence for six months, with permission to leave the United States.

**Society Meetings for the Coming Week:**

MONDAY, *May 21st:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *May 22d:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society (private).

WEDNESDAY, *May 23d:* Connecticut Medical Society (New Haven); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *May 24th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Roxbury, Mass., Society for Medical Improvement (private); Pathological Society of Philadelphia.

FRIDAY, *May 25th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *May 26th:* New York Medical and Surgical Society (private).

OBITUARY NOTES.

**Howard Pinkney, M. D.,** one of the surgeons to the New York Eye and Ear Infirmary and a well-known practitioner in New York, died suddenly on Monday, the 14th inst., on a railway train in England. He had sailed from New York on the 5th, on a journey undertaken on account of impaired health, and was on his way from Southampton to London. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1860.

# Letters to the Editor.

## THE USE OF CHROMIC ACID IN THE NASAL CAVITY.

*To the Editor of the New York Medical Journal:*

SIR: Since the publication of my article in the Journal for March 10th, on "The Use of Caustics in the Nasal Cavity," a number of inquiries have been made as to the particular method employed in the application of the chromic acid. Special stress was laid in my article on the fact that the object of caustics was not to destroy tissue, but rather to control inflammatory action.

The membrane, first, having been thoroughly contracted by the use of cocaine, the superficial layer is coagulated and thus rendered sufficiently dense and inelastic to prevent a return of the blood. With careful use of the caustic, this exsanguinated condition may be maintained for several days.

The method more in detail is as follows: A 20-per-cent. solution of cocaine is first sprayed into the nasal cavity. This solution produces, as a rule, complete expulsion of blood at the end of two minutes and complete anæsthesia at the end of three. This, however, does not occur in all cases, and the tactile sensibility should be tested with a probe and at the same time the condition of the membrane by ocular inspection. If complete exsanguination and anæsthesia do not occur in the time specified, a pledget of cotton, wrapped on a small probe and saturated with the cocaine solution, should be repeatedly swept over the membrane until those conditions have set in. Now the membrane should be wiped perfectly dry with a pledget of fresh cotton on the probe before the application of caustic. Then a very small and slender probe, as shown in the woodcut,



reduced one third, is dipped into a little thin mucilage, and subsequently three or four fine acicular crystals are taken up upon it. The mucilage is used in order that the chromic acid may adhere to the probe. The probe holding the crystals should then be held over the flame of a coal-oil lamp or other suitable heating apparatus until the crystals of chromic acid have fused into a small round tear, care being exercised that they be not burned, which on drying presents a minute red bead, as it were of chromic acid, firmly attached to the end of the probe. In this manner the acid can be carried easily to the part which it is desired to cauterize and without danger of burning adjacent tissues.

In making the application, there should always be kept in mind the fact that we do not wish to destroy but simply to create a small inelastic button, as it were, at the summit of the projecting portion of the hypertrophied tissue. We, therefore, as a rule, simply create a small round eschar, perhaps of the size of a split pea.

The speculum being left in the cauterized nostril, the opposite side should now be closed with the finger and the patient directed to take a number of quick inhalations through the nostril which has been treated until the caustic has exhausted itself and been entirely converted into an insoluble oxide of chromium.

In most cases the patient can now be dismissed without further procedure. In many cases, however, it is well to thoroughly wash the part with an alkaline solution and subsequently to throw in a spray of fluid cosmoline.

F. H. BOSWORTH.

## HOUR-GLASS CONTRACTION OF THE UTERUS.

PERTH AMBOY, N. J., *May 11, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: As the reply to my letter of the 14th of April, in which I took occasion to review a case of hour-glass contraction, involves a question of facts and personal veracity, I deem it a matter of justice to myself to submit the statements of the writer to the readers of the "New York Medical Journal," that they may examine and ascertain whether I have perverted any facts the doctor presents.

In his communication of the 24th of March he says: "I then made one examination, and found the placenta high up in the vaginal canal." He sends for an anæsthetic and says: "I gave the anæsthetic, introduced my hand into the cavity of the uterus, and found the placenta detached." In my review I stated: "The location of the placenta in the vagina prior to the administration of the anæsthetic and its existence in the uterus afterward, when it was found detached and adhering to the membranes in the upper segment of the womb, I am unable to reconcile." If the placenta *was* "high up" in the vagina, it was as much in that canal as if it had occupied a lower position. *I did not state that the placenta was in the upper segment of the womb*, as may be seen by the foregoing quotation from my reply. When the doctor succeeds in proving to me that he can be in two places at the same time, I shall be able to understand that a placenta can be in the vagina and in the uterus simultaneously.

L. S. Blackwell.

# Proceedings of Societies.

## NEW YORK SURGICAL SOCIETY.

*Meeting of April 11, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**Result of an Operation for the Radical Cure of Hernia.**—Dr. Markoe presented a patient upon whom he had operated about six weeks previously for the cure of an inguinal hernia by the radical method proposed by Dr. McBurney, with a slight modification which he considered important, as securing a stronger and more resisting cicatrix. In Dr. McBurney's cases, which were presented to the society at the meeting held December 28, 1887, it was noticeable that, owing to the fact that the skin was sutured to the deeper layers of each margin of the wound, there was a groove or depression of the cicatrix which left its solid part thinner than the surrounding abdominal wall. This seemed to Dr. Markoe to be a weak point in the operation, which could be easily remedied. In the first case that presented itself the speaker made an incision from a point over the internal ring well down to the scrotum, and isolated the sac in the usual manner. Then the anterior wall of the inguinal canal was slit up to the internal ring, after Riessel's method, as had been done by Dr. McBurney in his cases, and the hernial sac was tied off as close to the internal ring as possible. In dressing the wound, instead of sewing the cut edges of each flap by sutures passing over the surface of the cut edge, the sutures were passed through the flaps, about half an inch from the edge, penetrating all the layers down to the inguinal canal, and then returned up through the flap to the surface, where they were tied. Three such sutures were placed in each flap, fixing the planes of the parietes in such a way that they were bound to each other, but their free edges were not inverted, as in Dr. McBurney's method. After the flaps were sutured, as above described, a pledget of iodoform gauze was placed in the wound, so as to keep the edges apart and secure granulation from the bottom. The last step consisted in introducing two or three loose stitches from one edge of the wound to the other, to hold the gauze in its position, and to keep the edges from unnecessary gaping. The patient was kept upon his back for four weeks. The wound healed from the bottom by granulation without accident, leaving a scar, which was as thick as the abdominal parietes, and was anchored to the groove formed by the opened inguinal canal. There was no depression of the scar, and the result promised to be perfect.

Dr. McBurney said that the result shown in the case of Dr. Markoe's patient was certainly all that could be desired in any. He thought, however, that the operation described by himself had certain advantages. In the latter operation the sutures were so placed as to bring down the edge of the conjoined tendon, and thus to cause it to be certainly involved in the cicatrix. Secondly, the skin was securely inverted at the edge of the wound, thereby securing patency of the wound for some time, and, consequently, cicatricial healing began at the posterior wall of the canal. The skin, however, did not remain permanently inverted, but gradually yielded as the sutures dissolved, and the granulations grew up.

**The Surgical Treatment of Pseudo-membranous Laryngitis.**—A paper on this subject was read by Dr. J. D. Rushmore (see page 541).

Dr. Markoe was surprised at the meagre success of the expectant treatment, as shown by the statistics quoted by the reader. In his own experience he could recall at least three cases in which the patient had recovered after tracheotomy had been proposed and declined. He was not an opponent of the operation, however; on the contrary, he believed that it was a useful and valuable adjunct to the medicinal treatment of croup and diphtheria.

Dr. Kammerer said that his experience covered about two hundred and fifty cases. He inclined to Dr. Markoe's opinion, since in a number of cases, in which the symptoms seemed to indicate operative interference, the urgency had disappeared before the preparations for the operation had been completed. He thought that if operative interference was reserved as a last resort, it was very difficult to determine when death would have occurred without it, from asphyxia. Of the whole number of patients operated upon, thirty-three per cent. had recovered; only one child under the age of one year had survived the operation.

Dr. Willy Meyer was very much in favor of tracheotomy. He was of the opinion that more patients who were operated upon for membranous croup would recover if proper care was taken in the after-treatment, with a view to improving both the general condition and the local trouble. So far as his experience went, he could highly recommend instillations into the cannula of warm borosalicylic solution, or solution of salicylic acid alone, as a local antiseptic. Trendelenburg had strongly advised their use several years ago. Five or ten drops were applied at a time with a medicine-dropper, beginning immediately after the introduction of the cannula, and repeating the instillation every ten or fifteen minutes. Aside from their antiseptic action, they irritated the mucous membrane and produced violent coughing, so that mucus and pieces of membrane were expelled. The viscid mucus could not dry so readily at the lower end of the cannula and thus cause a mechanical obstruction. The speaker believed that he was not mistaken in stating that he had seen between twenty-five and thirty of the patients who had been operated upon recover under this method of treatment.

**Case of Immediate Strangulated Hernia.**—Dr. Wyeth related the history of a case of hernia occurring in a woman, aged forty-two, a multipara of spare build, in good health, who had never had a symptom of hernia. On April 8th, at 8 P. M., while straining at stool, she suddenly felt something give way in the region of the right groin. She immediately felt the tumor that had appeared, and experienced a sharp pain in it. Vomiting began two hours later, and continued at intervals for twelve hours, when it was arrested by a hypodermic injection of morphine. He operated upon her at 4 P. M. on April 9th,

and found a loop of small intestine, about two inches in extent, strangulated at the right femoral opening. Although the hernia had just formed, there was no difficulty in recognizing the sac, which was separated from the intestine by about two drachms of serous fluid. The case was reported because it was the first one in the speaker's experience in which strangulation had occurred in an immediate hernia.

**Case of Arterio-venous Aneurysm.**—The PRESIDENT said that he wished to complete the history of the case of traumatic communication between an artery and vein which he had presented to the society two months ago. It would be remembered that four years and a half before he had tied the common carotid on the proximal side of the point of communication, and that the murmur promptly returned and became quite as marked as before the operation. After presenting the patient to the society, he tied the external and internal carotids. Five days later a faint murmur was again perceptible, plainly due to a recurrent stream through the superior thyreoid, for it could be arrested by pressure over the front of the upper part of the trachea. The murmur increased for a day or two, and then diminished, so as to be barely perceptible when the patient was dismissed, ten days after the operation.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of April 11, 1888.*

The President, Dr. J. SOLIS-COHEN, in the Chair.

(*Continued from page 499.*)

**A Case of Hysterectomy.**—Dr. W. W. KEEN read the following notes of the case, which he owed to the courtesy of Dr. John K. Mitchell, the patient's attending physician:

"Miss X., aged forty-two, American, author. Family history good. Previous personal history good up to about twelve years ago, when she began to suffer in many ways, pointing toward a uterine growth. After two years or more of treatment, Dr. S. Weir Mitchell recommended that the ovaries should be removed. This was done *per vaginam* by Dr. William Goodell in the winter of 1876–'77. The tumor diminished, but she has never been free from pain since, chiefly in the left hypochondrium, but extending both up and down. For between two and three years before I first saw her (January 25, 1887) her general health had been steadily growing worse, and the distress in the side increasing to such a degree that she was utterly unable to work, and was wretched alike in body and mind.

"*Status præsens*, January 25, 1887.—Slight woman, anæmic, not emaciated, complexion pasty. Heart and lungs normal. On examining the abdomen externally a very slight abnormal increase in the uterus upward and to the left was detected. I supposed it the remnant of the old growth, but the patient did not desire a vaginal exploration made, and I was unable to examine it further. There was here no pain or tenderness. An inch below the lowest angle of the ribs on the left side was situated a spot not larger than a quarter of a dollar, tender on pressure, and nearly corresponding in situation with a similar but less defined area of tenderness posteriorly. Most of the distress complained of was vaguely placed hereabouts.

"The kidneys could be clearly outlined by percussion, and showed no change from the normal in their areas. The urine was natural, but sometimes contained a slight excess of uric-acid formations; bowels always slightly sluggish and the appetite poor; no digestive trouble; she slept very ill, being unable to lie on the back or on the left side, as either position increased the pain in the side, and finally caused a suffocating sensation. It is also greatly aggravated by very slight physical exertion, by sitting long in one position, and by constipation. It is now so constant and severe that Miss X. complains of 'losing her grip,' of inability to work to good purpose, and of great irritability.

"*Treatment.*—In spite of the previous ovarian and uterine trouble, the situation of the pain seemed to me to be so far from the former site of the ovaries that I was doubtful of their having any share in the present difficulty, though the thought of a nerve caught in the stump left after their removal occurred to me. My treatment was at first directed to the slight lithæmia. Alkaline waters and a regulated diet did little good, and I returned to the view of the implication of a nerve in the cicatrix, and for some weeks passed a galvanic current through the body, with one pole on the posterior tender spot and the other over the one in front. Miss X. was for two or three months much relieved by this, and grew better when a tonic mixture of iron quinine, and strychnine was given. The treatment was interrupted for a short time by a slight attack of acute articular rheumatism in the left foot and ankle. This yielded readily to salicylates, but returned in a less degree once or twice afterward. For a time cannabis indica tincture at night helped her to sleep, but did no permanent good.

"Throughout a summer in the country her condition varied, but in October she was decidedly worse—more pain, more mental and physical disability, and, finally, repeated violent neuralgic headaches. The fact that there might be a pressure on a nerve, and possibly on the bowel, from the cicatrix of the old wound again occurred to me. There was possibly, also, nephritic trouble suspected. In order to determine the facts, a careful examination under ether was advised."

Early in October, 1887, with the assistance of Dr. J. K. Mitchell, I etherized and examined Miss X. with great care. I found the uterus small, the internal measurements two and a quarter inches; normal position; freely movable; the posterior wall somewhat thickened. On each side of the uterus a distinct tumor was found of about the size of an English walnut. That upon the left side was movable independently of the uterus, and was thought to be the knobbed end of the stump resulting from the previous operation by Dr. Goodell. That upon the right side moved strictly with the uterus and was thought to be a uterine myoma. No other lesion was found in the pelvis. There was nothing detectable in the abdomen in connection with the left kidney, in front of and behind which the chief pain was complained of.

In view of the extremely wretched condition of the patient an exploratory operation was advised.

*Operation, November 9, 1887*, Dr. J. K. Mitchell and Dr. W. J. Taylor assisting.—An incision was made in the middle line, five inches in length, from the pubes upward. As soon as the peritoneal cavity was opened the uterus came into view and the two tumors above described were immediately recognized. They were so intimately incorporated with the body of the uterus that it seemed hopeless to attempt to remove them separately. In view, also, of the other additional myomata now discovered, and described later with the specimen, it seemed to be the more unwise to leave the uterus in place; accordingly, a Kœberlé *serre-nœud* was applied to the cervix, and the body of the uterus, with its attached tumors, after separation from the peritonæum, was removed by the scissors, the lateral attachments having been first ligated. The peritonæum was now stitched over the stump. Before removing the uterus a careful search had been made in the left hypochondrium, but nothing abnormal was found. The abdominal wound was now closed, first, by a continuous suture to the peritonæum, and next by a row of stitches passing through the rest of the abdominal wall. The clamp was separated from the skin by small pads of sublimate dressing on

each side, and a large sublimate dressing and a flannel binder were applied.

Dr. George Dock kindly examined the specimen, and reported as follows: "The specimen consists of the body of the uterus with 3·5 cm. of the right Fallopian tube and corresponding parts of the round and the broad ligaments, and 1 cm. of the left Fallopian tube, the round and the broad ligaments on that side being cut off close to the uterus and the tumors described below. The remains of the ovarian ligaments can not be made out. The fundus is of average size (nullipara), and appears to be cut off just below the internal os. The anterior surface is of normal curve. About the middle of the right border is a subserous fibro-myoma, of the size of a small bean. The posterior surface bulges excessively, the projection being due to the presence of a mural fibroid tumor, which makes up most of the bulk of that part of the organ. The cavity of the uterus (fundus) is flat from before backward, and is triangular in outline, the opening of the tubes being in the two upper angles, the os internum in the lower. The sides of the angles measure: Right, 27 mm.; left, 22 mm.; upper, 25 mm. The right upper angle is at a higher level than the left, the wall of the uterus being relatively thinner on that side. The surface of the cavity is smooth, and presents three small polypoid growths, two on the anterior, one on the posterior surface. The anterior wall is 8 mm. in thickness, the posterior 2 cm.

"The tubes show nothing abnormal. To the right of the fundus in front of its transverse axis, and 1 cm. below the level of the insertion of the round ligament, is a tumor of the size of a walnut (36 x 26 x 26 mm.). It lies in the angle formed by the broad ligament and the uterus, close to the latter, being separated by loose connective tissue and blood-vessels. It is covered by peritonæum, the greater part of which is that forming the anterior fold of the broad ligament.

"The surface of this tumor is irregular. On section it is hard, creaks under the knife; the cut surface is dark-gray in color. Around the periphery are whitish fibrous masses and extreme calcification.

"Microscopic examination of this growth shows it to be a myoma which has undergone partial necrosis, with pigmentation and calcification.

"To the left of the fundus, behind the transverse axis, is another tumor, slightly smaller than the one just described (33 x 26 x 28 mm.). Its upper surface is on a level with the fundus. Its nodular surface is covered with peritonæum, and it is separated from the uterus at a distance of 5 mm. by loose connective tissue in which lie two smaller tumors. On section it shows a lobular structure of firm white tissue (fibro-myoma). In the upper part are masses of hard, calcareous matter (calcium carbonate). The two smaller tumors in the connective tissue are myomata."

For the next three days the patient complained greatly of pain, which was relieved by considerable doses of morphine. It should, however, here be stated that she bore pain badly. Her highest temperature was 99·7° F., and the normal was reached at the end of the third day. At this time, of her own accord, she declined any further morphine. The catheter had to be used for the first three days. With the exception of a rather obstinate constipation, which caused considerable abdominal pain and sleeplessness, which last was relieved by cannabis indica, her later history was uneventful, saving in one particular. The wire was tightened to the utmost limit in the course of the week after the operation, but the stump did not slough nor did the clamp become loose. As the clamp was producing ulceration of the skin, it was removed December 2d. The wound at this time was reduced to a tubular sinus leading down to the stump. The last slough from the stump did not come away until December 26th, and the wound was completely healed January 6, 1888.

Since that date the patient has been absolutely well, physically and mentally. She eats and sleeps well, and takes active exercise with more satisfaction than at any time during the last twelve years; in fact, she is thoroughly restored to good health.

To complete her history, I will add the examination of her eyes by Dr. De Schweinitz: "Oval discs; rather too gray; retinal haze, both venous and arterial; lymph sheaths distended. This low grade of retinal disturbance is, I think, purely accommodative. There is a high degree of insufficiency of the internal recti." He prescribed the proper glasses.

The removal of the ovaries by Dr. Goodell, which was done *per vaginam*, was one of the earliest of such operations done in this country. It reflects no little credit upon his skill, that in so contracted a vagina he was able so successfully to remove the ovaries. Although this operation relieved her temporarily from pain, it proved of no permanent benefit. Her pains returned, and, though located differently, grew worse and worse, so that, finally, all mental exertion, and all physical exertion as well, became greatly hampered. In fact, writing, which was her vocation, became impossible. She was willing to undergo any operation whatsoever which held out any chance of relief. She preferred to die rather than to live in such wretchedness. The diagnosis was very obscure. What the meaning of the pain in the hypochondrium was, I could only surmise. The two tumors on each side of the uterus were believed to be, one a uterine myoma, and the other an enlargement on the stump following Dr. Goodell's operation. An examination of the specimen shows, as to the first, that I was right. But no enlargement had taken place on the pedicle on the left side, the tumor being one of a number of myomata developed in connection with the uterus. Its situation at the cornu uteri very naturally misled me. No other operation than hysterectomy would, I think, have been advisable. Its performance was easy, and its results have been perfect. Why the removal of the uterus, with its attached myomata, should get rid of pain in the hypochondrium I am unable to say. To say that it was reflex pain is simply to express our ignorance in different words. Certain it is, however, that the removal of the entire internal organs of generation has been followed with the happiest results, whereas the removal of the ovaries alone gave but little relief. I have deemed it important to report the case in consequence of the recent question as to the results of complete and incomplete removal of the tubes with the possibility of the development of tumors on the stumps after incomplete removal of the tubes. My first impression upon examining the specimen itself was that the two tumors were such knobby stumps, but, after section and microscopic examination by Dr. Dock, this impression was seen to be erroneous.

## Book Notices.

*The Refraction of the Eye.* A Manual for Students. By Gustavus Hartridge, F. R. C. S., Consulting Ophthalmic Surgeon to St. Bartholomew's Hospital, Chatham, etc. With Ninety-six Illustrations. Third Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xv–240. [Price, $2.]

The first edition of this little manual was published in 1884. The present edition is somewhat enlarged, and numerous additions have been made to almost every chapter. Chapter III, on the methods of determining refraction, has been largely rewritten and is much improved. Chapter IV, on the ophthal-

moscope, is nearly new. Chapter V devotes thirty-three pages to the subject of retinoscopy; and from the standpoint of American ophthalmologists this is altogether out of proportion to the real value of this method of investigation. Chapter X, on strabismus, has received many additions, which render the book more valuable to the student. The book contains a series of test-types for reading, some large letters for the testing of distant vision, and Pray's test-types for astigmatism. There is also a very full index, and some new woodcuts have been added, all of which tend to make this little volume still more acceptable to the student.

## GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

Asselin & Houzeau, Paris.—A. Blum, "Chirurgie du pied." (8*fr.*) —— Lannelongue, "Tuberculose vertébrale." Ed. by V. Ménard. (12*fr.*)

J. B. Baillière & fils, Paris.—E. Périer, "La seconde enfance." (2*fr.*) —— A. Cullere, "Les frontières de la folie." (3*fr.* 50.) —— Chaleix-Vivie, "Des névralgies vésicales." (2*fr.* 50.)

Bureaux du "Progrès médical," Paris.—P. Raymond, "Des éphidroses de la face." (2*fr.*)

A. Delahaye & E. Lecrosnier, Paris.—Rendon, "Fièvres de surmenage." (3*fr.* 50.) —— Garrigou-Désarènes, "Du catarrhe chronique hypertrophique et atrophique des fosses nasales, de l'ozène, obstruction catarrhale des trompes d'Eustache," etc. (5*fr.*) —— Baudry, "Éléments de pathologie chirurgicale générale." 2d part. (7*fr.*) —— Dreyfous, "De l'hystérie alcoolique." (1*fr.* 50.) —— P. Gaudin, "Sur la pathogénie des accidents nerveux consécutifs aux explosions du grisou." (2*fr.*)

O. Doin, Paris.—Debière, "Les maladies infectieuses; microbes, ptomaïnes et leucomaïnes." (3*fr.* 50.) —— Bérenger-Féraud, "Leçons cliniques sur les tænias de l'homme." (8*fr.*)

G. Masson, Paris. — Poincaré, "Recherches expérimentales sur l'action toxique des conserves."

W. Braumüller, Vienna.—J. Neudörfer, "Gegenwart u. Zukunft d. Antiseptik u. ihr Verhältniss zur Bakteriologie." (1*M.*)

Breitkopf & Härtel, Leipsic.—H. Fehling, "Stand d. Leitung d. physiolog. u. patholog. Nachgeburtszeit." (0*M.* 75.) —— Jaffe, "Ueber Hyperemesis gravidarum." (0*M.* 75.) —— K. Partsch, "Die Actinomykose des Menschen." (1*M.* 50.)

H. Costenoble, Jena. — Mantegazza, "Anthropologisch-kulturhistorische Studien über die Geschlechtsverhältnisse." 2d ed. (7*M.*)

Franz Deuticke, Vienna.—E. Finger, "Die Syphilis u. die venerischen Krankheiten." 2d ed. (6*M.*) —— E. Finger, "Die Blennorrhöe d. Sexualorgane u. ihre Complicationen." (9*M.*) —— J. Gottstein, "Die im Zusammenhange mit den organischen Erkrankungen des Centralnervensystems stehenden Kehlkopfaffektionen." (1*M.*) —— J. Gottstein, "Die Krankheiten des Kehlkopfes." 2d ed. (7*M.*) —— A. Schreiber, "Allgemeine u. specielle orthopädische Chirurgie." (10*M.*)

Ferdinand Enke, Stuttgart.—C. J. Eberth and C. Schimmelbusch, "Die Thrombose nach Versuchen u. Leichenbefunden." (7*M.*) —— G. Leopold, L. Korn, H. Löhmann, and J. Präger, "Der Kaiserschnitt u. seine Stellung zur künstlichen Frühgeburt, Wendung u. Perforation bei engem Becken." (7*M.*) —— W. T. v. Renz, "Die Eigenart der Warmquellen von Wildbad u. deren richtiger Kurgebrauch." (3*M.* 60.) —— Riedinger, "Verletzungen u. chirurg. Krankheiten des Thorax u. seines Inhalts." Part 42 of "Deutsche Chirurgie." (10*M.*) —— Seiffart, "Die Massage in der Gynäkologie." (1*M.* 60.) —— F. Seitz, "Der Abdominaltyphus." (6*M.*) —— R. Kobert, "Arbeiten des pharmakolog. Instituts zu Dorpat." i. (5*M.*) E. H. Kisch, "Die Fettleibigkeit." (10*M.*)

J. A. Finsterlin, Munich.—C. Kraus, "Die Irrenbehandlung u. Irrenpflege vor 50 Jahren in Bayern u. deren Fortschritte in d. Gegenwart." (2*M.*)

Gustav Fischer, Jena.—G. Baur, "Beiträge zur Morphogenie des Carpus u. Tarsus d. Vertebraten." i, "*Batrachia.*" (3*M.* 50.) —— T. Boveri, "Zellenstudien." i, "Die Bildung d. Richtungskörper bei *Ascaris megalocephala* u. *Ascaris lumbricoides.*" (4*M.* 50.) —— A. Hückel, "Die Rolle d. Suggestion bei gewissen Erscheinungen d. Hysterie u. des Hypnotismus." (1*M.* 80.)

G. Freytag, Leipsic.—J. Janosik, "Zur Histologie des Ovarium." (0*M.* 80.)

Carl Gerold's Sohn, Vienna.—J. Gruber, "Lehrb. d. Ohrenheilkunde." 2d ed. (24*M.*)

T. Grieben, Leipsic.—C. Griebel, "Die Nervenkrankheiten." 4th ed. (1*M.* 20.) —— C. Griebel, "Die menschliche Stimme, ihre Pflege in gesunden u. kranken Tagen." (1*M.* 25.)

Heuser, Neuwied.—Galippe, "Die infektiöse arthro-dentäre Gingivitis (Pyorrhœa alveolaris)." Transl. by B. Manassewitsch. (1*M.*) —— E. Günther, "Praktische Anleitung zur vollständigen Heilung des Stotterns." 2d ed. (2*M.*) —— J. G. Sallis, "Der Hypnotismus in d. Geburtshülfe." (0*M.* 75.)

A. Hirschwald, Berlin.—A. Heimann, "Ueber Paralysis agitans." (2*M.* 40.) —— Orth, "Compendium d. patholog.-anatom. Diagnostik." 4th ed. (14*M.*)

Lipsius & Tischer, Kiel.—C. Barckmann, "Ueber Xeroderma pigmentosum." (1*M.*) —— H. Collischonn, "Beitrag zur Kasuistik der Form- u. Lagerungstörungen des Magens." (1*M.* 50.) —— G. Kalmus, "Beitrag zur Statistik u. path. Anatomie d. sekundären Magendiphtheritis." (1*M.*) —— C. Schröder, "Ueber die Wirkung d. Ueberosminsäure bei Epilepsie." (1*M.*) —— M. Friedrich, "Ueber metastatische proliferirende Papillome d. Aortenwand bei primärem proliferirenden papillären Kystom des Ovarium." (1*M.*) —— J. Herting, "Ueber Achsendrehung des Darms bei Neugeborenen." (1*M.*) —— C. Schmid-Monnard, "Ueber Pathologie u. Prognose d. Gelenktuberkulose, insbesondere des Fusses." (2*M.*)

F. Lucas, Mitau.—S. Kröger, "Wirkung u. Anwendung d. verschiedenen Badeformen in Gesundheit u. Krankheit." (1*M.* 50.)

Stahel, Würzburg.—A. Hoffa, "Lehrbuch d. Frakturen u. Luxationen." ii. (8*M.*)

F. W. Steffens, Leipsic.—C. Mantegazza, "Das nervöse Jahrhundert." (2*M.*)

F. C. W. Vogel, Leipsic.—B. Schmidt, "Arbeiten aus d. chirurg. Universitätspoliklinik zu Leipzig." i. (4*M.*)

Leopold Voss, Hamburg.—F. Brosin, "Ueber die schwarze Haarzunge." (1*M.* 20.)

Urban & Schwarzenberg, Vienna.—M. Benedikt, "Kraniometrie u. Kephalometrie." (5*M.*) —— A. Bum, "Die Massage in der Neuropathologie." (0*M.* 75.) —— W. F. Löbisch, "Die neueren Arzneimittel." 3d ed. (8*M.*) —— G. Diamantopulos, "Typhus icterodes von Smyrna." (3*M.*) —— F. Minnich, "Croup u. seine Stellung zur Diphtherie." (1*M.* 50.)

Vandenhoeck & Ruprecht, Göttingen.—O. Bense, "Beiträge zur Statistik der Trommelfellperforationen bei Otitis media suppurativa." (0*M.* 60.) —— E. Clebsch, "Ueber Herzerkrankungen bei Diphtherie." (0*M.* 60.) —— C. Varenhorst, "Beiträge zur Lehre von den Fremdkörpern des Ohres." (1*M.* 20.)

A. Cammeyer, Christiania.—K. Heiberg, "Orienterende Oversigt over Laeren om de pathogene Bakterier hos Mennesket." (1*Kr.* 25.)

Fratelli Rechiedei, Milan.—G. Fiorani, "Le malattie della vescica e della prostata." (4*l.*) —— R. Cantalupo, "Compendio di patologia chirurgica topografica." 3 vols. (14*l.*)

Imprenta del Estado, Lima.—D. A. Carrion, "La Verruga Peruana."

## BOOKS AND PAMPHLETS RECEIVED.

Abdominal Surgery. By J. Greig Smith, M. A., F. R. S. E., Surgeon to the Bristol Royal Infirmary, etc. Second Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi–776. [Price, $7.]

Inebriety: its Ætiology, Pathology, Treatment, and Jurisprudence. By Norman Kerr, M. D., F. L. S., Fellow of the Medical Society of London, etc. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xxx–415. [Price, $3.]

Theine in the Treatment of Neuralgia. Being a Physiological Contribution to the Therapeutics of Pain. By Thomas J. Mays, M. D., Professor of Diseases of the Chest in the Philadelphia Polyclinic, etc. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vii–9 to 84. [Price, 50 cents.]

The Language of Medicine. A Manual giving the Origin, Etymology, Pronunciation, and Meaning of the Technical Terms found in Medical Literature. By F. R. Campbell, A. M., M. D., Professor of Materia Medica and Therapeutics, Medical Department of Niagara University. New York: D. Appleton & Company, 1888. Pp. viii–318. [Price, $3.]

The Modern Treatment of Pleurisy and Pneumonia. By G. M. Garland, M. D. Detroit: George S. Davis, 1888. Pp. 108. [The Physician's Leisure Library.]

Clinical Notes on Pruritus. By L. Duncan Bulkley, A. M., M. D., etc. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Lesions of the Vagina and Pelvic Floor, with special Reference to Uterine and Vaginal Prolapse. By B. E. Hadra, M. D., Austin, Texas. With 83 Illustrations. Philadelphia: Records, McMullin, & Co., 1888. Pp. 9 to 329.

Studies in Pathological Anatomy, especially in Relation to Laryngeal Neoplasms. 1. Papilloma. By R. Norris Wolfenden, M. D. Cantab., and Sidney Martin, M. D. Lond., etc. London: J. & A. Churchill, 1888.

Should Physicians be Pharmacists? By Charles L. Mitchell, M. D. [Reprinted from the "Philadelphia Medical Times."]

Photographic Illustrations of Skin Diseases. An Atlas and Textbook combined. By George Henry Fox, A. M., M. D., etc. Hand-colored Plates. Part V—Nearly One Hundred Cases from Life. Part VI—Nearly One Hundred Cases from Life. Second Series, complete in Twelve Parts. New York: E. B. Treat, 1888.

The Movements of the Ankle Joint. By W. Arbuthnot Lane, M. S., F. R. C. S., etc. [Reprinted from the "Journal of Anatomy and Physiology."]

Infant Feeding, especially with Reference to Subjects with Infantile Eczema. By L. Duncan Bulkley, A. M., M. D., etc. [Reprinted from the "Journal of the American Medical Association."]

A Guide to the Practical Examination of Urine. For the Use of Physicians and Students. By James Tyson, M. D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania, etc. Sixth Edition. Revised and corrected. With a Colored Plate and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–13 to 253. [Price, $1.50.]

# Miscellany.

**The New York Academy of Medicine.**—The Section in Ophthalmology and Otology will meet on Monday evening, the 21st inst. The programme includes: "Four Cases of Acute Inflammation of the Middle Ear from the Abuse of Roosa's Bulb Nasal Inhaler" and "The Disastrous Results of a New Artificial Drum Membrane," by Dr. Frank W. Ring; and "A Case of Metastatic Carcinoma of the Chorioid," by Dr. A. Schapringer.

The Section in Laryngology and Rhinology will meet on Tuesday evening, the 22d inst. Members are expected to give brief answers to the following questions: "What are the various Causes of so-called Catarrh of the Upper Air-passages?" and "Is Follicular Tonsilitis Contagious?" Dr. Charles H. Knight will read a paper on "Malignant Disease of the Larynx."

The Section in Pædiatrics will meet on Wednesday evening, the 23d inst. The programme includes: "Experimental Studies on some Points concerning the Causation and Treatment of the Summer Diarrhœa of Infants," by Dr. V. C. Vaughan, of Ann Arbor, Michigan; "A Study of the Micro-organisms in the Stomach and Intestines in the Summer Diarrhœa of Infants," by Dr. W. D. Booker, of Baltimore; "Microscopic Examination of the Stomach and Intestines in the Summer Diarrhœa of Infants," by Dr. L. Emmett Holt; and "The Anatomical Characters of Summer Diarrhœa in Infants," by Dr. J. Lewis Smith and Dr. W. P. Northrup.

The Section in Obstetrics and Gynæcology will meet on Thursday evening, the 24th inst. Dr. H. T. Hanks will demonstrate Mr. Tait's method of "Flap-splitting" and read "A Plea for the Primary Operation on the Perinæum"; and Dr. A. H. Buckmaster will report "A Case of Extra-uterine Pregnancy—Destruction of the Fœtus by the Galvanic Current without Interruptions."

The Section in Materia Medica and Therapeutics will meet on Friday evening, the 25th inst. Dr. D. M. Cammann will read a paper on "Terpin in Diseases of the Lungs."

**The New York State Medical Association.**—The Fifth District Branch will hold its fourth annual meeting in the Magnolia Lodge Rooms, No. 177 Montague Street, Brooklyn, on Tuesday, the 22d inst. There will be an annual address by the president, Dr. Edwin Barnes; Dr. T. H. Allen will read a paper on "Some Causes of Failure in the Operation of Trachelorrhaphy"; Dr. J. Lewis Smith will read a paper on "Diphtheria of the New-born and Sepsis of the New-born as observed in the New York Infant Asylum and the New York Foundling Asylum"; and a discussion on "Surgical Aid in the Treatment of Pulmonary Disease" will be opened by Dr. N. L. North, who will be followed by Dr. J. D. Bryant, Dr. C. A. Leale, Dr. Avery Segur, and Dr. C. S. Wood.

**The New York Pathological Society.**—At the next meeting, to be held on the 23d inst., at the College of Physicians and Surgeons, Dr. Delafield will show specimens of acute Bright's disease, with lantern demonstrations. We are asked to state that the society's meetings, which are held on the second and fourth Wednesday evenings of each month, are open to the profession.

**The German Society of Gynæcology** will hold its second meeting in Halle, on the 24th, 25th, and 26th inst. The programme includes the following titles: "On the Interchange of Matter between Mother and Fœtus," by Dr. Dührssen, of Berlin; "On the Promotion of Delivery in Cases of After-coming Head," by Dr. Winckel, of Munich; "The Treatment of the Placental Stage of Labor," by Dr. Dohrn, of Königsberg; "On the Treatment of Extra-uterine Gestation," "On Atony of the Non-puerperal Uterus," and a "Demonstration of Preparations," by Dr. Schwarz, of Halle a. S.; "On the Occurrence of Psychoses in Consequence of Operations on the Genital Apparatus in Women," "On Laparotomy with the Pelvis elevated" [*bei hochliegendem Becken*], and "On the Use of Buried Sutures in Plastic Operations on the Perinæum and Vagina," by Dr. Werth, of Kiel; "On the Ætiology of Vulvo-vaginal Inflammation in Childhood," by Dr. Pott, of Halle a. S.; "On the Internal Relapse of Erysipelas after Months of Latency in Consequence of Premature Labor," by Dr. Döderlein, of Leipsic; a paper on a subject not yet announced, by Dr. Zweifel, of Leipsic; "On Congenital and Acquired Anomalies of the Tubes," by Dr. Freund, of Strassburg; "On Injury of the Bladder in Laparotomies," "On Leucæmia in Pregnant Women," and a "Demonstration of Patients operated on by Flap Perinæorrhaphy and by Ventrofixation for Retroflexion of the Uterus," by Dr. Sänger, of Leipsic; a "Short Contribution on Pessaries," by Dr. Schultze, of Jena; "Therapeutical Contributions on Ischuria Puerperarum, on Pains during Pregnancy, and on Turning and Extraction in Cases of Contracted Pelvis," "On Placenta Circumvallata," and "On the Puerperal Mortality in the Grand Duchy of Mecklenburg-Schwerin," by Dr. Schatz, of Rostock; "On the Operative Treatment of Parametritic Abscesses" and "On the Operative Treatment of Cancer of the Cervix Uteri," by Dr. Baumgärtner, of Baden-Baden; "On Placenta Prævia, illustrated by a Section of a Uterus in an Advanced Period of Gestation," "On Intra-uterine Fœtal Movements not before described," and on "Professional or Occasional Midwives," by Dr. Ahlfeld, of Marburg; "On the Treatment of Rupture of the Uterus," by Dr. Leopold, of Dresden; "Experiences with the Axis-traction Forceps," by Dr. Bumm, of Würzburg; "The Treatment of Retroflexion of the Uterus," by Dr. Skutsch, of Jena; "On the Opening of Abdominal Cystic Tumors on Two Separate Occasions," by Dr. Keil, of Halle a. S.; and "On Plastic Operations" and "On Myomotomy," by Dr. Fritsch, of Breslau.

**Antiseptic Vaccination.**—Under the heading of "An Important Step in Vaccination," the "Medical and Surgical Reporter" says: "In these days of antiseptic surgery, when it is believed that the most

serious consequences may follow the introduction into the human system of germs which are constantly present in the air and on the surface of the body, it is a somewhat singular spectacle to see men who are full believers in the germ theory habitually doing a thing which, according to this theory, must be exceedingly dangerous. We refer to the practice of vaccination as it is ordinarily carried out. In this procedure a portion of the skin is scratched until the corium is reached, and then a portion of vaccine virus is thoroughly rubbed into it with the aid of sufficient moisture. It is the misfortune of physicians and patients that there is no practicable way of securing supplies of vaccine virus which will insure its entire freedom from the germs of erysipelas or some other disease; and, no matter how careful and conscientious the vaccinator may be, he may inoculate his patient with something very different from what he intended. But there is another source of danger to the patient which does not depend upon the nature of the virus used, and which may have its share in producing the violent inflamed sores and profound constitutional disturbance which too often follows vaccination. This source of danger lies on the skin of the patient, in the shape of dead epithelium, which may have undergone some decomposition from the action of the perspiration, or of morbific organisms which have been deposited in it. We believe this source of danger in vaccination has not received the attention it deserves, and that it would be profitable for some investigator to try to learn what proportion of bad arms are the consequence of the failure of physicians to render aseptic that portion of the skin of their patients which they select as the place for vaccination. Meanwhile we would urge upon our readers the desirability of making it an invariable rule to thoroughly cleanse the site of vaccination with water and soap —and perhaps some antiseptic—and brisk rubbing; so that, if a bad arm follows, they may feel that they have not neglected so simple a step, which is suggested by common sense and made almost imperative by the accepted tenets of general surgery. To vaccinate an unwashed arm ought, we believe, to be regarded as an error in practice."

**A Portrait of the late Dr. James L. Little** has been placed in the reading-room of the New York Post-graduate Medical School and Hospital.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending May 11th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending April 21st corresponded to an annual rate of 19·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton and Derby, viz., 15·7, and the highest in Plymouth, viz., 29·6 in a thousand. Small-pox caused 12 deaths in Sheffield, 3 in Hull, 1 in Bristol, 1 in Manchester, and 2 in Oldham.

*London.*—One thousand five hundred and fifty-two deaths were registered during the week, including measles, 18; scarlet fever, 21; diphtheria, 10; whooping-cough, 92; enteric fever, 13; diarrhœa and dysentery, 23. The deaths from all causes corresponded to an annual rate of 18·9 in a thousand. Diseases of the respiratory organs caused 363 deaths; different forms of violence, 48; and 12 suicides were registered. In greater London 1,954 deaths were registered, corresponding to an annual rate of 18·4 in a thousand of the population. In the "outer ring" 30 deaths from whooping-cough; scarlet fever, 5; and diphtheria, 5, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending April 21st in the sixteen principal town districts of Ireland was 26·1 in a thousand of the population. The lowest rate was recorded in Dundalk, viz., 8·7, and the highest in Lisburn, viz., 53·2 in a thousand. In Dublin 168 deaths were registered, including 5 from whooping-cough; scarlet fever, 3; typhus, 1; diphtheria, 1; enteric fever, 1; and diarrhœa, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending April 21st corresponded to an annual rate of 21·2 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 14·9, and the highest in Paisley, viz., 25·5 in a thousand. The aggregate number of deaths registered from all causes was 535, including 9 from measles; scarlet fever, 4; diphtheria, 11; whooping-cough, 17; fever, 10; and diarrhœa, 11.

*Callao.*—The United States consul, in his dispatch under date of April 3, 1888, states that "the last report from the Peruvian medical representative in Chili regarding the progress of the cholera in that republic is dated the 23d of March last, and is as follows: 'Santiago.—No new cases; deaths, 2; 17 sick in hospital. Another lazaretto closed. Valparaiso.—Seven new cases; 1 death; in hospital, 34. Ovalle, Viculla, few cases. At Serena it has disappeared. Lazaretto at Concepcion closed. Declining at Lota and Coronel.' This information is the most reassuring that we have received. The public health at Lima and this port continues to be satisfactory, but interdiction of vessels from Chili is still maintained.

"April 13, 1888.—The latest cable reports regarding cholera in Chili from the medical representative of this government are very satisfactory. Under date of the 11th instant he states that 'at Valparaiso the disease is officially declared to have disappeared'; at Santiago 'only 2 patients in hospital, and the last lazaretto was to be closed on the 11th; at Copiapo, 8 cases.' The authorities here will doubtless follow the precedent established last year and lift the interdiction of vessels from Valparaiso after sixty days have elapsed from the date of the official declaration mentioned."

*Dunfermline, Scotland.*—The United States consul, in his dispatch dated April 16, 1888, states that "several cases of small-pox are reported from Inverkeithing, a village of about fifteen hundred inhabitants, and distant about three miles from Dunfermline. It is believed that the disease was brought to this district by a railway laborer from Leeds or Sheffield, in both of which towns small-pox is said to be alarmingly epidemic. . . . The last case reported is that of a girl who is a member of a large family, and who continues to reside at home. The law does not provide for the removal of such a patient from home without the patient's consent."

*Copenhagen.*—The United States consul, in his dispatch dated April 21, 1888, transmits copies of notices issued by the Danish Government respecting regulations in second part of the law with reference to the importation into the country of epidemic diseases, dated July 2, 1880, which are in force until further notice with respect to vessels arriving from ports on the French coast between Nantes and St. Malo, etc.

"According to reports, a small-pox epidemic has broken out in Bretagne, and therefore the aforesaid regulations were at once enforced for vessels arriving from and having been in contact with the above-mentioned ports. It is prohibited to import used linen, wearing apparel, and bed-clothing, if such do not belong to persons' traveling effects, rags, used wadding, carding-wool, paper-shavings, hair, and hides. Quarantine is hereafter ordered for Italian ports on the Adriatic coast between Ortona and Bari, both included. The before-mentioned regulations are hereafter in force from the following places: Ports on the French coast between Nantes and St. Malo, both included. Ports on the Swedish coast between Malmo and Landskrona. All ports in Chili. All ports in Florida. All ports at Jamaica. All ports at Martinique. All ports at Guadeloupe, St. Jago di Cuba. All ports in East India, Tonkin, and Cochin China. Trieste. All ports in Egypt. Ports on the Red Sea. Rio de Janeiro and Havana. Prohibition against the importation of used linen, wearing apparel, and used bed-clothes, if such do not belong to passengers' traveling effects, rags, used wadding, carding-wool, paper-shavings, hair, and hides, from the following places: Ports on the French coast between Nantes and St. Malo, both included. Ports on the Swedish coast between Malmo and Landskrona. Ports at the Adriatic coast between Ortona and Bari, both included. All ports in Florida. All ports at Jamaica. All ports at Martinique. All ports at Guadeloupe, St. Jago di Cuba. All ports in East India, Tonkin, and Cochin China, and all ports in Chili. The prohibition of importation into the country of used linen, wearing apparel, and used bed-clothes, if such do not belong to persons' traveling effects, is in force with regard to Rio de Janeiro and Havana. Besides, it is particularly ordered and under the control of the authorities that linen, wearing apparel, and bed-clothes which may be brought from the

two before-mentioned places shall be cleansed. This order will be enforced at once. Published for the information and observance of all whom it may concern."

*Havana.*—The sanitary inspector reports for the month of April 474 deaths, including yellow fever, 24; small-pox, 55; enteric fever, 9; so-called pernicious fever, 6; diphtheria, 10; croup, 2.

The following telegram has also been received:

"Havana, *May 9, 1888.*

"British steam-yacht Lancashire Witch sailed 6th with several cases suspicious diarrhœa. Destination, Charleston or New York, probably."

The health officers at Charleston and New York were immediately notified by this Bureau.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | April 21. | 2,260,945 | 1,115 | .. | .... | 8 | .... | 10 | 5 | 35 |
| Glasgow | April 21. | 545,678 | 228 | .. | .... | .... | .... | 4 | 1 | 8 |
| Warsaw | April 14. | 439,174 | 194 | .. | .... | 2 | .... | .... | 2 | 4 |
| Calcutta | March 24. | 433,219 | 242 | 70 | .... | .. | .... | .... | .... | .... |
| Copenhagen | April 16. | 300,000 | 130 | .. | .... | .... | .... | .... | 5 | 7 |
| Palermo | April 22. | 250,000 | 110 | .. | .... | .... | 1 | 2 | 1 | 5 |
| Genoa | April 21. | 179,464 | 85 | .. | .... | .... | 2 | .... | 1 | 1 |
| Leipsic | April 21. | 170,000 | 73 | .. | .... | .... | .... | .... | 1 | 5 |
| Trieste | April 14. | 154,500 | 93 | .. | .... | 1 | .... | .... | .... | .... |
| Toronto | April 28. | 130,000 | 41 | .. | .... | .... | .... | 1 | .... | .... |
| Stuttgart | April 21. | 125,510 | 46 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | April 19. | 122,000 | 42 | .. | .... | .... | .... | .... | 1 | .... |
| Havre | April 21. | 112,074 | 65 | .. | .... | 5 | .... | 2 | .... | .... |
| Barmen | April 21 | 109,000 | 31 | .. | .... | .... | .... | .... | .... | .... |
| Leghorn | April 22. | 101,718 | 42 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | April 21. | 65,028 | 35 | .. | .... | .... | .... | .... | .... | .... |
| Callao | April 14. | 34,000 | .... | .. | .... | .... | .... | .... | .... | .... |
| Curaçoa | April 14. | 25,000 | .... | .. | .... | .... | .... | .... | .... | .... |
| Sagua la Grande | April 14. | 15,605 | 8 | .. | .... | 1 | .... | .... | .... | .... |
| Sagua la Grande | April 21. | 15,605 | 17 | .. | .... | 1 | .... | 1 | .... | .... |
| Cartagena, Colo. | April 14. | 13,000 | 10 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | April 14. | 12,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Nassau | April 21. | 12,000 | .... | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | April 14. | 7,428 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Paita, Peru | April 14. | 4,000 | .... | .. | .... | .... | .... | .... | .... | .... |

*Key West.*—The medical officer in charge of the Marine-Hospital Service reported, under date of the 4th instant, that "the steamship Alamo, from Galveston for New York, has just arrived with a case of small-pox in one of the crew. I understand the man has been isolated, and will be sent to the city hospital, and the vessel cleansed and allowed to proceed."

## THERAPEUTICAL NOTES.

**Salicylic Acid in Ringworm.**—Dr. N. F. Penn, of Lexington, Kentucky, writes to us that salicylic acid, in the form of an ointment or, still better, dissolved in collodion, is almost a "sure cure" for ringworm of the face, neck, etc. He paints the affected spot with a saturated solution once a day, if necessary, but says that one application will generally effect a cure. It causes some pain, but only for a short time. So far as Dr. Penn knows, the method originated with his brother, Dr. W. W. Penn, of Texas. He has seen it fail in only one case—one of several years' standing—and in that instance it stopped the affection for the time being, but it would return very soon.

**Lipanin as a Substitute for Cod-liver Oil.**—According to von Mering ("Therap. Monatsh.," 1888, No. 2; "Ctrlbl. f. d. ges. Therap.," April, 1888), lipanin is a partially saponified olive-oil containing six per cent. of free oleic acid, of an agreeable taste, easily emulsified, and readily absorbed. On the theory that cod-liver oil owes its efficiency to the presence of free fatty acids, lipanin may be regarded as a substitute for that agent. The author has given it for months together to adults, from two to six tablespoonfuls daily, and for from six to twelve weeks to children, from a teaspoonful to four teaspoonfuls daily, with good results.

**Atropine in Poisoning with Pilocarpine.**—The "Lancet" gives an abstract of an account, published by Dr. Wicherkiewicz in a Polish medical journal, of a case in which eight minims of a two-per-cent. solution of pilocarpine had been injected under the skin of the temporal region for an ophthalmic affection. This was followed by very severe symptoms of poisoning and collapse. A subcutaneous injection of morphine and the inhalation of amyl nitrite having proved useless, two drops of a one-per-cent. solution of atropine were given subcutaneously. This proved more effective, and the patient recovered.

## ANSWERS TO CORRESPONDENTS.

*No. 184.*—The formula of Dendy's lotion for pruritus is as follows:

Diluted hydrocyanic acid..... 1 fluidrachm;
Corrosive chloride of mercury..... 1 grain;
Almond mixture..... to 6 fluidounces.

*No. 185.*—(1.) There is no definite rule as to the size of the opening made by a bullet entering the skull and the range. (2.) At the distance you mention, powder-marks would probably be discernible. (3.) "Instantaneous death" we take to mean death supervening on the injury or other lesion that causes it, without an appreciable interval. Death from an injury of the head is very rarely instantaneous, unless the *nœud vital* is involved. (4.) You do not state the point of emergence; consequently no estimate can be given.

*No. 186.*—The salt operates by raising the specific gravity of the liquid. Sugar will answer quite as well.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### ON FRACTURES OF THE HEAD OF THE FIBULA FROM MUSCULAR CONTRACTION,

#### AND IMPLICATING THE EXTERNAL POPLITEAL NERVE.*

BY ROBERT F. WEIR, M. D.,
SURGEON TO THE NEW YORK HOSPITAL, ETC.

I VENTURE to bring to the notice of the society to-night a form of fracture which investigation has shown to be quite uncommon.

On the 6th of last May I was requested by Dr. C. C. Lee, of this city, to see a young gentleman, aged twenty-one, who had fallen the night previously while wrestling with a companion. His left leg, he stated, was twisted around that of his antagonist. As he fell he felt something give way and found that he was unable to walk. His leg was carried decidedly to the inside of the thigh, so that the entire limb was bowed outward. He obtained relief from his pain by his friend pulling forcibly upon the foot, whereupon the knee straightened itself. The accident had occurred about twelve hours prior to my seeing him, and as at this time the knee joint was greatly swollen and very painful, particularly over its outer aspect, where a good deal of ecchymosis was visible, ether was administered for a proper examination of the parts. The joint, as previously stated, was greatly distended with blood, but no fracture of the femur nor of the tibia was made out. Just above the joint, however, on the outer aspect of the external hamstring tendon, was felt a hard mass of the size of the end of the thumb, movable in several directions and apparently bony in character. Below this point was a depression, at the lower end of which, about one inch from the bony mass felt above, was the squared-off end of the fibula to be felt. This bone, on being measured from the external malleolus to this fractured edge, was found to be nearly an inch shorter than the bone of the uninjured leg. It was therefore evident that we had to deal with a tearing off of the upper portion of the fibula by the action of the biceps muscle, which accident had also produced the probable dislocation and effusion of blood into the knee joint. No dislocation of the knee joint was, however, to be discovered at this examination, nor could it be reproduced by the manipulation, which was carried out in a careful and graduated manner. From the patient's description it was, however, undoubted that a moderate displacement had occurred. The limb was placed on a well-padded Volkmann's splint and cotton placed over the joint. Pressure was made upon the latter by the bandages used to secure the limb to the splint.

As this injury was to me a novel one, I occupied the time prior to my next visit to the patient in looking up in a hasty manner the literature of this subject and found but very scanty information upon such a lesion.

Nothing, for instance, is mentioned of this injury in Hamilton's work on "Fractures and Dislocations," nor in Malgaigne, nor in the recent work of Pick on "Fractures and Dislocations," nor, in fact, in any of the ordinary English works on surgery, except an allusion to it in Ashhurst's "International Cyclopædia of Surgery." † But in the excellent work of Stimson on "Fractures" ‡ there is an account of this injury. In this latter work is a short summary of several of such fractures, and its concomitant paralysis from injury of the external popliteal nerve is also mentioned. Nothing was found in the standard French surgical works, and in German only a brief statement in Koenig * as to the existence of the injury and the possibility of its producing certain nerve symptoms, was met with.

My attention having been in this way directed by Stimson to the possibility of a nerve injury, the day after the etherization a more critical examination of the limb was made.

It was then found that there was a loss of sensation commencing about the middle of the outer aspect of the leg and running downward and extending over the central portion of the dorsal aspect of the foot from the ankle to the toes. In this latter region the sensibility was utterly lost. The patient was, moreover, unable to turn his foot outward or to draw up the ankle, showing that the peroneal and anterior groups of muscles had likewise been deprived of their innervation. The patient's condition was very satisfactory and no inflammatory reaction had shown itself in the joint.

A brief review of the original reports of the cases referred to by Stimson, and of several others which I found in a further investigation, and which will be briefly detailed hereafter, brought plainly into view the fact that the paralysis was due, as has been proved by a post-mortem section, to a division of the external popliteal nerve just above its division into the musculo-cutaneous and anterior tibial nerves. The question, therefore, arose whether the permanent disability that resulted in most of the cases that had recovered from the lesion to the bone could not be averted in this case by a surgical operation, having for its end the exposure and suturing together of the divided ends of the nerves. To aid me in the solution of this question I was assisted by the advice of Dr. E. C. Seguin and Dr. H. B. Sands, who kindly saw the patient with me and confirmed the diagnosis, as well as the treatment which I proposed. It was deemed advisable, however, to wait a few days until the tenderness of the knee joint had subsided, and thus avert the risk of inflammatory action, so easy to light up in parts not yet recovered from the irritation of the injury, in accordance with methods deemed most advisable in cases of recent patellar fractures.

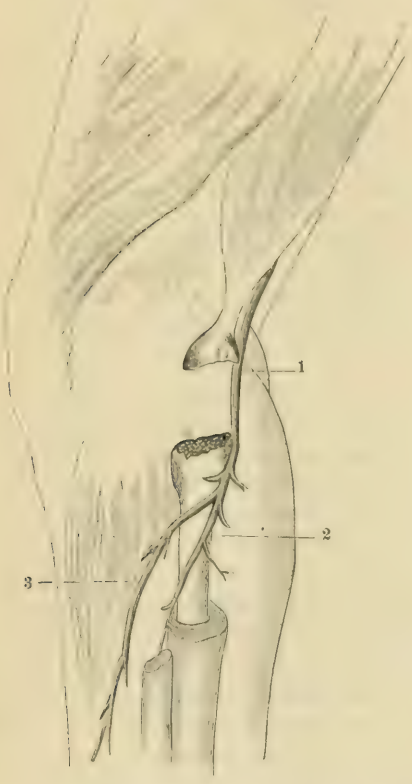
Accordingly, on the tenth day after the injury, the patient was again etherized, and, under antiseptic precautions, a curved incision some six inches in length, the center of which corresponded to the gap between the fractured bones, was made alongside of and down to the posterior edge of the tendon of the biceps muscle. On exposing this, the external popliteal nerve was recognized and traced downward to the separated capitulum of the fibula, and was subsequently dissected out from that point downward for nearly an inch below the lower end of the fractured fibula, where it divided in several branches. The trunk of the nerve was found not to be divided, but bearing just below the separated piece of the fibula marks of contusion, such as swelling and ecchymosis, and a moderate constriction, as if some of the fibers had been crushed in. The nerve was still attached to the small fragment, and below this

* Read before the New York Surgical Society, April 25, 1888.

† Vol. iv, p. 256. ‡ Page 586.

* "Lehrbuch der Chirurgie," Bd. iii, S. 498.

point it was apparently stretched by the action of the biceps. It was therefore carefully separated from the loose piece of bone and freed in this way from the further effect of tension. The depth of the nerve injury was not ascertained. The fracture itself, when brought clearly into view, proved to be not as large as it was supposed through the skin, and consisted simply of the styloid process of the fibula torn off and drawn up about an inch and a half (see figure). The surface of the body of the




Fracture of the fibula with injury to the external popliteal nerve. 1, external popliteal nerve stretched by the separated fragments; 2, musculo-cutaneous nerve going to the peroneal muscles and to the skin of the lower leg and the dorsum of the foot; 3, anterior tibial nerve going to the externo- and tibialis anticus muscles.

fibula was smooth, and it was evident that the fracture had occurred at the epiphyseal junction. A large amount of clotted and fluid blood was also met with, a good deal of which escaped from the wound. The lateral and posterior parts of the joint were seen to be open, but great care was taken not to disturb the clots which partly closed this rent. Two drainage-tubes, one running down to the joint and one anterior to it, were placed in the wound, the edges of which were closed and antiseptic dressings applied. The limb was again placed in the Volkmann splints.

Nothing special need be said regarding the progress of the case. No reaction occurred; the wound healed with two dressings in ten days, the tubes being removed when the first dressing was changed.

It was not considered practicable, from the small size of the detached fragment, to undertake at the time of the operation the wiring of the two fragments of bone together, nor was any attempt made, by permanently and strongly flexing the limb, to approximate them. A temporary essay in this direction, previously made, moreover, had shown only a moderate gain. It was therefore considered that any further or persistent trials of this latter manœuvre would be more likely to endanger the integrity of the joint, and that it would be wiser surgery to consider the safety of this part rather than the doubtful gain that might be obtained to the fracture. Moreover, in Herrgott's cases, as well as in some others, it did not appear that any disability ensued to the limb from the permanence of this separation.

At the end of two weeks from the operation a light plaster splint was applied, and the patient was allowed to get out of bed and go about on crutches. He left the city for his home at Newport at the end of six weeks, with the directions given to a competent nurse that galvanism and massage, subsequent to the removal of the splint, should be carried out thoroughly. Within four months after the injury he was walking about, even dancing. He subsequently went to Colorado, and, according to advices received within the last month, the patient has been able to walk a distance of ten miles, though making an occasional complaint of not being able to do as much at times as other young men on account of his lameness. In one of his recent letters he states that he is very much better, but fears that he will always limp a little.

The literature on the subject of this fracture, as has already been indicated, is quite scanty. The first reports that I have been able to find were presented to the *Société Medical du Haut Rhin*, in 1854, by Herrgott. These are also the same cases referred to by Gurlt,* and quoted from the latter by Stimson. The injury there detailed by Herrgott occurred in a woman of fifty-two years of age, who had had a fracture of the leg four years previously, and which had become thoroughly consolidated. She plunged one foot through a supposed closed cellar door, and, in drawing herself back with an effort, the other leg gave way with a crackling sound. There was found immediately afterward a slight tumefaction opposite the head of the fibula, where a delicate crepitation was felt by the patient, as well as by the surgeon. This crepitation was recognizable for twelve days after the accident; the movements of the knee were complete, though the patient was not able to execute them herself. There was apparently no paralysis from the injury to the nerve, though the patient suffered a great deal of pain, which continued for two months and a half. Two other cases were reported by Weber and Müller at the same meeting of the society. In Weber's case the patient, a male, very powerful, slipped, but did not fall. In endeavoring to preserve himself erect he felt something crack in his leg, and he was not able to walk. He recovered, with an incomplete paralysis of the extensors of the foot. In Müller's case two young men were wrestling; one of them was at the point of being thrown, and made a violent effort when the injury occurred. A fracture of the head of the fibula was recognized. Nothing is stated about the progress of the case, or the injury of the nerve, except what may be inferred from the statement that the calf was for a long time very painful,† and that his getting about was much prolonged.

Poncet, the writer of the article on fractures of the leg in the volume just cited, and whence some of the fore-

* "Lehre von den Knochenbrücher," 1862, vol. i, p. 243.

† "Nouveaux dictionnaire de médecine et de chirurgie pratiques," vol. xix, p. 504.

going details have been derived, explains the persistent pains, and the feebleness of the contraction of the extensor muscles and even the paralysis, by the nerve being caught in the space between the fragments, and being subsequently compressed by the formation of callus. Another case is reported by Lotzbeck, of Munich, who, in 1865, wrote an article upon this subject.* This author states that Hyrtl also mentions the possibility of the tearing away of the upper part of the fibula during violent contraction of the biceps femoris, and that Fuhrer likewise enunciated that such fractures could be brought about by muscular contraction; but neither of them report cases of their own, and only refer to those of Herrgott, Weber, and Müller, already given above. These authors, however, more correctly explained the causation of the pains and paralysis, and placed it to the tearing and stretching of the external popliteal nerve at the point where it turns around the head of the fibula.

Lotzbeck's case is a thoroughly detailed one, but in it the nerve symptoms were conspicuously absent. It is as follows:

A soldier, while mounted, fell with his horse in such a manner that his heel touched the ground, with the spur strongly burrowed in the snow. In trying to get up, with the leg much bent and without its touching the ground, a crackling was heard and a severe pain was felt in the knee joint. The patient then fell downward on his left side, but his left leg remained caught and free from the ground. This, the soiling of the patient's clothing elsewhere, corroborated. When seen, the knee was bent slightly—*i. e.*, to an angle of 160°—and the movements of the joint were attended with much pain. Close under the external condyle of the femur, in the midst of compressible coagula, was felt a hard mass, pointed above and broad below. This was slightly movable laterally and downward. It was recognized as attached to the biceps muscle, and below it was a hollow. It was considered to be the head of the fractured fibula. When the leg was strongly flexed and the mass in the ham was crowded downward, occasional crepitus was obtained. By maintaining the limb in a flexed position—*i. e.*, to an angle of 110°—the head of the fibula, which was originally 25 mm. from the body of the bone, was approximated, with the additional help of compresses and plaster, to a distance of only 5 mm. At the end of nearly five weeks the head of the fibula was found in its normal position, though somewhat enlarged. The measurement from the trochanter major to the top of the fibula on the affected side was only 1 ctm. less than on the uninjured side. The peroneal muscles, though slack and weak, soon regained their power under baths and massage, and fourteen days later the patient went to his work. The usual nerve pains observed by others, says Lotzbeck, were totally absent in this case.

In the "Medical Record" for July 18, 1876, is a letter from a Dr. Merriam, which I transcribe verbatim:

"Professor F. H. Hamilton.

"Dear Sir: Having sustained a fracture in my own person, resulting, in part, in non-union and slight deformity and disability, and not finding a record of any similar case in your "Fractures and Dislocations," nor in any other work we have here, I have considered it of sufficient importance to communicate it briefly to you. The injury occurred by being capsized while riding in my covered buggy, and dragged underneath it a short distance, my legs being on the ground wrapped in a buffalo-robe. When finally released from the buggy, I found I had sustained a fracture of the leg. It proved to be a transverse fracture of the tibia, just below the tubercle, two inches and a half below the joint of the knee, near the attachment of the ligamentum patellæ, and of the fibula, about one inch below the head. It is nine weeks since the accident occurred. I am about on crutches with a good tibia, but the deformity and disability consist in the fact that the superior fragment of the fibula, with the biceps attached, is drawn upward and inward, so that it lies across the under side of the knee. The head of the fibula seems to rest upon its articulating surface, while its inferior extremity is drawn upward and inward, and is loose and movable. This dislocation of the head of the fibula was not diagnosticated at the time of dressing the fracture by the attending surgeon, and, in fact, I do not know that anything could have been done to overcome the power of the biceps on such a short fragment. The consequence is, a loss of the fullness and prominence of the external hamstrings, and weakness of the external part of the knee, being inclined to easily turn out. The superior extremity (inferior fragment of fibula), seems to be attached by bony union to the tibia at the seat of fracture, having a depression between that and the superior fragment. I am able to rest my foot upon the floor, but bear no weight upon it. There has also been a paralysis of the extensors of the foot and toes, with extreme sensitiveness or hyperæsthesia of the dorsum of the foot and toes, which still continues.

"There has been no appearance of bruise or injury to the anterior surface of the limb, but my foot droops and toes drag. I have been led to communicate this to you from the fact that I could not find anything of similar kind recorded.

"E. D. Merriam, M. D."

To this Dr. Hamilton replied, through the same journal:

"The case related in the accompanying note is of special interest. The fracture of both bones of the leg at this point is unusual. The refusal of the fibula to unite, on account of the contraction of the biceps, suggests the propriety of flexing the leg in treating such a fracture, or of dividing the biceps at once.

"The hyperæsthesia, pain, and paralysis of certain portions of the foot is plainly due to some injury inflicted upon the external popliteal nerve, probably by the pressure of the upper fragment; and I have said to the doctor that the biceps ought to be divided, or the upper fragment of the fibula dissected out."

The most satisfactory account of this injury, however, is that offered by Duplay in 1880,* who presented two examples of this variety of fracture, which he states had not up to this time had attention drawn to it, but which, nevertheless, is of much importance by reason of the severe complications which seem to often accompany it. In both his cases the mechanism of the fracture was nearly the same. The lesion was met with in two men, one forty-eight and the other sixty years of age. They were both caught in some machinery and their bodies struck against a neighboring wall. They thereby sustained multiple injuries, and therefore are not so clearly examples of the effects of muscular contraction as some of the preceding ones. On a level with the head of the fibula in each case was recognized un-

* "Beiträge zur Casuistik der Frakturen am Capitulum fibulæ," "Memorabilien," April 26, 1865.

* "Bulletin et mémoires de la soc. de chir. de Paris," vol. vi, p. 218.

der the skin a little tumor of the size of a large almond, very mobile, laterally elevated in flexion, and sinking down in extension. This bony mass was continuous directly with the tendon of the biceps. Below it was found a depression capable of admitting the end of the thumb. The articulation of the knee had an excessive lateral motion, sufficient even to produce a partial luxation.

In the second case the mechanism of the tearing was more evident from the patient's description. Duplay, several days after the accident, remarked in the first one of his injured men that the muscles on the anterior peroneal surface of the leg were completely paralyzed, and no longer responded to electrical excitation. At the same time he recognized the existence of patches, anæsthetic and analgesic, on the dorsal face of the first and second toe and on the dorsum of the foot and above the external malleolus, corresponding, in other words, with the distribution of the musculo-cutaneous nerve. In the second patient, who died suddenly, the symptoms of similar paralysis also existed, and the specimen was presented by Duplay to the Surgical Society of Paris, with the description of the case. The nerve was found to be torn across and contused, and the ends rested between the two fragments of bone. The situation of the fracture in the bone was just above the tibio-fibular articulation, which was opened by the accident.

In the discussion that followed this case, Perrin gave the particulars of a similar case of his own, where a soldier had his leg jammed between the ground and his horse, after the latter had fallen. A fracture occurred during the violent efforts of the man to dislodge himself from his position. Paralysis followed. Two months later the nerve lesion was unchanged. The surviving case of Duplay was seen by another surgeon at the end of five months, and then the man could scarcely go about even with crutches.

That the influence of the biceps muscle is of greater importance in the production of this injury than the traction on the lateral ligament seems to be proved by the difficulty that has been met with in bringing it about in the cadaver by several observers who have tried it. For instance, Levrat reports* that he could not produce this fracture on the cadaver, and Strauss and Couette came to a similar conclusion. Bonnet,† in six trials on the cadaver to produce a laceration of the external lateral ligament and luxation of the knee by a forced adduction of the leg, was only able in one of these trials to produce the fracture now under consideration.

In this brief review of these cases that I have been able to gather together for reference, I hope that it will be acknowledged by my colleagues here present that something more than the flexion treatment of the fracture should be resorted to. As the prognosis in reference to the paralysis is bad, I feel that it would be proper, under similar circumstances, to do as was done in the case which I have reported to you—to wit: to expose the nerve, secure together the divided ends, if such are found to exist, to free it from tension should it not be torn across, and possibly, if the upper fragment is sufficiently large, to bring it, or attempt to bring it, by sutures or nails, in apposition to the rest of the fibula. Furthermore, that nerve suture should also be applied to the cases of this injury when encountered at a period remote from the injury, and when time (say four to six months) and treatment have proved of no avail; such might perhaps have been of benefit in the cases of Dr. Merriam and others cited in the foregoing pages.

Last fall a somewhat similar nerve complication, from direct violence, occurred under my observation. It was as follows:

Case II. *Fracture of Tibia and Fibula near the Knee Joint, with Paralysis of the Left Popliteal Nerve.*—The patient, John Kissenberger, aged twenty-nine years, a laborer, was received into the New York Hospital, October 7, 1887, with the history that, a few hours previously, a large piece of timber had fallen on his left leg, injuring it severely in the region of the knee joint. The joint was much swollen, and, after waiting a few days, with fixation of the limb by a splint and pressure with cotton and a bandage, an examination was made by Dr. Weir, under ether, October 15th. There was found a fracture of the fibula an inch and a half below its capitulum. There was also a fracture of tibia, an inch and a half below its upper extremity, extending outward, backward, and slightly upward. The head of the fibula did not seem to be drawn upward. There was an area of sensory paralysis, commencing about two inches and a half below the point of fracture of the fibula, and extending down to the ankle, involving in this distance the antero-external aspect of the leg. From the ankle a comparatively narrow area of skin paralysis extended down the dorsum of the foot to the root of the first and second toes. There was some slight impairment of sensibility in the skin of the great and second toes. Muscles supplied by the external popliteal nerve were probably paralyzed. This point was difficult to determine on account of the injury to the leg and of the pain on motion.

*November 16th.*—At an examination made on this date there was little change in area of sensory paralysis. Not quite as wide on the leg as at first, but it extended higher on the anterior surface of the limb, at the upper part nearly to the tubercle of the tibia. On the dorsum of the foot the area was wider, and now extended up to the toes for about half their length, involving in this way the first, second, and inner half of the third. The foot drooped, and the patient was unable to draw it upward.

*21st.*—Good union in fracture. Patient wished to leave the hospital, and against advice was discharged improved.

He was seen by me in March. He was then walking badly, with the aid of two canes. He said, however, that the motion of the foot was increasing. The area of skin insensibility had diminished on the leg, but the dorsum of the foot was yet completely insensitive to feeling. He was requested to return if improvement ceased.

I have not attempted to collect together with any thoroughness the cases of this variety of injury, though a somewhat similar case is described by Terrier.*

It occurred in a student who fell on his side in descending some stone steps. A fracture was recognized a fingerbreadth below the head of the fibula, with a slight anterior displacement of the lower fragment. There was also a slight turning inward of the foot. Whether the fracture was due to direct violence or to the indirect effect of the supposed tibio-tarsal displacement could not be determined. There was, however, no drawing

* "Lyon médical" of September 18, 1882, page 51.

† "Des maladies des articulations," 1845, p. 187.

* "Société de chirurgie," 1880, p. 222.

upward of the upper fibular fragment. The patient suffered then and for some time afterward most intolerable pain, especially on the dorsum of the foot and at the root of the nails, from tetanic contractions of the peroneal and anterior muscles. There was also insensibility of the upper part of the dorsum of the foot, with painful formications at the periphery of the anæsthetic part. The pains persisted in paroxysms, gradually becoming less, for more than a month, when the splints were removed, and a slight degree of talipes equinus was found. At the end of six weeks the patient began to go about, which markedly increased his severe pains in the leg, and trophic changes showed themselves on the top of the foot, such as desquamation and cellular induration. At the end of a year the patient had fairly recovered, but still had his trophic changes and insensibility in the dorsum of the foot; but he had become a morphine consumer.

Verneuil, at the same meeting, cited a nearly similar case, where, however, both the tibia and fibula were broken just below the tibial tuberosity. There also existed a wound, but it is not stated that it communicated with the fracture. When bony union had been completed there was found to continue a paralysis of the extensors with analgesia of the foot and anterior face of the leg. Electricity partially restored excitation of the muscles, but only after a long use. When the patient, an American, returned home, it was, however, yet necessary to wear an apparatus to draw up his foot in order to clear the ground.

These instances would justify, where no improvement takes place, a resort to nerve suture.

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## EXTRA-UTERINE PREGNANCY,

*WITH HISTORY OF A CASE.**

By WILLIAM McCOLLOM, M. D.,

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Mrs. H., a highly cultured and finely formed woman, thirty-five years of age, of excellent health, never had had symptoms of uterine disease of any kind. She was the mother of two children, the oldest six years and the youngest fourteen months. She nursed the youngest up to her last sickness five weeks previous to her death, which occurred on January 7, 1888. She recovered good health after the birth of her last child, and was very active in her domestic duties and as a teacher to classes in painting until her fatal seizure. She menstruated once or twice after the birth of the child, the last time in June, about seven months before her death.

I first saw the patient on December 2d; was called on account of severe abdominal and pelvic pain, which came on suddenly and without known cause. She was at this time having a little sero-sanguinolent discharge. Bimanual examination of the uterus showed some enlargement. The pains were paroxysmal in character, which led to a suspicion that normal pregnancy of recent date might exist. Rest in the recumbent posture was enjoined, morphine and atropine given, and full relief ensued. I saw her again once or twice in the course of ten days, without noticing other change in symptoms than marked sensitiveness over the hypogastrium, more marked over the fundus uteri. Nothing could be felt abnormal in the vaginal fornix, neither could I discover any abnormal growth in the abdomen or pelvis; this was made difficult on account of the very firm abdominal muscles, heavily covered with fat, together with sensitiveness on pressure.

At about the end of two weeks from the first attack she was again seized with excruciating pains, closely resembling in character parturient pain. The external os was patulous, with a little bloody flow from the uterus; this attack was followed by an acute peritonitis which required large and frequently repeated doses of opium. No change from the dorsal decubitus could be endured, and the bladder could only be relieved by the aid of the catheter. Large and frequently repeated hot vaginal and rectal douches with hot fomentations over the abdomen helped to make her more comfortable for a period of two weeks, though she suffered severe paroxysmal pain, recurring every two, three, or four days. Two and three days before her death the uterus expelled pieces of decidual membrane of considerable size. The effort of the uterus to expel the decidua gave, I presume, the labor-like character to the pains.

On the evening of the 6th of January she had agonizing pains for an hour, followed by sleep for a few hours. I found her the next morning at ten o'clock in a state of collapse, unconscious, and unable to swallow. The uterus was pushed down in the pelvis and the vaginal vault showed evidence of blood-pressure from above. Hypodermics of brandy, ether, and atropine were used without influence. She died at five o'clock, P. M., from hæmorrhage into the abdomen, as shown by the autopsy made the day following her death.

The autopsy was made by my friend Dr. Benton, who had seen the case with me in consultation, and it was hurriedly made on account of the late hour and failing light. The abdomen was distended from blood clots. Extensive peritoneal adhesions were present, and one side of the fœtal cyst only was adherent to the abdominal parietes, but the examination was not made with sufficient accuracy to define its exact point of attachment, which was high up in the abdomen. The uterus, broad ligaments, Fallopian tubes, ovaries, and cyst, containing the fœtus in its membranes firmly distended by the liquor amnii, were removed, and I present them for your inspection.

The cyst wall had ruptured so that the finger passed down upon the fœtal membranes. You will easily see the rupture in the specimen before you. A smaller rupture had evidently occurred at an earlier stage, and a partially organized clot was quite firmly adherent to the cyst wall. The entire growth when removed was of the shape and size of a small or medium-sized orange, and of about ten or twelve weeks' growth.

An examination of the specimen seems to show that the point of conception was in the ostium abdominale or fimbriated extremity of the right Fallopian tube, and as development progressed the cyst formed an attachment on one side to the abdominal parietes; its only other attachments were points of union with the right broad ligament and fimbriated extremity of the tube. The placenta was attached to the posterior wall of the cyst.

I believe that the ovum in this case did not develop in the tube proper, though Lawson Tait teaches that all extra-uterine fœtation is primarily tubal, and says: "I have known at least twenty post-mortem examinations of women who have died from ruptured tubes. In not a single instance which I have found recorded has the pregnancy been anywhere but in the tubes." When the growth is in the abdomen and the tubes normal in size, he would have us be-

* Read before the Kings County Medical Association, May 1, 1888.

lieve that the tube ruptured at an early date with subsequent complete healing of the same, and offers in evidence the statement "that the tubes in nearly all such pregnancies



have been spread over the wall of the cyst and forming part of it." An examination of the specimen will show that the tube is normal, with no evidence of dilatation or rupture, and that the tube in no sense forms a part of the cyst wall by being spread out over it. The fimbriæ are only adherent to the cyst.

In this case, in the earlier stage the diagnosis could not have been made with certainty. The ordinary symptoms of pregnancy up to the time of the first seizure were absent. So far as I know, there were no subjective symptoms which would have excited suspicion of the condition existing until shortly before the final sickness. The woman was in good health, nursed her baby, had not menstruated for months previous to conception, said she had not had any of the symptoms she experienced in her other pregnancies, and only complained that she had suffered from pain at times, sometimes referred to the left and at other times to the right side of the abdomen.

In my failure to make out any abnormal growth in the pelvis or abdomen, with the uterus somewhat enlarged but in its normal position, the pains, like labor-pains in character, with a little bloody flow at times, inclined me to the belief that uterine pregnancy existed, and I acted in accordance with this belief up to the time of the severe seizure, which was followed by an acute peritonitis that was so alarming in character as to prevent any further examinations or active interference other than to control inflammation and relieve pain.

After the acute peritonitis I suspected extra-uterine pregnancy, and the opinion was strengthened two days before her death by the discharge of decidua from the uterus; but on the theory that if the peritonitis had been caused from rupture of the cyst and that the inflammatory action was subsiding and the abdominal sensitiveness and pain growing less, and in view of an inability to locate or make out any pelvic or abdominal growth, there seemed little to do but to wait for further development; but, unfortunately, a serious rupture occurred and fatal collapse followed.

If the diagnosis could have been made before the first rupture and the growth located, electricity should have been used to check further development. The abdominal variety of misplaced pregnancy is specially difficult to diagnosticate in the early months.

The symptoms commonly present in tubal pregnancy are generally absent, and the ordinary symptoms of gestation may not exist, for the uterus and its appendages are not necessarily markedly disturbed in function when the fœtal sac is only attached to the abdominal parietes, and not to uterus, ovaries, or tubes.

Almost every case has some special characteristics of interest when carefully studied, and, as the condition is usually so difficult, and many times impossible to make out before rupture of the sac, all cases should be carefully reported and critically studied.

This is the second case occurring in my own practice. The first case I reported to the Kings County Medical Society, July, 1878, and it was published in "Proceedings," vol. iii, No. 5. That was a case of tubo-abdominal pregnancy—a fœtal development of nine months. The mother carried the same eleven years, menstruating quite regularly until the menopause, and enjoying comfortable health until a few months before her death. A little time before her death a few bones of the fœtal development were passed *per rectum*, and the skeleton and macerated soft tissues were removed post mortem. I preserved the bones, and they are on the table before you.

The ætiology of misplaced pregnancy is far from being settled, though we have had much speculation regarding it. An old theory, that fright or fear at the time of intercourse was a prominent cause, and that the unmarried and widows had proportionately suffered more than the married, is not sustained; fuller observation and more knowledge of the subject seems to disprove this.

Virchow noticed the fact that the condition was usually associated with adhesions of the internal genital organs, and believed that such adhesions interfered with the mobility of the ovary, and thus extra-uterine fœtation resulted; but it is quite probable that the adhesions more often are the result of the pregnancy than the cause of it. Imperfect action of the oviduct may favor abdominal pregnancy. Tait's theory of the cause of the abnormity is that there has existed salpingitis, with destruction of the cilia, thus allowing the ovum to adhere to the tube, and that all ectropic gestation is primarily tubal.

Ectropic fœtation is of increasing frequency, or the condition was formerly not infrequently overlooked, and death attributed in such cases to other causes.

The literature of the subject is becoming voluminous. Dr. Garrigues says that he has found a record, in a period of four years, of over two hundred cases.

Has increased civilization and the more unnatural sexual life of woman, with the almost constant effort to prevent conception with the cold douche following orgasm, which suddenly contracts the uterus and favors congestions and inflammations, had to do in producing this unfortunate physiological accident? Or is it more probable that the increased frequency of pelvic inflammations, adhesions, and diseased tubes act to interfere with the normal action of the generative function? The plan of creation can not be so defective as to result in the sacrifice of so many valuable lives. There is good reason to believe that ectropic gestation is on the increase, and it will be an interesting study to determine, if possible, the underlying causes.

Nothing in such cases is more important than the making of a correct diagnosis, and this before rupture, which is many times promptly followed by fatal collapse that gives no opportunity for laparotomy. Unfortunately, the symptoms are not uniform. Lawson Tait thinks a diagnosis before rupture very difficult, and questions its being made. Dr. Wylie says that the diagnosis is often extremely difficult, if not impossible. That it is at times difficult and impossible to make admits of no question, but that it has, in a good many instances, been clearly made before rupture is evident, and should impress us with the belief that the condition can often be made out in season for operative interference. Careful and painstaking study should be made—a careful study of general symptoms as well as by the intelligent and educated sense of touch—to determine the diagnosis as early as possible.

When the more ordinary symptoms of pregnancy are present—unfortunately, they are not always present—any abnormal symptoms should be carefully scrutinized; recurrent abdominal or pelvic pain; the presence of an irregular serosanguinolent discharge, however slight, should excite suspicion and lead to a careful examination; and if the external os is found patulous and the uterus not sufficiently enlarged to correspond with the earlier symptoms of pregnancy, and it is probable that normal gestation does not exist, the uterine sound should determine the question. Severe pain coming on suddenly and without known cause, such pain recurring at intervals of days, and particularly if paroxysmal in character, should excite grave suspicion. The intense pressure of the cyst wall, and, no doubt, rupture of the serous coat of the sac, give rise many times to agonizing pains before a final serious rupture occurs. A good deal of importance should be placed upon the character of the pain, and that it so often closely simulates parturient pain. In the case reported the patient would not have appeared different in the active second stage of normal labor; the agonizing pain, the brief interval of rest, and the recurrent pain made me feel that the uterus was in active spasm until the presence of my finger in the patulous os showed that such was not the case. That true uterine pain is sometimes present when the uterus is expelling decidual membrane is evident. The expulsion of decidua, unless it is thrown off in shreds so as to elude detection, is pathognomonic, and should only be mistaken for membranous dysmenorrhœa, which is not likely to appear suddenly, and can be excluded if not previously existing.

When the general symptoms are supplemented by a growth of small or large size in the pelvis or abdomen, though its nature can not be clearly defined by the touch, the evidence should be deemed sufficient to call for operative interference in the use of electricity, which is not likely to do harm if the diagnosis is not beyond question.

It is not unlikely that a portion of the cases reported as ectropic fœtal growths, and treated by the galvanic or faradaic currents with prompt and complete recovery, were not embryotic developments.

In a recent report of a case by an authority it is stated that a five-months' fœtus was killed by electricity, and completely absorbed within three weeks. Is it not more probable an error was made in diagnosis? If not, it was a most marvelous result.

If fœtal death should be secured to prevent rupture of the cyst and death from hæmorrhage or peritonitis, the electric or galvanic current should be used in pelvic and abdominal growths whenever a fair probability exists of abnormal gestation, though the diagnosis can not be clearly or positively made. It seems to be in evidence that rupture does not take place after the death of the fœtus. Dr. Janvrin reports one case of death from hæmorrhage eighteen hours after treatment by galvanism from rupture of an artery on the wall of the sac, and he presumes that the ruptured artery did not result from the galvanism.

The all-important question of treatment is not yet settled. There is little unanimity of opinion among those who have studied the subject specially and practically. When we can clearly make out a case of extra-uterine fœtation before rupture, what shall we do? This is an important question. The German, English, and a considerable portion of American gynæcologists favor laparotomy; but only Martin, of Berlin, and Lawson Tait claim to have had much success, and Tait's successes have been in abdominal section after rupture of the sac. Few authorities, perhaps, would differ with Tait in his teaching to open the abdomen and remove the growth after rupture and hæmorrhage, but, unfortunately, in a large proportion of cases the operator is not at hand when rupture takes place and the hæmorrhage produces fatal collapse; then why should not the life of the growth be destroyed, though abdominal section may be re-

quired later on? American gynæcologists are pretty equally divided upon the question whether or not the growth shall be removed by the knife or its life destroyed by electricity. I think, however, the weight of opinion is in favor of electrical fœticide. A paper in the "Annals of Gynæcology" for February, 1888, in favor of "Electricity in Extra-uterine Pregnancy," by Matthew D. Mann, M. D., is well worth perusing.

It is evident that the results obtained in primary laparotomy—*i. e.*, abdominal section after the fœtus is of sufficient development to be of viable age—have been far from satisfactory. Dr. Robert P. Harris, of Philadelphia, in a very careful and painstaking paper published in the "American Journal of Obstetrics and Diseases of Women and Children" for December, 1887, states that the operation is "a very rare and fatal one"—so rare that only one operator out of twenty-six has had a second case; he shows that death has resulted from the operation in eight cases out of nine. Theorizing and opinions given will be of little value until better results are obtained.

Statistics show beyond question that better results have been obtained in secondary laparotomy—that is, in abdominal section to remove the ectropic cyst and its contents after the death of the fœtus. Dr. Martin, of Berlin, however, has recently reported nine operations for extirpation of fecundated tubes with eight successes; in the ninth the tube had ruptured with hæmorrhage before the operation, and death resulted. If a skilled operator like Martin can show as good results by abdominal section as have been secured by electricity, it does not follow that the method shall be generally advised, for specially skilled operators are not often obtainable away from the larger centers where cases are liable to occur. A method not requiring the highest degree of skill must be the available one in general practice.

Dr. Thomas has done more than all others to popularize in America the method of electrical fœticide and secondary laparotomy when required, and his success has been remarkable, having operated twelve times without failure to save life. He would limit the practice to the earlier months of gestation; but when the fœtus attains a stage of development capable of maintaining independent life he would attempt to save both mother and child by abdominal section.

Lawson Tait, on the contrary, says: "What right have we to murder these children either by immoral delay or galvanic shocks? Our business is to save life and not destroy it." He says that there is no question but that the placenta continues to grow after the death of the fœtus, and that it will "go on developing enormously after the fœtus has died from natural causes; then why destroy the fœtus when the source of danger is in the placenta?" Herman also says that the placenta develops after the death of the fœtus. It may for a brief time, but I do not think there is good evidence to establish it as the rule. It is not probable that the placental development goes on long after the death of the fœtus in the ectropic cyst if it does not in normal pregnancy after the death of the ovum. In the death of the fœtus the function of the placenta must cease without much lapse of time in all but exceptional cases.

It is notable that those who have practiced electrical fœticide and secondary laparotomy, and consequently have had much the best opportunity for such study, should not have discovered that the placenta goes on developing enormously after fœtal death, while those who have not had such opportunity for determining the question are so emphatic in statement regarding it. Tait's reasoning is certainly open to criticism, and his moralizing should have no consideration if it can be shown that the chances of saving the mother's life are increased by destroying the abnormal ectropic gestation. Yes, our business is to save life, and the mother's life in particular; not the life of an embryo, to the great risk of the life of the mother.

It is, perhaps, yet a nice question whether the treatment in the earlier months before rupture, and when the diagnosis can be clearly made, shall be by abdominal section or by galvanic or faradaic currents to destroy the life of the ovum, and then waiting until symptoms arise which render surgical interference necessary. Experience has shown that the mortality from laparotomy after fœtal death has been less than when made during the life of the ovum, while the vessels of the sac and placenta are full and active.

The more recent experience of Tait, Martin, and others of less experience, seems to show that abdominal section, and the removal of the ectropic growth promptly after rupture of the cyst when the condition can be made out, is the course to be recommended. It seems to me, in view of the fact that in many cases the diagnosis is difficult or impossible, and that fatal hæmorrhage is liable to occur from rupture at any time, and a competent operator can not always be obtained in season to operate after rupture occurs, that the galvanic or faradaic current should be used. It would seem that the galvanic should be preferred, for it is probably less likely to rupture the dangerously distended cyst walls.

From a pretty careful examination of the more recent literature of the subject, I am convinced that galvanic treatment to the death of the ovum should be recommended in the earlier months in all cases before rupture of the sac, and that abdominal section should be as universally practiced after rupture, whenever the condition of the patient is such as to give hope of success.

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## ÆTIOLOGY OF PUERPERAL FEVER.*

By JAMES P. MARSH, M. D.,
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Question First: "What evidence can be adduced to show that the puerperal fevers are caused, either directly or indirectly, by micro-organisms?"

In arising to reply to this question, I feel it incumbent upon me to turn my attention to the term puerperal fevers. Professor Parvin defines puerperal fever as "an acute febrile affection, heterogenetic, contagious, and often epidemic, attacking women in childbed." † I am well aware

* Read before the Medical Association of Troy and Vicinity, May 1, 1888, as the opening paper in a discussion on "Puerperal Fever."

† Theophilus Parvin, "The Science and Art of Obstetrics," Philadelphia, 1886, p. 560.

that it is not politic for a disputant to preface his remarks with a string of objections, but, nevertheless, I feel constrained to take exceptions to the term puerperal fever, and also to this definition of the condition commonly known as "puerperal fever." These objections are based upon the ground that the pyrexia of the disease is only a symptom of secondary importance, and, as pathologists are very well agreed that in inflammatory affections the initial lesion is a lymphangeitis,* it is therefore suggested that the condition might properly be called obstetric lymphangeitis; but to declare it "heterogenetic" is to affirm that which is by no means conceded to have been proved. I submit that a definition must convey to an inquirer that which is understood by the majority of competent persons when the said term is used. Hence by puerperal fever we shall understand a lymphangeitis contagious, often epidemic, which attacks women in childbed.

Returning to the proposed question, it is to be observed that it has been framed in a peculiar manner, and that the use of the plural number carries with it the direct admission of there being more than one puerperal fever. Should any of my hearers, therefore, take the ground that there is a puerperal fever *sui generis*, then also must they admit that the lying-in woman is subject to all the grades and forms of pyæmia and septicæmia.†

Having thus performed the duty imposed upon every discusser of first accurately defining his subject, we find that the inquiry as regards the cause or causes of this disease must embrace, at least, three several factors:

1. As regards the manner in which the state of pregnancy might influence the condition of the maternal organism in those respects which may relate to either its receptivity or refractoriness toward micro-organisms.

2. As regards the natural history of micro-organisms, so far as the lying-in woman would furnish a suitable nidus for their birth, growth, and decay.

3. As regards the favorable or the unfavorable environment of both the woman and the micro-organisms.

Now, it is purposed to briefly set down under each one of these divisions the well known and established facts which may relate to that part of the subject, but before I proceed so to do let me detain you for a moment by a consideration of the broad rules of evidence according to which the inquiry must be conducted.

If evidence of the unfailing presence of micro-organisms of a certain definite morphological character in the lochia or tissues of patients suffering from puerperal fever can be adduced, and, furthermore, that said organisms are found in no other disease, or, on the other hand, in cognate diseases, it is still maintained that it is not proved that these micro-organisms are the direct or only cause of said "fever." It is self-evident that they must be either complete or partial cause—complete or partial effect, which relation may be in either case direct or indirect. To establish sufficient proof, it must be incontestably shown that these organisms, alone and without the chemical products of their existence in a previous environment, will originate "puerperal fever" in a patient who has nothing in her previous or present condition, other than being in childbed, which would render her either susceptible or refractory to said micro-organisms. Supposing that this can be demonstrated, then, in addition, to render the proof conclusive, it must be established that the condition known as puerperal fever never arises without the presence of these organisms. If proof of the foregoing propositions be found, it is still necessary to declare by facts whether these organisms are the direct poisoners or that the products of their existence—the *débris*—are the real producers of the disease.

So difficult is it to eliminate all sources of error in investigations as to the ætiology of puerperal fever that it is not surprising that of the many theories which have been proposed, few have advanced much further than the stage of an hypothesis. The mind of man is of an inquiring tendency, but his investigations into the causes of things have in the past been very discouraging; he has usually solved one problem by leaving two conundrums in place of it. This has been pre-eminently true of the ætiology of puerperal fever, and there is but one way through the labyrinth of its vast literature. Place on your right hand all the known facts, on your left all the proposed theories; walk boldly midway between the two—never confounding the one with the other—and you may, after many hours of hard toil, arrive at the faint glimmering twilight of the conception of the ultimate cause, but the clear sunshine of the exact relation of cause and effect has never been, nor never can be, a concept of the human mind. Hence I am led to say, with Sir William Aitken,* that, after centuries of toil and study, the final cause or causes of any disease are still absolutely unknown. Having then told you that it is impossible to solve the riddle that we have in hand, and yet inconsistently following hope, the one great chimera of mankind, we proceed to those facts which may be said to have been definitely settled.

I think it well established that during pregnancy there occurs a marked diminution of the red blood-corpuscles;† that the function of these corpuscles is mainly that of carriers of oxygen;‡ that the vitality of the individual cells composing the body is seriously impaired, if they do not receive a sufficient supply of oxygen;* that there is during pregnancy an increase in the watery constituents of the blood, and that, as a consequence of this hydræmia and by reason of the pressure of the gravid uterus upon the abdominal veins, there is often induced an œdema which by preference manifests itself in the lower extremities, and frequently extends to the labia, vagina, and the lower segment of the uterus;‖ and that where an œdema arises from mechanical

* Arpad G. Gerster, "The Rules of Aseptic and Antiseptic Surgery," New York, 1888, p. 179 *et seq.*, especially Note I, p. 183.

† Fordyce Barker, "The Puerperal Diseases," New York, 1874, pp. 476 and 477.

* Sir William Aitken, "On the Animal Alkaloids," Philadelphia, 1887, preface, p. v.

† William T. Lusk, "The Science and Art of Midwifery," New York, 1883, p. 92.

‡ John C. Dalton, "A Treatise on Human Physiology," New York 1882, p. 219.

* *Ibid.*, p. 232.

‖ P. Cazeaux, "A Theoretical and Practical Treatise on Midwifery. Annotated by S. Tarnier," Philadelphia, 1873, p. 479 *et seq.*

pressure there also ensues a retardation in the rapidity of the blood current and an increase in the blood pressure.*

In the lochia of nearly every healthy woman there exist micro-organisms of different varieties.† Pasteur has divided micro-organisms into two classes. The first consists of those whose existence is jeopardized in an environment deprived of free oxygen; the second contains those whose existence is jeopardized in an environment where there is present free oxygen. The first class he calls *aérobies*—oxygen-living; the second, *anaérobies*—non-oxygen-living.‡ Both of these classes are represented in the micro-organisms found in the discharges and tissues of healthy and unhealthy puerperal women. The prevailing organism, however, both in the healthy and the unhealthy, is a micrococcus, which is very abundant in women who are passing through or are about to enter upon the state of puerperal fever.# These micrococci belong to the vegetable kingdom, and, as regards their structure and reproduction, are the most simple of living beings.‖ They multiply by *spontaneous fission*, and sometimes this division is not complete, and it is one of these forms which constitutes the chain-micrococcus.△ Now, it is this chain-like micrococcus that appears to have the most direct relation to puerperal fever, and also it has, so far as microscopic evidence is concerned, been found in erysipelas, diphtheria, and scarlatina.◊ When the chain-micrococcus has gained admittance to a wound, it especially selects the lymphatics for its seat of action and rapidly extends along these vessels and the lymph-spaces.‡ It may be truthfully affirmed that there is no more favorable ground for this organism than the wounded lymphatic system of the living mammal.

We have all heard puerperal fever called puerperal septicæmia,‡ and many of us have thought with justice. Now, in septicæmia there is present a true bacillus, and it is, perhaps, the very best example of the anaerobic bacteria.‡ This bacterium is also the leading member of the class which begins the process of putrefaction.** It is found in the lower part of the intestines, where there is no free oxygen,†† and its malignity seems to consist in its wonderful power of reproduction. Its growth is attended by very noxious odors, for it liberates the sulphur and phosphorous gases from the tissues. It is found wherever dead albuminoid substances are undergoing decomposition. It is very numerous in cadavers, making its appearance a few hours after death.

The almost unfailing existence of large quantities of these two micro-organisms—the chain-like micrococcus and the septic bacillus—in the discharges of women suffering from puerperal fever has been conclusively proved, but whether they are the cause or effect is still *sub judice*. Hausmann, of Berlin, observed that septic symptoms followed the injection of septic material into the uterus of a pregnant rabbit.* An excited experimenter might here see the cause of septicæmia, but the philosophic biologist would remember that there has been inoculated not only the living organisms, but also the chemical results—the *débris*—of their existence in a previous environment. If we separate from each other the bacteria and the fluids in which they have lived, the results with either are negative.†

At this stage in our inquiry perhaps it would be well to turn our attention to the vexed question of ptomaines. When I use the word ptomaines I mean the alkaloidal products of a purely chemical process which, without the intervention of micro-organisms, is asserted to arise in dead animal tissue.‡ These alkaloids are said to exert an action upon the living organism very similar to the physiological action of atropine.# It is claimed by certain experimenters that these alkaloids are the originators of the class of diseases which we are discussing to-night.‖ Accept this position, gentlemen, and you may, reaching back over the expanse of two thousand years, clasp hands with the immortal Hippocrates. The march of centuries, then, has accomplished nothing; the old humoral pathology leads the van; the cycle of medical time has made its revolution, and we are again at the starting-point. Now, what I wish to say is that no chemical substance has been proved to have the power to originate out of its own environment a product which, as to its molecular formula, is identical with said substance. According to Brieger, it requires one thirteenth of a grain of mydaleine to kill a rabbit; the microbes on the point of Pasteur's needle will do the same. I am so bold to say that Brieger could not recover from the remains of said rabbit more mydaleine than would naturally be found therein, while Pasteur would harvest millions of microbes for every one planted. I put the whole subject in a nut-shell when I declare animal alkaloids to be unreproductive and microbes to be reproductive. It is true that Brieger has found poisonous alkaloids in a dead body;△ but this signifies nothing until he has proved that that given cadaver was not acted upon by micro-organisms previous to his analysis, or that the alkaloids are the direct food of the microbes, and are consequently pre-existent. Now, when a person receives a poisonous dose of atropine, there is no increase in the temperature;◊ therefore, if an alkaloid like

* Austin Flint, "A Treatise on the Principles and Practice of Medicine," Philadelphia, 1881, p. 35.

† A. Charpentier, "Cyclopædia of Obstetrics and Gynæcology," edited by Grandin, vol. iv, p. 302.

‡ "Louis Pasteur," from the French, by Lady Claud Hamilton, New York, 1885, p. 53.

# Charpentier, *loc. cit.*, p. 308.

‖ George M. Sternberg, "Photomicrographs," Boston, 1884, p. 130.

△ *Ibid.*, p. 131.

◊ From the conclusions of Lomer, Charpentier, *loc. cit.*, p. 313. See, also, Parvin, *loc. cit.*, p. 567.

‡ Gerster, *loc. cit.*, p. 170.

‡ W. S. Playfair, "A Treatise on the Science and Practice of Midwifery," Philadelphia, 1880, p. 589.

‡ W. Watson Cheyne, "American Journal of the Medical Sciences," vol. 92, p. 80.

** "Life of Pasteur," *loc. cit.*, p. 195. †† *Ibid.*, p. 194.

* Charpentier, *loc. cit.*, p. 299.

† Hiller obtained negative results with bacteria washed in water, and hence we arrive at the law consistent to all organisms, that they live in a certain environment and perish in others, which are only slightly dissimilar. To substantiate this assertion, let me instance the action of the splenic-fever microbe upon the common fowl, where the successful inoculation depends upon a few degrees of temperature.

‡ Aitken, *loc. cit.*, pp. 49, 50. # *Ibid.*, p. 38.

‖ *Ibid.*, pp. 49, 50. △ *Ibid.*, p. 39.

◊ T. Lauder Brunton, "Pharmacology, Therapeutics, and Materia Medica," Philadelphia, 1885, p. 839.

atropine is the cause of puerperal fever, there should be no pyrexia. As corollary to the foregoing propositions I may assert that, if any one doubts the power of microbes to produce a direct chemical change, I refer him to the proved fact that the organisms found in certain sulphur waters have the power of reducing the sulphates of said waters.*

We now approach the facts as regards the third division of the subject, and upon these I shall dwell very briefly, as they are to be more fully considered by one of the subsequent speakers.

It is known that puerperal fever is more liable to follow a tedious labor than one of average severity; an instrumental rather than a non-instrumental; that tedious labor is frequently accompanied by extensive laceration of the cervix uteri; that the external wounds are the ones which usually become the seat of diphtheritic deposits; that the so-called diphtheritic deposits of the higher genital tract are in reality superficial sloughs; that retention of a portion of the placenta is more likely to be followed by puerperal fever than is complete expulsion of that body; that the lying-in woman, through the condition of her pelvic organs subsequent to delivery, offers, so far as temperature, moisture, the presence of appropriate microbian pabulum, a suitable environment for the growth of the aerobic micro-organisms, and that the *débris* of the growth of the aerobic organisms is a suitable food for the anaerobic bacteria.

Finally, then, having gone over ground in a fragmentary manner which would require volumes to fully elaborate, I must say that the cause or causes of puerperal fever are unknown, and, as has been observed by Grandin, it is not scientific to dogmatize while our knowledge is in so chaotic a form. The one great fact, as has been observed by Pasteur, is the unfailing evidence of the existence of micro-organisms, or of the results of their action.

Having thus delivered my judicial opinion, it may not be taken as presumptuous if I declare it to be my own personal conviction that micro-organisms are one of the main factors in the causation of this disease. I do hold that the state of the puerperal woman as she comes to childbed is particularly hazardous. She offers an organism whose natural resources of defense are reduced in number and in strength; a circulation whose rapidity is lowered; an abundance of moisture; a propitious temperature; an exhausted mind and nervous system; a pelvic lymphatic system, laid open by lacerated wounds—a most fitting nidus for the indwelling of the chain-micrococcus; large blood-vessels peculiarly deprived of free oxygen, especially suited for the rapid advance of the anaerobic septic bacillus of septicæmia.

To me there is a clear mental picture of what I conceive to take place when a woman contracts puerperal fever. By reason of the above-mentioned condition of her blood and the character of her labor, she is especially prepared to receive into her genital apparatus † such microbes as may be conveyed to her upon the hands or instruments of her attendants. If, now, it be the septic bacillus, and the quantity large, and the inoculation direct into a blood-vessel, the result is a rapid fulminating case; it is a matter of a few hours. As you stand by the bedside of a woman thus inoculated, you may safely say that here is a direct inoculation of septic material, of a *contagium vivum*; that here the method of Semmelweiss* would have prevented the condition; here some one is guilty of manslaughter. Supposing, however, that the inoculation is done with the chain-micrococcus. After the stage of incubation, which is about three days, has passed, there appears usually upon the external genitals a diphtheritic patch, or perhaps there is no patch, but the lochia become ill-smelling. The micrococci, which now swarm in the discharges, having clustered themselves together in great masses and become attached to the mucous surface, thus largely constituting the said diphtheritic patches, begin, from dearth of food-supply, to advance along the lymphatics.† Their path of advance is not by the blood-vessels, simply because the number of red blood-corpuscles, the carriers of oxygen, is reduced; and, on the other hand, here abound the white blood-corpuscles, which, as Stermberg has pointed out, are the natural antagonists of the microbes. Nevertheless, the leucocytes, which constitute the police system of the organism, advance in vast numbers to repel the attacks of the invading microbes. Countless numbers of leucocytes and microbes are killed, their dead bodies constituting what is called pus. Finally, the leucocytes, by means of the half-dead bodies of their comrades, build up a rampart in the ends of the blood-vessels and lymph-channels.‡ The rest of the maternal organism is thus shut against the victorious host, and consequently its food-supply becomes limited. As the pabulum decreases, the adult microbes perish, but they are survived by innumerable spores. Should, now, the process cease, the woman has a slight chill and a few degrees of pyrexia—it is the "milk fever" of the third and fourth days. But now the septic vibrio finds the conditions of his existence. The spores of this bacillus, free oxygen being absent, begin to develop. This bacillus feeds upon the bodies of the dead microbe and the dead leucocyte alike. His carnage gives origin to gases of putrefaction, which, as their volume increases, seek an egress. Pressure is brought to bear upon the ramparts of the leucocytes, eventually a weak spot is found, the leucocytes are pushed to one side, and a host of microbes, which have been dormant but not dead, are hurled into the blood-channels and lymph-spaces. The white blood-corpuscles rally; they grasp in their amœboid embrace the advancing host. Each leucocyte is an officer of the law; he takes a microbe prisoner and hurries off to the nearest lockup. If now the arrest has been made in a lymph-channel, he takes his capture to the nearest police

* E. L. Trousseart, "Microbes, Ferments, and Molds," New York, 1886, p. 119.

† Use of term according to Dr. John W. S. Gouley.

* Joseph Kucher, "Puerperal Convalescence," New York, 1886, p. 213 *et seq.*

† Note II.—Nor is the general course of that advance a hap-hazard chance, for the observations of König and Schlesinger prove that the course of pelvic inflammation is along the lines of least resistance, and Gordon's post-mortems would show that that side which had been more functionally active is most liable to become affected.

‡ Virchow has pointed out that a lymphatic thrombosis is a conservative process. William Leishman, "A System of Midwifery," Philadelphia, 1879, p. 676.

station, which is the nearest lymphatic gland or space; but if the seizure has been made in the blood current, the urgency being great, the microbe is hustled off to the great court of justice of the human organism—which is the kidney. Here the microbe is deposited. The kidney cell, which is at once judge and executioner, passes sentence, and the micrococcus, or what remains of it, is transported out of the body-politic. The maternal organism has proceeded with her public offenders as England did a century ago. Still, at times, the number of criminals in the halls of justice is so great that a riot takes place. A number of officers and judges—leucocytes and kidney cells—"bite the dust," and we, observers, notice an albuminuria. Supposing, however, that the courageous leucocyte gets a hold on a septic bacillus, or rather a septic bacillus gets a hold on a leucocyte; the leucocyte makes an endeavor to reach the courts, but at some point in the journey the bacillus kills the leucocyte—*e. g.*, the officer is assassinated by his prisoner. A general fight takes place at this point between leucocytes and bacilli—the result eventually being a metastatic abscess. The bacilli again resort to their putrefactive gases—in other words, they use dynamite. The bacteria, by means of their atropine-like *débris* (alkaloids), paralyze the vaso-motor nerves. The blood-vessels become dilated. The circulation is slowed down. The police can not reach the central station with their captures. The septic bacilli and the microbes carry the day. The *friction* of the fight carries up the general temperature of the patient. A fatty degeneration of the tissue-cells of the body takes place. The battle closes with the patient's life.

In every human organism the blood-vessels and lymph-channels constitute a great system of highways and byways. Along these crowded thoroughfares there whirl an innumerable host of red blood-corpuscles—the artisans of the body-politic. Meandering along down the sides of these "arteries of travel" stroll the leucocytes, officers of the law; like most policemen, proverbially slow-going, frequently coming to a stand-still when they are not hustled by the strong public opinion moving in the middle current. Nevertheless, they are the constituted protectors of the active little red blood-corpuscle. As they leisurely perambulate the wide avenues of the human republic they carefully examine every flaw in the perfect pavement, for by chance one of those general foes of the society, a micrococcus, may be attempting to push a way through or digging a pitfall to catch the foot of some unwary citizen. Should, however, the burly leucocyte find a septic bacillus, then he unearths a true anarchist. The result is a "Haymarket" riot.

**Purpura Hæmorrhagica after a Mental Shock.**—"Dr. Ed. de Smet, of Brussels," says the "Lancet," "has recently had a case of a young woman of a highly nervous temperament who, in consequence of a severe fright, experienced an eruption of purpura hæmorrhagica, though she had never had any eruption of the kind before. Some four months subsequently, however, in consequence of a fall, a similar eruption made its appearance. The treatment was directed mainly to the nervous system, which was evidently very much affected. Dr. de Smet refers to M. Lenoir, of Lille, who has published cases of various skin diseases—eczema, psoriasis, herpes, pemphigus, and vitiligo—which have followed a mental shock."

# A NEW SUTURE FASTENER FOR SILVER WIRE,

## ESPECIALLY ADAPTED FOR OPERATIONS UPON THE CERVIX AND PERINÆUM.*

By AUGUSTIN H. GOELET, M. D.,
NEW YORK.

Those who have operated much for lacerated cervix, using the silver wire for suture, have experienced the great objection to its cutting into the tissues when twisted. If twisted tight enough for thorough coaptation, it is sure to cut deeply, and will be found buried out of sight when the sutures are removed. Sloughing or non-union is often the result, as the suture becomes loosened when the tissues give way, and this allows the margin of the wound to gape. The furrows left by the twisted sutures may be seen on the cervix years after the operation. But silver wire has held the preference over all other sutures for this location, because those which require tying are inconvenient of application. The catgut does not last, except for supplementary sutures, and silk is more apt to cut than silver wire.

Anything which will avoid the necessity of twisting the silver wire will, I feel sure, be appreciated. For this purpose I have devised this lead button-shield, which, when the wire has been well shouldered, is pushed down upon it tightly against the cervix, and clamped like a shot. (See Fig. 1.)

It has a smooth concave surface, with rounded edges, which may be molded to fit the side of any cervix, and from the middle of the outer or convex surface there is a projection resembling an oblong shot, through which there is a perforation for the wire. The wire should be well shouldered, either with the knot-tyer or the needle-holder, which has had a shallow groove made across the end to keep the

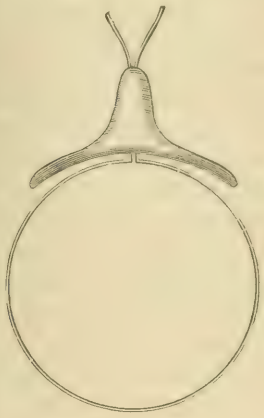


Fig. 1.

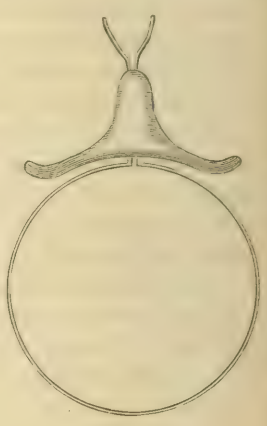


Fig. 2.

wire from slipping off. When the knot-tyer is used, the ends of the wire must be crossed, which need not be done when the needle-holder is used. The shield may be clamped in position by the ordinary strong needle-forceps, and a multiplicity of instruments avoided.

Usually two sutures, fastened in this way on each side

* Read before the Section in Obstetrics and Gynæcology of the New York Academy of Medicine, April 26, 1888.

of the cervix, are all that are necessary, even in very extensive lacerations, with an additional catgut suture on each side, near the os.

There is the same objection to silver wire when it is used for closing the external perineal wound. Although the skin is more able to resist than the mucous surface, great care is always necessary to avoid twisting the suture too tight, and, as an extra precaution, it is loosened afterward. When the tissues become swollen, it will cut some even then.

I have prevented this cutting and secured better results by using the same fastener as described above, with the ends of the shield surface turned up as shown in Fig. 2, to avoid digging into the flesh when the knees are brought together.

When silver wire is used for closing the abdominal wound after laparotomy the same fastener may be used with advantage if the shield surface is flattened out somewhat.

As a substitute for the lead button used to fasten deep sustaining sutures in large flap-operations where there is much strain on the line of union, I have had the shield surface made larger and curved up at the sides (something like a small Bozeman button), and the projection and perforation in the center, which avoids the necessity of using shot. (See Fig. 3.)

The advantages claimed for this fastener over the twisted suture are, viz.:

1. The rapidity of its application.
2. The support to the parts furnished by the concavity of the shield surface.
3. The wire will not cut and allow the sutures to loosen and the margins to gape.
4. The sutures are more easily removed because the wire will not be buried out of sight.
5. Fewer sutures are required.
6. It promotes more prompt union and better results.



Fig. 3.

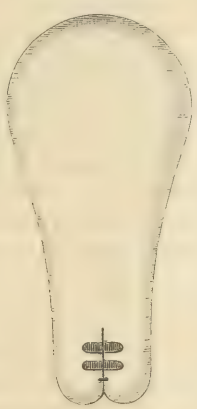


Fig. 4.

To remove these sutures the projection is seized with a pair of dressing forceps, slight traction made, and the scissors inserted under the shielding surface, and one side of the wire cut.

These buttons have been made for me very nicely by Mr. Philip H. Schmidt, the instrument-maker.

From the discussion which followed the reading of this paper, I fear I did not make one point quite clear and may be misunderstood; therefore I will add another illustration (Fig. 4) to show the position of the button-shield when in place. They are applied across the line of union of the two denuded surfaces on each side of the cervix, the concavity of the shield fitting the convexity of the side of the cervix, and when pushed down in place, while the projection is in the grasp of a pair of strong needle forceps, it is compressed like a shot, and the ends of the wire cut off close to the lead projection.

The claims of advantage for this fastener, as set forth above, have certainly not been exaggerated. I have used it as well as the twisted suture long enough to be sure that it is a decided improvement over the twisted suture, although it may not be (as was claimed by some present) an actual necessity. It might likewise be claimed that the electric light and telephone are not actual necessities; still this is no argument that they are not decided improvements upon gas and the telegraph.

I assert that the silver wire when twisted will cut more or less when the tissues become swollen, as they do after these operations, and that the use of this shield will prevent it. Let him who doubts the truth of this assertion try it for himself.

243 West Fifty-fourth Street.

## SHOULDER AND OTHER MORE TRANSVERSE PRESENTATIONS.

By EDWIN R. MAXSON, A. M., M. D., LL. D.,
SYRACUSE, N. Y.

Having published, during the past thirty years, in various medical journals, my discovery of the availability of the genu-pectoral position for producing cephalic version in shoulder and other more transverse presentations, and having read a paper before the Syracuse Medical Association in 1877 advocating it, as well as having in 1867 presented my essay as delegate to the International Medical Congress in Paris on this subject—the former having been published in the "American Practitioner," and my method heartily indorsed by the late Sir James Y. Simpson, Professor S. D. Gross, Professor Parvin, Dr. Edward Warren Bey, and others of high standing in this country and abroad—it was not a little surprising, when dissection in a case of shoulder presentation was reported in a learned medical association recently, calling up a discussion of the subject, that so much doubt was expressed as to the availability of this posture in such cases, none of the speakers, as appears, having tried it, and the reporter not having heard of it, as was stated.

Passing over many successful cases that have been reported in this country and abroad, I again attempt to call attention to this subject by abstracts from an essay of Dr. H. M. Cutts, of Washington, D. C., read before the Washington Obstetrical and Gynæcological Society, and published in the "American Journal of Obstetrics" of November, 1887, to which reference is here had.

After referring to Deventer, Smellie, Bard, and Shippen, as having advocated this position, "to favor podalic version," he says: "On the other hand, Dr. Maxson recom-

mends it for cephalic version, so to him is due the discovery of this more desirable possibility."

Dr. Cutts then gives my rules for having the patient kneel in the middle of the bed upon folded quilts, eighteen inches high, the face being brought down forward on to a pillow, so as to bring the back inclining downward at an angle of about 45 degrees, the attendant then placing himself or herself on the side opposite that to which the head is lying, and gently pressing the shoulder back, if it is not receding by gravity alone, extending the fingers so as to grasp the head and guide it to the superior strait, manipulating externally with the other hand, then turning the woman down upon the opposite side, and steadying the head till one or two pains may cause it to engage, when the presentation becomes normal.

These rules I laid down at length in the essay I read before the Syracuse Medical Association, February 6, 1877, which was published in the "American Practitioner" of March, 1877, to which he refers, that being the last of a series of articles I have published in various medical journals since 1860, advocating the genu-pectoral position for cephalic version.

Dr. Cutts offers the following helps secured by this position:

1. "The downward pressure of the atmosphere upon the fundus uteri is, at least in part, equalized by the admission of air into the vagina."

2. "We have the force of gravity to aid us. The weight of the child naturally drags the presenting part from the os uteri and pelvic cavity, and by so much relieves the impaction" (Hildreth, "Am. Jour. of the Med. Sciences," April, 1876).

3. "The abdominal cavity is elongated, putting the vagina upon the stretch, thereby giving it a cylindrical character, thus aiding to throw the head into line with the superior strait" (Maxson, "Am. Prac.," March, 1877).

4. "The woman can not in this position, to any extent, exert her voluntary muscles in bearing down" (Hildreth).

5. "We get rid in a great measure of the superimposed weight of the abdominal viscera and the resistance offered by the promontory of the sacrum, should any part of the child be impacted below it" (*ibid.*).

6. "The liquor amnii is much more likely to be retained until the version" (*ibid.*).

7. "The uterus, with its contents, recedes from the spine, and by force of gravity tends to relax the abdominal muscles, and hence favors our manipulations" (*ibid.*).

8. "It is more than probable that in this position the uterus will be found physiologically to contract less violently and relax more readily than when the patient is on the back or side" (*ibid.*).

Dr. Cutts then proceeds to give in detail seventeen cases to illustrate the success of this posture in difficult version, "bringing out especially (1) why version was necessary; (2) what was tried before the genu-pectoral position; (3) the condition of the membranes; (4) the presentation of the fœtus after the genu-pectoral position; (5) the termination of labor."

Dr. Cutts then details the seventeen cases reported in different medical journals by Smellie, Maxson, Hildreth, Hadden, Bigham, Lueck, Parvin, Linton, Huestes, Perkins, Fowler, and others, and, in conclusion, says: "It will be seen that what Maxson calls the posture treatment has made easy an operation that, in certain presentations, is always difficult and sometimes impossible, and that it has avoided the hideous operation of embryotomy, which, barring an occasional spontaneous version, would have in many instances been the only alternative under the circumstances. It will also be seen that in all the cases a transverse presentation made version necessary, that in many of them other methods had failed, that in a large majority of cases the membranes were ruptured before version was undertaken, that cephalic and podalic version were accomplished about equally, and that in every case, except one unknown,* the labor and puerperium terminated without complications to the mother. In four cases the child was born dead, but in no instance was this the fault of the posture; in two cases the position failed to bring relief. In none of these cases has the use of antiseptics been mentioned."

Dr. Cutts then says:

"I think we may conclude, therefore, that, in transverse presentations at least, the genu-pectoral position is an invaluable adjunct to the safety of both mother and child; that version with it may be undertaken any time after the complete dilatation of the os, and without regard as to whether the membranes are ruptured or not, and without waiting for an anæsthetic. The only thing we have to consider is whether we shall do cephalic or podalic version. This choice," he says, "depends so much upon the individual case, and opens up a subject outside of the paper's intent, that I shall not allude to it further." He adds: "It would seem, also, that combined manipulation is not always necessary, for in several instances Nature brought the head into the inlet."

Dr. Cutts concludes as follows:

"I have been surprised to find how little is said of the genu-pectoral posture in regard to obstetrical uses. Except to mention it in speaking of prolapsed funis, I can find nothing about it in the modern text-books on obstetrics. The journal literature, also, contains a wonderful dearth of reported cases, from which I take it the method has not often been tried. The 'boom' given it by Maxson was short-lived, and thus, in my opinion, a valuable expedient has been relegated to desuetude" ("American Journal of Obstetrics" of November, 1887, pp. 1173–1180).

I notice also in the same journal, at pages 1204–1207, that Dr. Fry, in opening the discussion in the Obstetrical and Gynæcological Society, premised by saying "he thought Dr. Cutts's paper one of the most important that had ever been read before the society."

I present this sketch and abstract of Dr. Cutts's paper as a justification of what I have stated and published on the availability of the genu-pectoral posture for producing cephalic version in all shoulder and more transverse presentations, and hoping that it may call attention to this easy, safe, and humane method for both mother and child.

208 Madison Street, Syracuse, N. Y., *April, 1888.*

* The pains ceased, and another physician had the case.

# A CASE OF CYST OF THE PANCREAS.*

By J. A. NICHOLS, M.D.,
PLATTSBURG, N. Y.

This case of cyst of the pancreas is presented to you principally on account of its interest as an extremely rare affection and of its difficulty of diagnosis.

In searching the literature on the subject I have found but eleven cases recorded, none of which were correctly diagnosticated before an exploratory incision had been made, but were mistaken for either echinococcus cysts of the liver or, in most of the cases, ovarian cysts. All of the cases but one were operated upon either by extirpation of the cyst or evacuation and drainage. Five of the cases operated upon resulted in recovery, while five died from peritonitis.

A word as to its ætiology. Pancreatic cyst may be occasioned by any cause which obstructs the common duct or any of its branches, as by the impaction of calculi, partial or complete obstruction by cicatricial contraction, or a sudden or gradual obstruction of the duct without diminution of its lumen by displacement of the pancreas. Thus the pancreatic juice, obstructed in its flow, dams back, distends the ducts, causing a degeneration and absorption of the parenchyma of the gland, leaving the distended capsule to form the cyst wall.

The case which I have to report was that of a male, aged forty-nine, American, who, twelve years prior to his death, first complained of very severe pains in the epigastrium attended with a feeling of fullness in that region, but having no nausea or dyspepsia. These symptoms would continue with more or less severity for a week or so, and then disappear, returning at intervals of two or three months. These periodical pains were preceded by a rather peculiar premonitory symptom, which I will not endeavor to explain, of a most intense itching of both feet, which subsided on the advent of the pain. His appetite during the most of the time was voracious and never poor; any food ingested caused him no disturbance. The patient's condition remained apparently unchanged for about seven years, when he consulted his family physician for excruciating pains he was having in his right arm and forearm, said at the time to be rheumatic. The pains were not constant, but continued, attended with atrophy of the muscles, although he had the use and control of the member. During the same year he had a circumscribed peritonitis, after which, until his death, he had periods of vomiting the peculiar coffee-ground material so common in malignant disease of the stomach.

Three years prior to death the first evidence of any tumor of the abdominal cavity was discovered. He was seen by some of the most eminent men in the profession, but all alike failed to make a diagnosis. He refused to allow an exploratory incision or aspiration to be made. At about the time of the discovery of the tumor, symptoms of diabetes presented themselves, and large quantities of sugar were found in the urine. He became greatly emaciated, although his appetite and digestive powers remained fairly good and his bowels regular, and he finally died, February 27, 1887, of asthenia.

At the necropsy the following day a cyst was found, holding about four quarts of serous fluid, occupying a large portion of the abdominal cavity, bound down by adhesions at various points. No trace of the glandular structure could be found.

* Read before the Clinical Society of the New York Post-graduate Medical School and Hospital, April 21, 1888.

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## A WORD ABOUT SLEEPLESSNESS.

Disorders of sleep may be said to predominate over all other complaints that more or less painful maladies wring from suffering humanity. "If he sleep, he shall do well," says the sacred chronicle. It holds true to-day and for all time. Freedom from pain, and sound, unbroken slumber, are the most reliable signs of health, that condition of well-being which makes well-doing possible. Whatever murders sleep has a far more widely reaching influence than simply the loss of one or many a night's rest. In view of insomnia's destructive power, any agent to arrest its ravages deserves both gratitude and praise.

In the "Practitioner" for March, 1888, there is an interesting paper on the "Treatment of Sleeplessness" by A. Symons Eccles. The author finds restless sleep and "constant dreaming" associated with dyspeptic or gouty symptoms; and in patients suffering from chronic joint affections and sciatica, in which the local pain has not been sufficiently severe to inhibit sleep altogether. A hot bath, he affirms, has been found most valuable in producing a dreamless sleep, although not usually of longer duration than four hours without intermission, and sometimes followed by a period of great wakefulness, relieved only by a short morning doze. Even when this somewhat uncomfortable vigil supervenes, the patient always feels more refreshed and happier the next day than after a long night of uneasy, dreaming sleep. Minute directions in regard to this bath are given. The temperature of the bath-room should be not less than 65° F., which the steam raises to 70° F. The patient should lean, entirely nude, over the edge of the tub or supported on a chair, and have *the head and face rapidly douched with water at 100° F.* The exposure of the rest of the body-surface to the air will cause a short contraction of the cutaneous vessels and an appreciable cooling of the surface, which may be verified by Immisch's metallic thermometer. This cooling of the body-surface, coupled with the application of the hot sponge to the head, leads to a determination of blood to the head, or, in other words, to a dilatation of the vessels of the brain, the patient's temporal pulse being accelerated and a sense of fullness in the head experienced. The whole body, excluding only the head and face, is then immersed in the bath at 98° F., rapidly raised to 105° to 110° F. When a sensation of pleasant languor is felt, the pulse, at first accelerated, has fallen to a slow, full, steady, and easily compressible beat. The time necessary to bring this about varies from eight to fifteen minutes. Then the patient must be slowly raised, wrapped in warm blankets, and put to bed without haste or personal effort. By the time the bedroom is reached the moisture on the surface of the body will have been absorbed. Having donned his

night-clothes, the newly bathed wraps the drapery of his couch about him and lays him down to pleasant dreams, with a hot bottle to his feet, and minus any noise or any light, save the feeble glimmer that reassures the timid. A good night usually follows, sleep supervening within a few minutes after entrance into bed.

The theory on which these proceedings are based is, that first, by the exposure to the air of the suddenly unclothed body, a contraction of a large vascular area is produced, leading to a corresponding dilatation of the vessels of internal organs, which in the case of the brain is further induced by the application of the hot sponging and posture. This provides a thorough filling of all the cerebral vessels. By immersing the body, except the head, the vessels of the abdomen, trunk, and extremities, and especially those of the surface, are dilated. Contraction of the arterioles of the brain occurs, which, with the gradual slowing of the heart's beat, reduces the supply of blood *to the whole of the brain*, thus decreasing its functional activity equally throughout, and so placing it in the most favorable condition for complete functional rest. There are circumstances that contra-indicate this method, such as extreme anæmia, emaciation, the presence of aortic valvular disease, or signs of atheroma. A stimulant rather than a depressant action on the nervous system is required in such cases. Just here massage possesses unusual virtue.

Insomnia depending upon an overwrought and enfeebled nervous system is often accompanied by hyperæsthesia of sufficient degree to cause the patient to resist, to become more or less rigid under massage. In this event, gentle stroking of the back and limbs, thorough chafing of the feet with firm upward friction until the local temperature is raised to 97° F., together with the application of a hot compress over the abdomen, have proved effective and highly beneficial measures. The hot bath, the hot abdominal compress, with or without previous kneading of the abdomen, or the whole wet pack modified to suit the requirements of the case, and all of these followed by the most rigid observance of the recumbent position in a warm bed in a quiet, cool, well-ventilated room, where the senses can become dormant through absence of stimulation—these have been found valuable aids to sleep when disorders of this function are not dependent upon fever or intense pain. Even in sciatic and trigeminal neuralgias the wet pack has been employed with advantage.

To effect permanent restoration of refreshing sleep, the tiresome old vault of heaven must be broken up into new forms. The brain, when overworked, must lie fallow. The stomach, that too often suffers with the other organs of digestion from the most extraordinary maltreatment, must be coaxed into a regular performance of its duties. The muscular system, wasted and inert, perhaps, from disuse, must be called upon to fulfill its digestive and excrementitious functions, too long held in abeyance. The question of overcoming insomnia is not one of taking something, but of doing something. Mechanical disturbances must be overcome. Everything wrong, it has been stated, is primarily an error in mechanics. What must I do to go to sleep? It is the province of the wise physician to give reply. Valuable hypnotic agents exist outside of narcotics. These are to be selected with care and discretion for the relief of suffering humanity, that to soft sleep it may give itself away,

> "And in a dream, as in a fairy bark,
> Drift on and through the enchanted dark
> To purple daybreak."

## A RADICAL CHANGE NEEDED.

Nothing, perhaps, in sanitary science is better established than the danger to be apprehended from the processes of fermentation and putrefaction. It being certain that all decomposition is the result of, or at least is attended by, the rapid multiplication and great activity of micro-organisms, that some of these organisms or their products are injurious to the health of higher animals, and that it is at present impossible to discriminate between those that are harmless and those that are not, it is evidently the part of prudence to remove all organic refuse matter as rapidly as it accumulates and before decomposition sets in.

Acting upon this conviction, boards of health have devoted a considerable share of their energies to the prompt removal of such refuse from houses. Pipes and traps, water-closets with nicely adjusted flushing apparatus, sinks and slop-basins of impermeable material, and metallic garbage-cans, have been forced into use, and old vaults, ash-pits, and cess-pools abolished under constant pressure, in the firm belief that these improvements would be warranted by results, and they have been.

In disposing of the refuse of our stables, however, our methods are still primitive, in city or country. Manure is allowed to accumulate and rot until there is no more room for it, or it suits somebody's convenience to take it away. It seems to be dealt with as if it were a harmless product. In fact, there is yet among the laity a wide-spread belief that the air of stables is wholesome and particularly conducive to the well-being of persons afflicted with diseases of the lungs. There is certainly no general conviction that stables ought to be kept as clean, as promptly, frequently, and thoroughly disinfected and rid of all refuse, as human dwellings. The few facts that have been collected show the danger of the accumulation of manure. A recent order of our city Board of Health compels, in most cases, the retention of manure inside the stable, and the epidemic of spinal meningitis among horses during the past winter is by many veterinarians attributed to the pollution of the atmosphere in this way. Why, then, is not the manure removed more promptly?

The chief difficulty seems to be that the matter is left entirely to private enterprise. The contractors, undertaking it as a matter of personal profit, find it to their interest to remove the manure at their own convenience. There are times when the demand for it is light, when its collection is difficult and expensive, when (as at present) strikes and boycotts interfere with the work, and when conflicts with the public authori-

ties and private health associations render the contractors cross-grained and indisposed to accommodate the public. Our Board of Health forbids the use of manure-vaults outside of the stable, and the accumulation of more than a cart-load of manure on the premises before removal, but it has no power to compel the private contractor to remove these small accumulations, and can only harass the individual owner and keep him in a most uncomfortable state of perplexity. Many physicians have been annoyed in this way during the year, and there seems to be no prospect of relief.

Why, then, should not the removal of stable manure devolve upon the public authorities as does the removal of all other kinds of refuse? Why make an exception in this? If it were put in charge of the Department of Street-cleaning, it would probably be done with considerable regularity, and the whole vexatious question would be settled. It would undoubtedly be a source of profit to the city, and relieve, instead of increasing, the burdens of the tax-payer. The matter is one that concerns the health as well as the comfort of every inhabitant of this great city, and we urge its careful consideration upon the public authorities as one of great economical, administrative, and sanitary importance.

## *MINOR PARAGRAPHS.*

### MEDICAL PUBLICATIONS OF HARVARD MEDICAL SCHOOL.

We have received a neatly bound volume containing reprints, in their original form, of articles written by instructors in Harvard Medical School. It is stated in the preface that the articles are presented in bound form to show the character of the original work done by the instructors, or under their personal supervision, during the year 1887, and that a portion only of the year's work is thus represented. The papers are all of scientific value, and the absence of clinical papers makes the collection a desirable one. The following is the Table of Contents: "The Action of Sulphuric Ether on the Peripheral Nervous System," by Dr. H. P. Bowditch; "The Anatomy and Physiology of the Recurrent Laryngeal Nerves," by Dr. F. H. Hooper; "The Effect of Pure Alcohol on the Reaction Time, with a Description of a New Chronoscope," by Dr. J. W. Warren; "Notes on Muscular Abnormalities," and "The Range of Variation of the Human Shoulder Blade," by Dr. Thomas Dwight; "The Process of Repair after Resection of the Intestine," by Dr. J. C. Warren; "The Experimental Value of the Dowse Splint," by Dr. E. G. Brackett; "Fracture of the Spine: its Immediate Treatment by Rectification of the Deformity and Fixation by Plaster-of-Paris Jacket," by Dr. H. L. Burrell; "The Artificial Feeding of Infants," by Dr. T. M. Rotch; "An Experimental Research upon Rabies," by Dr. H. C. Ernst.

### THE EFFECT OF TEA UPON THE TEETH.

A writer in the "British Medical Journal" states that in the district in which he resides about 2,000 persons who are employed in cotton factories are in the habit of drinking strong tea to excess, and that "they, almost without exception, have bad teeth"; that many of them lose their teeth at puberty, and that the disease, "whatever be its cause," seems to be hereditary, children during the teething period often losing their first teeth before the time for the eruption of the permanent set. He states that decay begins in or near the roots and that it bears no resemblance to specific disease—syphilis being an almost unknown disease in the district. He evidently entertains the opinion that tea is the direct cause of the decay of the teeth. Another writer in the same journal says that "excessive tea drinking," in so far as it vitiates the secretions of the mouth, thereby favoring the development of acids or micro-organisms, which, being deposited on teeth that are structurally defective in enamel or dentine, cause decay, may "be looked upon as a remote cause of dental disease."

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 22, 1888:

| DISEASES. | Week ending May 15. | | Week ending May 22. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 3 | 3 | 5 | 4 |
| Scarlet fever | 186 | 35 | 164 | 30 |
| Cerebro-spinal meningitis | 3 | 3 | 6 | 5 |
| Measles | 169 | 11 | 206 | 7 |
| Diphtheria | 193 | 52 | 193 | 56 |
| Small-pox | 20 | 6 | 12 | 7 |

**The Health of New York City.**—During the four weeks ending Tuesday, May 22d, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhus, 1 case; typhoid fever, 31 cases and 17 deaths; scarlet fever, 772 cases and 135 deaths; cerebro-spinal meningitis, 20 cases and 21 deaths; measles, 602 cases and 34 deaths; diphtheria, 734 cases and 213 deaths; small-pox, 66 cases and 24 deaths.

**The New York Dermatological Society.**—At the annual meeting, held on Tuesday, the 22d inst., the following officers were elected for the ensuing year: President, Dr. E. L. Keyes secretary and treasurer, Dr. George T. Elliot; members of the Executive Committee, Dr. R. W. Taylor, Dr. George H. Fox, and Dr. E. B. Bronson.

**The Hospital Graduates' Club** gave its third annual dinner on Thursday, the 17th inst. An address was delivered by Dr. J. S. Hawley, whose theme was the prevailing tendency to seek foreign instruction and to read foreign medical literature. The club is composed of some of the younger medical men, and its membership is limited to twenty-five, a full term of service on the resident staff of a hospital being a prerequisite to admission. The officers for the ensuing year are Dr. A. B. Townshend, president; Dr. N. H. Henry, vice-president; and Dr. J. E. Newcomb, secretary.

**Harvard Medical School.**—Dr. F. C. Shattuck has been appointed to the Jackson professorship of clinical medicine. Dr. E. N. Whittier, assistant professor of clinical medicine, has resigned. Dr. Whittier has been connected with the school for sixteen years, having formerly been assistant to the late Dr. Calvin Ellis. Since the resignation of Dr. R. T. Edes he has had charge of the teaching of clinical medicine which duty he has performed with credit to himself and benefit to the students.

**The late Dr. Loring.**—At a meeting of the Practitioners' Society of New York, held on Friday, the 4th inst., the following resolution was adopted:

*Resolved*, That in the death of Dr. Edward Greely Loring the society has lost an eminent colleague whose contributions to its

scientific work were characterized by distinguished ability, whose agreeable companionship contributed largely to the enjoyment of the scientific entertainments of the society, and whose absence will long be felt and lamented.

[Signed.] SAMUEL SEXTON, M. D., ROBERT F. WEIR, M. D., JAMES B. HUNTER, M. D., } *Committee.*

**Back Numbers wanted.**—Any subscriber to this Journal who has copies of the issues for December 15, 1883, and December 13, 1884, which he does not care to retain, will confer a great favor if he will send them to the office of the Journal, No. 3 Bond Street, New York.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 19, 1888:*

KERSHNER, EDWARD, Surgeon. Detached from the U. S. steamer Pensacola, and to wait orders.

SAYRE, J. S., Assistant Surgeon. Detached from the U. S. steamer Pensacola, and to wait orders.

JONES, W. H., Surgeon. Detached from the Navy-Yard, League Island, and ordered to the Pensacola.

COOKE, G. H., Surgeon. Ordered to the Navy-Yard, League Island.

CRAWFORD, MILLARD H., Passed Assistant Surgeon. Ordered to the Vandalia.

WIEBER, F. W. F., Assistant Surgeon. Detached from the Vandalia and ordered home.

STONE, E. P., Assistant Surgeon. Ordered from the Naval Hospital, New York, to the Pensacola.

HARMON, G. E. H., Passed Assistant Surgeon. Commissioned a Surgeon, May 12th.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 13 to May 19, 1888:*

TOWN, F. L., Major and Surgeon, Post Surgeon at the Post of San Antonio, Texas, will take charge of the office of the Medical Director at these headquarters, and perform the duties of that officer during his absence on leave. S. O. 51, Department of Texas, May 11, 1888.

APPEL, D. M., Captain and Assistant Surgeon, will be relieved from duty at Fort Davis upon the arrival of Captain J. V. Lauderdale, Assistant Surgeon, and proceed to Fort Hancock and report to the commanding officer of that post for duty. S. O. 49, Department of Texas, May 5, 1888, and S. O. 50, Department of Texas, May 9, 1888.

EDIE, GUY L., First Lieutenant and Assistant Surgeon, will proceed, not later than the 25th inst., to Fort Concho, and report to the commanding officer, 8th Cavalry, for duty as medical officer, in compliance with Par. 13, S. O. 99, c. s., Headquarters of the Army. S. O. 49, Department of Texas, May 5, 1888, and S. O. 50, Department of Texas, May 9, 1888.

WOOD, LEONARD, First Lieutenant and Assistant Surgeon. Leave of absence extended two months. S. O. 114, A. G. O., May 17, 1888.

Par. 12, S. O. 49, Department of Texas, May 5th, relative to HARRIS, H. S. T., First Lieutenant and Assistant Surgeon, accompanying 8th Cavalry to Department of Dakota, is amended by Par. 1, S. O. 50, Department of Texas, May 9, 1888.

Par. 1, S. O. 50, Department of Texas, May 9th, is revoked by Par. 1, S. O. 51, Department of Texas, May 11, 1888.

Par. 15, S. O. 49, Department of Texas, c. s., relative to CLENDENIN, PAUL, First Lieutenant and Assistant Surgeon, accompanying 16th Infantry to its destination, is revoked by S. O. 51, Department of Texas, May 11, 1888.

HARRIS, H. S. T., First Lieutenant and Assistant Surgeon, will be relieved from duty at Camp Peña Colorada, and proceed to San Antonio, where he will report to commanding officer, battalion 16th Infantry, for duty as medical officer with that battalion to its destination in the Department of the Platte. Upon completion of this duty, he will return to his proper station, Camp Peña Colorada, Texas. S. O. 51, Department of Texas, May 11, 1888.

CLENDENIN, PAUL, First Lieutenant and Assistant Surgeon, will proceed from Fort McIntosh to Fort Davis, and report to commanding officer, 8th Cavalry, for duty as medical officer with that regiment on its march to Fort Concho, from which place Lieutenant Clendenin will return to his proper station. S. O. 51, Department of Texas, May 11, 1888.

WALKER, F. V., First Lieutenant and Assistant Surgeon, will be relieved from duty at Fort Ringgold, and proceed with Co. D, 16th Infantry, to San Antonio; he will then report for duty to commanding officer, Post of San Antonio. S. O. 49, Department of Texas, May 5, 1888.

**Society Meetings for the Coming Week:**

TUESDAY, *May 29th:* Boston Society of Medical Sciences (private); Medical Societies of the Counties of Queens (annual—Mineola) and Rockland (annual), N. Y.

WEDNESDAY, *May 30th:* Medical Society of the State of West Virginia (Charleston); Auburn, N. Y.; City Medical Association; Medical Society of the County of Monroe (annual—Rochester), N. Y.; Berkshire, Mass., District Medical Society (Pittsfield).

THURSDAY, *May 31st:* Cumberland, Me., County Medical Society (Portland).

FRIDAY, *June 1st:* Practitioners' Society of New York (private); Baltimore, Md., Clinical Society.

SATURDAY, *June 2d:* Clinical Society of the New York Postgraduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

## Letters to the Editor.

### SOME POINTS IN THE PHYSIOLOGY AND SURGERY OF THE ANCIENTS.

KIOWA, KANSAS, *April 2, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: In a recent communication I endeavored to show that the ancients understood, as we do now, that the arteries contained "pure blood and spirit"—that they knew the effect if they were cut. Indeed, they ligated them, which is proved by the method of Celsus for arresting hæmorrhage. He says: "*Quod si illa quoque profluvio vincuntur*, venæ *quæ sanguinem fundunt, apprehendæ, circaque id quod ictum est, duobis locis deligandae, intercidendæque sunt.*" If we once admit that they knew the contents of the arteries and the result when opened, we are forced to concede that they knew the direction of the blood's current. But in the foregoing quotation it will be observed that the word "venæ" and not "arteriæ" is used. By comparing the following quotations, however, it will be understood that they did not apply the words venæ and φλέβες as we do now: "ἡ καρδίη καὶ αἱ κοίλαι φλέβες κινέονται αἰεί."—Hip. de principiis, cap. vii.

"*Quas venas autem conspectus medici movet, quam facile mille res turbant! . . . Ac protinus quidem scire, non febrici-*

*tare eum, cujus venæ naturaliter ordinatæ sunt.*"—Celsus, lib. iii, cap. vi. "*Tum requirunt etiam, quare venæ nostræ, modo submittant se, modo attollant.*"—Cel. Procœmium. "*Arteriarum pulsus in cacumine maxime membrorum evidens, index fere morborum, in modulos certos legesque metricas per ætates—stabilis aut citatus aut tardus—descriptus ab Herophilo medicinæ vate meranda arte.*"—C. Plin., lib. xi.

"*Alia, si sanguinis in eas venas, quæ spiritui accommodatæ sunt, transfunditur.*"—Cel. Procœmium. I have quoted Pliny to show that the words arteria and vena were applied to exactly the same thing, and, whether a fault of transcribers of the original manuscripts or not, this use of the words compels us to judge from the sense of the context which may be meant, an artery or a vein, according to the modern acceptation of the words.

If we grant, which we must do, that they knew the contents of the arteries and the direction of the blood's current in them, it naturally leads us to consider whether the course of the blood in what we now term veins could have escaped their notice. Were they men so deficient in ordinary observation as an affirmative answer to this question would imply? When we consider that the origin of our planet, nearly as geologists teach at the present time, is clearly explained by Hippocrates in the following passage: "Κυκλεομενῶν δὲ τουτέων ὁτὲ οὖν εταράχθη, απεκλέισθη τοῦ θερμοῦ πουλὺ ἐν τῇ γῇ ἀλλοθι· τὰ μὲν μεγάλα, τὰ δὲ ἔλαστω τὰ δὲ καὶ πάνυ σμικρὰ, τὰ δὲ ὠλῄθος πολλά. Καὶ τῷ χρόνῳ ὑπὸ τοῦ θερμοῦ ξηραινόμενης τῆς γῆς, ταῦτα καταλῃφθέντα περὶ αὐτὰ σηπεδόνας ποιέει, οἷον περὶ χιτῶνας"—ΊΠΠΟΚ ΠΕΡΙ 'ΑΡΧΩΝ—and that this explanation was made only for illustration, and therefore was considered to be well understood by others of his time, we are forced to acknowledge that they were men not only of ordinary but of extraordinary perceptive faculties, even if there were no other evidence than this one passage. It is, therefore, hardly necessary to refer to his experiment of giving water colored blue to a thirsty animal and while drinking cutting its throat, whereby he demonstrates with what accuracy the epiglottis performs its work, or to his experiment of watching the development of the chick (*vide* "Hip. de corde," cap. ii, "De natura pueri," cap. xxxvi), or to numerous other passages, which prove that they were men of, at least, ordinary observation. What, then, did they know of the blood's current in those vessels in modern phraseology termed veins? If we turn to either Celsus or Hippocrates "De fracturis," we shall there find displayed not only an intimate knowledge of the circulation of the blood, but also of the results to be obtained by steady and uniformly increasing pressure upon a given limb. The principal obstacles to the successful reduction of a fracture and the maintenance of exact apposition are two in number—viz., the mass of flesh over the fracture whereby we are prevented from feeling "with our own fingers" whether the bone is exactly in its proper place, and the natural contraction of the muscles, the stay which the bone afforded having been removed.

These impediments were overcome by the ancients in the following manner: The limb was extended and reduction effected nearly as at the present time. Then, supposing it to be a break between the wrist and elbow, the initial of a bandage was carried twice or thrice around the limb at the point of lesion and terminated above near the elbow. Another, commencing at the same point, was carried downward to the hand, thence backward to end with the first. This process was repeated until sufficient had been used for the object desired. The pressure of these bandages was always *greatest* over the point of fracture and gradually became less toward the hand and elbow, and the bandages were removed from time to time and again applied with gradually increased pressure, but always most constricted at the point of fracture, by which means, Hippocrates says, ἐξαρύναται εκ τούτου οἱ ἰχῶρες ἐς τὰς ἐσχατιὰς ἐνθα καὶ ἐνθα. The arm was flexed, the thumb uppermost, and splints were applied to retain the bones in place in precisely the same way as at the present. But as a result of the pressure he further says: "τῇ δὲ ὑστεραίῃ οἰδημάτιων ἐλθεῖν ἐς χεῖρα ἀκρην μαλθακόν." This swelling, οἴδημα, of the hand was carefully watched and the pressure regulated thereby, so that σφάκελος, or mortification, of the hand should not occur. At the end of seven days by this method the muscles and tissue near the fracture were so attenuated that the obstacles to the successful treatment of the fracture were removed. The fragments, if not already so, were then placed in *exact* apposition for "τὰ ὀστέα τὰ κατεηγότα ἐπὶ μᾶλλον κινεύμενα καὶ εὐπαράγωγα ἐς κατόρθωσιν."

From this treatment we learn that the principle of the Esmarch bandage is nothing new. If more proof is needed as to their knowledge of the blood's circulation in the limbs, we have it in Celsus, lib. iv, cap. xi. He says: "*Erasistratus,*" for hæmorrhage from the lungs, "*horum crura quoque et femora brachiaque pluribus locis deligabat,*" and that, "*id sæpe commode respondere experimenta testantur. Neque tamen pluribus locis deligare necesse est: sed satis est infra inguina et super talos, summosque humeros, etiam brachia.*"

Heretofore I have endeavored to prove that they were men of at least ordinary powers of observation and intelligence. If further proof were necessary, I might refer to Pliny, lib. xi, who remarks that the heart of man increases in weight annually until the age of fifty, thence decreases until one hundred years, and that the Egyptians, who were accustomed to embalm their dead, estimated that a man could not live more than one hundred years by reason of this defect in the heart.

The ancients bled from the arm, the leg, and other points, and I submit that it is an absurdity to suppose that men of ordinary intelligence could have practiced this "lost art" without discovering the course of the blood in the veins, for whoever attempts to perform phlebotomy will find the operation much facilitated if he places a ligature between the point of incision and the body, thereby preventing the blood's onward course to the heart and causing a steady flow of blood from the wound which usually stops the moment the ligature is removed. Hippocrates, *de morbo sacro*, explains that spirit which has been distributed to other parts of the body returns with impurities from flesh and blood ($CO_2$?), and is therefore wholly unfitted for the brain's use.

In other places he gives us clearly to understand that the blood is purified by respiration. If, however, we still doubt them to have had a knowledge of the circulation of the blood, what shall we say to this passage—περὶ φλεβῶν.

αἱ φλέβες διὰ τοῦ σώματος κεχυμέναι πνεῦμα, καὶ ῥεῦμα, καὶ κίνησιν παρέχονται, ἀπὸ μιῆς πολλαὶ διαβλαστάνουσαι. Καὶ αὐτη μὲν ἡ μία, ὅθεν ἤρκται, καὶ ἡ τετελεύτηκεν οὐκ οἶδα. Κύκλου γὰρ γεγεννημένου, ἀρχὴ οὐχ εὑρέθη. The word "ῥεῦμα" here means a constant flowing or changing, and the word φλέβες includes those vessels we now term veins and arteries.

It is perhaps a misfortune that the inclinations of those teaching the Greek and Latin impel them to use only historical or poetical works rather than those in which may be found the knowledge of the past. Man is fond of reading of destruction, and pays far more honor to Cæsar, who slaughtered millions, than to Jenner, who, by a life of quiet industry, has saved millions, and will save millions yet unborn, from death in its most hideous form. General Stark is remembered and honored to-day by the people of New Hampshire. Dr. Dixi Crosby, who by his discovery of an easy and practical method of reducing dislocations of the finger joints bestowed a never-ending benefit upon the human race, is probably, by these same people,

nearly or quite forgotten. Of these causes, the former renders even those having a classical education ignorant of ancient science; the latter tends to bury all knowledge, both ancient and modern, in the dunghill of man's folly.

If we turn from the old to the new, from ancient medical works to the modern, what a change! In the first we have been reading of *ὀλίγαιμα, αἵματα, μοῖραι, καὶ ἔθνεσιν* as the causes of disease. In the second we learn that the cause of infectious pneumonia is "pneumococcus, or ptomaine, or what not"; yesterday it was all cellular pathology, to-day pneumococcus, but to-morrow it will be "what not," and we naturally felicitate ourselves and assure the layman of our profound knowledge.

For my part I humbly concur concerning the circulation of the blood with a eulogist of Vander Linden, who exclaimed:

*Restituisti divino seni circuitum sanguinis quem incuriosa veterum hæc ætas, proh stupor! aliis adscripserat. Reperarant margaritum in fimeto ignati a quo recondita fuisset. Et quid hoc ad illos novos Herostratos?* W. T. O'Donnell.

## THE REMOVAL OF THE SPINAL CORD POST MORTEM.

36 Montgomery Street, Syracuse, N. Y., *May 8, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In the last number of the Journal there appeared an article on the "Removal of the Spinal Cord," deploring the difficulty and the amount of time necessary for its accomplishment by the method of Virchow, used in Germany, England, and the United States. Another means, more satisfactory, as it is less difficult and more speedy, is used in Vienna. After the general autopsy has been performed the viscera are removed, exposing the anterior portion of the vertebral column. The instruments necessary are a mallet, a heavy, wide-jawed forceps, and two chisels—one for each side of the cord—having wide cutting edges inclined at an angle of about 30°. The chisel used for cutting the pedicles on the left side has on its edge a blunt projection large enough to steady the instrument when in use. The chisel for cutting the right side of the spine has the blunt portion of its edge on the right, its obliquity on the left. The body of the first lumbar vertebra having been removed, the blunt side of the chisel's edge is inserted into the canal, steadying the instrument and protecting the cord while the pedicles are cut by the oblique portion under the blows of the mallet. Changing instruments, the other side is treated in the same way, removing the vertebræ severed by breaking them off with the forceps. The pedicle should be cut close to the bodies, and, as the cord does not fill the foramina, there is little danger of wounding it. One accustomed to this method can remove the cord easily in five minutes.

H. H. Pease,
*Demonstrator of Anatomy, Syracuse Medical College.*

# Proceedings of Societies.

## NEW YORK NEUROLOGICAL SOCIETY.

*Meeting of May 1, 1888.*

The President, Dr. C. L. Dana, in the Chair.

**Address by the retiring President.**—Dr. Dana, the retiring president, stated that during his term of office, since May, 1886, fifteen new members had been received and two members had resigned, leaving the present membership eighty-six. The names of a number of distinguished European neurologists had been added to the list of honorary members, and a new order of associated members had been created. The latter included active but non-resident members. Forty-seven scientific communications had been presented during the two years. Among these had been accounts of the first case of Thomsen's disease reported in this country, the first case of cerebral tumor operated upon, the first case of coprolalia, of syringomyelia, and of professional hyperkinesis of the larynx. Early reports upon the use of cocaine and antipyrine might also be mentioned. The society was the oldest of its kind in this if not in any country. The speaker recommended raising the annual dues and limiting membership to persons doing actual neurological work. By restricting its work to that which was technical and special the society would achieve its greatest success.

**Address of the newly elected President.**—Dr. George W. Jacoby, the newly elected president, acknowledged the honor conferred upon him, and commented upon the duties and responsibilities of the office to which he had succeeded, particularly urging upon members regular attendance and personal interest in the society's work. He then read an address on "The Significance of the Epiblastic Origin of the Central Nervous System" (see page 477).

**Paralysis Agitans.**—Dr. Leonard Weber followed with a paper upon this disease, which had been first described by Parkinson in 1817. Charcot had differentiated it from disseminated sclerosis. Progressive tremor and muscular weakness, affecting first one limb and subsequently spreading to other limbs, were its chief symptoms. According to Charcot, the head was always respected. There was apparent diminution of muscular force, and in well-advanced cases movements were slow and uncertain. There was loss of the faculty of equilibrium. In trying to walk the patient would run, appearing to be running after his lost center of gravity. There was bending of the body to a stooping posture, and there was an immobile facial expression, with a fixed stare. Death occurred from marasmus or intercurrent disease. The onset was insidious; a foot, a hand, or even a thumb was first affected. The crossed form was rare, and the hemiplegic form was more common than the paraplegic. Charcot had referred to cases in which pain had been the first symptom, tremor following later on. Deglutition was not interfered with, the bladder and rectum but seldom. There might be annoying cramps, but contractures did not occur. Deformity might be present, giving to the hands the aspect of arthritis deformans. Glycosuria had been noted. This complication had been present in a case of his own. In an advanced stage there was disturbance both of thought and of action. Neuralgias were present, with a sense of fatigue and restlessness requiring frequent change in position. There was a subjective feeling of heat. Marked melancholia or general hallucinations might be present, with even maniacal attacks. Remak had differentiated a cerebral and a spinal form. In two of the author's own cases cerebral and in two others spinal symptoms had predominated. Nothing definite to account for the tremor had been found in either the brain or the cord. It was a disease which affected the lower strata of society particularly, and men rather than women. It was a disease of advanced life, though Meschede had reported a case in a boy of twelve years where it had developed after a kick in the face by a horse; and Duchenne, one in a young man of twenty. It was said to be more frequent among English and American people than among those of other nations. Powerful emotional and moral shocks had produced it, also irritation of the peripheral nerves by traumatism. Prolonged damp cold was a cause; also, in the reader's opinion, sexual excess. He had not observed that syphilis had anything to do with its production. Heredity was said not to be a factor, but in one of his own cases the patient's

father and two brothers, and in another one brother, had been affected.

Arsenic, ergot, and nitrate of silver had no retarding action. The comfort of the patient might be increased by using Brown-Séquard's bromide mixture, leaving the iodide of potassium out. Hyoscyamine had not been of any value in the reader's experience, producing head symptoms and even maniacal attacks. He had used the amorphous preparation in $\frac{1}{10}$-grain doses. Antipyrine, in 15- to 20-grain doses, gave rest at night in some cases. Chloral, too, had been useful, but the effect of both had been transitory. He had found paraldehyde superior to either as a hypnotic in these cases. It was given in emulsion, 15 to 30 grains at a dose. It did not affect the stomach, did not weaken the heart, and did not lose its efficiency by use. The galvanic current would relieve the feeling of fatigue. Tepid half-baths, with cold affusions to the head and spine, were even more effective and prompt. The reader had had twelve cases, in five of which the patients had been under his care sufficiently long for study. He briefly referred to these cases.

*Case I* was that of a man of seventy years, in whom the disease had existed for twenty-four years. The patient was still able to get about. The disease was produced by cold.

*Case II* was that of a woman of seventy years, first seen by the reader in 1884. This patient was a very cultivated lady, with a fine intellect and a great knowledge of men and affairs. The disease dated from 1876, and an occasion upon which she had received news of the illness of a loved daughter. The expression of face in this case was markedly sad and immobile. There was little neuralgia, there was no spastic paralysis, and there were no contractures. A peculiar feature was atrophy of the epidermis of the hands, forearms, feet, and legs. Death occurred in 1887 from pneumonia. Nightly sufferings had been relieved in this case by paraldehyde for six months.

*Case III* was that of a man of fifty-three years, a German, addicted to drinking and smoking in excess. The disease had existed for seven years, and glycosuria was present. The weight, which had been 320 pounds, had been reduced to, but not below, 280 pounds. Œdema of the legs had been present in this case for six months. Paraldehyde, in a dose of thirty grains at bedtime, gave a good night's rest.

*Case IV* was that of a German, sixty-three years of age, a market dealer, presenting as causes for his illness exposure to rheumatic influences connected with his business and sexual excess. The right hand had been first affected, and in the course of the following year the arm and shoulder. The right leg had been seized during the last six months. There was paræsthesia but no neuralgia in this case.

*Case V* was that of a German, seventy-two years of age, whose father and two brothers also suffered from the disease. The left upper and lower extremities only were affected, and thus the case differed from the usual hemiplegic form, which affected the right side. It was to be remarked, however, that this patient was left-handed. The shaking was violent in this case. The patient was easily excited and suffered with vertigo and headache.

Dr. Dana felt that the obscure points of pathology and treatment should receive consideration. We did not know the nature of the disease, nor how to cure it. It was his opinion that paralysis agitans was a degenerative disorder of the voluntary motor system. The sensory symptoms and the mental inquietude were explained by the close relations between the motor and sensory centers. The speaker had had twenty cases under his own observation, and had seen eighteen others in the Bellevue Out-door department. Two patients had been between thirty and forty years of age; five, between forty and fifty; eighteen, between fifty and sixty; nine, between sixty and seventy; and four, between seventy and eighty. Of thirty-one, twenty had been males and eleven females. Of thirty-four in whom the race had been mentioned, twenty-six had been Irish; six, German; one, Russian; and one born in the United States. The Celtic element had thus greatly preponderated, a fact not entirely explained by the large percentage of Irish attendants at this dispensary. The disease seemed to be increasing in frequency; from 1876 to 1879 the Bellevue Dispensary had presented but seven cases of paralysis agitans in a total of 2,300 cases, while from 1885 to 1888 eleven were recorded out of a total of 2,200. The speaker could corroborate the statement that rheumatic influences were active in its production. He, too, had had a case complicated with diabetes, and he had had four cases in which the head had been affected. He thought this not uncommon. It might be shown in the muscles of the angles of the mouth and of the tongue. In treatment, hyoscyamine had given the best results. He had used, however, not the amorphous, but the crystalline form, in $\frac{1}{100}$- to $\frac{1}{60}$-grain doses. Given thus, it had never failed to exert a palliative action.

Dr. M. A. Starr called attention to a monograph upon "Paralysis Agitans" by Anton Heimann, published in Berlin six weeks ago, and only last week received here, in which the theory of cortical origin, referred to by Dr. Dana, was supported by the report of a case. In this case, which had developed under the writer's observation, the four limbs were affected. The lesion could be located as hæmorrhage into the internal capsule. Coincidently the paralysis agitans had ceased upon the hemiplegic side. The inference was that the paralysis agitans was due to impulses from the cortex through the internal capsule, and that the irritated cortical centers were cut off from the muscles by the injury. Gowers had demonstrated, too, that the rate of vibration in paralysis agitans was eight to the second. It was known that irritation of the cortex of a moderate degree, in monkeys, produced tremor of the muscles characterized by eight vibrations to the second. In regard to the extension of the tremor to the head, while Charcot had stated that the head never was affected, the majority of German observers, among whom were Seeligmüller, Strümpell, and Heimann, added to Gowers, in his new book, had found the head affected in a considerable proportion of cases. The speaker had had seven cases of paralysis agitans under his care during the last two years. The tremor had affected the head in two of these cases. He could join Dr. Dana in his indorsement of hyoscyamine, given in the crystalline form and in $\frac{1}{100}$-grain doses.

Dr. L. C. Gray considered the origin of the tremor very obscure. He recalled a case presenting the typical symptoms of disseminated sclerosis. The patient was under observation in the hospital for a year and a half, and the post mortem showed nothing but a cortical meningitis, with no lesion in the brain or cord. The speaker did not agree with Dr. Weber that the diagnosis between paralysis agitans and disseminated sclerosis was in all cases easy to make. Voluntary tremor might be present in both, and in the earlier stages the diagnosis might be impossible. In one of the most typical cases which he had known, too, there had been movements of the head. It was that of a woman of seventy-five years, who had had paralysis agitans for thirty years. It had started one day when she was on a ferry-boat, on her seeing a baby fall into the water and, buoyed up by its long clothes, float down the stream. Upon getting home she had found her upper lip quivering like that of a rabbit. This had been the commencement of a widespread affection.

Dr. Graeme M. Hammond had seen three or four typical cases of face tremor. In the case of a patient whose brain was

now in his possession, the paralysis agitans had been present for eight years. There had been no change in the voice, but during the last year there had been paralysis of the tongue, lips, throat, lungs, and heart, which had finally terminated life. Post mortem there was absolutely nothing found, no softening in the medulla and no change in the cortex. A few years ago the speaker had collected all the reports of autopsies which he could find of cases of athetosis, chorea, ataxic tremor, and paralysis agitans. Where any lesion was found, it occupied the position of the gray nerve-cells of the optic thalamus, corpus striatum, or cortex. Where spastic spasm was present, either combined with the tremor or alone, the white fibers of the internal capsule were affected as well. Where spastic spasm was not present, the lesion did not affect these tracts.

Dr. Rockwell had had two or three cases in persons under forty years. He thought that the younger patients responded best to palliative treatment. He recalled the case of a patient from Peru whom he had treated with hyoscyamine in $\frac{1}{100}$-grain doses and the galvanic current. This patient had returned to his home apparently cured. The symptoms returned, he came back, was again subjected to treatment, was again cured, and had remained well for a year.

Dr. Sachs regarded Dr. Heimann's argument as ingenious, but not conclusive. Hæmorrhage into the internal capsule was the commonest cause of hemiplegia in middle life. Hemiplegia was not very uncommon in the course of paralysis agitans, and it did not interfere with the tremor. In regard to the involvement of the head, he had a case now under treatment in which the head was affected. He used hyoscyamine in the crystalline form, and had found it so reliable as a palliative that no other drug was required. Even in severe cases the tremor was lessened by means of it.

Dr. Petersen referred to the fact that, when he was in the Poughkeepsie asylum, while administering hydrobromide of hyoscyamine for headache, he had incidentally relieved the tremor of paralysis agitans.

Dr. Weber thought that Charcot's rule as to the involvement of the head would be found correct in the main. General shaking would move the head, but tremor of the intrinsic muscles he thought rare. In regard to Dr. Rockwell's case he should hesitate about pronouncing the patient cured. Paralysis not unfrequently presented intermissions of a year or two, but would ultimately return. In regard to hyoscyamine, he had tried it some years ago; possibly not of such good quality as that now obtained. He would again give it a trial in the crystalline form.

## NEW YORK SURGICAL SOCIETY.

*Meeting of April 25, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**Unusual Power of Motion after Extensive Shell-wound of the Shoulder.**—Dr. R. F. Weir presented a patient who had received a wound from a fragment of shell at the battle of Antietam in 1862. The outer portion of the right clavicle, the acromion, and the greater part of the spine and upper edge of the scapula had been carried away, with the soft parts covering them, although the shoulder joint had not been exposed. Dr. Gurdon Buck had performed a superficial plastic operation a few months after the patient's recovery from the injury. He now had almost perfect use of his arm in spite of the great loss of muscular and bony parts; he could raise and move it freely, although not quite so much as the left. When both arms were raised vertically, some shortening was noticeable in the right. This was only an apparent impairment and due to the new attachment of the deltoid.

**Fractures of the Head of the Fibula from Muscular Contraction, involving the External Popliteal Nerve.**—Dr. Weir read a paper with this title (see page 561).

Dr. H. B. Sands asked what the result of the injury had been as regarded paralysis.

Dr. Weir replied that he had not recently seen the patient, but that after the lapse of nearly a year the patient was able to walk ten miles with only a slight limp; that he was able to dance freely.

Dr. Sands said that the fact that the patient limped did not prove anything above the recovery of power in the peroneal muscles.

Dr. Weir said that it was impossible to discover by the ordinary electrical tests whether the nerve was simply contused or entirely divided.

Dr. R. Abbe thought that surgically tenotomy of the biceps tendon at a point above the seat of fracture would be of advantage in relieving the tension whether the fragments were wired or not.

Dr. C. McBurney asked if any attempt had been made to see if the fragments could be brought together.

Dr. Weir said that such an attempt had been made when the patient was etherized the first time.

Dr. McBurney said that it would have been very difficult to wire the fragments without dividing the hamstring-tendon. A V-shaped incision of the tendon might be made, the V being made in the lower portion, as had been done in a case of fracture of the patella under the care of Dr. Sands.

Dr. C. K. Briddon said that the tension might be relieved by splitting the tendon longitudinally.

Dr. Weir said that the history of these cases showed that only slight disability resulted, even where no effort had been made to approximate the fragments by flexion of the limb.

Dr. McBurney thought that it was a question if tenotomy of the biceps alone would have allowed the upper fragment to be drawn down in contact with the lower. The object aimed at was to draw the upper fragment down while the biceps-tendon was attached to it.

Dr. Abbe said that tenotomy would at least relieve the tension on the nerve.

Dr. McBurney thought that in order to relieve the tension on the nerve it was necessary to dissect the latter away from the muscle. If tenotomy was done to relieve nerve-tension, the muscle must be divided high up.

The President said that the reader had not dwelt on the possibility of this injury being produced by adduction of the leg. If it was regarded as due to muscular action alone, the surgeon might make more prolonged efforts at reduction than were desirable. In both of Duplay's cases the fracture was due to forcible adduction, and it was quite probable that this was true in Dr. Weir's case, especially as he had mentioned the fact that the knee seemed to be displaced outward. The latter showed that there must have been forcible adduction subsequent to, or contemporaneous with, the injury. It was noticeable that in several of the reported cases the injury was received while wrestling.

**Congenital Deformity due to Malposition of the Scapula.**—Dr. McBurney presented a young woman, aged twenty-three, who had a peculiar deformity of the right shoulder which was said to have existed since birth. The scapula was so placed that its lower angle pointed directly toward the spine, the superior angle projecting high above the center of the clavicle. The clavicle on this side was at least an inch and a half longer than the left one, but articulated normally with the sternum, and also completely with the acromial process. The speaker thought the deformity might have been caused by some accident occur-

ring at the time of birth. The movements of the humerus were good, but the arm could not be raised beyond a right angle.

In reply to the president, Dr. McBurney said the coracoid process could be felt.

Dr. SANDS said that he had seen a similar condition in a child two years before; he was sure that it had not been due to any injury received at birth. There had been no disability, but the scapula had been elevated as much as in the present case, so as to cause a conspicuous deformity in the neck. He had assisted Dr. Shaffer in dividing the trapezius and levator anguli scapulæ muscles, but no benefit had resulted from the operation. Subsequently the speaker had removed the portion of the scapula above the line of the spine; in addition to the elevation of the entire bone, its upper edge was curled forward. The child had been greatly benefited by the operation, and there seemed to be no reason why a similar procedure would not be successful in the case of Dr. McBurney's patient. The speaker had been unable to find a report of a similar case.

The PRESIDENT thought that there was a scroll-like change in the scapula of the patient presented, similar to that described by Dr. Sands. There seemed to be no paralysis of the scapular muscles.

Dr. MCBURNEY believed that the upper angle of the bone might be removed.

**Suprapubic Cystotomy for Encysted Calculi; Death from Renal Disease.**—Dr. MCBURNEY showed a bladder removed post mortem from a man, aged seventy-one, who came under his care two months before, suffering from cystitis. He was obliged to urinate every half-hour, the act being attended with great pain. Lithotrity had been performed three or four years before by the late Dr. Little, since which time the patient had been examined by several surgeons, who thought that the condition was simply cystitis. The speaker had sounded the bladder but could discover no stone, and the mucous membrane appeared to be quite smooth. As the patient was very anxious to be relieved, suprapubic cystotomy was done for the purpose of exploring the bladder. Near the median line and about half an inch above the left ureteric opening there was an opening three quarters of an inch in diameter, leading into a cavity as large as a hen's egg, in which were three small calculi. These were removed with the finger and forceps. They would hardly have been discovered if the lateral incision had been made. The patient died at the end of two weeks of a renal complication. He was relieved of pain after the operation.

To a question by the president, Dr. MCBURNEY replied that no rectal examination had been made.

Dr. WEIR thought that the opening of the sac as described by Dr. McBurney was quite unusual.

**Septic Peritonitis following Perityphlitis.**—The PRESIDENT showed a specimen and related the following history: A woman, eighteen years old, entered the Presbyterian Hospital, April 7th. Three days before she had been seized with violent pain in the right iliac region with one or two moderate attacks of vomiting and slight fever. Her bowels had moved daily. On examination soon after her entrance (late in the afternoon), a resonant tumor was found on the right side. The temperature was only 100·5°, so that operative interference was deferred. At ten the next morning the rectal temperature was 105·5°, that in the mouth being 99·4°, while in the axilla it was only 98·6°. The patient was then moribund and died the same evening. The rectal temperature half an hour before death was 108·5°; half an hour after death it had risen to 109·5°. At the autopsy a small quantity of turbid serum was found free in the abdominal cavity. There was a small encysted intra-peritoneal abscess in the epigastrium, and another in the right iliac fossa. The omentum was firmly adherent to the cæcum, the latter and a loop of small intestine being adherent to the abdominal wall. On raising the cæcum, the appendix lay entirely behind and adherent to it. There was a small abscess between them, and two small perforations in the latter, which did not communicate with the peritoneal cavity. On stripping back the cæcum, an abscess, containing about two drachms of pus, was found in the right iliac fossa between the layers of the mesocæcum. If the usual lateral incision had been made, this abscess might have been opened. Another intra-peritoneal abscess, containing at least a quart of thin pus, was situated below the liver and behind the ascending colon entirely covered by the ribs.

In reply to Dr. Weir, the PRESIDENT said that there was no trouble in the pelvis or with the gall-bladder. The large abscess was completely shut off by recent adhesions from the general cavity. The extra-peritoneal operation would have reached the extra-peritoneal abscess, while the intra-peritoneal would have opened one of the intra peritoneal abscesses, but would have left the extra-peritoneal unseen. There was no ulceration of the intestine or escape of fæces. The large and small abscesses were four inches apart, being separated by unchanged intestine and cellular tissue, although there was an infiltration of turbid serum in the connective tissue of the right iliac fossa.

**Peritonitis; Gangrenous Cavity in Mesocolon; Adhesion of Small Intestine forming Acute Angle; Obstruction; Death.**—Dr. BRIDDON reported the following case: C. H., aged fifty years, a man of temperate habits, contracted syphilis in early life, and had now some late tertiary lesions of the bones. Many years ago he had suffered from what were regarded as attacks of bilious colic. Last summer he had had two attacks of obscure and not severe pain in the left side of the abdomen, below the level of the umbilicus; it had yielded to simple remedies applied by himself. For a week prior to his seeing him he had had some dull pain in the same region. On Sunday night, March 25th, the pain had increased slightly, and, he thought, was due to the action of a dose of calomel and jalap that he had taken, although his bowels had been perfectly regular. Tuesday night, the 27th, while emptying his bowels, he had had a severe attack of pain, which, he had said, passed downward from the left side of the abdomen into the rectum and penis. Dr. Briddon saw him on Wednesday night, the 28th. The man's wife had sent for him without his knowledge, and he did not consider himself as sufficiently sick to require professional aid. He complained of occasional, not severe, pain in the left side of the abdomen, between the umbilicus and the left anterior superior spine of the ilium. The pain was paroxysmal and not severe. There was slight general intumescence of the belly. It was everywhere resonant, but there was a sense of resistance at the seat of pain. His pulse was 104; temperature, 102°. No nausea; bowels regular; stools of normal form and consistence. Ordered chlorodyne, gtt. xx, every four hours.

*29th.*—Condition better as regards pain, which he says has gone. Pulse, 108; temperature, 101°; in the evening, 102°. Slight tenderness on pressing the region that had been painful.

*30th.*—No complaint of pain; pulse and temperature about the same. Toward night he felt slight nausea, and vomited a little mucus; bowels had not moved since he had taken chlorodyne, and the torpor was attributed to the influence of that remedy. Early on Saturday morning, the 31st, he vomited twice some bilious matter that had no fæcal odor; but, suspecting obstruction, and not being able to determine as to the propriety of laparotomy, consultation with Dr. Lange and Dr. Janeway was requested. At the time these gentlemen saw the patient he had no return of the vomiting; had no pain, only tenderness on pressure; and some flatus had passed *per anum*. The speaker thought that the abdominal swelling had slightly

increased; his temperature in the rectum was 102°. It was the opinion of the consultants, and with which opinion the speaker had concurred, that the patient was suffering from a localized peritonitis, and that the indications for surgical interference were not clear. A continuation of treatment, ice-coil, and hypodermics of morphine, were advised. In the evening he passed more wind, and it was hoped that faeces would soon follow. On the following morning, when he was visited, he was in collapse; temperature in the rectum 105°, pulse reduced to a thread and 140. He vomited no more until the moment before he died, at 9 P. M., when a large quantity of stercoraceous matter was ejected.

Autopsy, made fourteen hours after death: Cadaveric rigidity well marked; abdomen swollen and tympanitic. On exposing the abdominal cavity, the omentum was found adherent to the walls on the left side, and to the large and small intestines beneath. The adhesions were recent, and very easily broken down. On separating the omentum and lifting it up, one source of obstruction was manifest enough—a knuckle of ileum was found adherent to a neighboring portion of intestine at a very acute angle; in fact, about two inches of the wall of the gut were in close contact. There was no dilatation of the proximal side of the gut, whose diameter was the same as on the distal side of the obstruction, and pressure on the gut above forced some of the gases into the part below the bend. An attempt was made to remove these without disturbing the relation of parts, but the adhesions were so slight that they gave way. On stripping the omentum from the small intestine lying outside of this knuckle, the adhesion was found infiltrated with pus, and, tracing this farther outward, it led to a small, free cavity, bounded by small intestine, omentum, and the sigmoid flexure of the colon. The intestines, matted together at these points, were highly congested, and in the mesocolon was a gangrenous cavity as large as a filbert; it was distant about three quarters of an inch from the junction of the meso- with the colon, but it did not communicate with the cavity of the colon.

The reporter added that the symptoms were so obscure he was unable to decide whether the constipation was due to obstruction or to the use of opium. The patient did not vomit until just before death, and at no time did he have very severe pain, or present acute symptoms. Laparotomy would have been unavailing, as it was very difficult to discover the pus even at the autopsy.

In reply to a question by Dr. Weir, Dr. Briddon said that he was unable to account for the presence of the gangrenous patch; there was a small, sloughing cavity, barely admitting the tip of the little finger, containing only two drachms of pus. It was entirely separated from the general peritoneal cavity.

## MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

*Meeting of March 26, 1888.*

The President, Dr. Laurence Johnson, in the Chair.

**Cerebral Symptoms of Pneumonia in Children.**—Dr. L. Emmett Holt read the paper. Two points about pneumonia had been brought out very prominently in almost every text-book devoted to diseases of children. The first was that disturbances of the central nervous system were much more likely to be met with in young children than among adults; the second, that these were almost invariably associated with disease of the apex of the lung. Regarding these points, an analysis of 173 cases in his own experience might be of some interest. Seventy-three were cases of lobar pneumonia, with a mortality of 5·5 per cent.; 100 were cases of broncho-pneumonia, with a mortality of 34 per cent. One hundred and twenty-three patients were two years old or under; only 13 were over five years. Twenty per cent. of the whole number had presented decided cerebral symptoms. He had divided these into three groups: those attended by convulsions, 14 in number; those in which delirium was the principal symptom, 12 in number; and those in which neither delirium nor convulsions existed, but in which other symptoms decidedly cerebral in type were present, 8 in number. In half the cases the convulsions had been symptoms of invasion; in the other half they had come on toward the close of the disease. Only one case had presented both early and late convulsions. In almost all cases the convulsive movements had been general, and usually repeated. Initial convulsions had been succeeded by drowsiness or stupor, sometimes by light delirium. There had usually been nothing in the symptoms to indicate pulmonary disease during the first twenty-four or forty-eight hours. Delirium was most marked at the height of the disease, and, if intense, it generally lasted until the crisis. It was more commonly wild and excited, like that of cerebro-spinal meningitis. In addition to delirium, the patients had dilated or contracted pupils, involuntary passage of urine and fæces, boring of the head into the pillow, retracted abdomen, sordes on the lips and teeth, irregular pulse, and almost every symptom of cerebro-spinal meningitis. Other patients had persistent drowsiness or semi-stupor, occasionally alternating with periods of excitement, sometimes terminating in convulsions, simulating tubercular meningitis very closely. He did not include vomiting, as it was present in almost every case of pneumonia. Headache was frequent in children old enough to describe their sensations. He had not noticed irregular respiration, nor had he noticed the "gun-hammer position."

The practical question of most importance was to distinguish the cases from meningitis. This could be done only after careful and repeated examinations of the chest. This was too commonly omitted by the practitioner. The great frequency of pneumonia in early life imposed upon the physician the necessity of always excluding it before accepting any other explanation of a persistent high temperature in a child. The difficulties in diagnosis were much increased by a delayed appearance of positive physical signs, as in central pneumonia. In his own experience he had found that the cases with late physical signs had gradually grown smaller in number with his increased proficiency in diagnosis. Cough was usually present, but it was wanting in a sufficient number of cases during the first two or three days to make it of little value in obscure ones. Alteration of the pulse-respiration ratio was more important than any other single symptom. Accelerated respiration out of proportion to the pulse and temperature should always make us suspect disease of the lung, whatever other symptoms were present. Irregular respiration, especially of the Cheyne-Stokes type, was hardly ever seen in pneumonia.

A slow irregular or slow intermittent pulse did not occur in this disease. Irregularities and intermissions in a rapid pulse were common, but were of no significance. It was rare for the temperature in meningitis to remain so high as it was commonly in pneumonia. The loss of the knee jerk was the rule in meningitis. He was not aware that it had been recorded as absent in pneumonia. Localized paralyses were not present in pneumonia unless there was a complicating brain disease. The cerebral symptoms of pneumonia were usually less severe than and not so continuous as those of meningitis, so that the progress of the case almost invariably cleared up the doubt in diagnosis. Between broncho-pneumonia with cerebral symptoms and pulmonary tuberculosis with a few tubercles in the brain, he agreed with Jürgensen that the diagnosis might be impossible.

As to the ætiology of cerebral symptoms in pneumonia, they

might depend upon complicating meningitis, although the reader had never seen such a case. In all but one of his cases the convulsions had occurred in patients under two years of age, while delirium had been most common between the ages of four and eight years. Delirium and stupor were much more commonly associated with high temperature than convulsions. Convulsions were more common in delicate children. Of the twelve patients with delirium, all but three had previously been healthy. Early convulsions had been most often seen in the lobar form, while late convulsions in every instance but one had occurred in broncho-pneumonia; delirium had been seen much oftener in the lobar form. There had been 38 cases of pure apex pneumonia, in 18 per cent. of which there had been cerebral symptoms. There had been 36 cases of pure base pneumonia, and in 11 per cent. of them cerebral symptoms. In 73 cases there had been extensive disease; in 26 per cent. of these there had been cerebral symptoms. In 56 per cent. of the 34 cases in which there had been cerebral symptoms the lesions had been extensive.

The predisposing factor to cerebral symptoms was to be found in the susceptibility of the nervous system, which was one of the striking peculiarities of all the acute pathological processes of infancy and childhood. Very extensive disease acted in two ways: by inducing nervous depression, and by interfering with hæmatosis. Regarding prognosis, we might conclude that, excepting late convulsions, the occurrence of cerebral symptoms in pneumonia did not very much increase the danger of the disease.

The reader drew the following conclusions: 1. Cerebral symptoms in the pneumonia of children were very common. 2. Convulsions belonged almost without exception to infancy, being rarely met with after the age of two years. Occurring at the onset, they belonged essentially to lobar pneumonia; they did not indicate a bad prognosis, nor even in most cases a severe attack. When late convulsions came on, death within twenty-four hours might confidently be predicted. 3. Delirium came oftenest between the ages of five and eight, usually in conjunction with extensive disease and high temperature. These cases, although severe, with but few exceptions ended in recovery. 4. There was no such intimate association between cerebral symptoms and apex disease as had been frequently stated. Such symptoms occurred in only about one fifth of the apex cases. 5. Nervous spmptoms occurred much more frequently when the disease was extensive and the temperature very high. He closed by emphasizing two points in treatment: First, that in the hyperpyrexia of pneumonia the cold pack was a safe and the most efficient means of reducing the temperature. Second, the use of antipyrine to allay restlessness, quiet delirium and cough, and promote sleep. Doses of two or three grains were sufficient in an infant of from six to nine months. It might be repeated every six or eight hours.

Dr. Andrew H. Smith thought, with regard to the immediate cause of the cerebral symptoms in pneumonia, that the cases might be divided into three classes: 1. Those in which the cerebral symptoms were brought about by the direct influence of the pneumonic poison. 2. Those in which they resulted from high temperature. 3. Those in which they resulted from exhaustion. He regarded lobar pneumonia as an infectious disease, and as likely to be ushered in by cerebral symptoms, like other infectious diseases. The convulsion in children corresponded to the chill in adults. There might be apparently broncho-pneumonia, yet associated with it might be isolated spots of the croupous variety. Convulsions were in some instances associated with exhaustion. He was inclined to ascribe delirium in most cases to high temperature. Then there was a group of cerebral symptoms more or less of a typhoid character which occurred in the later stage, and were the result of exhaustion. He thought kidney complications might cause cerebral symptoms in some cases. Gastro-intestinal disturbances also produced their share of cerebral symptoms. He agreed with Dr. Holt regarding the beneficial effects of small doses of antipyrine in subduing restlessness and insomnia.

Dr. Joseph E. Winters was glad that Dr. Holt had knocked down one of the idols of the text-books. He referred to the relation between pneumonia of the apex and the occurrence of cerebral symptoms in children. He agreed with Dr. Holt that the more extensive the pneumonia the more likely were there to be cerebral symptoms. He doubted very much whether convulsions took place at the commencement of a pneumonia without one of the following predisposing causes: 1. Previous convulsions from one cause or another. 2. Inherited neurotic habit. 3. Aural trouble, induced perhaps by the same condition which caused the pneumonia. He adapted his treatment to the cause of the convulsion. He thought it was quite true that those who were accustomed to examine for central pneumonia in every doubtful case were much less likely to overlook this disease than those who so frequently neglected careful physical examination. Especially should one lift the arm and auscultate in the axillary space.

Dr. Seibert called attention to the statement made in the paper that late convulsions occurred principally in broncho-pneumonia, and all proved fatal within twenty-four hours, while early convulsions occurred mostly in lobar pneumonia, and these cases did not prove fatal. These facts, he thought, went to prove that lobar pneumonia was an infectious disease. He thought that the early convulsions were due to the poison of the disease, and that high temperature had little to do with it. Late convulsions were simply the result of long-continued disease and its effect upon the brain. With regard to the effect of high temperature, he had seen it higher and longer continued in other diseases than in pneumonia without causing convulsions or delirium.

Dr. H. D. Chapin said that most cases of pneumonia in which convulsions took place were accompanied by very high temperature; when the temperature went down the convulsions ceased. A temperature of only about 102° F. in the pneumonia of children was not accompanied by any severe nervous symptom. One speaker had said children might in some affections have a temperature of 105° F., and not show discomfort. He had never seen such a case. He was not yet prepared to accept the view that the text-books were in error in stating that pneumonia of the apex was more likely to be accompanied by cerebral symptoms. At any rate, in all his cases of pneumonia in the apex there had been cerebral symptoms, usually stupor rather than convulsions. Regarding treatment, he accepted the remarks of Dr. Holt concerning the benefit derived from cold applications, but he thought antipyrine was dangerous, on account of its weakening effect upon the heart, and it was unnecessary for the purposes suggested by Dr. Holt, if the cold applications were employed, as they not only reduced the tempera ture, but also quieted restlessness and induced sleep.

Dr. A. Caillé said there were many forms of diseases, especially acute infectious diseases, which were ushered in by cerebral symptoms, and pneumonia was not an exception. He thought the intensity of the disease was probably a cause of the cerebral symptoms. The cerebral symptoms at the beginning were due to a different cause from those which appeared toward the close of an attack of pneumonia; the latter were probably caused by anæmia, and the former by hyperæmia of the brain. He had noticed in three or four cases of pneumonia ushered in by cerebral symptoms that the pupils were unusally large, but reacted to light. In other cases without this complication they

were not so large. He agreed with Dr. Holt regarding the value of the cold pack.

Dr. S. J. McNutt said her experience had been like Dr. Holt's, that cerebral symptoms in pneumonia were not specially limited to the cases in which the disease attacked the apex. She had observed that cerebral symptoms were just as likely to occur in patients who were by nature nervous as in the well developed. She had noticed a likelihood of other children taking lobar pneumonia when one was introduced into a hospital suffering from that disease. She had used the cold pack frequently with much benefit, particularly in broncho-pneumonia. In the late stage, when there was a tendency to heart failure, musk had proved of great value.

Dr. Seibert added that he also looked upon antipyrine as a dangerous drug, unless properly administered and in suitable cases. He had noticed that when the temperature went down under antipyrine and the pulse remained high, the antipyrine had produced no valuable result.

Dr. J. A. Irwin said that in his experience the locality of the pneumonia had had little to do with the cerebral symptoms, which he believed were entirely reflex. The diagnosis in these cases was usually made, he believed, from symptoms rather than from physical signs. He thought that, as a rule, the most successful practitioner was he who was influenced in his treatment by the symptoms rather than by the physical signs, and he objected to frequent examinations, which implied disturbance of the patient. Many patients had been placed in danger by frequent examinations, whether made for diagnostic purposes by consulting physicians or for other reasons. When he made a diagnosis of pneumonia he gave his patient rest, and was guided in his further treatment of the case by the pulse and general appearance more than by the result of physical examination of the chest. He did not fully agree to the view that nervous symptoms did not render the prognosis less favorable. Yet reflex nervous symptoms often occurred in those who had the greatest reactionary power. He had seen cerebral symptoms oftener in obscure cases of central pneumonia than in any other class of cases. In the catarrhal type, usually bronchial in the beginning, late cerebral symptoms were the precursors of death.

Dr. David P. Austin referred to treatment, and spoke of the value of cacao butter, used by inunction, in not only keeping up the nutrition of the patient, but also reducing the temperature. After anointing the skin the temperature fell not infrequently two or three degrees within six or eight hours.

The President said, respecting the infectious nature of pneumonia, that he could not reconcile that view with the fact that the disease was most prevalent during the coldest months of the winter.

Dr. Holt said it had not been his intention to discuss the question of pathological differences between the forms of pneumonia in children, but he stated that in many cases of presumable lobar pneumonia the microscopical examination revealed little different from what was present in disseminated broncho-pneumonia, except the extent of the disease. He had commonly observed a high temperature in the convulsions of children, even when idiopathic in nature. But in these cases it went down again quickly. He thought the convulsion might be the cause of the high temperature rather than the reverse. Regarding there being a temperature of 105° F. without causing discomfort, it was not at all uncommon. With regard to danger from antipyrine, he had used it a great deal in small doses in children without ever causing any unfavorable symptoms. Like Dr. Caillé, he had seen in some cases dilatation of the pupil with reaction to light in patients having cerebral symptoms complicating early pneumonia. Cacao butter often added to the comfort of the patient.

## Book Notices.

*Essays on Hysteria, Brain Tumor, and other Cases of Nervous Disease.* By Mary Putnam Jacobi, M. D., etc. New York and London: G. P. Putnam's Sons, 1888. Pp. 216. [Price, $2.]

Emerson calls the best man the one who can define, can answer a question so as to admit of no further answer. On this principle of excellence, the "Essays" contain much that is the best in connection with the subjects of which they treat. The paper on hysteria is rational, exhaustive, and convincing. It starts out with a consideration of the twofold condition fundamental to hysteria: a congenital or acquired deficiency in the power of nerve-elements to affect the storage of force in nerve-tissues. Then the manifestations of this profound and far-reaching disease are carefully considered, and a truly catholic plan of treatment suggested. "The Prophylaxis of Insanity" recommends itself to the thoughtful. The three great elements in the moral substratum of a person predisposed to insanity are: "The egotistical predominance of the instincts over the faculties of reflection and external relation; the ineffectiveness of the will, even when this is impulsive or violent; the inaptitude for ideas, resulting in their poverty and imperfect combination." The author affirms with reason that the expansion of this shrunken individuality can be effected by means of a strenuous educational system, directed at once toward the repression of the egotistic instincts, the enrichment and systematization of the ideas, and, through multiplication of acts and external relations, the energizing of the feeble will. Great stress is laid upon the fact that the acquisition of knowledge, training in morals, formation of habits of thought, must all be centered upon practical activities. As ideas enter the forming mind from without, the carefully guarded child has a hopeful outlook, in spite of neuropathic ancestry. Environment being a more potent factor than heredity, it is no more necessary to become insane than inebriate because of transmitted predispositions. The "Essays" are models of terseness, force, and conclusive argument. They form a valuable contribution to medical literature, and are deserving of both gratitude and praise.

## Miscellany.

**The late Dr. Agnew.**—At a meeting of the Board of Trustees of the College of Physicians and Surgeons in the city of New York, held on the 1st inst., the following minutes were presented:

"Since the last meeting of this Board of Trustees one of its controlling spirits, and one of the stanchest friends and most distinguished teachers of the College of Physicians and Surgeons, has suddenly, and in the full tide of his usefulness, departed this life.

"The death of Dr. Agnew creates what seems like a hopeless void in our councils, and casts a deep shadow across the path of brilliant promise upon which the college has just entered. Since his graduation from this institution in 1852, Dr. Agnew has fostered and advanced its interests as a faithful alumnus, has enlarged its fame as one of its most popular and eminent instructors, and for more than ten years has served to direct its management as a diligent and wise trustee.

"In all his labors for the welfare and distinction of his alma mater he displayed a lofty purpose and a generous devotion of his time and energy. He has been identified with every measure in the management of this college which was directed toward improving its methods of instruction or elevating the standard of its requirements. He combined in a rare degree the attributes of a scientific teacher, a wise philanthropist, and a man of affairs. He had an exalted sense of the public as well as the private responsibilities of medical men, and

he was not less distinguished as a citizen and a sanitarian than as a physician.

"In the many and varied relations of his busy and useful life he will long be remembered for the dignity of his character and his unselfish devotion to the highest interests of his fellow-men!"

GEORGE G. WHEELOCK, M. D., *Registrar.*

**The Medical College of the State of South Carolina.**—The chair of surgery has been divided to enable Professor R. A. Kinloch to devote his entire attention to clinical surgery. Dr. Manning Simons has been appointed to the chair of didactic surgery. Dr. P. Gourdin De Saussure has been appointed to fill the chair of obstetrics and gynæcology made vacant by the death of Dr. J. Ford Prioleau, whose position as dean has been filled by the appointment of Dr. Kinloch.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality," for April, there were 502 deaths during the month, including 1 from cholera infantum, 5 from croup, 8 from cerebro-spinal meningitis, 11 from diphtheria, 2 from erysipelas, 13 from typhoid fever, 1 from measles, 5 from pyæmia, 3 from whooping-cough, 1 from syphilis, 2 from septicæmia, 4 from scarlet fever, and 4 from small-pox.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending May 18th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending April 28th corresponded to an annual rate of 18·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bolton and Hull, viz., 14·7, and the highest in Blackburn, viz., 25·9 in a thousand. Small-pox caused 5 deaths in Sheffield, 1 in Bristol, and 1 in London.

During the quarter ending March 31st, 150,014 deaths were registered, including whooping-cough, 4,428; measles, 2,129; scarlet fever, 1,868; diphtheria, 1,447; fever, 1,362; diarrhœa, 1,295; and small-pox, 583.

*London.*—One thousand four hundred and thirty-seven deaths were registered during the week, including measles, 16; scarlet fever, 15; diphtheria, 22; whooping-cough, 80; enteric fever, 7; diarrhœa and dysentery, 17. The deaths from all causes corresponded to an annual rate of 17·5 in a thousand. Diseases of the respiratory organs caused 343 deaths; different forms of violence, 56; and 9 suicides were registered. In greater London 1,782 deaths were registered, corresponding to an annual rate of 16·8 in a thousand of the population. In the "outer ring" 28 deaths from whooping-cough, and diphtheria, 9, were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending April 28th in the sixteen principal town districts of Ireland was 29 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 12·7, and the highest in Lisburn, viz., 48·3 in a thousand. In Dublin 213 deaths were registered, including 5 from whooping-cough; scarlet fever, 7; typhus, 1; diphtheria, 1; enteric fever, 4; and measles, 3.

*Scotland.*—The deaths registered in eight principal towns during the week ending April 28th corresponded to an annual rate of 21 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 14·9, and the highest in Paisley, viz., 32 in a thousand. The aggregate number of deaths registered from all causes was 530, including 8 from measles; scarlet fever, 4; diphtheria, 5; whooping-cough, 17; fever, 3; and diarrhœa, 12.

*Netherlands.*—The deaths registered in the twelve principal cities of the Netherlands, having an aggregate population of 1,101,568, during the year 1887 corresponded to an annual rate of 23 in a thousand. The lowest mortality was recorded in Haarlem, viz., 21·1, and the highest in Maastricht, viz., 27·1 in a thousand.

*Calcutta.*—One thousand and twenty deaths were registered during the month of February, 1888, including 182 from cholera.

*St. Thomas, W. I.*—Four hundred and sixty-two deaths were registered during the year 1887, including intermittent and remittent fever, 79; small-pox, 1; and leprosy, 3.

*Ceara, Brazil.*—Two hundred deaths were registered during the month of March, including 5 from yellow fever.

*Valparaiso, Chili.*—The United States consul, in his dispatch dated March 17, 1888, relative to cholera, states that "until last year the disease was unknown here in its epidemic form, when, in spite of guards and military pickets in the mountains, it crossed from the east to Santiago, invading many smaller communities and causing numerous deaths by its virulent character. It was, no doubt, the more deadly for the want of knowledge for its successful diagnosis and treatment, and for the absence of properly organized ambulance and hospital service. These were partially remedied by private subscriptions and exertions, with some governmental aid, and the then intendente of this province acted with energy and resolution. Disinfectants were freely employed, the sale of fruit was prohibited, and, after various fluctuations in the progress of the disease, which had broken out severely in this port, it disappeared from this part of the country with the setting in of the winter season. After a few months, however, it reappeared about Conception and Talcahuano, some two or three hundred miles down the coast, and with the coming on of summer it broke out violently near Santiago, in that city, and in Valparaiso, and has spread in all directions. In the mean time all the obvious precautions had been practically discontinued or disregarded by the authorities and the people. The lazarettos were closed, the ambulance service abandoned, and while the sale of fruit was forbidden, the prohibition against such sale has been revoked. It is everywhere asserted, and, so far as I know, everywhere freely admitted, that both last year and this the general government and the local authorities have studiously concealed or misrepresented the extent of the mortality. The population of this city is probably about 110,000. An eminent physician, educated as such in the United States, recently stated to me that his examination of the official records of deaths from cholera in Valparaiso from the 15th of December, 1887, to the 15th of February, 1888, showed 1,194 deaths, while, as is well known, many deaths from that disease are ascribed to 'indigestion,' etc. This reprehensible state of things is owing partly to the indulgent and surprising regulation which authorizes the issuance of a burial permit on the bare statement of two persons who knew the deceased and declared their opinion as to the cause of his death. The same physician told me that in the period referred to—two months—thirty of his private patients had died of cholera. He estimates, deducing his estimates from various sources, that the mortality in this city alone for that time reaches 3,000, and for the whole country he places it at 60,000. Another physician of standing, whose practice from his official position is in a part of the city inhabited mostly by the poorer and more ignorant classes, places the cholera mortality during the same period at from 4,000 to 5,000. I consider it my duty to refer in this report to the fact that the certificates of health from the office of the captain of the port are altogether untrustworthy. The American steamer City of Pueblo, which sailed on 1st December last from Valparaiso for San Francisco, had, as I was informed (being requested by the consignees to add my certificate, which, of course, I refused to do), a full certificate of the existence here of no epidemic disease, this long after cholera had reappeared; and the American schooner Oscar and Hattie, of Marblehead, sailed from Valparaiso for Seattle, Washington, on 10th instant, with a certificate concluding—

"I certify, also, that the sanitary condition of this port is good, and that there are no cases of epidemic sick (persons)."

*Trujillo, Venezuela.*—The United States consul at Maracaibo, in his dispatch dated April 27, 1888, states that "for several months past the section Trujillo, of the State of Los Andes, a mountainous region lying to the southward of Lake Maracaibo, has suffered severely from yellow fever, and recently the disease has made such progress as to almost decimate the population and cause the virtual abandonment of various thriving towns, among them notably the city of Trujillo, capital of the section of the same name, and one of the most important centers of the State.

"A curious and apparently anomalous fact in connection with this epidemic is that Maracaibo, together with the coast generally, has never

been more free from this disease, while the localities which have heretofore been looked upon as our sanitaria are undergoing terrible suffering, although they have an elevation of from three to five thousand feet above the sea level. Such a complete reversal of sanitary conditions has never heretofore been known in this district, and it is worthy of note that Maracaibo, which has a bad, though undeserved, reputation, is, although situated but thirty feet above the level of the sea, sending assistance to the mountain regions, which are suffering from a usual coast disease, from which at present we are totally exempt."

*Genoa, Italy.*—Seven cases of small-pox are reported for the week ending April 28, 1888.

*Santiago de Cuba.*—The sanitary inspector reports for the week ending May 5th that there are no cases of yellow fever at present in the military hospital, and the town is unusually healthy just now.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from — Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | April 28. | 2,260,945 | 1,092 | .. | .... | 9 | ... | 15 | 2 | 48 |
| Calcutta | March 31. | 433,219 | 235 | 65 | .... | .. | .... | .... | .... | .... |
| Amsterdam | April 28. | 389,916 | 182 | .. | .... | .... | .... | .... | .... | 3 |
| Rome | March 17. | 382,973 | 170 | .. | .... | 1 | .... | 3 | .... | 4 |
| Rome | March 24. | 382,973 | 157 | .. | .... | 2 | .... | 1 | .... | 4 |
| Copenhagen | April 17. | 300,000 | 158 | .. | .... | .... | .... | 1 | 4 | 8 |
| Munich | April 21. | 275,000 | 139 | .. | .... | .... | .... | 2 | .... | 3 |
| Edinburgh | April 21. | 262,733 | 101 | .. | .... | .... | .... | 2 | .... | 1 |
| Palermo | April 28. | 250,000 | 88 | .. | .... | .... | .... | .... | 2 | 2 |
| Leipsic | April 28. | 170,000 | 55 | .. | .... | .... | .... | .... | .... | 5 |
| Toronto | May 5. | 130,000 | 83 | .. | .... | .... | .... | 1 | .... | 4 |
| Stuttgart | April 28. | 125,510 | 42 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | April 21. | 122,000 | 52 | .. | .... | .... | .... | .... | .... | .... |
| Havre | April 28. | 112,074 | 73 | .. | .... | 2 | .... | 3 | .... | .... |
| Leghorn | April 29. | 101,718 | 38 | .. | .... | .... | .... | .... | .... | .... |
| Reims | April 28. | 97,903 | 64 | .. | .... | 1 | .... | .... | .... | 2 |
| Cadiz | April 28. | 65,028 | 40 | .. | .... | .... | .... | .... | .... | .... |
| Merida | April 30. | 48,800 | 39 | .. | .... | .... | .... | .... | .... | .... |
| Cienfuegos | April 23. | 40,573 | 18 | .. | .... | 2 | .... | .... | .... | .... |
| Cienfuegos | April 30. | 40,573 | 24 | .. | .... | 11 | .... | .... | .... | .... |
| Maracaibo | April 28. | 40,000 | 13 | .. | .... | .... | .... | 1 | .... | .... |
| Curaçoa | April 28. | 25,000 | 3 | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | April 22. | 23,631 | 8 | .. | .... | .... | .... | 1 | .... | .... |
| Sagua la Grande | April 28. | 15,605 | 7 | .. | .... | 1 | .... | .... | .... | .... |
| St. Thomas | April 27. | 15,000 | 6 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | April 28. | 12,000 | 13 | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | April 28. | 7,428 | 7 | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

*Appalachicola, Fla.*—The board of health have issued a quarantine proclamation containing twenty-seven sections. Section 2 requires that "all boats and vessels arriving at the port of Appalachicola on and after May 10, 1888, either foreign or domestic, upon which any contagious, infectious, or pestilential diseases have occurred or existed during the voyage to said city, or within thirty days next preceding the arrival of said boats or vessels at said port or city of Appalachicola, are forbidden to approach the city nearer than is specified in the rules and regulations of the board of health; . . . and are also forbidden to land any person or persons or goods until such boats or vessels have performed all quarantine, as directed by law and the rules and regulations of the board of health."

*San Francisco, Cal.—Small-pox.*—The secretary of the health department reports 22 cases and 4 deaths for the month of April. The Governor of Hong-Kong telegraphed to the mayor, "Small-pox no longer epidemic in Hong-Kong." . . . The Board of Health of San Francisco, at a meeting held May 4th, declined to declare Hong-Kong a non-infected port, and will still exercise the utmost precaution in landing Chinese and their baggage.

*Portland, Me.*, May 10, 1888.—Since last report one case of varioloid, of a mild type, has been under municipal quarantine, and is now convalescent.

**The Virus of Rabies.**—The "Lancet's" Paris correspondent writes that Dr. V. Galtier recently made a communication to the Academy of Sciences on the persistence of the rabic virulence in corpses buried in the ground. According to the author, the rabic virus preserves its activity in bodies buried, so that, should any doubt arise after the burial as to the nature of the malady that had caused death, the exhumation of the body and the inoculation of the bulb are naturally indicated. In support of his thesis, Dr. Galtier stated that on November 25th last the body of a dead dog that had been buried for fifteen days was brought to him. The dog had left the house of his master after having presented signs of rabies and having bitten another dog and a fowl. According to the information obtained, and from what was noticed at the necropsy, there was no doubt that the dog had died from rabies. The brain was extracted on the same day, and a portion of the bulb was employed on the following day (November 26th), to practice an inoculation by trephining in a dog, which became furiously rabid on December 7th, and died paralyzed on the 10th. At the necropsy the stomach was found empty of food, but was filled with a mass of straw, exhaling an odor of manure; the œsophagus also contained straw in its thoracic portion; a brownish substance was found in the intestine; the larynx was vividly injected; the brain was congested, but there were no lesions consecutive to the trephining. The rabies of this first subject inoculated was transmitted with success to other animals. To sum up, the bulb of a dog that had been dead seventeen days from rabies and buried fifteen days, preserved all the virulence of the disease, which was proved by the manifestation of rabies in twelve days in a dog that had been inoculated, and which died fifteen days after the operation.

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**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

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*All communications intended for the editor should be addressed to him in care of the publishers.*

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## Original Communications.

### THE PRESSURE PARALYSIS OF POTT'S DISEASE.*

BY GEORGE R. ELLIOTT, M. D.

THE object of this paper is to determine the mechanism of the lesion which gives rise to pressure paralysis of the spinal cord, limited to that form of paralysis which complicates Pott's disease.

*Anatomical Considerations.*—It may not be out of place to call attention to the following anatomical points:

1. The spinal cord reaches only to the lower border of the first lumbar vertebra.

2. The cord only partially fills the vertebral canal.

3. The cord swings in the spinal canal, insulated by means of the arachnoid fluid which surrounds it.

4. The cord is much nearer the anterior wall of the canal than the posterior, held in place by means of the anterior nerve-roots.

5. The tracts conducting motor impulses are more superficial than those transmitting sensory impulses.

It further may not be out of place to state that paralysis in Pott's disease bears no relation to deformity. A spinal column may be bent at nearly a right angle without giving rise to any paralytic symptoms, while in another case, manifesting no deformity, *complete paraplegia* may be present.

*Pathology.*—In order to arrive at an intelligent understanding of the pathology of the lesion to be considered in this paper, I cite briefly the carious process which is the exciting ætiological factor. It matters little whether we accept the tubercular theory of caries or not. The process is one insidious in its onset and slow in its progress. Cornil and Ranvier, in comparatively recent investigations, seem to show rather conclusively that the disease begins not as an inflammatory process, but a fatty degeneration of the bone cells. The result—a destruction of the bone cells and consequent inability on their part to perform their function as agents of nutrition. The osseous trabeculæ, killed by the death of their cellular elements, form so many small foreign bodies which determine suppurative inflammation about themselves. The medulla becomes vascular, adipose cells disappear and are replaced by embryonic cells, and suppuration is established. The bone cells which have escaped fatty degeneration become active, the osseous substance surrounding them is dissolved, the necrosed trabeculæ become free, and granulations or fungosities are formed from embryonic medulla. Islets of osseous tissue become necrosed oftentimes, and are dislodged by granulations and carried away by suppuration. In their place are left irregular cavities. Here, then, we have a suppurative process in progress which is most frequently confined to the anterior portions of the bodies of the vertebræ. These diseased portions, giving way, permit the vertebræ to fall together. The disease creeps dorsad and destroys, to a greater or less extent, the posterior common ligament. The latter, dissociated, allows the pus to pass from the vertebræ. The dura mater and the peridural tissue are aroused to inflammatory activity. The external surface of the dura mater becomes covered with granulations of a fungoid character, and infiltrated with caseous pus. This condition passes under the name of *pachymeningitis externa caseosa.* This process shows no tendency to extend beyond the site of the vertebral disease. It is limited. In a cross-section we can see how the diseased condition abruptly gives way to the healthy membrane.

Up to this point the pathology stands, I can safely say, undisputed. In the large majority of cases of caries of the spine the pathological chapter closes here. The products of inflammation remain imprisoned, ultimately to be absorbed and replaced by reparative material. Frequently paralytic symptoms manifest themselves, and here the pathology is by no means settled.

Ollivier * was among the first to describe at all carefully the changes which take place in the cord as a result of slow compression. He cites numerous cases where the membranes were found thickened and the cord softened without evidence of further disorganization. His findings were verified and described later by Louis.† These writers, and many of their followers who have described this form of paralysis, have dwelt upon the mechanical lesion alone as the cause of the paralysis. From time to time cases were reported where the cord seemed harder than normal, a condition not dwelt upon by these writers, and consequently no explanation offered. That the cord should become injured as a result of crumbling and broken vertebral bodies sufficient to lead to the production of marked angular curvatures, was considered but a natural sequence. This idea became so thoroughly fixed that many books, even to this day, refer only to bone as the pressure cause of the paralysis. It was noticed, however, that very frequently no paralysis followed in cases where the deformity was very marked. The spinal column might even be bent to a right angle as a result of the disease, and still no paralytic symptoms become manifest. That marked deformity can occur without the cord becoming compressed is also observed in lateral curvature, where sometimes the deformity assumes a frightful aspect. In the words of Fagge,‡ "every pathological museum contains specimens which show that the spinal canal generally retains its full width, however much its direction may be altered."

Further, paralysis was seen to complicate caries when careful examination of the spinal column gave no evidence of deformity. These observations naturally called for some explanation other than the current view.

The middle of this century, which inaugurated an active interest in the physiology and pathology of the great nerve-centers, produced men who sought a solution of the prob-

* Read before the Section in Pathology of the Ninth International Congress, September, 1887.

* "Ueber das Rückenmark und seine Krankheiten," uebersetzt von Dr. J. Radius, Leipsic, 1824, p. 202.

† "Mémoire sur l'état de la moelle dans la carie vertébrale," Paris, 1826.

‡ Fagge, vol. i, p. 410.

lem. Among others, Charcot * and his pupils made investigations and published to the medical world their conclusions. To Michaud,† I think, can be credited the pioneer article upon this subject. These authors and investigators contended, and apparently demonstrated, that the cause of the paralysis in these cases is not directly due to a mechanical lesion, but to a myelitis the result of the mechanical lesion. Michaud held that myelitis was invariably the lesion, and even went so far as to claim its existence in cases giving no evidence of paralysis.

This explanation of the cause of this form of paralysis, first described by Michaud and Charcot, and subsequently supported by Bouchard ‡ and Courjon,* was accepted and apparently verified by Leyden ‖ in his microscopical examinations of compressed cords.

Great controversy has now long been in vogue regarding the exact nature of inflammatory processes of the cord. So loosely has the term myelitis been employed that various affections of the cord have been called myelitis—polio-myelitis, ascending and descending degeneration, various kinds of softening; all these have been described by observers under the head of inflammatory lesions.

Recent pathologists have come to look upon the disease myelitis as one giving rise to certain unmistakable and ever-present findings. Stricker, Leyden, Joffroy, Schultze,△ Strümpell, ◊ and others have found the following pathological findings which they regard as pathognomonic of the inflammatory lesion:

1. Increased size of nerve-elements, axis-cylinders enlarged, or without the sheath of Schwann.

2. Swelling of the interstitial tissue and increase of same, according to age of process.

3. Increased number of round cells in the connective tissue and around the blood-vessels.

4. Enlargement of Deiter's cells.

The later stages characterized by hyperplasia of the connective tissue.

Erb practically coincides with the view of these authors, and their observations have been verified by numerous competent and careful observers both here and abroad.

The progress of the lesion in cases of slow compression is, as a rule, insidious, and, to reconcile the clinical symptoms with the lesion, the interstitial form of myelitis is believed to predominate. This is characterized by an increase of the neuroglia or connective tissue, similar to that occurring in other organs, the parenchyma becoming secondarily implicated. The interstitial tissue becomes increased, together with proliferation of the nuclei, great thickening of the walls of the blood-vessels, and distinct atrophy of the nerve-fibers. A later stage is characterized almost exclusively by the presence of connective tissue.

In support of the inflammatory theory are usually found post-mortem findings, showing the cord at the site of compression converted largely into connective tissue with thickened blood-vessels and sparsely distributed changed nerve-fibers and granular bodies.

Further, in one case examined by Michaud, when the compression had not as yet produced paralysis, but where sensory disturbances in the form of fulgurating pains were complained of by the patient, the microscope revealed increase of the connective tissue throughout the posterior root zone.

This explanation, then, of this form of pressure paralysis, which was so ably treated by Michaud and Charcot, supplemented by the studies of Courjon and Echéverria,* became as thoroughly implanted and accepted as had the explanation of Ollivier and Louis a quarter of a century before.

Let us proceed now to a closer study of the subject in hand, and to that end we ask, *Can a mechanical lesion satisfy the demands of pathology and symptomatology?* Let us see.

A mechanical cause is present. We have seen how the bodies of the vertebræ become destroyed by the carious process going on in the bone, leading to the formation of an abscess the walls of which are composed of bone and of the thickened surrounding soft tissues. We have further seen how the dura mater becomes involved, the process which goes on being called pachymeningitis externa caseosa. The abscess-cavity is not a simple one, but in it are developed fungoid granulations, and the abscess products tend to accumulate. Nature tends to fortify the walls as far as possible. It is not common for the pus to perforate the walls and escape into the surrounding tissues. The site of least resistance is toward the spinal cord, which swings insulated in the spinal canal. The membrane bulges into the canal and the cord recedes. The canal offers escape for the cord up to a certain limit, when, if bulging still goes on, the medullary substance is destined to suffer. Here, then, is practically a fluid sac, its pressure force commensurate with its fluid tension, mechanically an elastic ball.

*Clinically*, the appearance of a psoas or gluteal abscess in a case of paralysis is often attended with the disappearance of paralytic symptoms. No one who has seen many of these cases has failed to note this clinical symptom. It is unnecessary to dwell upon the mechanism of this relief further than this allusion to it. I may add that bone is sometimes found pressing upon the spinal cord post mortem in cases which have had paralytic symptoms.

*What does the gross lesion tend to show?* At the compressed site the spinal cord is often reduced in size to such an extent as to appear simply like a band of connective tissue. It is a striking fact that the diseased dura mater is limited to the site of the diseased vertebræ.

The change from "pachymeningite externe" to normal dura mater is abrupt. This has been noted by numerous ob-

* "De la compress. lente de la moelle ép.," "Leçons sur les mal. du syst. nerv.," 2me sér., 2me fasc., 1873.

† "Sur la méningite et la myélite dans le mal vertebral," Paris, 1871.

‡ "Compress. lente de la moelle," "Diction. ency. des sc. médic.," 2me sér., vol. viii, p. 664, 1874.

* "Étude sur la paraplégie dans le mal de Pott," Paris, 1875.

‖ "Klinik der Rückenmarks-Krankheiten," vol. ii, first part, p. 149.

△ "Arch. f. klin. Med.," vol. xxv, p. 297; Virch. "Archiv," vol. lxviii, p. 111.

◊ "Archiv f. klin. Med.," vol. xxx, p. 526.

* "Sur la nature des affections dites tuberculeuses des vertébres," Thèse, Paris, 1860.

servers. Cornil and Ranvier * say: "Inflammation of the dura mater is limited exactly to the parts of the vertebræ diseased." This change in the dura mater is invariably in the anterior part of the membrane, and only in grave cases of caries does it encircle more than half of the cord. Does not this limitation of the diseased dura to the exact site of vertebral disease argue the non-tendency of the inflammatory process to extend in the membrane beyond what is necessary to protect the cord from the abscess cavity itself—beyond nature's necessary protective area?

*Medullary Surface of the Dura Mater.*—This is usually intact and perfectly normal in appearance, the inflammatory process seeming to have spent its force in the external layers. Microscopical examination of the diseased membrane rarely shows even infiltration of the internal layers. Can we not draw from this a further inference of the non-tendency of the process to extend? Here, then, is a slow form of inflammation which does not seem active enough to extend beyond the limits of the diseased vertebræ, not active enough to involve, as a rule, the internal layers of the membrane in which it originates. Is it possible, then, *a priori*, that it will extend to the cord? It is proved, then, I think, that the *irritation force* is simply that of the pressure of a bland mechanical body.

*Is there anything in the pathological findings to militate against the lesion being a mechanical one?* Examination of compressed cords in the recent state show:

1. Granule cells, many or few, according to the mass of destroyed nerve-fibers.
2. *Débris* of broken-down nerve-tissue.
3. Swollen axis-cylinders, or absence of the same.

If examined at a later stage:

1. Nothing indicating changes in the blood-vessels.
2. No increase of cells about the vessels.
3. Occasionally traumatic hæmorrhage.
4. Nerve-fibers in course of destruction and others which have been destroyed.
5. Swollen axis-cylinders or empty spaces, the former site of nerve-fibers.

Then follows, as in all other analogous conditions, a secondary increase of the neuroglia.

*Experimental Physiology.*—It is a settled fact that pressure upon nerve-trunks interferes with nerve conductivity. It has been demonstrated over and over again that a very moderate constrictive force about a nerve separates the myeline within the sheath, and, if severe enough, leads to secondary degeneration, accompanied by all its pathological findings, rendering the nerve incapable of transmitting nerve impulses—*e. g.*, the injury to the musculo-spiral nerve from pressure. Has it been demonstrated in these cases that the pressure invariably leads to a neuritis in the sense of an inflammatory lesion?

Vulpian has shown experimentally that paralysis follows the introduction of a wooden match so placed as to press upon the spinal cord of a guinea-pig. The pressure was continued a quarter of an hour, and the paralysis disappeared one hour after the pressure was removed.

Attention is directed to what occurs after a nerve has been tied:

1. Segmentation of the myeline and disintegration of the same.
2. Disintegration of the axis-cylinders.
3. Complete absorption of the mass, leaving the nerve-sheath empty or containing only *débris* and nuclei.

The nuclei of the perineurium and endoneurium aid in the transformation of the nerve into a band of connective tissue. Here, then, is a process the result of which is practically identical with that following compression of the cord—changes, degenerative in character, the result of the mechanical interference, followed by increase of the connective-tissue elements. Pathological views characterizing degenerative changes as inflammatory are by no means established.

In the endeavor to settle this point, Dr. O. Kahler * made certain experiments upon dogs. He injected bee's-wax about the spinal cord; motor and sensory paralytic symptoms followed in the lower extremities. At varying periods the cords were carefully examined. After the compression had lasted from *six to thirteen hours* he found slight nodular foci located in the posterior and lateral columns. Microscopical examination of the same revealed marked swelling of the axis-cylinders, disappearance of the myeline sheath—*no interstitial changes.*

*Two to Ten Days.*—Microscopical examination showed greater swelling of the axis-cylinders and destruction of the same, granular cells, slight increase of Deiter's cells.

*Later, five weeks to six months*, there were found nodules of sclerosis with marked thickening of the connective tissue. He claims to have found none of the characteristics considered by Leyden, Joffroy, Stricker, and Schultze as pathognomonic of myelitis, and concluded that the results were purely those of a mechanical lesion.

Kahler states, as in peripheral nerves so in the spinal cord a moderate pressure is enough to excite a break in conduction. A few fibers are destroyed in such cords, and we find lacunar changes distributed in the form of nodules.

*Do the connective-tissue-growth changes which are usually found at the site of the compression lesion necessarily signify the inflammatory character of the lesion?*

It is not denied that we usually find a sclerotic condition of the cord at the compression site when paralysis has existed for any length of time. A glance at the observations will make this conclusive. That such is the outcome of the lesion is beyond dispute. We contend, however, that the presence of sclerotic tissue in the cord is no proof that the initial lesion was inflammatory. We have seen that this follows various processes.

Ziegler says the increase of connective tissue is a result of every process of softening. The connective-tissue increase characterizes every process of degeneration. Throughout the nerve-centers destruction of nerve-tissue by processes degenerative or otherwise *is invariably followed by increase of the neuroglia.* The examination in the great majority of these cases is made long after the onset of the lesion. We

* Ed. 1882, vol. i, p. 606.

* "Zeitschrift für Heilkunde," vol. iii, 1882, p. 187.

find only the result of the process which has produced destruction. Leyden,* who came to look upon the lesion as identical with transverse myelitis, drew his conclusions almost exclusively from old findings, and these are identical with those following myelitis. Charcot's† case—where the disease was cured after one year's standing, and where, two years subsequently, death occurred, the cord at the compressed site being found smaller and presenting a sclerotic condition—does not seem to offer any great support to the theory that the difficulty had been inflammatory. Michaud himself offers but one case as the strong pillar of his argument, where interstitial changes were found at an early stage, and this case had not as yet given evidence of paralysis.

Erb‡ says the fact that in not a few cases of compression of the cord the microscope reveals in the softened mass no granule cells, no hyperplasia of the connective tissue, no proliferation of the nuclei, but only swollen and disintegrated nerve-elements, speaks unmistakably in favor of the view that the process is sometimes one of simple softening.

Strümpell# contends that in repeated examination of cords compressed through spinal caries he has never found signs of inflammatory change. He refuses it upon pathological grounds, and believes that there is nothing found histologically that can not be accounted for as a result of a mechanical lesion. He says: "We must maintain, against the theory generally received at present, on the ground of many of our own investigations, that we have not the slightest reason to refer the occurrence of paralysis in spondylitis to a secondary myelitis. Such a 'compression myelitis'—that is, an inflammation of the spinal cord arising from the pressure as such—is to be rejected from general pathological reasons, and the microscopical examination of the cord also shows nothing which points to an inflammation or what may not be entirely the result of mechanical compression. If we make stained cross-sections of the hardened cord, we see under the microscope no signs of vascular changes, of hyperæmia, of accumulation of cells about the vessels, and only exceptionally a little traumatic hæmorrhage; but we do find, in addition to many still preserved nerve-fibers, other fibers which are involved in the disintegration, and evidence of those already destroyed. If the destruction of nervous tissue has advanced to a certain degree, there is in the later stages, as in all analogous processes, *a secondary implication of the neuroglia*. Now follows an increase of the interstitial connective tissue. Its proliferations, which take the place of the destroyed nervous tissue, seem diffuse at first, but later firm and fibrillary. Thus it happens that in old cases we find nothing at the point of compression but a loss of nerve-fibers in the cord, and in their place a *firm fibrous tissue*."

*What inferences can be drawn from a study of post-mortem findings?* In the light of the present well-recognized value of post-mortem findings in settling pathological questions it would be a superficial study, indeed, in the present instance that neglected to consider them. From the literature of the subject those cases only are selected which have been reported with some attention to detail, for from such cases only is it possible to draw any reliable inferences. The cases are first cited and then analyzed.

Observation I.—Male, aged six years, with marked angular spinal curvature of eighteen months' duration, complicated with paraplegia which had existed for four months. Examination showed complete loss of voluntary power of both lower extremities; very little muscular atrophy; exaggerated reflexes even to the exhibition of spinal epilepsy. Died, seventeen months after the beginning of the paraplegia, from pulmonary complications.

*Autopsy.*—Partial carious destruction of the sixth, seventh, and ninth dorsal vertebræ, and complete destruction of the eighth. An abscess, the contents of which had degenerated into a white, cheesy mass, occupied the site. Pultaceous matter occupied the body of the eighth dorsal vertebra, and pressed upon the spinal cord.

Microscopical examination by Dr. E. C. Seguin showed *cord converted into connective tissue at the site of compression*, also above and below, the usual lesion of secondary degeneration.—Gibney, "The Illustrated Quarterly of Medicine and Surgery," April, 1882, p. 43.

Observation II.—Male, aged twenty-three years, complained for a short period of lancinating pains in the lower extremities, preceded by malaise and fever, and soon followed by complete paraplegia. The legs were flexed upon the thighs, and the latter upon the abdomen. Reflexes markedly exaggerated. Death occurred five weeks after the onset of the paralysis.

*Autopsy.*—Body of fifth dorsal vertebra completely destroyed by caries. The spinal cord was found compressed at the level of the fifth dorsal vertebra by a purulent mass which existed in the vertebral canal. Spinal cord showed *sclerotic changes at site of compression;* inflammation of pia mater involving spinal portion.—Mathieu, "Le progrès médical," No. 35, September 2, 1882.

Observation III.—Male, aged thirty-one years, complained for three months of a fixed pain in the region of the inferior angle of the left scapula. This was soon followed by a painful stiffness of the neck, together with marked atrophy of the infra-spinatus and deltoid muscles of the right side; later by atrophy and paralysis of muscles of both upper extremities. Died, five months after the onset of the lesion, from asphyxia.

*Autopsy.*—Cheesy osteitis, third, fourth, and fifth cervical vertebræ; "pachy. externe" limited to site of lesion, compressing same at height of fourth pair of cervical nerves through a cheesy proliferation which had broken through the dura mater.—Chantemesse, "Le progrès médical," No. 8, 1883.

Observation IV.—Male, aged forty-eight years, complained of occasional sharp pains in left arm, followed by weakness of both upper extremities and contraction of same. Lower extremities subsequently became weak, accompanied by a spastic condition of same. After ten weeks the lower extremities became completely paralyzed, with marked contracture. The upper extremities remained only partially paralyzed, with a high grade of atrophy of the thenar eminence of both hands; partial degenerative reaction of the atrophied muscles; otherwise normal electrical excitability, no fibrillary contractions, tendon reflexes increased only in lower extremities. The only disturbances of sensibility were slight pains and paræsthesia in the arms. Death occurred, seven months after the beginning of the disease, from sepsis.

* "Klinik der Rückenmarks-Krankheiten," vol. ii, part 1st, p. 149.

† "Communication de M. Charcot à la Société de biologie," Sept., 1871.

‡ "Ziemssen," vol. xiii, p. 469.

# "Lehrbuch der sp. Pathologie und Therapie der inneren Krankheiten," vol. ii, part 1st, p. 167.

*Autopsy.*—Beginning caries, fourth, fifth, and seventh cervical vertebræ, without deformity of same. External surface of dura mater presented the condition of "pachy. externe" limited to the site of the bony lesion, the medullary surface of the dura mater remaining smooth and intact.

The spinal cord at the site of compression was found *softened* in a marked degree and unfit for microscopical examination.—Kahler, "Prager medicinische Wochenschr.," No. 49, p. 480, 1883.

Observation V.—Female, aged six years, with a history of paraplegia of four years' duration; reflexes markedly exaggerated; no sensory disturbances. Under treatment the paralysis disappeared to a considerable extent, so that the patient could bear considerable weight upon the feet. Death occurred from embolic pneumonia.

*Autopsy.*—Caries of the seventh cervical and first five dorsal vertebræ, the bodies of same being hollowed out and filled with cheesy pus. The spinal cord included between the second and seventh dorsal segments, measuring about 7 ctm., is transversely flattened, and has an increased consistency. In this portion of the cord there is destruction of both the gray and white matter. The walls of the blood-vessels are thickened, and the anterior portion of the dura mater is thickened and contains calcareous deposits. The cord above and below the compressed portion shows the usual lesion of secondary degeneration.—Ridlon, "N. Y. Path. Soc. Rep.," "Medical Record," March 26, 1887, p. 361, and July 16, 1887, p. 84.

Observation VI.—The patient, a male, complained for some months of pain in the back, followed by paresis of the lower extremities, which soon became completely paralyzed; reflex movements exaggerated; no marked sensory disturbances in same.

*Autopsy.*—Partial destruction of the four upper dorsal vertebræ. The spinal cord was found compressed at the point opposite the second dorsal vertebra. At this point careful examination failed to detect any inflammatory evidence.—Kadner, "Archiv d. Heilk.," xvii, 6, p. 481, 1876.

Observation VII.—Male, aged forty-four years, November 10, 1875, seized with pain in chest, neck, and shoulders, accompanied by cough and dyspnœa. These symptoms were soon followed by paralysis of the lower extremities, rectum, and bladder; sensibility of lower extremities diminished and reflex movements increased. Died February 17, 1876.

*Autopsy.*—Caries of the seventh cervical and four upper dorsal vertebræ. Examination of the spinal cord *negative.* There was a marked purulent infiltration beneath the periosteum, some pus having found its way into the spinal cord. This was the only lesion to account for the paralytic symptoms.—Kadner, *loc. cit.*

Observation VIII.—Patient gave a history of stiffness of the neck, followed soon by a numb feeling in the arms, which extended up the arms over the trunk. Head, neck, and legs remained unaffected. Examination upon admission into the hospital at Stockholm elicited partial anæsthesia, most marked upon the right side in hands and fingers. There was also paresis of the lower extremities. The right side of the body became completely paralyzed. Patient died from failure of respiration.

*Autopsy.*—Caries second, third, and fourth cervical vertebræ, with subperiosteal blood effusion. At a point opposite the second cervical vertebra the spinal cord was found compressed by a portion of bone. The pia mater at point opposite second and fourth cervical vertebræ was injected, but there was no exudation. The spinal cord at same height was softened exactly where the piece of bone pressed. Small hæmorrhagic foci were found in the cord substance at the site of compression. —Malmsten, Schmidt's "Jahrb.," Bd. 171, S. 65.

Observation IX.—Patient, aged sixteen years, upon admission into hospital was found to have complete paralysis below the upper extremities, with marked anæsthesia of same; reflexes markedly increased. Died four months after admission.

*Autopsy.*—Body of sixth cervical vertebra almost totally destroyed by caries. A rough protuberance projected into the anterior part of the spinal canal at this point, narrowing it considerably. Dura mater shows the lesion "pachy. externe." Spinal cord at this point was found compressed and flattened. Microscopical examination not given.—Savory, "St. Barthol. Hosp. Reports," v, p. 45, 1869.

Observation X.—Male, aged sixteen years; voluntary movements of lower extremities completely abolished; no anæsthesia; electrical contractility normal; reflexes markedly exaggerated; absence of pain in the beginning of the disease, but later some pains of a lancinating character; pupils dilated, but they react slowly to light; function of bladder and rectum normal.

*Autopsy.*—Caries of the first four dorsal vertebræ. The *anterior columns* of the spinal cord were compressed at the site of the lesion, and found *softened* and *markedly anæmic;* the remaining portions of the cord are normal.—E. Rallett, "Wien. med. Wochenschr.," iv, p. 24, 1864.

Observation XI.—Patient, aged five years and a half, brought to the hospital with measles, complicated with capillary bronchitis. Examination of the spinal column showed an angular curvature at point of ninth and tenth dorsal vertebræ; no paralysis. Death occurred from the pulmonary disease.

*Autopsy.*—At the posterior surface of the diseased vertebræ a small pocket was found formed by the prevertebral cellular tissue, and filled with cheesy pus; the posterior ligament was found perforated at this point, and the contents were in contact with the anterior surface of the dura mater. The membranes appeared as though sprinkled with vegetations, forming plaques 4 to 5 ctm. square. Hardened sections of the cord showed *beginning myelitis.*—Michaud, "Sur la méningite et la myélite dans le mal vertébral," Paris, 1871, p. 66.

Observation XII.—Patient, aged two years, admitted to hospital November 9, 1869, with left hemiplegia, with rigidity. Later, the right inferior limb became paralyzed. The thighs were flexed upon the abdomen, and the legs upon the thighs. Nothing was observed abnormal with the right superior extremity, which alone could execute movements. Died April 2, 1870.

*Autopsy.*—Spinal cord at the site of the compression lesion due to caries showed marked evidence of sclerosis.—Michaud, *ibid.*, p. 68.

Observation XIII.—Female, aged thirty-four years, noticed, after birth of first child, at the age of twenty-five years, slight deformity of the spinal column, followed three months later by numbness in the lower extremities. Entered the Hôtel Dieu with complete paraplegia of the lower extremities, accompanied by contracture of same. The paraplegia continued for more than four years. Patient died from a complicating morbus coxarius, September, 1869.

*Autopsy.*—Upon opening the rhachidian canal, the dura mater was found covered with a grayish exudation, which caused it to adhere to the posterior face of the changed vertebral bodies. An osteoform projection compressed the spinal cord at the level of the third dorsal vertebra. The spinal cord at this point was found extremely *diminished in size and of about the size of a goose-quill.* Above and below, the cord regained gradually its normal dimensions. Microscopical examination showed sclerosis of cord, with ascending and descending degeneration.—Michaud, *ibid.*, p. 70.

Observation XIV.—Male, aged thirteen years, entered hos-

pital Sainte-Eugénie, September 16, 1869, with dorsal angular curvature and complete paraplegia; moderate contracture of legs and thighs; sensibility to touch, temperature, and pain completely abolished; reflex movements exaggerated; function of bladder and rectum normal. Died January 29, 1870.

*Autopsy.*—Caries of the five lower dorsal vertebræ, the apex of the angular deformity being found by the tenth. Two of the vertebræ are completely destroyed; the osseous tissue is infiltrated with tubercle. The *dura mater* is thickened at the site of the disease, showing the lesion "*pachy. externe.*" The spinal cord at the site of the lesion shows well-marked evidence of sclerosis, with dislocation of one of the anterior horns.—Michaud, *ibid.*, p. 73.

Observation XV.—Male, aged forty-two years, admitted into the service of M. Vulpian at hospital La Pitié, March 31, 1870, complaining of severe neuralgic pains in the lumbar and epigastric regions. Examination revealed angular curvature of the spinal column at the junction of the upper and middle thirds of the dorsal region; analgesia of the lower extremities most marked upon the left side; sensibility to temperature very well preserved. Died January 18, 1870.

*Autopsy.*—The dura mater is considerably thickened at a point corresponding to the eighth and ninth dorsal vertebræ, and the latter present a condition of extreme friability as a result of caries; the posterior ligament is destroyed opposite the diseased vertebræ. The spinal cord at the site of the lesion does not offer a uniform alteration. Toward the superior part of the compressed segment are found tracts of sclerosis in the posterior columns following the course of the internal radical filaments. The corresponding nerve-roots present evidence of neuritis, with granulo-fatty change. At the lower part of the compressed segment is found a peripheral sclerosis, presenting a tendency to assume the annular form, most marked upon the lateral columns; the left lateral half of the gray substance is deeply changed. Above the site of the lesion is found sclerosis, which continues in the lateral columns up to the cervical region.—Michaud, *ibid.*, p. 74.

Observation XVI.—Infant, aged eight months, began gradually to lose power of the right arm, and subsequently of the left. After two months and a half, partial paralysis of the lower extremities. Died at the end of seven months after the onset of the disease.

*Autopsy.*—Caries of the sixth and seventh cervical vertebræ, opposite which point the cord seemed enlarged. This enlargement was due to tubercular infiltration, which at this point had caused complete absorption of the proper tissue of the cord. The tubercular mass seemed to have had its origin in the right postero and postero-lateral columns; then extended until the cord was gradually destroyed, only slight traces of the anterior columns remaining.—Gull, "Guy's Hosp. Reports," 1858, 3d series, vol. iv, p. 206.

Observation XVII.—Male, aged fifty-eight years, complained of backache for thirteen years, the pain being most severe in the lumbar region, thence radiating toward both sides; loss of power slowly developed in the lower extremities, which soon became completely paralyzed; reflex movements markedly exaggerated; severe muscular cramps.

*Autopsy.*—Caries of the sixth, seventh, and eighth dorsal vertebræ. At a point opposite the posterior surface of the body of the eighth dorsal vertebra the dura mater is thickened and adherent to the bone; the vertebral canal is narrowed at this point; the intercostal nerves in the vicinity of the diseased vertebræ are imbedded in thickened callous tissue. Above and below the site of the lesion the dura mater is normal. The *spinal cord* at the site of the lesion was compressed, and smaller than that above and below. *Microscopical* examination of the same revealed absence of a portion of the nerve-fibers; medullary sheaths destroyed in places; connective tissue increased; the nuclei were but slightly increased, in no place more than two or three being found together; little fat droplets and amyloid bodies also found.—Frommann, Virchow's "Archiv," Bd. 54, S. 42.

Observation XVIII.—Male, aged thirty-seven years, fell on the 10th of October, 1885, spraining his right hand; three weeks later complained of some pain in his right shoulder, and gradually his right arm became paralyzed. Examination showed paralysis of deltoid, brachialis anticus, and biceps muscles; sensibility of arm slightly diminished; hyperæsthesia over the region of the superior cervical nerve; pupils dilated. One year after beginning of the disease general emaciation, with very pronounced atrophy of the muscles of the right arm; less of the left. Finally, complete paralysis of both upper extremities and of the muscles of the neck, with moderate anæsthesia; paresis of legs, with increased tendon reflexes. Died November 14, 1886.

*Autopsy.*—Bodies of the third and fourth cervical vertebræ carious; intervertebral substance destroyed; the posterior ligament is bowed with the convexity toward the spinal cord, compressing same. *Spinal cord:* 4 to 5 ctm. of the cervical enlargement softened into a reddish pulp; the *meninges* are intact; fourth cervical nerve surrounded by pus.—Grasset and Estor, "Revue de méd.," viii, 2, p. 113, 1887.

Observation XIX.—Female, aged sixty years, admitted into Guy's Hospital, November 6, 1867, with complete paraplegia, which had been progressive from time of onset, three months previous; partial anæsthesia, but no pain. Died suddenly, ten days after admission, with symptoms of heart-failure.

*Autopsy.*—Third and fourth dorsal vertebræ partially destroyed by caries, with complete destruction of the intervertebral substance. At the site of the lesion a mass of softened material projected into the spinal canal, causing pressure upon the cord. Spinal membranes intact. Spinal cord diminished in size at site of compression and somewhat softened.—Ogle, "Trans. of the Path. Soc. of London," vol. xix, p. 16, 1868.

Observation XX.—Male, aged forty-one years, afflicted with caries of the middle dorsal region of the spine, complicated with paresis of both lower extremities; reflex movements markedly exaggerated. Died from phthisis complicating the carious disease.

*Autopsy.*—Caries of the fifth and sixth dorsal vertebræ and complete destruction of the intervertebral substance. At the site of lesion an abscess pressed upon the spinal cord. The spinal membranes were found intact, and the spinal cord presented no evidence of inflammatory change.—Ogle, *loc. cit.*

Observation XXI.—Male, aged forty-five years, complained, during year 1878, of stiffness of his neck which rendered rotation of same impossible. During the year a retro-pharyngeal abscess formed, which broke externally. Examination, January 1, 1879, showed rigidity of the upper part of the vertebral column, but no paralysis of upper or lower extremities. The only marked symptom aside from the rigidity of the muscles of the neck was profound atrophy of the *thenar eminence* and *interossei* of both hands.

*Autopsy.*—Posterior ligament in great part destroyed from the third dorsal to the superior cervical vertebræ; body of first dorsal and all the cervical vertebræ carious. Dura mater opposite diseased site shows the condition of "pachy. externe," the internal surface, however, remaining intact. The condition of "pachy. externe" extends laterally in the dura mater far enough to include the anterior and posterior spinal nerve-roots traversing same.

*Microscopical Examination.* — The anterior nerve-roots which form the brachial plexus show the degenerative lesion—proliferation of the nuclei, atrophy, and crowding together of the myeline and axis-cylinders. This same lesion is found in the nerves which supply the atrophied muscles. The posterior spinal roots appear normal.

*Spinal Cord.*—Several ctm. of the middle and inferior cervical segments show: *a.* Slight sclerosis of the direct cerebellar tract. *b.* The internal root-zones of the posterior columns show a sclerotic lesion similar to that of locomotor ataxia, which lesion is prolonged into the gray substance. The motor cells of the anterior horns are also somewhat atrophied, and the cells fewer than normal. No evidence of ascending or descending degeneration in the white columns usually found consequent to lesions of the cord.—Proust and Ballet, "Revue mensuelle," vol. iv, p. 425, 1880.

*Analysis of the Findings.* — In examining the cases which have just been cited, we are struck with the superficial manner in which some have been reported—so imperfectly reported in some instances, even by competent observers, as to render them almost worthless beyond giving a rough description of the gross findings. Yet, inasmuch as these are valuable to us, they have been included with those where the microscopical findings are also given.

*Dura Mater.*—The medullary surface is found intact in all observations excepting III and VII, which showed perforation of the dura.

*Pia Mater.*—In Observation VIII found injected, but unaccompanied by exudation; in the remaining cases *normal.*

*Spinal Cord.*—Observations I, II, V, IX, XII, XIII, XIV, and XVII show the spinal cord *converted* into *connective tissue* at the *site of compression.* This gives no clew to the pathology of the original lesion, since we have seen that connective-tissue growth is a result of a variety of lesions affecting nerve-tissue.

*Softening of the cord* at the compression site is found in Observations IV, VIII, X, XVIII, and XIX. In Observation VIII the cord was softened exactly where it was pressed upon by bone, and small hæmorrhagic foci were found in the cord substance—changes non-inflammatory, similar to changes already described, which experimental physiology tends to show take place in the cord as a result of compression. In Observation X the lesion was limited exactly to the anterior columns of the cord, and these were found *softened* and *anæmic*, the presence of the latter condition, as held by the observer, pointing to a non-inflammatory lesion. In Observation XIX, Ogle adds, with some emphasis, that the lesion at the site of compression was purely a mechanical one, as nothing indicative of inflammation was found. In Observations IV and XVIII the lesion may or may not have been inflammatory. A compression cause existed in the form of abscess products which compressed the cord. In both cases it is to be noted that the *meninges* were found *normal.* Observations VI, VII, and XX give no evidence of inflammatory destruction reported by such observers as Kadner and Ogle. In Observation XVI the cord tissue proper was found absorbed by the tubercular neoplasm. In Observation XI Michaud sums up the histological findings under the head of *beginning myelitis*, without detailing the formr.

If we carefully compare the findings in Observations XV and XXI, we will notice a marked resemblance and at once see that they differ materially from those histological changes usually met with at the site of compression. While no paralysis existed in either case, it is deemed best to refer to them here, inasmuch as they have been thought by some authors to indicate the early lesion of so-called "compression myelitis." In Observation XXI, especially, we notice that the lesion is confined to definite tracts in the spinal cord—viz.: the posterior root-zones or columns of Burdach and gray matter adjoining, the direct cerebellar tracts, the anterior horns and nerves originating from the latter. How is such a lesion to be explained? Proust and Ballet were inclined to accept the following hypothesis: Irritation of the posterior nerve-roots excited inflammation of the posterior root-zones, which inflammation extended from thence to the parts of the cord found implicated—in other words, an *ascending neuritis.* Kahler,* in commenting on this case, calls attention to a fact which we have also observed, that usually in cases of lower cervical caries giving rise to symptoms similar to those enumerated, the reflexes of the upper extremities are preserved even when the atrophy is quite profound, and correctly infers that such phenomena are quite inconsistent with a neuritic disease of the cervical nerve-roots.

The distribution of the pathological findings to rather definite tracts of the cord argues a lesion having a definite cause and progressing in a definite order. The following hypothesis would seem to offer a satisfactory explanation: The lesion is twofold in character: 1. Alteration of the posterior root-zones and direct cerebellar tracts due to a degenerative lesion, the result of implication of the sensory roots at the site of *pachy. externe.* 2. The changes in the anterior horns are believed to be the direct result of moderate compression of the cord, and the degeneration of certain of the anterior nerve-roots necessarily secondary. The preservation of the reflexes in these cases renders it conclusive that the spinal-cord substance itself is primarily involved. Even here, then, there seems to be nothing which a mechanical lesion will not readily explain.

We may add, Is there, even in those cases where the sclerosis is said to have an irregular distribution at the compressed site, anything especially incompatible with the theory that such changes are but later stages of non-inflammatory foci, induced by moderate compression of the cord? That such is the case is rather corroborated by Kahler's experiments, already dwelt upon in an earlier part of this paper.

To briefly summarize, then, we have shown:

1. That we have present a simple mechanical pressure in the form of *abscess products*, thickened *dura*, or *bone.*

2. That the inflammatory process is invariably a limited one, the inflammation of the dura mater being limited exactly to the site of the diseased vertebræ, exhibiting no

* Kahler, "Prag. med. Woch.," viii, No. 49, p. 480.

tendency to extend in the membrane—nature's medullary protection.

3. That the *medullary* surface of the dura mater is almost invariably normal.

4. It follows, then, that the pressure lesion is simply mechanical, possessing no tendency to involve the spinal cord through any inherent specific characters of the carious process—a bland mechanical lesion—and the damage it inflicts commensurate with the pressure exerted.

5. That examinations of the pathological findings have, in the vast majority of cases, necessarily been confined to old cases where the lesion had existed for a very considerable period, and that such examinations usually revealed the cord largely converted into connective tissue at the site of compression.

6. The presence of sclerotic tissue at the site of compression is no evidence that the original lesion was of an inflammatory character, since it is a well-established pathological law, to which we have alluded, that throughout the nerve-centers destruction of nerve-tissue, by processes degenerative or otherwise, is *invariably followed by increase of the connective tissue.*

7. Experimental physiology gives no evidence of an inflammatory lesion following experimental compression of the cord, microscopical examination of the same showing a few granular cells, swollen axis-cylinders and evidence of destruction of the same, foci of traumatic hæmorrhage—changes identical with those observed by Strümpell, Kahler, and others, at the site of recent compression of the human spinal cord. We do not find signs of vascular changes, of hyperæmia, of accumulation of cells about the vessels, and in the connective tissue; in other words, no evidence of those pathological changes which are considered by Leyden, Joffroy, Stricker, Schultze, and others as pathognomonic of inflammatory change.

8. A careful examination of the pathological findings of reported cases reveals to us, in the light of recent pathological knowledge, but few instances where we have reason to believe the original lesion to have been inflammatory. These were cases where the process was virulent, leading to a perforation of the dura mater, thus allowing the purulent products to come in direct contact with the cord, giving rise to a lepto-meningitis.

Finally, then, our researches have led us to conclude that the original lesion is, as a rule, non-inflammatory, and we have endeavored to demonstrate this from a pathological standpoint, support it by experimental physiology, and corroborate it by clinical manifestations.

We must await further researches in neuro-pathology to clear away certain obstacles which we recognize exist. When the pathology of the so-called combined sclerosis is thoroughly understood, together with all the facts pertaining to the physiological and pathological rôle played by the posterior root ganglia and the vascular mechanism of the cord, it will doubtless be possible to complete the pathological picture of this peculiar form of paralysis, and establish as certainties what at present exist but as probable hypotheses.

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# TRACHEOTOMY WITHOUT THE CANNULA.

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The patient would be spared great discomfort after the operation of tracheotomy if the use of the tube could be dispensed with; moreover, a source of irritation would be removed which by its presence retards the healing process and increases the danger from blood-poisoning.

My thoughts have been recently directed into an old channel by reading the medical reports issued from time to time on the condition of the Emperor of Germany. It has been evident that the instrument in his case has been a constant cause of discomfort while in place, and the usual difficulty attending its insertion or change has been experienced.

This subject has not come within the scope of the line of practice with which the greater part of my life has been identified, but in earlier years my experience with the operation of tracheotomy was unusually great. One of my first literary contributions to the profession was an article on "Œdema Glottidis resulting from Typhus Fever," which was published in the "American Journal of the Medical Sciences," July, 1856. I was directly or indirectly the means of saving the lives of some twenty persons by performing tracheotomy where passive œdema of the glottis had taken place.

At a later period I saved the lives of two children, now grown, on whom I operated for membranous croup. One of the first difficulties I experienced was in the management of the cannula. In the treatment of some of the adult patients I dispensed with the use of the tube entirely, and kept the wound open by means of a thick lead wire passing around the neck. This could be bent to avoid pressure on the vessels, and, through a hole in each end of the wire, a silk suture was secured, which had been passed through the skin and edge of the tracheal wound on each side, and thus the opening was kept patulous.

With both children I used a long silver wire, passed through the skin and trachea, which was so adjusted and twisted sufficiently as to turn the edges of the skin over into close contact with the edge of the opening in the trachea. To avoid making pressure on the vessels, I placed on each side of the neck two corks into which I had made deep cuts to imbed the wire, and, after making the necessary traction to separate the sides of the wound, the ends of the wires were twisted together behind the neck.

A great improvement has doubtless been made in the cannula since the treatment of these cases, but the instrument can never be so perfected that its presence in the trachea will cause no irritation.

The strip of muscular tissue which is inserted, as it were, in the posterior wall along the line of the long axis of the trachea and between the ends of the cartilaginous rings, is exceedingly sensitive to the touch of a foreign body. Muscular contraction can be excited, and often a paroxysm of coughing brought on by the pressure of a probe. When this contraction is brought about, the diameter of the trachea must be proportionately diminished. Through the action

of the reflex system the irritation must be transmitted to the minutest bronchi, so that the capacity of the air-passages becomes greatly lessened as a consequence. Until the wound has healed, it is impossible to prevent the discharges from its surface entering the trachea. The healing process is retarded and the discharge is greatly increased from the irritation of the tube, while its introduction is always attended with difficulty, and with more or less damage to the soft parts.

I believe that it will prove good surgery and a comparatively easy matter to obtain early union between the edges of the skin and the lining membrane of the trachea, and at the same time to preserve the necessary opening into the air-passage. This assertion is based upon my experience in treating diseases of the bladder and urethra in the female, where it is now easy to establish a permanent opening for drainage in chronic cystitis, and in making the "button-hole" opening in the urethra, by uniting with interrupted sutures the mucous membrane of the bladder or of the urethra with the mucous membrane of the vagina. If an early union can be obtained in such friable tissue, so prone to inflammatory action, and with a constant stream of urine flowing over the parts, we may infer that the skin can be made to unite around the opening in the trachea with even less difficulty. An oval opening should be made in the trachea by removing a small portion of tissue on each side, and this can be readily done by the aid of a tenaculum and a pair of curved scissors. A fine needle, about half an inch in length—such a one as I employ for operations about the bladder and urethra—would answer for the introduction of the interrupted sutures around the opening in the trachea. The first suture should be introduced about the middle of the wound on each side, and the others in turn toward each end, using about five to the inch. After they have all been secured, there would necessarily remain at each end a fold or pucker, since the opening in the skin would be much greater than the one in the trachea. This line should also be closed by fine interrupted sutures, but it would be necessary to include more of the deeper tissues than would be advisable where union of the skin and mucous membrane was desired. A fine silver wire should be used, and this may be introduced by means of a short silk loop attached to the needle. A metallic suture for a case of this kind would be preferable to silk, as it would not excite a local inflammation by being retained an indefinite time. It could also be utilized, by being bent, to act as a splint in giving form to the flap, and the discharges would not follow its course, by capillary attraction, to enter the trachea.

After twisting the wire sutures just sufficiently to bring the parts together, each should be cut off about an inch in length. If properly laid down, they will radiate, as it were, from a common center and lie flat, without producing any irritation.

The success of the operation will necessarily depend on the dexterity of the operator in being able to catch up the skin and subcutaneous tissue so that it will slide over the raw surface, and thus turn in the edge of the skin in close approximation to the edge of the tracheal mucous membrane. After operating on the children I was surprised at the time when noticing the rapid healing of the edges in comparison with other cases. Only a single stitch was used on each side, but even this was sufficient to cover in a great portion of the surface which would otherwise have been left to heal by granulation.

If the details attending the introduction of these sutures are properly carried out, with the necessary care which should be employed in closing any wound, union should promptly take place, and in the shortest possible time. A portion of the line in direct contact with the edge of the skin and trachea may possibly have to heal by cicatrization, but it would be very limited, and the surgeon could readily keep the granulations in check. The procedure as proposed would certainly reduce the cicatrizing surface to the minimum.

If only the skin, and not the deeper tissues, is brought together, the smallest diameter of the passage would be at the entrance to the trachea, and this diameter could not be encroached upon from without. If the union by cicatrization should be as limited in extent as is maintained, the trachea will be left far more movable than under ordinary circumstances where the parts have been healed by granulation. The small portion of the tracheal tissue which it seems advisable to remove from the edge will offer no obstacle to the final closure, but the opening would remain a mere slit, which could be securely covered by denuding an elliptical surface on the skin, which would be brought together in a fold over it.

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## SOME SURGICAL LESIONS OF THE ABDOMINAL VISCERA,

*WITH ILLUSTRATIVE CASES.**

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From the cases of lesions of the abdominal viscera which have come under my observation within a year I have selected twelve to report. While not all of my cases for the period embraced, this list contains all the fatal results.

The great interest attaching to abdominal surgery at this time has determined me to present this group of cases for your consideration:

Three cases of exploratory laparotomy (no further operation), all of the patients recovered; one case of purulent peritonitis, fatal; two cases of perityphlitis, one patient recovered; three cases of intestinal obstruction, one patient recovered; one case of gunshot wound of the abdomen, fatal; one case of nephrectomy, fatal; one case of nephrotomy, the patient recovered. Six recovered and six died.

To this I shall add some remarks upon "*intestinal suture*" from a successful case of exsection of a portion of the small intestine which I reported in full to another society.

Case I. *Exploratory Laparotomy; Sarcoma of Iliac Fossa; Recovery.*—S. M., a native of Russia, a peddler, twenty years old, was admitted to Mount Sinai Hospital July 21, 1887. Five days before admission the patient was seized with pain in the

* Read before the New York Surgical Society, May 8, 1888.

abdomen, followed by vomiting, headache, and dizziness. He supposed the trouble resulted from overloading the stomach with unripe fruit. His family history was negative. Temperature, 100·2°; respiration, 24; pulse, 72. On examination, the urine was normal. Lungs, liver, and spleen negative. Slight fullness in the right iliac region, in which, on palpation, a sausage-shaped swelling was recognized. The patient was put to bed and given milk and liquid diet.

On September 22d, under ether narcosis, I cut into the abdomen, by the incision in the median line below the umbilicus, in the effort to determine the exact nature of the mass. A hard, irregular oval tumor measuring about eight by five inches occupied the right iliac fossa, dipping up toward the kidney and extending well to the linea alba near the incision. It was adherent to the iliac fascia, cæcum, and mesentery, and could not be removed. The wound was closed and the patient rapidly recovered from the operation, but died two months later from the progress of the neoplasm. Autopsy, sarcoma.

Case II. *Exploratory Laparotomy; Sarcoma of Left Iliac Fossa; Recovery.*—Edwin B., male, eleven years old, was brought to me by Dr. J. H. Blanks, of Meridian, Miss., in September, 1887, with this history:

He had been a healthy child up to one year ago, when he complained of a pain in the left iliac region, where a small lump was recognized by palpation. About this time he had several chills, with high febrile movement, which were thought to be due to malaria, and which yielded temporarily to free doses of quinine. The boy's health gradually failed and the tumor enlarged. Dr. Blanks suspected a malignant neoplasm, but brought the child to this city for further advice.

Examination without an anæsthetic revealed a tumor seemingly attached to the iliac fascia and projecting forward against the abdominal wall. We gave an opinion that it was sarcoma, and probably could not be removed. Under chloroform narcosis the abdomen was opened directly over the mass. A sessile tumor about four inches in diameter was attached by its broad base to the fascia in front of the iliacus and psoas muscles, and straddled the iliac vessels. As removal was impossible, the wound was closed. The boy recovered promptly and is still living, seven months after the operation. The tumor is growing, and I am informed a fatal issue is near at hand.

Case III. *Exploratory Laparotomy for supposed Pyloric Stenosis; Recovery.*—Mrs. C., thirty-four years old, a native of Nova Scotia, came under my observation through the courtesy of Dr. R. M. Cramer, of this city, in October, 1887.

Her family history was good. Her personal history was good up to July, 1886, when she noticed a feeling of considerable distress after eating which would pass away in a few hours. These attacks became so aggravated in the course of the next few months that her physician was led to suspect a malignant growth at the pylorus. In January, 1887, she had scarlet fever, remaining confined to bed until June. In September she sought advice in Boston, remaining two weeks in a hospital. The patient states that the diagnosis of her family physician was corroborated. She consulted Dr. Cramer in October, 1887. At this date she was pale, emaciated, and extremely weak. Had no desire for food, vomited more or less every day, occasionally streaked with blood. Nausea constant, pain almost continuous and severe, referred to the pylorus. No tumor could be recognized. A laceration of the cervix uteri was discovered, the left tube was slightly enlarged, the right ovary was bound down.

For several weeks a tonic and stimulating treatment was followed, but without apparent benefit. Nourishing enemata were employed, and only small quantities of liquid food given by the stomach. The vomiting had continued.

In November, 1887, I saw the case with Dr. Cramer. It was determined to advise an exploration in order to render a diagnosis positive, to which the patient eagerly assented. Under chloroform narcosis this was done, preparations being made for dilatation of the pylorus should stricture be found, or gastro-enterostomy if cancer was present. A careful examination showed no lesion of the pylorus, nor of the stomach which could be recognized from the outside. The wound was closed and the patient recovered rapidly from the operation. Three weeks later Dr. Sims operated upon the cervix uteri successfully. The patient steadily improved from this time, and four months later declared herself fully restored to health.

Case IV. *General Purulent Peritonitis; Operation; Death.*—F. B., twenty-eight, a native of Austria, a housewife, was admitted to Mount Sinai Hospital December 3, 1887.

Twelve days before, after straining herself by lifting a heavy weight, an old hernia, which had descended on several other occasions and returned, appeared, and could not be reduced. Pain was present in the abdomen at once, and vomiting occurred within a few hours after the accident. She had vomited at intervals ever since the tumor was observed. For the last day or so the nausea and vomiting were much more severe and there was great pain over the abdomen, with general swelling.

At the time of admission the abdomen was very tense and there was some tympanites. There was a tumor in the right inguinal region about two inches in diameter to which a slight impulse was imparted on coughing. The patient was in a condition of great prostration, pulse almost imperceptible at the wrist, heart-beat irregular, extremities cyanotic. Temperature 103° in the rectum. A diagnosis of general purulent peritonitis from strangulated hernia was made. Operation was immediately undertaken. Ether was sparingly administered, and the patient constantly stimulated with hypodermics of whisky.

In cutting down upon the swelling the sac was opened and considerable pus escaped. No intestine was found and no fæcal odor. The opening into the cavity of the abdomen was found and enlarged with scissors, giving escape to a large quantity of liquid, purulent in character, with numerous large flakes of lymph. The cavity of the peritonæum was irrigated with Thiersch's solution heated to 105° to 110° F., until it flowed out clear and free from all particles of lymph or pus. Two soft rubber tubes were inserted, one into Douglas's *cul-de-sac* and a shorter one for superficial drainage. The wound was closed with silk sutures, and stimulants ordered to be continued at intervals, and the abdominal cavity to be irrigated every two hours with warm Thiersch's solution. The patient did not rally, and died six hours after the operation.

The hernia was no doubt composed of omentum, which had become strangulated and gangrenous, communicating a general peritonitis.

Case V. *Perityphlitis; Operation.*—T. W., clerk, twenty-five years old, came under my observation June 14, 1887, by courtesy of Dr. Buckley, of Manchester, Conn. His family history was good. Five years ago the patient had what was described as a "severe attack of inflammation of the bowels." Ever since there had existed a tenderness in the right iliac region. One year ago this pain became greatly exaggerated, and since that time had caused him to "favor" that side in moving about. At the time I examined him there was decided tenderness on pressure and a well-marked induration and swelling in the right iliac region. His general condition was not good. His health and strength had never been restored since the original attack, and lately he had had occasional rigors, with exacerbations of temperature followed by profuse sweats. Temperature, June 14th, 99°. Bowels constipated. The diagnosis was abscess, the result of old perityphlitis.

On June 15th I made an incision in the right ileo-lumbar

region, and, keeping behind the peritonæum, opened into an old abscess, from which some pus and broken-down tissue were removed. The cavity was immediately behind the cæcum and beginning of the ascending colon, the walls of which were involved in the process of chronic inflammation, which existed. Irrigation was done with Thiersch's solution, and two soft rubber drains were inserted.

*June 16th.*—The patient was comfortable; temperature, 99·5°.

*20th.*—A profuse fæcal discharge occurred through the wound.

*28th.*—The patient was sent home to be treated by his physician. The fæcal fistula persisted, and on January 11, 1888, six months after I last saw him, he revisited this city.

The fæcal discharge had at one time almost ceased, but after a fit of coughing became again profuse. Several sinuses existed in the region of the old incision, and on January 13th these were laid open. A small opening about four lines in diameter still persisted in the large intestine. Since I last saw the patient, consolidations in the upper portions of both lungs had occurred. Microscopical examination of the sputa demonstrated numerous bacilli of tuberculosis. Patient returned to Connecticut on February 18th, and died from exhaustion due to the fistula and tuberculosis six weeks later.

Case VI. *Perityphlitis; Recovery.*—Louis G., twenty-four years of age, clerk, was attacked suddenly with pain in the abdomen, September 2, 1887. His bowels had moved on the previous night and early on the morning of this day. Prior to this date he had had several attacks of intestinal catarrh. Dr. S. Henry Dessau, who was called to the patient and to whom I am indebted for the history of this case and the privilege of reporting it, prescribed rhubarb as a laxative and ordered a sinapism over the abdomen.

On September 3d the pain was limited to the right iliac fossa; temperature 100°, pulse 84, respiration 16. Administered hypodermic of sulphate of morphine, gr. ¼, with sulphate of atropine, gr. $\frac{1}{150}$, and ordered gr. ij sulphate of quinine, with gr. ¼ sulphate of morphine, to be given *per os* every four hours; ice-bag to the seat of the pain; milk diet.

*September 4th.*—Tenderness increased and tympanites, presenting slight increase in temperature to 102°. Treatment continued.

No marked change occurred to September 10th, the ninth day of attack, when I was asked to see the case with Dr. Dessau.

Examination revealed an apparent swelling in the right iliac fossa. While the abdominal wall on the left side was normally soft and yielding under pressure, there was well-marked muscular resistance over the ileo-cæcal region. Tenderness was elicited on deep pressure over the iliac fossa. The temperature was between 100° and 101°. Tympanites had disappeared. It was decided that operative interference was not yet called for. The patient's condition continued about the same until five days later (the fourteenth of his attack), when, after an enema, the bowels moved freely. This was the first discharge in five days. The temperature shortly afterward fell to the normal, and the patient recovered rapidly.

Dr. Dessau informs me that two months later the patient had a second attack, milder in character, lasting five days.

Case VII. *Appendicitis with Peritonitis and Occlusion of the Ileum; Operation; Death.*—R. M., twenty years of age, a milliner, born in New York city, in good health up to Friday, January 13, 1888. She was at this time seized with headache, pain referred to the region of the stomach and umbilicus, with occasional eructations and tenesmus, which last symptom was not relieved by a moderate stool on Friday night. Two days later (Sunday, 15th) she was visited by Dr. George W. Rachel, to whom I am indebted for these notes. He learned that on several former occasions she had suffered from constipation, but had never been forced to take cathartics to get relief.

When examined by Dr. Rachel, at 4 P. M. on Sunday, the abdomen was somewhat swollen; there was tenderness on pressure over the lower portion of the belly. The nausea was less than when she was first taken ill, and the eructations had ceased. Pulse 100 and fairly strong. Opium was prescribed. On the morning of Monday (16th) nausea was increased. A small quantity of thin fæcal matter had passed *per rectum*. During the afternoon she began to vomit. The greenish matter ejected had no stercoraceous odor. The abdomen was more swollen and tender, and over the right iliac area dullness was perceptible. In order to relieve the vomiting and to induce peristalsis, Dr. Rachel washed out the stomach several times and administered a copious enema, which had no effect.

A consultation was now asked for, and the attending and consulting physicians advised operative interference. In the mean time a second physician was sent for, and, on further consultation, drastic cathartics were freely administered. By the next morning no evacuation had occurred, and the attendant urged an operation, which was deferred until the afternoon, when, at the request of the family and the physicians, I visited the patient. She was lying on the back with the thighs flexed on the abdomen. The pulse was 120, temperature 102°, and respiration above the normal and costal in type. She was rational, yet evidently impressed with the gravity of her situation. Tympanites was well marked though not extreme, the resonance being somewhat emphasized on the right half of the abdomen. Vomiting occurred at intervals during the examination, and was of greenish color and intestinal odor, not fæcal. No evacuation had occurred from the rectum since the scanty discharge on Monday morning, thirty-six hours before.

Despite the tympanites, on palpation there was readily made out a resistance on the part of the muscles in front of the ileo-cæcal region not present on the opposite side. The muscular wall of the abdomen on the left side could be depressed with slight inconvenience to the patient, while on the opposite side the resistance was so great that no idea of the contents of the peritoneal cavity could be obtained. The symptoms pointed to intestinal occlusion at or near the ileo-cæcal junction, and this diagnosis was agreed upon by all. Local peritonitis was evident. Although the condition of the patient was desperate, I advised laparotomy and the rapid establishment of an artificial anus to relieve the urgent symptoms of obstruction. As no operation was possible in the hovel in which the unfortunate patient was lying, stimulants were administered, and she was carried into the operating-room of Mount Sinai Hospital. The operation consisted of an incision in the linea alba below the umbilicus, in length five inches. The small intestine presented as soon as the peritonæum was incised. It was distended to twice its natural size, and its wall was injected to a degree I had never before observed. The color varied from dark red to a bluish brown. I allowed it to escape into wrappings of warm Thiersch towels and rapidly sought for the point of obstruction, which was found within a few inches of the ileo-cæcal junction. The gut was now opened at a point one foot above the seat of occlusion by a longitudinal incision one inch in length. Several pints of dirty fluid escaped, which allowed the intestine to collapse. The various loops were returned, the wound in the abdomen closed to within one inch of the lower angle, to which the edges of the opening in the gut were stitched. The operation lasted about thirty minutes. The patient did not rally from the ether, dying three hours later. The autopsy disclosed an inflammation of the appendix vermiformis with almost a per-

foration by a grape-seed. Just where the seed was about to project through the wall of the appendix the inflammatory process had spread to a contiguous loop of the ileum, binding this to the appendix, while a second loop had also become adherent, thus causing a complete occlusion.

Case VIII. *Obstruction of the Transverse Colon by a Band; Symptoms of Perityphlitis; Peritonitis; Operation.*—H. H., male, fourteen years old, in good health, was suddenly, on the evening of April 12, 1888, seized with violent pain in the stomach. His bowels had been regular up to this date. On the next morning, after a sleepless night, he vomited several times after a moderate breakfast. The pain continued with diminished intensity for the next two days, and, although not seen by a physician to make a record of the temperature, it was evident that for three days there had been some fever. The bowels moved each day.

On April 15th (third day) he was seen by Dr. W. T. Alexander, who kindly gave me the notes of the case. Temperature, 102° in the mouth; pulse, 110; tongue natural; dorsal decubitus with legs extended; respirations somewhat increased in frequency. The patient complained of pain over the region of the pylorus, radiating down the right side to the right iliac fossa. There was no pain or tenderness over the left side of the abdomen. There was marked muscular resistance over the abdomen, especially on the right side, with tympanitic resonance; less marked over the right iliac fossa. No tumor was discovered. The patient was placed on milk diet, opium to relieve pain, and a poultice was applied to the abdomen. During the afternoon of this day the temperature was 104°, pulse 120. Acetanilide, gr. v, was given. Was fairly comfortable while quiet, but any movement caused pain. An enema was given, which brought away a few hard lumps. Opium continued. Cold applications to abdomen.

I saw the patient with Dr. Alexander in the afternoon. Temperature 105·5°, pulse 130. Dullness well marked over the right iliac fossa, and up in the line of the ascending colon. Tympanitic resonance was present over the remainder of the abdomen. Urine moderate in quantity and dark in color. Respiration accelerated and costal in type. Dr. Alexander and I agreed, after consultation, that we had a case of perityphlitis, with rapidly formed abscess, to deal with, and limited peritonitis. It was decided to give the patient acetanilide, gr. v, every four hours until the temperature fell, and to operate on the next day if the threatening symptoms did not in good part disappear. On the 16th (fifth day of illness), at 3 P. M., under chloroform narcosis, I examined the patient. A well-defined mass was easily made out, occupying accurately the right iliac fossa, and extending in the line of the colon upward for six or seven inches. Percussion was dull over this area. An incision was made parallel with and about one inch above the outer third or half of Poupart's ligament, and extending obliquely beyond the crest of the ilium. The peritonæum, somewhat injected yet not materially thickened, was stripped from the retroperitoneal tissues until the mass was reached. There were no adhesions or other evidences of pus formation. The tumor gave way under pressure with the finger, and was evidently composed chiefly of rather soft fæcal matter lodged in the caput coli and along this canal. A medium-sized aspirator-needle was introduced about one inch beyond the deepest portion of the wound, behind the cæcum, near the location of the appendix, where to the touch there seemed to be a slight thickening of the tissues. Upon withdrawing the piston, about two drops of fluid appeared in the cylinder. This was discolored by blood. We were not certain that it was pus. The needle had been left full of carbolic-acid solution (five per cent.) to prevent the entrance of air, and this fluid, with a small quantity of blood, would account for the contents of the cylinder. It had no odor. A second effort in the same location was negative. The needle was introduced one inch nearer the diaphragm, and evidently entered the colon. Not feeling justified in making any further dissection in the direction of the peritoneal cavity, two soft rubber drainage-tubes were inserted, and an aseptic dressing applied. It was decided, if no improvement followed this operation, to do a laparotomy within the next two days.

On the morning of the 17th there was slight improvement in the symptoms; but the temperature again went up in the afternoon, and in the evening was 104°. Dr. Alexander thought the peritonitis was extending, and on the next day, the 18th (seventh of attack), the peritonæum was opened. The tubes were removed from the former incision, it was irrigated with sublimate, and packed with sublimate gauze. No discharge had occurred from this wound. The incision through the abdominal wall extended from a point one inch above the junction of the middle and outer third of Poupart's ligament directly upward to a point one inch below the level of the umbilicus. Upon dividing the peritonæum, the small intestines, greatly distended, were with difficulty kept from protruding through the wound. By the use of flat sponges they were pressed back. The ascending colon and caput coli were about half full of fæcal matter and distended with gas. The transverse colon was enormously distended as far as the linea alba. Peritonitis was not general, the inflammation being confined to the right iliac region and along the colon. The appendix was distinctly made out by the finger; was empty and normal. There was no sign of pus anywhere. The great distension of the intestines suggested obstruction, and, carrying my hand into the abdominal cavity along the line of the transverse colon, a strong, narrow band was felt coming from above downward across the transverse colon and occluding this canal. The band was divided, and the gas immediately escaped toward the rectum, causing marked collapse in the colon on the central side of the obstruction. I next made a thorough irrigation of the peritoneal cavity with Thiersch's solution, heated to 105° F., and closed the wound. This second operation lasted an hour. On account of the great weakness of the patient, only a small quantity of chloroform was employed, while whisky was administered by the skin at intervals. He did not fully react, and expired nine hours later. The parents refused our request for an autopsy.

Case IX. *Intestinal Obstruction; Recovery.*—D. D., thirty-two years old, a native of Germany, a salesman, came under observation on February 4, 1888. His family history was good. Fourteen years ago the patient was thrown from a horse, sustained compound fracture of the foot, and was laid up several months. On getting up and about, he felt pain in the left groin, which was increased by coughing or straining. He was told he had hernia, and a truss was ordered. Had worn the truss constantly when not reclining. He had experienced no pain since the instrument was applied.

On January 30th his bowels moved naturally and freely. On February 1st, without apparent cause, he felt a sharp pain in the abdomen, chiefly referred to the region of the umbilicus. An enema was given that night, followed by a good stool. Morphine was prescribed to relieve pain. On February 2d vomiting occurred, and was repeated at intervals. There was no movement from the bowels. Dr. Cosby, who had the patient in charge, called Dr. Janeway in consultation. Intestinal obstruction was suspected. The bowels did not move in forty-eight hours. At repeated intervals he vomited discolored matter, which was supposed to be stercoraceous. Nothing could be retained in the stomach.

On February 4th I was asked by the attending physicians to see the patient. The temperature was 99·2°; pulse, 70;

respiration somewhat accelerated, and in great part costal in type. The abdomen was much swollen and tympanitic everywhere. Pain was dulled by morphine. No hernia could be recognized in the inguinal or femoral regions. The finger passed well into the left inguinal canal. The vomiting was of less frequent occurrence. The patient was not alarmed at his condition. I advised a postponement of operative interference, but made immediate preparations for this, so that when the symptoms justified it no delay should occur. As no operation would be allowed in the house, he was at once removed to a room in Mount Sinai Hospital. Ice and champagne were administered and retained. On arriving at the hospital, the temperature was 99°, pulse 72. Still markedly tympanitic, notwithstanding gas had escaped by the rectum.

*February 5th.*—Condition not changed, except that vomiting had ceased. Patient had eructations of gas. At 9 P. M., placing the patient in the knee-shoulder position, a large enema of warm water was administered. A part of this escaped shortly after the tube was withdrawn, but the greater portion was retained. Several hours later a small quantity of fæces escaped.

On February 6th a free discharge of fæces occurred, all symptoms of obstruction disappeared, and the patient made a good recovery.

Case X. *Gunshot Wound of the Abdomen.*—On July 11, 1887, at 5 o'clock P. M., P., sixteen years old, a strong, healthy lad, while standing erect, was wounded by a 38-caliber rifle-ball, discharged at a distance of about fifteen feet. The ball entered two inches above the crest of the ilium on the right side, about two inches and a half to the right of the spines of the lumbar vertebræ, and passed out one inch below and to the left of the umbilicus. External hæmorrhage was insignificant. The patient was seized immediately with violent pain and was prostrated with shock, which lasted for five hours. At this time he rallied, the pulse became full and normal, and for five hours he was free from pain, temperature, or any evidence of peritonitis. At 3 A. M. the following morning (July 12th) symptoms of peritonitis appeared, with increasing tympanites and elevation of temperature. Opium was prescribed by the physician in attendance. I was sent for at 9 A. M. of this day, and the first train for the patient's residence arrived at 1 P. M. I found him with pulse 140, temperature 104°, respiration rapid. The abdomen was tympanitic and greatly distended, the patient wild with delirium. Operation was out of the question. Death ensued two hours later. An autopsy was not allowed.

That the intestines were perforated there can be no reasonable doubt, both on account of the direction and path of the missile, and from a study of the symptoms.

Case XI. *Nephrectomy for Medullary Carcinoma; Death.*—Miss D., thirty-seven years old, came under my care through the courtesy of Dr. McWilliams, of this State, in May, 1887. While never robust, she gave a history free from serious illness to within five years of this date, at which time she was seized with a severe pain referred to the region of the left kidney and ureter. The first attacks were supposed to be due to renal calculi, but no concrete particles were ever discovered in the urine. The seizures returned at intervals varying from a few days to four or five weeks, caused intense suffering and considerable prostration, but in a few days after each paroxysm she would be up and about, resuming her household duties. It was noted by Dr. McWilliams that the urine was more or less bloody with the paroxysm, the blood disappearing a few days after the attack. About three years after the first seizure the patient, while in the upright posture, suffered so severely from soreness and a sense of dragging or weight in the left side of the abdomen that she took to bed, in which condition she was conveyed to this city in May, 1887.

To the date on which she went to bed no tumor was noticeable, although careful examination was made by her physician. On examination, the patient was found to be fairly well nourished, considering the protracted nature of her illness, the two years' confinement to bed, and the necessity for the not infrequent recourse to morphine for relief from suffering. A tumor occupying the left side of the abdomen, extending from the ribs to the iliac crest, seemingly elliptical in shape, the long diameter parallel with the axis of the spine, was readily made out. Direct pressure or the effort to move the mass in any direction was painful. The tumor was only slightly movable. The history of its development, as well as the location, pointed quite clearly to the kidney as the seat of disease. A careful study of the urine for ten or twelve days satisfied me that if one kidney was seriously involved the other organ was in good condition and doing sufficient work. Professor Janeway, who saw the patient with me, concluded that the kidney was the seat of a neoplasm. An operation, the dangers of which were fully submitted, was advised, accepted, and, after two weeks of careful preparation of the patient, was performed. The lumbar incision was made, extending from the eleventh rib to below the iliac crest. On approaching the mass, it was found to be the kidney, and of such size that the opening was increased by a transverse incision passing from the middle of the first incision well over to the left linea semilunaris. The peritonæum was not opened, but was rolled or dissected inward. The bulk of the tumor was situated above the twelfth rib, well up in the arch of the diaphragm. The operation lasted nearly three hours, and was practically bloodless.

The unusual vascularity of the tissues about the tumor, together with the large size of the neoplasm, made the dissection necessarily tedious. During the last hour of the operation hypodermics of whisky were employed, on account of the weakness and rapidity of the pulse. The patient became conscious two hours after the wounds were closed, but did not fully recover from the shock of operation, and expired five hours later.

An autopsy was not permitted. The tumor was eight inches in the longest measurement, and varied from two to four in transverse diameter. The microscope showed it to be medullary carcinoma, as by the report of Dr. J. S. Thacher, of the Polyclinic Laboratory.

Case XII. *Nephrotomy.*—S. A., forty-seven years old, a tailor, a native of Russia, was admitted to Mount Sinai Hospital, December 10, 1886, in the service of Dr. Gerster, with symptoms of vesical calculus, for which left lateral lithotomy was performed April 5, 1887, and a stone weighing twenty-one and a half grammes was removed. He recovered very slowly after this operation, and in August began to develop symptoms of perinephritic abscess. On August 25th Dr. Gerster made an exploratory aspiration, with negative results.

In October he came under my care. At this time he was slowly improving from the severe prostration which had followed the lithotomy. The urine contained a small quantity of pus, granular and hyaline casts, and, as estimated, more albumin than the pus would account for. He complained of an almost constant pain over the region of the right kidney. On November 2d the temperature was 104°; on November 4th it was still high and there was great pain. On November 8th I made an exploratory incision five inches in length along the outer edge of the quadratus lumborum muscle and down to the kidney. Introducing the finger, the kidney could be distinctly outlined and seemed in normal condition. There was slight thickening of the pelvis, but it contained no calculus, nor was it overdistended. Two good-sized rubber drainage-tubes were inserted, the wound irrigated and dressed. It healed promptly without suppuration. The patient steadily improved up to November

19th, having had no exacerbation of temperature. At 9 P. M. on this date the thermometer registered 105°. It went down to about the normal on the following day and ran about normal to January 21, 1888, when 105° was again reached. Notwithstanding these drawbacks, he continued to improve, and was discharged very much improved on March 1st.

*Summary.*—The cases of exploratory laparotomy * are reported chiefly because they will add something, however small, to the argument in favor of this radical method of diagnosis. When careful asepsis is employed, I think we may safely say that simple exploration of the peritoneal cavity adds little to the danger of the situation.

In one of these cases, that of suspected pyloric stenosis, so many different physicians had given their opinion that this condition existed, that the patient insisted upon exploration. Her prompt recovery was due chiefly to the cure of the irritation at the cervix, and in good part to dissipation of her anxiety in regard to suspected cancer of the stomach.

In Case IV (general purulent peritonitis) the patient was practically moribund when first seen, and the operation was a forlorn hope. I hold it to be accepted that laparotomy with irrigation of the peritoneal cavity in purulent peritonitis is a justifiable procedure. It should be done, however, in the earlier steps of the inflammatory process; in fact, as soon as the general character of the peritonitis is recognized. For irrigation I prefer Thiersch's solution warmed to 105°–110° F. Water that has been boiled and cooled down to this temperature is next in order. In two cases I have successfully employed sublimate solution, 1 to 18,000.

Cases V and VI illustrate two forms of *perityphlitis*, one in which resolution did not occur, ending in operation, fæcal fistula, and death; in the other, resolution took place and operation was avoided.

If the abscess had been recognized in the first case early enough and opened, the fistula need not have occurred and the patient's life would not have been sacrificed. In this instance the pus formed behind the peritonæum and colon above the *caput coli*, and the fistula broke through near the junction of the cæcum and colon.

In Case VI operation was deferred on account of low temperature, normal pulse, and absence of any marked symptoms of pus-formation or spreading peritonitis.

In Case VII the original trouble was *appendicitis*, obstruction occurring from adhesions of the ileum to the appendix. Perforation had not taken place—in fact, was rendered practically impossible by the adhesions which were found immediately over the place of lodgment of the grape-seed. This patient was, in my opinion, sacrificed first by delay in operation, for which the attending physician could not be blamed. Secondly by the administration of powerful drastics when occlusion was complete.

My experience in these cases convinces me that—

1. In a fair proportion of cases of perityphlitis, resolution of the inflammatory mass takes place without suppuration and abscess.

2. In very rare instances pus may form and remain for an indefinite period without producing the marked acute symptom of abscess.

3. The appendix is the seat of the inflammatory process in a majority of these cases.

4. This being the case, and considering the intimate relation of this organ to the peritonæum, it follows that peritonitis, usually local, possibly general, is present in a vast majority of cases.

The formation of pus may occur within the peritonæum or behind it. In the very incipiency of this process rapid adhesions, occurring between the peritoneal surfaces, arrest the progress of an abscess in this direction, while the underlying retroperitoneal tissues offer less resistance. Hence, although the inflammatory process is in its incipiency intraperitoneal, pus collections are much more frequent in the retroperitoneal space. The rapidity with which these adhesions occur on the peritoneal surfaces is well exemplified in Case VII, where, although the grape-seed had not quite perforated the appendix, the wall of the ileum was firmly adherent to this point, and, had not occlusion of the small intestine ensued, the perforation of the appendix would have communicated directly with the canal of the ileum.

5. As to the time at which operative interference is indicated, the circumstances of each case must determine. Operation within the first week is rarely indicated unless symptoms of perforation are present, or unless high temperatures (105°) prevail, with other symptoms of the rapid accumulation of pus. If exploration be deemed advisable, it should by preference be by incision and the retroperitoneal dissection. The use of the aspirator-needle should be cautiously advised. When the abscess is well marked it is scarcely necessary, and when it is obscure it is not free from danger.

6. Case VIII illustrates the difficulties which may occur in an effort at diagnosis in abdominal lesions. This boy gave as perfect a history with the physical signs of perityphlitis as I have ever seen, and yet there was occlusion by a band. The peritonitis did not seem severe enough to justify the high temperatures, and there was no pus collection.

In Case IX obstruction was so evident that a very conservative and justly distinguished diagnostician advised operation, and yet an enema brought about recovery.

This case is in happy contrast to Case VII, in which there was (as shown by autopsy) complete and insurmountable occlusion, and yet croton-oil, elaterium, and calomel were administered by a consultant, notwithstanding these symptoms of obstruction were present for three days—additional evidence, if such were needed, to show that these lesions of the abdominal viscera should, in their incipiency, be placed under the surveillance of a surgeon.

Case X, gunshot wound of the intestines, is still another argument in this direction. Five hours after this boy was shot he came out of shock, and for five hours was in excellent condition for operation. Had a surgeon been summoned as soon as the accident occurred, he would have prepared for operation and performed laparotomy when reaction took place.

* To those interested in statistics of exploration of the abdomen without further operation, reference is made to a recent interesting article by Dr. Baldy in the Philadelphia "Medical News."

Case XI, nephrectomy, suggests to me the single question of which incision is the better for removal of tumors of the kidney.

The anterior operation is, in my opinion, preferable for nephrectomy when the organ is unusually large. For small tumors the lumbar dissection seems the safer procedure.

## SUCCESSFUL SIMULTANEOUS TRIPLE AMPUTATION FOR RAILWAY INJURY.

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Under the foregoing heading, Dr. John Ashhurst, Jr., read a paper before the College of Physicians of Philadelphia, at the March meeting, showing a patient upon whom he had successfully operated. When reading the account of the case, as recorded in the "New York Medical Journal" for April 7, 1888, it occurred to me that the record of a somewhat similar case, which had recently (August, 1887) come under my own observation and treatment, might be interesting. I shall simply state the facts of the case, without entering into the more general considerations treated of in the instructive discussion raised by Dr. Ashhurst.

A lady of middle age and robust constitution was alighting from a train before the latter had been brought to a standstill. Missing the step of the carriage, she slipped between the platform and wheels, and when extricated was found to have had her right arm torn off and her left hand crushed. She was at once removed to her residence, where I saw her about two hours after the accident. She was then lying as she had been brought in; was restless, but not markedly collapsed. On removing her clothes, the following injuries were found: A compound comminuted fracture of the bones forming the left knee joint, with considerable laceration of the soft parts above the joint; a complete severance of the right upper extremity just below the middle of the arm, with the humerus projecting, splintered, and freed of periosteum, and the soft parts around much torn; and a compound comminuted fracture of the index and middle fingers of the left hand.

With the aid of Dr. Whitelaw and Dr. Smith the patient was placed under the influence of chloroform, and the following operations performed: The left thigh was amputated by a "modified circular" operation at the junction of the middle and lower thirds, the skin flaps being obtained as well as possible; the exposed and bare portion of the humerus, for about an inch, was sawed off, the brachial artery resecured by a ligature, and the muscles and other soft parts trimmed up; and the left index and ring fingers were amputated at the metacarpo-phalangeal joints.

The patient took the anæsthetic kindly, but, on coming to, reaction was accompanied with excitement. In the course of the night she had two subcutaneous injections of morphine—a half a grain at each injection. This had a distinctly quieting effect and enabled the patient to get some sleep. When I saw her the next morning she had considerably recovered from shock, was inclined to be hysterical, but free from pain, and able to take some light diet. The wounds, which at the operation had been treated antiseptically, were examined and redressed. In every respect they looked well. There is little further to add, the patient making a good and rapid recovery, the thigh stump, however, giving at one time some little trouble.

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## CANCER OF THE LARYNX.

At a meeting of the Section in Laryngology of the New York Academy of Medicine held last week a highly interesting paper upon "Cancer of the Larynx" was read by Dr. Charles H. Knight. Three questions were discussed in it: (1) Does malignant disease ever result from transformation of a benign growth in consequence of operative interference? (2) How shall a diagnosis be made? (3) What is the proper treatment?

In answer to the first question a careful review of published facts and opinions bearing upon it was given and the truth elicited that, while several illustrative cases were either mentioned or hinted at, and while several authors had made general statements to the effect that malignant degeneration might occur, the actual proof that such degeneration had taken place was based upon very meager grounds. We are not surprised, therefore, that the author concluded that traumatism alone was not capable of creating malignancy, and that other elements, such as constitutional vice or predisposition, were necessary. Authentic instances of malignant change occurring in a benign laryngeal growth are so few that there is no reasonable ground for inferring a special tendency to such change, or to refrain from endolaryngeal interference in suitable cases.

In the matter of diagnosis the gross appearance of a lesion may not betray its character. This is particularly true of a malignant ulcer obscured by papillomatous overgrowth, or complicated by an extreme degree of simple inflammatory infiltration, or an extensive suppurative process. Tubercle, syphilis, and malignant and benign neoplasms possess so many features in common that errors in diagnosis must occur if reliance is based solely upon the laryngoscope. Nor do the clinical history and the subjective symptoms furnish indubitable proof in every case. Each one of the usual symptoms may be wanting or else distinctly modified. There are, however, two signs of malignant disease of the larynx which have received less notice than they deserve. The first is the existence of pain, shooting from the larynx toward the ear of the affected side. The other symptom is disclosed by the laryngoscope and is seen in impaired mobility of the vocal band on the affected side of the larynx, the action of the laryngeal muscles being impeded by the infiltration characteristic of malignant disease. These symptoms, again, are not constant.

As an aid to diagnosis the microscope is most useful, for, although the existence of a specific cancer bacillus may not have been conclusively proved, the microscopic appearance of the affected tissues is usually characteristic, allowance being made for the fact that to be complete the examination should include

the whole depth of the growth and not alone its superficial layers.

Perhaps the most interesting part of the paper was that which related to treatment. Dr. Knight believes in the performance of tracheotomy when that procedure is indicated by the various accidents which may cause occlusion of the larynx and dyspnœa. He holds, moreover, with many of the best authorities of the day, that the operation of laryngectomy is not a success, and that, while a partial or unilateral removal of the larynx may be unobjectionable in cases suitable for its performance, complete laryngectomy is, in view of present methods and results, an unjustifiable operation.

While admitting the justice of this conclusion as applied to the early history of the operation, and notably to the lamentable records of Billroth and other pioneer operators, it can not be denied that the world moves and that, with improved methods, increased skill, and additional light, the prognosis in these cases is decidedly more hopeful than it has ever been before.

Park's case, with the patient alive and well three years after complete extirpation, Gerster's two successful cases of unilateral extirpation, and, finally, the brilliant record of one unilateral and two complete extirpations successfully achieved by W. T. Bull within the past year, warrant the belief that the operation has still a future before it. Its success will probably depend upon certainty of diagnosis, early performance of the operation, a high degree of personal skill on the part of the operator, trained assistance, scrupulous care in the after-treatment, and, finally, a sanguine and cheerful temperament on the part of the patient.

## THE PROPER LIMITS OF EXCISION OF THE RECTUM.

To those who hold that nearly all cases of rectal cancer are suitable for treatment by some modification of the operation of excision, Hildebrand's report of the results of this work in König's clinic ("Deutsche Zeitschrift für Chirurgie," Band xxvii, Hefte 3, 4) will not be encouraging. While it has been abundantly demonstrated that very extensive disease may be removed, and the technique of the operation has been so greatly improved that nearly any part of the rectum may be reached and extirpated rapidly and with comparative safety as to the immediate result, the advisability of such treatment has not as yet been established. The operations are done because they are manually possible and surgically justifiable, and because in this way only can the proper limits of operative interference be marked out.

Hildebrand's statistics cover 54 extirpations in 69 cases of disease, with a mortality of 35 per cent., which is higher than might have been hoped for. Moreover, exactly one half of the mortality was due to infection, which only proves that no amount of asepsis or antisepsis can be certainly relied upon to prevent periproctitis. Of those recovering from the operation, thirteen died of relapse and five were suffering from relapse at the time of reporting; but three had lived three years, six over two years, and eight over one year without relapse. A point which is made very plain by this report is that, no matter whether the sphincter is or is not preserved in the operation, sooner or later the condition in all cases is one of incontinence or cicatricial stricture.

The result of Hildebrand's study is to convince him that inguinal colotomy is the proper treatment for cases of extensive disease; or, in other words, to place him in opposition to the tendency toward promiscuous operation at present prevailing among German surgeons. It would seem as though conservative ideas as to this matter were certain after a little time to be accepted, and that operative interference must be limited by the extent of the disease and the amount of involvement of the structures around the rectum, as has been upheld by American surgeons ever since the operation was revived, after having for a long period been in disrepute because its proper field of usefulness was not strictly maintained. The simple facts seem to be that cancer of the rectum is less amenable to the knife than cancer of most other parts; that operation is followed by cure in a very small proportion of cases; that the dangers are great and the results as to comfort very unsatisfactory; and yet that in properly selected cases—those seen early—much good may be done by operation, and in those seen late an astonishing amount of lower bowel may be extirpated without an immediately fatal result.

## THE PHYSICIAN AND DOMESTIC REFORM.

Count Rumford, clear of thought and straight of vision, made this suggestive remark: "The number of inhabitants who may be supported in any country upon its internal produce depends as much upon the state of the *art of cookery* as upon that of agriculture; but, if cookery be of so much importance, it ought certainly to be studied with the greatest care. Cookery and agriculture are arts of civilized nations. Savages understand neither." There is much important truth wrapped up in this passage—truth that it has taken the world nearly a hundred years to appreciate with sufficient force for any considerable number of people to co-operate in reducing it to practice. If the scale of population, as well as the comfort and health of the people, depends to such a degree upon the art of cookery, what are all the issues of politics in comparison with systematic training in this particular branch? That the public weal is largely dependent upon the condition of agriculture is now pretty generally understood. Since Rumford's time great progress has been made in its scientific study through the establishment of special schools and colleges. Agriculture is a recognized department of popular culture. The friends of social improvement are now called upon to lend a hand and rescue the preparation of food from the hands of the raw material that pours in upon us from various foreign countries. Why should not the term *lady* be restored to its old meaning of loaf-giver, loaf-maker? Make good cooking fashionable and the thing is done.

Of the imperative necessity of this movement there can not be the slightest doubt. It is a notorious fact that our kitchens are the strongholds of ignorance, prejudice, irrational habits, and mental vacuity, with the result that Americans suffer beyond any other people from wasteful, unpalatable, unhealthful,

and monotonous cookery. Acquiescence in this state of things as something permanent and irremediable is no longer possible. The time has arrived when the advance of intelligence and the spirit of improvement must invade that citadel of stupidity, the kitchen, and banish from it all degrading associations by the presence of trained women who have made the work there carried on a matter of serious study. Cooking should be done as Northcote mixed his colors, "With brains, sir!" The difference between cooking that is good and cooking that is bad is very much an affair of attention to trifles. And this power of attention to trifles is the outward and visible sign of the inward and well-ordered brain. Slight mistakes, small omissions, little things done at the wrong time, spoil dishes, and therefore much healthful enjoyment. The charm of good housekeeping is the order of economy and taste displayed in regard to details. The little things are the great things after all, when their influence is taken into consideration. Fortunately, the application of science to daily living is constantly on the increase. The progress of education is beginning to take effect upon domestic life, and in the calends known as the "sweet by-and-by" there is a strong probability that Americans will have learned how to cook and discovered a diet suited to their environment. During the past few years cooking-schools have sprung up in this country and in England, and the English have taken the lead in organizing them as a part of their national and common-school system.

Considered from the standpoint of morality and hygiene, which in some respects seem almost one and the same thing, there is no reform movement that appeals so directly to the large-hearted physician as this present effort going on among us to secure rational cookery and authoritative knowledge of facts and rules in dietetic science. Why should not the doctor have a chair in the cooking-school? His place in nature as prophet, lawgiver, guide, philosopher, and friend makes him at home wherever help is needed. To the highest style of man there is neither great nor small, necessity being the only gauge of things ideal and non-ideal. The world, like Ajax, prays for light. What we shall eat, and how, are ever-recurring problems. Upon their wise solution depend, to a great extent, the health and happiness of mankind. The experience of the past upon this subject, a hopeless, unclassified mass, wheat and chaff, about as valuable as uncut gems from a mine, is the natural inheritance of all women interested in the ennoblement of domestic life. But other times require other manners. What is the best food, and how best prepared for nineteenth century man in America? Bewildered women are uttering the old cry: "Come over and help us." Have you sound knowledge upon the science of common things? Do you wish your fellows well? Then, friends, let us go!

## *MINOR PARAGRAPHS.*

### DOGS IN THE LYING-IN ROOM.

The newspapers of last Tuesday contained a short account of an attack made upon a Boston physician, while performing his duties as an *accoucheur*, by a bull-mastiff which, until the birth of the child, had lain quietly in a corner of the room. Attracted or excited by the cries of the infant who was in the physician's hands, the animal made a savage spring, it was supposed, at the child, but the doctor was quick enough to interpose his arm, which was seized by the dog. The child was taken by the frightened nurse and thus rescued from a severe injury, if not from death. Not so the physician, who was badly bitten in several places, and it was not until after a severe struggle, in which he was aided by his assistant, whose services had been necessary to anæsthetize the patient, that the animal was overpowered and killed by strangulation. Whatever may be the effect of the wounds inflicted by the dog, and we trust they will not be of a serious nature, the lesson is one by which all may profit to the exclusion of dogs from the lying-in room. The instincts of the animal, particularly of the breed named, lead it to attack, not only other animals, but, on occasions, even children and grown persons, and it is not to be wondered at that the cries of a newly born infant should arouse it to a state of fury liable to jeopardize the life of the child or of any person who stood, as did the *accoucheur*, between it and the object of its attack.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending May 29, 1888:

| DISEASES. | Week ending May 22. | | Week ending May 29. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 5 | 4 | 8 | 5 |
| Scarlet fever | 164 | 30 | 193 | 24 |
| Cerebro-spinal meningitis | 6 | 5 | 3 | 2 |
| Measles | 206 | 7 | 188 | 11 |
| Diphtheria | 193 | 56 | 154 | 47 |
| Small-pox | 12 | 7 | 4 | 1 |

**The New York Post-graduate Medical School and Hospital.**—At a meeting of the Board of Trustees, held on Monday, May 28, 1888, the following appointments were made in the faculty: Dr. A. Jacobi, professor of diseases of children; Dr. R. F. Weir, professor of clinical surgery; Dr. P. A. Callan, professor of diseases of the eye; Dr. L. B. Bangs, professor of diseases of the genito-urinary organs and venereal diseases; Dr. J. E. Winters, professor of diseases of children; Dr. O. B. Douglass, professor of diseases of the nose and throat. Dr. William A. Hammond, who was one of the founders of the school, has resigned as professor of nervous and mental diseases.

**The Board of Medical Examiners of North Carolina.**—At the annual examination, held at Fayetteville, on Monday, May 7, 1888, of the fifty-three candidates for a license to practice in the State, thirty-six were successful. The annual premium of medical books of the value of $25, offered by the publishers of this Journal to the candidate who passes the most creditable examination, has been awarded for 1888 to Dr. Henry Q. Alexander, of Davidson College.

**The late Dr. Dunster.**—The following resolutions were adopted at a meeting of the Wayne County, Mich., Medical Society, held in Detroit on Friday, May 4, 1888:

*Whereas*, It has pleased Almighty God to remove from his earthly sphere our worthy companion and professional brother, Dr. Edward S. Dunster, of Ann Arbor, Mich., therefore be it

*Resolved*, That we as a society tender to his grief-stricken family our heartfelt sympathies.

To the profession before whom he has appeared so eloquent

in address, logical in his reasoning, honest in his opinions which he maintained with his utmost power, and, above all, his loyalty to his profession he so dearly loved, and for whose best interests he so long and sedulously labored, we can only say that the loss of one so eminent can illy be told in resolutions or words; in this the heart alone can speak.

In obedience to the Almighty Power that rules the destinies of men, that can build up or cast down, that can give or take away, we bow in humble submission about the bier of our departed friend, fellow-member, and professional brother. Be it further

*Resolved*, That our secretary transmit a copy of these resolutions to the press and to the family.

[Signed] William Brodie, M. D., Hal C. Wyman, M. D., C. Henri Leonard, M. D., } *Committee.*

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending May 26, 1888:*

Dickson, S. H., Passed Assistant Surgeon. Detached from the Receiving-ship Dale, and ordered to the Marine Barracks, Washington, D. C.

Nash, F. S., Passed Assistant Surgeon. Ordered to the Receiving-ship Dale, in addition to his present duties.

Ruth, Melancthon L., Surgeon. Granted one year's leave of absence from date.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 20 to May 26, 1888:*

Sutherland, Charles, Colonel and Medical Director. To inspect the medical department at St. Francis Barracks, Florida; Fort Barrancas, Florida; Mount Vernon Barracks, Alabama, and Jackson Barracks, Louisiana. S. O. 100, Division of the Atlantic, May 19, 1888.

Brown, Harvey E., Major and Surgeon. Directed to continue on duty at Fort Barrancas, Florida, until further orders. S. O. 115, A. G. O., May 18, 1888.

Kimball, J. P., Major and Surgeon. Leave of absence extended two months. S. O. 117, A. G. O., May 21, 1888.

McCreery, George, Captain and Assistant Surgeon. To accompany Seventh Cavalry from Fort Meade, Dakota Territory, to Fort Riley, Kansas. From Fort Riley he will return to Fort Meade. S. O. 42, Department of Dakota, May 17, 1888.

Wyeth, M. C., Captain and Assistant Surgeon, will be relieved from duty at Fort Barrancas, Florida, at the expiration of his present leave of absence, and will report in person to the commanding officer, Fort Huachuca, Arizona, for duty at that post. S. O. 115, A. G. O., May 18, 1888.

Kneedler, William L., First Lieutenant and Assistant Surgeon, will accompany from Fort Snelling, Minnesota, that portion of the Twenty-fifth Infantry destined for Fort Shaw, Montana Territory. From Cascade, Montana Territory, he will accompany the portion of the Third Infantry en route from Fort Shaw, Montana Territory, to Fort Snelling, Minnesota. S. O. 40, Department of Dakota, May 14, 1888.

Robertson, R. L., First Lieutenant and Assistant Surgeon, will accompany from Fort Keogh, Montana Territory, the Fifth Infantry to the Department of Texas, returning to his station on the completion of the duty. S. O. 43, Department of Dakota, May 18, 1888.

Ewing, C. B., First Lieutenant and Assistant Surgeon, will accompany the Twenty-second Infantry, as medical officer, to the Department of Dakota, returning to his station on the completion of the duty. S. O. 56, Department of the Missouri, May 17, 1888.

Barrister, W. B., First Lieutenant and Assistant Surgeon. Granted leave of absence for two months, with permission to apply for an extension of twenty-seven days. S. O. 119, A. G. O., May 23, 1888.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the three weeks ending May 26, 1888:*

Wyman, Walter, Surgeon. Leave of absence extended fourteen days. May 22, 1888.

Magruder, G. M., Assistant Surgeon. Relieved from duty at the Marine Hospital, Chicago, Illinois, and detailed as medical officer of the revenue bark Chase during her summer cruise. May 19, 1888.

**Society Meetings for the Coming Week:**

Monday, *June 4th:* Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Hartford, Conn., City Medical Association; Providence, R. I., Medical Association; Chicago Medical Society.

Tuesday, *June 5th:* Indiana State Medical Society (Indianapolis); Medical Society of the State of Pennsylvania (Philadelphia); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Columbia (semi-annual—Chatham), Franklin (semi-annual), Herkimer (annual—Herkimer), Niagara (annual—Lockport), Orange (annual—Goshen), Saratoga (annual), Schoharie (annual), Ulster (annual—Kingston), and Yates (annual), N. Y.; Hudson, N. J. (Jersey City), and Warren (annual), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine.

Wednesday, *June 6th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Societies of the Counties of Cattaraugus (annual), and Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Philadelphia County Medical Society (regular); Bridgeport, Conn., Medical Association; Medical Society of Orleans County (annual), Vt.

Thursday, *June 7th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *June 8th:* New York Academy of Medicine (Section in Neurology); Medical Society of the Town of Saugerties, N. Y.

Saturday, *June 9th:* Obstetrical Society of Boston (private).

## OBITUARY NOTES.

**Augustus R. Davidson, M. D.**, of Buffalo, died on Friday, May 25th, at the age of forty-three. He was a native of the Province of Ontario, Canada, and was graduated from the Medical Department of the University of Buffalo in 1878. He did not, however, enter at once into the practice of medicine, but for several years continued his work as a chemist, as which he had been graduated from the College of Physicians and Surgeons of Lower Canada. Upon the organization in 1883 of the Medical Department of the University of Niagara, in which he

had taken an active part, he was appointed to the chair of chemistry, toxicology, and dermatology, which position he occupied at the time of his death. He was at one time an associate editor of the "Buffalo Medical and Surgical Journal." The deceased was a member of the Medical Society of the County of Erie.

# Letters to the Editor.

## A DISEASE SIMULATING LOCOMOTOR ATAXIA.

BALTIMORE, *May 23, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: The following case has proved to be one of interest to me from its resistance to all remedial agents. I write, hoping you may be able to recommend some other plan of treatment:

Mr. W., aged twenty-nine, unmarried, family history good, for the past six years has been suffering from an almost constant pain of a dull aching character in the neighborhood of the sacro-iliac articulation, extending at times down the leg, along the course of the sciatic nerve, and to the anterior surface of each limb. These symptoms would remind one of locomotor ataxia, but such does not appear to be the case. There is no anæsthesia, inco-ordination of muscles, or loss of equilibrium when standing with the eyes closed. Reflexes normal. There are present, however, the burning pain prominent in locomotor ataxia, and the "electric-like pains which shoot down the limbs along the course of the nerves." Vision normal.

Exercise, so long as it is performed without bending the back, can be endured, and no evil effects follow; walking greatly increases the pain, although during the past year this has improved, and longer walks can now be taken. When the dragging sensation in the back is worse, a disagreeable and unexplainable feeling is also experienced in both eyes and across the forehead.

The previous history of the case is as follows: While performing athletic exercises with Indian clubs, which exerted much strain upon the back, the patient suddenly felt a sharp pain in the region of the sacro-iliac junction. Paying but little attention to it, he continued daily exercise for some weeks, until obliged to cease because of the pain produced. Thinking that abstinence from work of any kind would be of benefit to him, a trip West, followed by one abroad, was taken. Upon his return there was but little improvement. After receiving treatment from several physicians he came to me. Diagnosticating his case as a chronic inflammation of the sacro-iliac ligaments, I placed him upon full doses of aconitine, which had the effect of producing slight relief. I have lately put him upon the use of the biniodide of mercury in $\frac{1}{16}$-grain doses, slowly increased to one quarter of a grain, conjoined with the application of a mustard plaster to the back at bed-time, twice a week, which has a very soothing effect. The administration of the mercury is of too recent date to state definitely its result. Galvanic and faradaic electricity have been employed with but transient relief. He has taken—according to his own satement, and I am inclined to think he is partially correct—almost every drug which can be given, with but little or no improvement. In conclusion, I would state that, so far as I can ascertain, there is neither kidney nor bladder trouble, nor stricture; neither has the patient suffered from syphilis.

I should like much to hear the opinion of others regarding diagnosis and treatment.

WM. D. THOMAS.

611 NORTH CARROLLTON AVENUE.

# Proceedings of Societies.

## NEW YORK SURGICAL SOCIETY.

*Meeting of May 8, 1888.*

The President, Dr. LEWIS A. STIMSON, in the Chair.

**Some Surgical Lesions of the Abdominal Viscera, with Illustrative Cases.**—Dr. J. A. WYETH read a paper with this title (see page 597).

Dr. H. B. SANDS said that he had been much interested in the paper, and he agreed with the reader in his remark that explorative laparotomy ought to be performed more frequently in cases of suspected intestinal trouble, since the danger was often small. On the other hand, there might be much risk in this procedure if septic processes were present in the abdominal cavity. The speaker was unable to cover the entire ground of the paper, but he thought that the society would be interested in hearing his recent experience in the surgical treatment of perforative peritonitis. In February last he had read a paper on a successful case of laparotomy for perforation of the vermiform appendix, and presented the patient. Since that time he had had two more cases, the histories of which were as follows:

CASE I.—On April 16th he saw a gentleman, aged twenty-six, who had been very ill for thirty-two hours. He said that when thirteen years of age he had had some abdominal trouble, which had been called peritonitis; three years later he had had a similar attack. He had had for several years a small, irreducible hernia on the right side, which had been thought to be omental. Five days before the speaker saw him he had begun to be troubled with slight pain in the region of the cæcum, which had not been sufficiently severe, however, to prevent his going about. On Sunday, April 15th, at four in the morning, he had had a violent chill, the temperature rising afterward above 102° F. He had had severe pain in the cæcal region, and had begun to vomit. On the following day he was better. Dr. Sands saw him at 12.30 P. M., nearly thirty-three hours after the chill, and found evidences of peritonitis, apparently localized in the right inguinal region. The abdomen was very tender, and there was slight dullness on percussion over the region above mentioned, but no tumor could be discovered, either in the iliac fossa or on examination through the rectum. The knees were drawn up, the patient had an anxious expression, and considered himself dangerously ill. The speaker then felt confident that there was a perforation of the appendix vermiformis, and proposed to perform laparotomy at 3.30 P. M. The patient was seen by several other physicians and surgeons; the former did not believe in the advisability of operating, and it was decided to delay it until the arrival of the young man's father, at 10.30 P. M. At that time the gentleman who had opposed operative interference consented to it, on the ground that if no pus was present an explorative incision would be attended with but little risk, and, on the contrary, if pus was present, life might be jeopardized by further delay. The speaker made an incision directly over the cæcum, to the outer side of the rectus muscle, and found marked œdema of the subcutaneous tissues, while the muscular layers were adherent to one another. On opening the peritonæum, pus spurted out to the distance of an inch. The wound was enlarged, and the appendix was sought for. It was about an inch in length, and was evidently the focus of the suppurative process. No perforation was discovered, although it was partly cleft transversely, nor was there any foreign substance in the peritoneal cavity. The speaker thought that there must be a perforation at some point; accordingly, he ligated the appendix with silk at its base, and cut

it off. The adjacent intestinal coils were covered with pus and recent lymph. The omental hernia was next examined. It was cordiform, about an inch in width, and could not be spread out. It was cut off above and below, to the extent of two inches, double catgut ligatures having been previously applied on each side. The intestines in the iliac fossa were attached to one another by slight adhesions, and the appendix lay behind the cæcum. The neighboring peritoneal cavity was thoroughly irrigated, first with warm water, and then with a small quantity of bichloride solution (1 to 1,000). Afterward a little iodoform was sprinkled over the wound, which was packed with iodoform gauze, placed around a rubber drainage-tube, and closed at its upper part with three interrupted silver-wire sutures. No bad symptoms followed the operation. The gauze was removed piecemeal, the removal being completed on the fifth day, and the bowels moved on the eighth day. Now, at the end of three weeks, the patient was sitting up, and the wound had almost entirely closed.

Case II.—A week ago to-day (Wednesday) Dr. Sands saw a medical gentleman, aged forty, who had been ill since the preceding Monday. On that day he had moved, and thought that he had strained himself. He had drunk some wine before retiring, and had been awakened at eleven o'clock by a severe pain in the right iliac region. His brother (also a physician) had seen him the next morning and had administered opium, which had relieved the pain. Dr. Sands saw him at 4.30 P.M. the following day (Wednesday), and found him with a temperature of 102° to 103°, with tenderness and dullness on percussion over the right iliac fossa; the knees were drawn up, but there was no vomiting. No tumor could be felt. The speaker believed that perforation had occurred, and advised an operation without delay. It was performed at 7 P.M. On making the incision no œdema of the connective tissue was observed, as in the former cases, while the muscular layers could be readily separated. Very little pus escaped on opening the peritonæum, but, on pushing the tissues aside, pus and fæcal matter were plainly seen. The appendix vermiformis was black and gangrenous, and was tied with silk and removed. It was impossible to find its lower extremity until the finger had been passed downward into the true pelvis, so as to pull it out of that cavity into which it projected. It had a distinct mesentery, and on examination a perforation was found about an inch from its base. The adjacent suppurating cavity was irrigated with hot water before much manipulation was attempted, in order to avoid the risk of infection. Some organized lymph was removed, and the speaker was inclined to hope that the operation would be successful, until he passed his finger into Douglas's pouch and found that it contained a large amount of purulent fluid. This cavity was irrigated until the water came out clear. Although the patient was relieved of pain after the operation, the prognosis was regarded as unfavorable, an opinion which was supported by subsequent events. Vomiting and abdominal distension soon developed, and he died at 12.05 A.M. on Sunday.

In reviewing this case, together with those previously reported, Dr. Sands inferred that there would be a good chance of saving life only when the operation was performed early. If it was delayed until an extensive septic process had developed, the prognosis would be unfavorable, as had been the case in the third patient. In the other two the inflammation had been limited to the iliac fossa and they had recovered. If the operation was delayed until considerable manipulation of the abdominal viscera became necessary, the gravity of the case would be much increased. In another case the speaker thought that he would first remove the appendix through an incision in the iliac region, and then, if he found that the inflammatory process had extended, he would drain the original cavity, and proceed at once to perform median laparotomy in order to irrigate the general cavity. This had been proposed later in the second case, but the patient's condition was such that it had not been deemed advisable. With regard to the chances of recovery generally after late operations, Dr. Sands said that he had heard of cases in which patients with strangulated hernia had been operated upon successfully when in a state of collapse, but he had never observed such a thing himself, and doubted whether the statement was true. When the heart's action was reduced through prolonged septic infection, operative interference would only hasten death.

In the three cases of laparotomy that he had performed for perforative peritonitis the symptoms had been nearly identical, and had been quite characteristic as distinguished from those of perityphlitis. A diagnosis could be made early, and thus there was a chance to save the patient. As it might be of interest to the society, he would state that in the case of an eminent medical gentleman, Dr. C. R. Agnew, who had recently died, preparations had been made for performing laparotomy the day after he became ill, but it had been the unanimous opinion of the attending physicians and surgeons, as well as of the patient himself, that an operation was not advisable, by reason of his age, the obscurity of his symptoms, and his general condition. It had been hoped that the disease was localized, and it had been decided to wait. On Wednesday the speaker had been called to operate, but he had found the patient's temperature 97°, with hiccough, and other signs of collapse. He had rallied after receiving stimulants, and his temperature had risen to 100°, but at no time thereafter could laparotomy have been performed with any prospect of success. On Friday Dr. Sands had opened and washed out the peritoneal cavity imperfectly. On Saturday a gentleman, who had not been present at the previous consultations, had thought that the appendix vermiformis might with advantage be found and tied off, but all the other consultants had believed that peritonitis had become too advanced to justify this step. The question had been submitted to the patient himself, who had declined to have the operation performed. He had lingered for several days, and died on the following Wednesday. The body had been examined, in accordance with a request made during his life, and the appendix had been found occupying an unusual position, extending upward in contact with the bodies of the lumbar vertebræ; it had been entirely gangrenous, and, although a perforation had undoubtedly occurred, it had not been found at the time on account of the extensive changes in the surrounding parts. There had been a large fæcal concretion in the peritoneal cavity. Only an operation of great extent would have given any chance of recovery, and even then it would have been difficult to find the appendix, as its unusual position would not have been suspected beforehand.

Dr. J. D. Bryant remarked that he had treated a fatal case of perforation of the appendix, in which the diagnosis had been confirmed on opening the abdomen; the appendix had been tied off. The patient had died twelve hours after of general peritonitis. Some time after this he had seen in consultation a case of peritonitis of nearly a week's standing, in which the symptoms had pointed clearly to perforation. In view of his experience in the previous case, he had judged that it would be unwise to open the abdomen; moreover, the physician in attendance had been unwilling to have the operation performed. In both cases the pain had been referred entirely to the epigastric region. It had been impossible to learn anything by palpation of the abdomen, as there had been so much distension in both instances. In the second case a free incision had been made above the crista ilii, a quantity of offensive pus had been evacuated,

and the symptoms had been temporarily relieved, especially the hiccough and vomiting. The day following the operation the vomiting had returned, had become markedly stercoraceous in character, and death had ensued. At the autopsy an abscess cavity had been discovered, confined to the iliac fossa and communicating with the wound. The appendix vermiformis had been sought for in its usual site, but it could not be found; an enterolith of about the size of a pea had been found lower in the pelvic cavity. On opening the cæcum and passing a probe into it, after careful search a small aperture corresponding to the beginning of the appendix had been found. The appendix itself had entirely disappeared, from sloughing no doubt.

**Apparatus for maintaining Continuous Extension of the Elbow Joint in all Positions of the Forearm.**—Dr. Bryant showed a piece of apparatus which he had devised to meet a special indication. The patient by whom it had been used had come to him a year previously and said that many years before he had sustained a fracture of the external condyle of the humerus. He had for some time suffered with severe pain over the condyle, which had been aggravated by his occupation—scroll-sawing. The speaker had advised rest, which had given relief, but the patient had been obliged to resume his work, when the symptoms had returned. There had been marked swelling over the affected region, with crepitus. Since the pain was relieved by extension, it had occurred to Dr. Bryant that if continuous extension of the forearm could be maintained, a permanent cure might be obtained. The apparatus had been adjusted, and had been worn by the patient until he was entirely relieved. The following letter, which had been received from the patient since the evening of the meeting, could not fail to be of interest:

"Oneida, N. Y., *May 7, 1888.*

"*Dr. Joseph D. Bryant.*

"Dear Sir: My elbow was fractured when I was a boy seven years of age, and has troubled me more or less for years. In May, 1886, it began to grow worse, the pain being so severe as to keep me from my business most of the time. After wearing the splint which you ordered to be made for me, my arm began to improve, and at the end of three months I considered the limb well, took off the splint, and have not had it on since. I worked most of the time while wearing it. After suffering all the pain as I did so long, I can not tell you how grateful I feel to you. Hoping this will prove of some use, I am,

"Very respectfully,

"A. W. L——."

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## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of April 11, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

(*Concluded from page 556.*)

**Some Cases of Abdominal Surgery.**—Dr. J. M. Barton read a report and exhibited some specimens. The first case was one of abscess of the liver in which a free incision had been made, drainage established, and the patient had made a good recovery.

The second was a case of epithelioma of the œsophagus occurring in a man forty-two years of age. Gastrostomy had been performed, but the patient had died from exhaustion four days after the operation.

The third case was that of a large uterine fibroid, occurring in a woman thirty-six years of age. An exploratory incision, under full antiseptic precautions, had been made, but there had been found adhesions so extensive that the removal of the uterus or ovaries had been rendered impossible. The wound had been closed in the usual manner and the patient had made an uninterrupted recovery.

The speaker said that there were some points of interest connected with the subsequent history of the last case. Though previous to the operation the patient had almost invariably bled for ten days at each menstrual epoch and at least twice between the menstrual flows, immediately after the operation the excessive bleeding had ceased, and for nearly two years she had regularly menstruated but three or four days; she had not lost more than one fourth of the quantity each day that she had prior to the operation, and there was no bleeding whatever between the menstrual periods. Her menstrual periods had gradually and irregularly increased until now, nearly three years after the operation, the speaker found in his last note made this year: "No bleeding between menstrual periods; menstruation lasts from three to ten days; when the latter, the bleeding is slight most of the time." Her pains had ceased since the operation, her general health had greatly improved, and she looked much younger. Ever since the operation she had been, and was now, following her occupation as a school-teacher. Nothing had been done at the operation to account for this improvement, which was great enough to have been considered quite a success if the ovaries had been removed. The tumor was gradually increasing in size, and was now beginning to interfere with respiration.

The next case was one of so much interest that he was anxious to have it on record, though the principal part of the operative treatment was not performed by himself. The laparotomy was performed by his colleague, Dr. F. H. Gross, during his term of service, when the speaker was a member of the staff of the German Hospital; the herniotomy by himself during his term, though both were present, and took active part in both operations. He was indebted to Dr. Gross for permission to report the case, which was one of strangulated hernia, occurring in a lad eighteen years of age. The hernia had been a right inguinal which had been strangulated for eighteen hours before the admission of the patient to the German Hospital. On opening the sac of the hernia, nine inches of the bowel had been found to be in a sloughing condition. The ring had been nicked, the healthy ends of the bowel made to protrude, and the gangrenous portion incised. It was proposed, on the next day, to freshen the edges of the healthy bowel and bring them together. By the following morning the patient had developed an intense peritonitis with a temperature of 104°, and the operation had been postponed. After a week of severe illness he had recovered, the sloughing bowel having separated in the mean time.

Some weeks later, as the patient had been slowly emaciating, and the discharges looked as though the artificial anus was high up the bowel, operative interference had been decided upon. The wound had been enlarged directly upward, at first but slightly, but ultimately to the extent of several inches, for the purpose of joining the divided ends of the bowel. In the neighborhood of the artificial anus from two to three feet of intestine had been found, strongly matted together by inflammatory deposits; small projecting loops of a few inches in length had been found free with both ends terminating in the mass. The lower end of the bowel, from which the slough had separated, could not readily be distinguished from any of the other loops; and it had soon appeared that it would be useless to join it to the bowel which formed the artificial anus, as it had been completely obstructed at many points. As the colon had been free, and a few inches of the ileum, at the suggestion of Dr. Weed, then one of the resident physicians, it had been decided to join the bowel forming the artificial anus to the colon. For this purpose a small opening had been made in the cæcum, and

one blade of Dupuytren's enterotome introduced, the other being carried into the bowel forming the artificial anus, and the two blades clamped together. A temporary ligature had been placed around both intestines while the toilette of the peritonæum was made; they had then been fastened in position, and the wound, about six inches in length, closed. The patient had done well after the operation, though it had been found necessary to reapply the enterotome twice before a satisfactory opening could be obtained—three times in all. The fæcal fistula had rapidly contracted, and when the speaker last saw him he was able to wear a pad over it for a week without removal; his bowels acted naturally, he was free from pain, gaining flesh, and was working as elevator boy at the hospital.

**Operation for Strangulated Hernia.**—Dr. Joseph Price read a report of three cases:

Case I.—Miss B., white, aged forty, single, a patient of Dr. Dundore, had had a reducible inguinal hernia of long standing and had never worn a truss. In May, 1887, it had become irreducible, and the bowels had been completely occluded for three days. Well-directed efforts to reduce failing, Dr. Dundore had decided upon operative interference, and invited the speaker to see the patient. The usual symptoms of a strangulated hernia were present, the abdomen being greatly distended and tympanitic. Upon incision, the bowel had been found to be firmly adherent to the sac, requiring considerable dissection to free it completely. After severing the stricture, the bowel had been pulled out for a few inches, and found to be completely occluded by bands of inflammatory tissue due to limited peritonitis at the point of stricture—the neck of the sack. These bands had been broken up by fingers, forceps, and scissors, which had restored the caliber of the bowel and it had immediately collapsed. The bowel had been very dark in color until released from these inflammatory bands, when its color had changed rapidly, and the speaker had decided that the circulation was sufficiently good to restore it to the abdomen. The canal had been closed by buried silk-worm gut sutures; the incision with silk. Dry dressing; recovery.

Case II was that of Miss K., white, aged seventy-five years, never pregnant, a patient of Dr. F. X. Dercum, who had called Dr. Price in consultation on March 1, 1888. He had found the patient in bed and very feeble, with a history of complete occlusion of the bowel for twelve days, and stercoraceous vomiting for eight days. The abdomen had been much distended and tympanitic. There had been a tumor of the size of a hen's egg over the right femoral ring which had presented no fluctuation or other symptoms of local trouble. There had also been a tumor over the left femoral ring of the size of a goose-egg, likewise presenting no symptoms of local trouble. The patient had said that the tumor on the left side had existed for eighteen years, while that on the right side was more recent, but also of several years' standing. Taxis failing to accomplish any results, operation had been suggested as the last resort, and had been performed the next day at the patient's request. As there had been no symptoms specializing either ring as the site of the obstruction, and as the distension had been so great that occlusion at some other point had been feared, the incision had been made in the median line. Examination had then revealed that the tumor on the left side was not a hernia, but either a hydrocele of the canal of Nuck, or an old hernial sac that had become cystic. The gut had been incarcerated at the right femoral ring, and had been very firmly adherent. Fearful of tearing the intestine, he had made another incision over the tumor, and had been compelled to dissect the intestine from its sac. The intestine had then been drawn through the median incision and carefully examined. It had been found to be greatly congested but speedily cleared, and had been returned to the abdomen. The neck of the sac had been twisted upon itself, and transfixed by deep buried sutures of silk, and stitched to the edges of the ring, the canal being closed by deep silk sutures. The median incision had been closed with silk sutures. Dry dressings. The bowels had moved spontaneously the same evening, and the patient had recovered without a bad symptom. Stitches had been removed the tenth day.

Case III was that of a woman upon whom an operation for ventral hernia had been performed. The hernia had been of fourteen years' standing and had increased from the size of a thimble to that of a pint tin cup. The woman had made a rapid recovery from the operation and in three weeks had been able to get up.

Dr. John H. Packard said that the amount of material presented for discussion in the papers read was so large that it would be difficult to do it justice. In connection with the cases of hernia reported, he briefly mentioned another, in which an old femoral hernia had been subjected to unjust suspicion. The patient, a woman, about fifty years of age, had been brought to St. Joseph's Hospital with intestinal obstruction of four days' standing; her general condition had been bad, and she had had fæcal vomiting. She had had an old left femoral hernia, which had given trouble on several occasions, but had always been successfully reduced. This had been cut down upon, and the sac found to be empty. Laparotomy had been at once performed, a twist of the small intestine being found and relieved, flatus had been discharged per anum, and the intense congestion and distension of the bowel had been relieved so that the mass had been easily returned. In spite of vigorous stimulation hypodermatically and by the mouth, the patient had sunk, and had died in about six hours. In this case, which would be elsewhere reported more in detail, an earlier operation would probably have had a different result.

As illustrating the difficulties attending the diagnosis of abdominal tumors, a case might be mentioned which had occurred at the Episcopal Hospital some years ago. A man had been sent down from the medical to the surgical ward to be operated on for an apparently movable tumor situated on the left side of the belly two inches below the level of the umbilicus. It had been found, however, that the mass was firmly adherent to the parietes, and the operation had been abandoned. The man had died a few months later, and an autopsy had showed that the disease was epithelioma of the pylorus, which had in some way become displaced and fastened by peritoneal adhesions in its abnormal relation.

The seat of pain was very deceptive as an index of the actual lesions in these cases. A woman who had been brought to the Pennsylvania Hospital in 1886 on account of a gunshot wound had complained of pain in the right iliac region only, yet the ball had ranged upward from the left loin to near the right axilla, wounding the pleura, colon, stomach, liver, right internal mammary artery, and right breast.

Dr. William Goodell said that some two years ago he had operated, performing a double ovariotomy. The cysts had been colloid, and there had been no indication of malignancy. About a year afterward, the patient then being apparently well, she had fallen in getting out of a carriage. There had been pain in her right side, considered by her attending physician in the country to be an attack of peritonitis. The pain had afterward shifted to the left hip, growing worse and worse. She had been brought to him again and he had examined her with the utmost care, feeling sure, from the symptoms and from the emaciation that had occurred, that there was malignant disease. He thought that perhaps the stump of the ovary had taken on malignant degeneration. Finding nothing, he had called in a distinguished specialist, who had twice examined her, under ether,

but had failed also to detect a cause for the pain. The actual cautery had been applied along the course of the sciatic nerve, to which region the pain had been referred. Death had taken place in a few weeks, and at the autopsy, which had been requested by the lady before her death, disseminated metastatic cancer of the liver had been found. Clearly the ovarian disease had been malignant in the beginning, and had been the focus from which had sprung the hepatic disease. But the salient point here was pain apparently in the sciatic [nerve, while the site of disease was the liver.

Dr. M. PRICE said that in many cases it would be found that the cause of strangulation of the bowel was adhesion of the small intestine and bands of inflammatory lymph. The pressure and irritation would set up slight peritonitis, and, finally, adhesions. An early exploration would save life. Handling of the bowel and tearing the adhesions, or snipping them with scissors, would do no harm. Sometimes we could not distinguish a mass of matted intestines from a tumor, as in the case of a little colored girl he had opened the other day. By the time the adhesions had been separated and the intestines liberated there had been no tumor. He thought that, in many cases, a fatal result might be attributed to the opium treatment. If any one would employ Epsom salts immediately after the patient came out from the ether, where opium was now used, he would never regret it. He would regret the use of opium. As to removing stitches, if silkworm gut was used, we need not give ourselves any concern. They might be left indefinitely. They would bear a strain of fifty or sixty pounds, and give no inconvenience of any kind.

# Book Notices.

## BOOKS AND PAMPHLETS RECEIVED.

The Applied Anatomy of the Nervous System. Being a Study of this Portion of the Human Body from a Standpoint of its general Interest and Practical Utility in Diagnosis, designed for use as a Text-book and a Work of Reference. By Ambrose L. Ranney, A. M., M. D., Professor of the Anatomy and Physiology of the Nervous System in the New York Post-graduate Medical School and Hospital, etc. Second Edition, rewritten, enlarged, and profusely illustrated. New York: D. Appleton & Company, 1888. Pp. xxxv–791. [Price, $5.]

The Medical Annual and Practitioner's Index. A Work of Reference for Medical Practitioners. 1888, Sixth Year. Bristol: John Wright & Co. Pp. xv–558.

A Manual of the Operations of Surgery, for the Use of Senior Students, House Surgeons, and Junior Practitioners. Illustrated. By Joseph Bell, M. D., F. R. C. S. Edin., Consulting Surgeon to the Royal Infirmary, etc. Sixth Edition, revised and enlarged. Edinburgh: Oliver & Boyd, 1888. Pp. xvi–336. [Price, 6 shillings.]

The Essentials of Medical Chemistry and Urinalysis. By Samuel E. Woody, A. M., M. D., Professor of Chemistry and Public Hygiene, and Clinical Lecturer on Diseases of Children, in the Kentucky School of Medicine. Second Edition, revised and enlarged, with Eighty-five Illustrations. Louisville: John P. Morton & Co., 1888. Pp. 5 to 140. [Price, $1.25.]

Augenscheinliche Heilung eines das Symptomenbild des Carcinoma Ventriculi darbietenden Falles durch den Gebrauch von Cundurango. Von Dr. Franz Foerster, New York. [Aus der "New Yorker Medizinische Presse."]

The Extraction of Cataract, as Influenced by Mycological Development. By A. E. Prince, M. D., Jacksonville, Ill.

An Aseptic Atmosphere. Club-Foot. A Rectal Obturator. Palatoplasty. By David Prince, M. D., Jacksonville, Ill.

The Pulley Method of Advancing the Rectus, with Indications for its Employment. By A. E. Prince, M. D., Jacksonville, Ill. [Reprinted from the "Ophthalmic Review" and "St. Louis Medical and Surgical Journal."]

Thesis for the Doctorship in Medicine. Presented and sustained by Dinitch (Kosta). The Kephir, or Milk Champagne of Caucasus. Origin, Physiological Action, and Therapeutic Importance. New York: W. M. Downs, 1888.

Clinical Notes on Pruritus. By L. Duncan Bulkley, A. M., M. D., etc. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

On the Use of Lanolin and Boric Acid in Certain Diseases of the Skin in Children. By Russell Sturgis, M. D. [Reprinted from the "Boston Medical and Surgical Journal."]

The Physiological Argument in Obstetric Studies and Practice. By A. F. A. King, A. M., M. D., Washington, D. C. Being the Presidential Address delivered before the Washington Obstetrical and Gynæcological Society at the Annual Meeting, October 7, 1887. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Du pneumothorax simple sans liquide et de sa curabilité. Par Le Dr. L. Galliard. [Extrait des "Archives générales de médecine."]

# Reports on the Progress of Medicine.

## ANATOMY.

BY MATTHIAS L. FOSTER, M. D.

PROFESSOR GRUBER contributes the following notes of several anatomical curiosities which he has observed ("Arch. f. path. Anat. u. Phys. u. f. klin. Med.," Bd. cx, Hft. 3):

I. **A Corpusculum Articulare Mobile (Ossiculum Carpi Supernumerarium?) in the Carpo-metacarpal Amphiarthrosis.**—This was an oval body lying free in a cavity hollowed out of the bases of the second and third metacarpal bones and the os magnum, the larger part being in the base of the third metacarpal bone. It was composed of cartilage with a bony nucleus, but the writer objects to the term "supernumerary ossicle," because it did not extend to either the dorsal or palmar surface of the carpal or metacarpal bones, and took no part in the ligamentous apparatus of the wrist. Its origin may have been in a knotty outgrowth of the synovial membrane of the capsule of the intermetacarpal joint, and he thinks that, by pressure and steady growth, it had hollowed the space in which it lay.

II. **Division of the Os Trapezoides into Dorsal and Palmar Trapezoids.**—In this case the trapezoid was divided obliquely into two parts, of which the dorsal was the larger, oval in shape, and occupying, on the dorsal surface of the carpus, the space normally occupied by the trapezoid; the palmar portion was smaller than the corresponding normal part, and cuboidal in shape. The upper portions of their contiguous surfaces were smooth, and covered with cartilage for articulation with one another, while the lower parts of the same surfaces were bound together with ligaments. The changes in the articular surfaces of the surrounding bones were those to be expected from such a division.

The great rarity of this condition is shown by the fact that this is the second case Gruber has seen after examination of 5,500 freshly dissected wrists. Between the time when he found his first case and that when he found the second he examined 3,700 wrists. Only two other cases have been reported, one by Fleach and one by Turner. Gruber is in doubt whether there were originally two cartilaginous trapezoids, or that two centers of ossification in one cartilaginous trapezoid, which did not fuse, had finally produced a joint at their synchondrosis, forming two bones articulating with one another.

III. **A Number of Rare Anomalies of the First Lumbrical of the Hand.**—CASES I AND II. *Substitution of a Muscle springing from the Thumb for the First Lumbrical.*—In the first case the first lumbrical was wanting, the second and third situated normally, and the fourth, divided into two parts, inserted into the extensor tendons on the ulnar

side of the fourth and the radial side of the fifth fingers. The place of the absent first lumbrical was supplied by a spindle-shaped muscle, which arose from the internal sesamoid bone in the capsule of the metacarpo-phalangeal joint of the thumb, and passed to the forefinger in the fold of integument between the thumb and forefinger, separated by a large triangular space from the adductor pollicis. It was inserted, as the normal lumbricalis, by a tendinous expansion into the tendon of the extensor longus digitorum to the index finger. In the second case the other parts were also quite abnormal. The middle phalanx of the index finger and the first lumbricalis were wanting; the second, third, and fourth lumbricals were inserted respectively into the ulnar sides of the extensor tendons of the index, middle, and ring fingers. The little finger was provided with no lumbricalis. The flexor tendons of the index finger divided over the interphalangeal joint into two portions, one being inserted in the first, the other in the last phalanx. The extensor indicis was inserted into the last phalanx. The muscle which supplied the place of the missing first lumbrical was very similar to the one described in the first case, the chief difference being that it arose from the internal sesamoid bone of the metacarpo-phalangeal joint of the thumb by two short tendons, which embraced the sheath of the flexor pollicis.

Case III. *Duplicature of the First Lumbrical by a Supernumerary Muscle springing from the Thumb.*—The presence of a supernumerary lumbrical was the only anomaly in this case. This was a slender muscle, which arose from the internal sesamoid bone of the metacarpo-phalangeal joint of the thumb, crossed the tendon of the adductor pollicis, passed between the first lumbrical and the outer head of the first interosseous, and united by a tendinous expansion with the insertion of the first lumbrical. The adductor pollicis was inserted between the origin of this muscle and the outer head of the first interosseous.

Case IV. *Substitution of a Muscle arising from the Anterior Annular Ligament (Ligamentum Carpi Volare Proprium) for the First Lumbricalis.*—In this case the place of the absent first lumbrical was supplied by a spindle-shaped muscle, which arose from the posterior surface of the anterior annular ligament some distance below its upper border, passed down in the palm of the hand near the flexor indicis, crossed the tendon of the flexor longus pollicis, the inner portion of the flexor brevis pollicis and the adductor pollicis, and was inserted into the tendon of the extensor longus digitorum on the radial side of the first phalanx of the index finger.

Case V. *Duplicature of the First Lumbricalis by a Supernumerary Muscle arising from the Anterior Annular Ligament (Ligamentum Carpi Volare Proprium).*—Here the normal lumbricalis was in position, and was supplemented by a muscle similar to that described in the fourth case, which arose from the posterior surface of the anterior annular ligament, and passed beneath the palmar fascia, beside the normal lumbrical, to be inserted with it into the tendon of the extensor longus digitorum.

Case VI. *A Second Head of the First Lumbricalis arising from the Anterior Annular Ligament (Ligamentum Carpi Volare Proprium).*—In this case the origin of the muscle was divided, one part occupying the normal origin of the muscle, the other arising from the lower border of the anterior annular ligament, and joining the first by means of a tendinous insertion.

IV. **Occurrence of the Branch to the Index Finger of the Flexor Digitorum Sublimis as a "Venter Bifissus Digastricus Biceps."**—In the lower part of the forearm the branch of the flexor sublimis digitorum which supplies the index finger was divided into two fleshy portions, which became tendinous, and were united in another fleshy portion in the palm of the hand, which in turn became tendinous, and was inserted in the normal manner into the lateral margins of the second phalanx. The palmar portion seemed to be a direct continuation of the tendon of the ulnar division, and received the tendon of the radial division in the lower half of its radial border. The fleshy portion in the palm was placed behind the anterior annular ligament and the palmar fascia. It commenced at about the upper border of the ligament, and ended at the metacarpo-phalangeal joint of the index finger. It received also a broad, fleshy accessory portion from the lower border of the anterior annular ligament. A similar combination of anomalies in a single tendon has never before been reported, to Professor Gruber's knowledge, and the rather long name he has given it seems to be justified.

V. **A Rudimentary Musculus Obliquus Abdominis Externus Accessorius.**—This muscle was found symmetrically placed on each side between the external and internal oblique muscles, arising from the posterior third of the cartilage of the tenth rib, passing obliquely downward and inward, to be inserted into the sheath of the rectus abdominis 7 ctm. below a horizontal line drawn through the umbilicus and 13 ctm. above the pubic bone. It measured 16 ctm. long, 3 mm. broad, and 2 mm. thick.

**The Synovial Pouches and Sheaths of the Tendons of the Palm of the Hand.**—Extensive observations have been made by Von Rosthorn ("Arch. f. klin. Chir.," "Ctrlbl. f. Chir.," 1888, No. 5) regarding these synovial pouches which lead him to the following conclusions:

The tendons passing from the front part of the forearm to the hand are united by loose connective tissue into a common bundle and receive the vessels and nerves serving for nourishment through a membrane (*Gekröse*) extending toward the dorsum. Beneath the annular ligament are usually two synovial pouches passing through the same sheath, best named the radial and ulnar synovial pouches of the palm. The first of these incloses only the flexor tendon of the thumb, while the other incloses the flexor tendon of the fifth, and perhaps of the fourth, digit. The flexor tendons, both deep and superficial, of the second and third digits lie entirely outside either synovial pouch. In the newly born the flexor tendons of all the digits have separate synovial sheaths, not joined to the carpal pouches, but later the sheaths of the tendons of the thumb and little finger gradually approach the carpal pouches until they fuse and produce the condition considered to be the rule in adults. On the other hand, the deep flexor tendons of the three middle digits retain in adult life closed, separate phalangeal synovial sheaths having no communication with the carpal pouches. Of the tendons of the superficial flexors, those of the second and third digits lie, as has been said, entirely outside the carpal pouches. For the most part they are inclosed only by loose connective tissue, but sometimes they present quite independent, closed, genuine synovial sheaths, especially that of the index finger in hard workers. Those of the fourth and fifth digits are, during their course, in great part surrounded by sheaths, which are, for a considerable distance, in free communication with the ulnar pouch, and must therefore be considered integral parts of the pouch. Three carpal pouches may occasionally be found. Von Rosthorn has never observed any communication between the carpal synovial pouches, or between them and the cavity of the joint. In the majority of cases the proximal extremities of the synovial pouches are found just on the distal side of the line of the radio-carpal joint, but this is quite subject to individual differences. The distal extremities vary less in position; on the ulnar side they are, as a rule, 2 ctm. above the metacarpo-phalangeal articulation of the little finger; on the radial, at the junction of the middle and lower thirds of the first metacarpal bone. The radial pouch is the smaller and the more slender, except in its proximal portion, where it is broader than the ulnar. Both pouches when distended have an hour-glass shape, because they are bound across by the anterior annular ligament.

**Relations of the Pelvic Peritonæum as shown by Frozen Sections, with Special Reference to Suprapubic Cystotomy.**—The object of Dr. Strong, in the paper read by him at the International Medical Congress ("Ann. of Surg.," January, 1888) before the Section in Anatomy, was to demonstrate whether, in order to perform suprapubic cystotomy without endangering the peritonœum or doing undue violence to the connective tissue back of the pubes, the bladder should be empty or partially filled, either alone or in connection with a distended rectum. The bladder and rectum being empty, the apex of the bladder and the peritoneal reflection are a little above the arch of the pubes. In moderate distension of the bladder the peritoneal reflection is below the apex. Distension of the rectum alone elevates the base of the bladder, but does not raise materially the vesico-abdominal fold of peritonæum. Distension of the bladder alone, in thin subjects particularly, requires a relatively greater amount of fluid to elevate the peritoneal reflection, as the bladder is not crowded against the abdominal wall, but rather falls away from it. When the distended bladder is pressed forward by distension of the rectum, the peritoneal reflection is lifted, and can be

lifted highest by a moderate distension of each viscus, the rectum being distended first. Air injected into the bladder tends to lift it and the peritoneal reflection out of the pelvis better than water. In very fleshy subjects, with flabby or pendulous abdominal walls, the bladder is relatively freely movable.

**Thyreoid Gland.**—Whitehead ("Lancet," March 10, 1888) thus briefly describes the gross structure of the thyreoid gland:

It consists of two lateral lobes, one on each side of the trachea, connected by a transverse portion called the isthmus, which passes in front of the second and third cartilages of the trachea, to which it is attached by a firm layer of fascia. Sometimes the gland is supplemented by a third lobe situated on the left side of the upper part of the isthmus, and again, less frequently, a lobe exists which passes behind the trachea and in front of the œsophagus. These supernumerary thyreoids are much more frequently found in dogs than in man. They vary in size from that of a millet-seed to that of a filbert. Although the normal thyreoid only weighs about two ounces, the vascular supply is very great. "It has been estimated that 'the sum of the sectional area of the thyreoid arteries is more than half that of the cerebral arteries,' and the arteries during disease have been found augmented to a third of an inch in diameter." It is surrounded by a fibrous capsule, from the inner surface of which are derived trabeculæ of connective tissue penetrating into the interior of the mass and forming the stroma of large alveolar spaces, which are abundantly supplied with blood-vessels and lymphatics. The acini are lined with epithelium which secrete from the blood a glairy fluid which is reabsorbed in health by the lymphatics.

Dr. Hale White (*ibid.*, March 17, 1888), after an examination of forty thyreoids, says that the size is very variable, being, as a rule, smaller in adults over fifty than in those under that age. Its shape also is inconstant. The vesicles average one twenty-fifth of an inch in diameter. The more distended the vesicle, the flatter its epithelium, and the less the connective tissue between the vesicles. Parenchymatous cells, leucocytes, and red blood-corpuscles can all immigrate into the vesicles and there, together with perhaps the epithelial cells, form a granular débris. Indentations on the edge of the colloid matter and holes in its substance are due to the invasion of parenchymatous cells and possibly other cells. Sometimes the colloid matter has a double contour, and at times contains oxalate of lime and cholesterine crystals. None of these changes can be associated with any particular disease. The amount of connective tissue is variable.

**Peculiar Ossification of the Occipital Bone.**—Dr. Campbell describes ("Glasgow Med. Jour.," Feb., 1888) a skull in which the tabular or supra-occipital portion of the occipital bone was divided into two almost equal portions by a suture extending between the two lateral angles immediately above the external occipital protuberance. The upper portion was again divided symmetrically into three distinct pieces, a median and two lateral of about equal size, and united by deep, finely serrated sutures. He thinks they were not large Wormian bones because there were two small ones present in the lambdoidal suture, and, as the entire bone above the occipital protuberance was involved, the condition seemed to be rather an instance of the interparietal bone found in some of the lower animals, as the rodents, being represented in man. "The explanation of the condition is to be looked for in the process of ossification of the supra-occipital portion of the occipital bone which commonly starts from four centers, two below in the cartilaginous base of the skull and two above in membrane, so that probably in the present case the two centers below formed in the cartilage fused and remain distinct from the centers above formed in membrane, of which it is likely there were four, two uniting to form the central piece and remaining distinct from the one on each side, forming the separate pieces of bone."

**Remarkable Vaginal Septum.**—The following condition is described by Dr. Davis as found by him in a German woman, twenty-one years of age, at that time in the first stage of labor ("Ann. of Gynæcol.," March, 1888):

The otherwise normal external generative organs inclosed complete rudimentary external female generative organs, the labia of the rudimentary pudendum being covered with integument, and the intravaginal extension with mucous membrane identical in appearance with the surrounding mucous membrane of the vagina, furnished with cristæ except at the part attached to the cervix uteri, where it was aponeurotic and fibrous. It formed a broad, thick, double septum dividing the neck of the uterus and vagina. In contraction of the sphincter muscles the abnormal part would contract and become rigid also, showing a complete and perfect relation to the sphincter vaginæ and ani, all being rings of the same muscle. Dissection of the rudimentary apparatus after removal revealed normal vaginal tissue, and demonstrated that the vaginal muscle in its return from the sphincter ani split or gave off enough fibers to form a second or intravaginal ring.

**Nervous Anomalies.**—Birmingham notes these anomalies ("Lancet," March 3, 1888): 1. A spinal accessory nerve ending in the sterno-mastoid, without giving any branches to the trapezius, which was supplied by the third and fourth cervical nerves. 2. Buccal branch of the inferior maxillary nerve absent; its place taken by a nerve arising from the orbital branch of the superior maxillary division of the fifth nerve, which pierced the outer wall of the orbit and ran down to be distributed as a normal long buccal. 3. A nerve larger than the long pudendal, arising by two roots from back of sacral plexus, corresponding to the second and third sacral nerves, piercing the great sacro-sciatic ligament, crossing and communicating with the long pudendal, distributed to the skin of the upper half of the inner aspect of the thigh. 4. A nerve to an axillary muscular arch, springing, without communicating with any other nerves, from the inner cord of the brachial plexus, close to the origin of the nerve of Wrisberg. 5. A small occipital nerve divided into two parts, the posterior crossing the occipital triangle obliquely, passing under the trapezius, piercing the muscle two inches from its insertion, giving off no branches, and returning again to the posterior border of the sterno-mastoid to be distributed with the rest of the nerve. 6. The origin of a median nerve by three pairs of heads; one head in each pair came from the inner, the other from the outer cord of the brachial plexus, the artery passing between the heads. The first pair had a high origin, the second was the largest, and situated at the normal level; the third pair, the smallest, joined the others three inches down the arm. 7. Absence of the nerve of Wrisberg arising from the inner cord of the plexus; its place taken by a branch of the first dorsal nerve, which ran outward between the pleura and the first internal intercostal muscle, pierced the thoracic wall and reached the axilla. The distribution was that of the nerve of Wrisberg. This anomaly he has found three times.

Brooks (*ibid.*) notes a case in which the branch of the median to the first lumbricalis was large, pierced that muscle, and united to form an arch with a twig from the branch of the median which divides to supply the contiguous sides of the index and middle fingers. This lay under the flexor tendon of the index finger, gave two twigs to the metacarpo-phalangeal joint of the index finger and one to the first dorsal interosseous muscle, supplying mainly the distal part, as the proximal part was supplied, as it normally is, by a branch from the deep palmar division of the ulnar.

**Overlapping of Nerves.**—Brooks (*ibid.*) read a paper on the distribution of the cutaneous nerves on the dorsum of the hand, showing that these nerves overlapped each other rather than anastomosed. He had demonstrated the overlapping of the radial and dorsal branches of the ulnar in several cases. In the case which he examined with the greatest care he found they overlapped in their distribution over the index, middle, and ring fingers, with a corresponding area on the back of the hand. He had also traced filaments of the musculo-cutaneous and the external cutaneous branches of the musculo-spiral overlapping the radial and ulnar, the musculo-spiral in one case reaching the metacarpo-phalangeal articulation of the little finger. He had found the palmar nerves taking part in the dorsal supply of all the fingers and thumb; in several cases he had traced strong branches of the median passing under the thumb-nail and ramifying in the bed of the nail.

**Rectum.**—Otis ("Ctrlbl. f. Chir.," 1888, No. 12) describes carefully the sacculi and folds of the rectum. The chief folds are two or sometimes three in number, are crescentic, and occupy rather more than one half the periphery of the rectum. The first is on the right side 6·5 ctm. above the anus, the second on the left side 2·5 ctm. higher, and the third is on the left side 4 to 6 ctm. high. Often the distance between them is so slight that they unite to form a ring about the rec-

tum. On the outer walls of the rectum are several wrinkles which are ordinarily supposed to be dependent on the flexure of the gut. This he claims is not the true explanation, but that they are the same as the similar wrinkles of the colon, caused by the longitudinal fibers upon whose development their depth depends. He traces the longitudinal fibers to pass in such a manner after leaving the sigmoid flexure as to form anterior and posterior ligaments for the rectum. Numbers of bands formed by the circular fibers can be found, an especially marked band being usually known as the third sphincter.

# Miscellany.

**The late Dr. Agnew.**—At a meeting of the New York Ophthalmological Society, held on Monday, May 14, 1888, the following reports were read:

The New York Ophthalmological Society records with profound sorrow the death of one of its founders and original members, Dr. Cornelius Rea Agnew, who died of peritonitis, on April 18, 1888, aged fifty-seven years, seven months, and twenty days.

Dr. Agnew was president of this society during the years 1864 and 1865, and was for many years a constant attendant at its meetings. He took a leading part in its scientific discussions, and his opinions, delivered in well-chosen words, were always listened to with that respect to which his vast clinical experience and his sound judgment entitled them. For over twenty years Dr. Agnew ranked with the foremost ophthalmologists and otologists of the world, and his original contributions to practical, and especially to operative, ophthalmic and otic science, though not comparatively numerous, were exceedingly valuable. The method devised by him for the removal of secondary cataract has long been referred to and described in all the text-books upon diseases of the eye, and is still accepted as the best method of operating in properly selected cases. His methods of removing foreign bodies from the cornea when they are imbedded so deeply as to project into the anterior chamber, which was published, with a wood-cut, in the "Medical Record," vol. i, No. 11, 1866, is still resorted to as the only available operation in such cases. Later, in 1874, he also published a method of removing a foreign body deeply imbedded in the cornea by trephining.

The operation for the removal of chalazion, described in Wells's "Treatise on Diseases of the Eye" (4th Am. ed., Phila., 1883, page 90), by making an incision through the margin of the lid into the tumor, and then scooping out the contents, was devised by him, though he never published it.

In the "American Practitioner" for January, 1871, he published a paper on the "Treatment of Lacrymal Diseases." In this paper were outlined the methods of treatment which have since been pursued by many ophthalmic surgeons.

In 1875 he published a paper on "Canthoplasty as a Remedy in Certain Diseases of the Eye," in which he made the different steps of the operation clear by means of wood-cuts, and in which he modified the operation by recommending a division of the external canthal ligament.

His "Method of Operating for Divergent Squint," by advancement of the internal rectus and tenotomy of the externus, described by him at the meeting of the American Ophthalmological Society, held at the Massachusetts Charitable Eye and Ear Infirmary in 1886, and published in the transactions for that year, has since been practiced by ophthalmic surgeons everywhere. He also published a "Contribution to the Subject of Strabismus" in the "Transactions of the American Ophthalmological Society" for 1870.

His last and, perhaps, most valuable contribution to operative surgery of the eye was his "Operation with a Double Needle, or Bident, for the Removal of a Crystalline Lens dislocated into the Vitreous Chamber," published in the "Transactions" for 1885. Other papers published by Dr. Agnew were "A Method of dressing Eyes after Cataract Extraction" (1869), a "Contribution to the Statistics of Cataract Extraction of One Hundred and Eighteen Cases" (1874), a "Case of Double, extremely Minute, and apparently Congenital Lacrymal Fistula" (1874), "Consecutive Enucleation of both Eyes for Recurring Glioma" (1875), "Cases of Ophthalmic Diseases in which Enforced Exposure of the Eyes to Light and Air was Salutary" (1876), "A Preliminary Analysis of Ten Hundred and Sixty Cases of Asthenopia" (1876), "Cases of Persistent Pupillary Membrane" (1880), "The Insufficiency of the Ophthalmoscope as the Sole Test of Errors of Refraction" (1880), "Near-sightedness in the Public Schools," "Medical Record," vol. xii, No. 3, and, besides these, numerous clinical lectures, cases, and papers on subjects not medical.

Dr. Agnew was taken away when in the meridian of his usefulness. At the time of his death he was a director of the Manhattan Eye and Ear Hospital, of the Brooklyn Eye and Ear Hospital, a trustee of the New York Academy of Medicine, of Columbia College, of the College of Physicians and Surgeons, a governor of the Woman's Hospital in the State of New York, a manager of the Hudson River State Hospital for the Insane, and of the New York Skin and Cancer Hospital. His hand was in many great and noble works of charity, and his sympathies were extended to everything that elevates and ennobles humanity. Those who knew him most intimately considered him the highest type of a true Christian gentleman, and felt the absolute integrity of the man in everything that he did.

His loss will be incalculably felt in this city and in this society.

[Signed] Henry D. Noyes,
D. B. St. John Roosa,
J. S. Prout,
David Webster.

**The late Dr. E. G. Loring.**—Dr. Loring joined the New York Ophthalmological Society, January 13, 1868. He was elected president of the society, January 12, 1874. He died suddenly in this city, April 23, 1888. During the twenty years in which he was a member of this society he was a constant attendant at its meetings, no one was more beloved than he for his many social qualities, and in the scientific work of the society his word was listened to with a respect accorded to but few. It is fitting that a brief sketch of his life should be entered upon our minutes.

Dr. Loring was born in Boston, September 28, 1837. He was a son of Judge Edward Greely Loring. For a short term a member of the class of 1861 at Harvard College, he went abroad and began the study of medicine in Italy. For three years he was enrolled as a student at Florence and Pisa, and at the university of the latter place he was a devoted student in anatomy of Professor Duranti. In 1862 he returned to America, and in 1864 graduated at the Harvard Medical School, winning the Boylston Prize Essay.

Upon receiving his degree in medicine, Dr. Loring devoted himself to the study of ophthalmology under the direction of Dr. Hasket Derby, of Boston. He was appointed ophthalmic externe by Dr. H. W. Williams at the City Hospital, and subsequently served for a short term at the Massachusetts Charitable Eye and Ear Infirmary.

In 1865 he established himself in practice in Baltimore, remaining there but little over a year, when he came to New York to become associated with the late Dr. C. R. Agnew. Four years later this partnership was dissolved, and until his death Dr. Loring practiced medicine in New York city.

He was a surgeon of the Manhattan and Brooklyn Eye and Ear Hospitals, and subsequently a consulting surgeon of the latter institution. He was in 1874 appointed an ophthalmic surgeon of the New York Eye and Ear Infirmary, and held a similar position at St. Luke's Hospital.

Original in thought, scientific in method, bold in execution, Dr. Loring was a skillful surgeon and a thoroughly trained physician. As an author he was conspicuously known both in this country and abroad for his original contributions to medical literature. In this brief memoir it would not be in place to discuss the value and extent of his literary work. His writings were upon nearly every subject embraced in the science of ophthalmology. His "Text-book of Ophthalmoscopy," the completion of the second volume of which occupied the last days of his life, will remain for all time his most lasting memorial.

Dr. Loring made the refraction ophthalmoscope a working instru-

ment, to which nothing of any importance, except the tilting mirror, has been added since. By whatever name the latest manufacture is known, this instrument is still the Loring ophthalmoscope, vastly better than all its predecessors.

In the discussions of this society he was frank and straightforward in his action and speech, scholarly in his address; the type of a brilliant, honest, and independent man. A keen observer, unfettered by the traditions of the schools, his opinions based on sound anatomical and physiological knowledge, he was a hater of sham, a follower of truth for the truth's sake.

[Signed] RICHARD H. DERBY,
D. B. ST. JOHN ROOSA,
ARTHUR MATHEWSON.

**A Bequest to the New York Academy of Medicine.**—The will of the late Dr. Wesley M. Carpenter contains the following clauses:

"FIRST. The sum of five thousand dollars to the New York Academy of Medicine, with which to found a lectureship, to be known as 'The Carpenter Lectureship.' This sum shall be paid to the trustees of said New York Academy of Medicine, who shall expend the interest thereon, annually, for one medical lecture. The lecturer shall be selected and the time at which the lecture shall be delivered shall be determined by a majority of the Council of the Academy, and the Academy shall publish the lecture in pamphlet form immediately after its delivery.

"If the Academy will not accept this gift and guarantee my executor that the above stipulations will be carried out faithfully, the proposed donation shall remain to be disposed of in my estate."

**The Indorsement of Nostrums.**—The following resolutions were adopted at the thirteenth annual session of the State Medical Society of Arkansas, held at Fort Smith, April 25, 26, and 27, 1888:

*Resolved*, That the members of the State Medical Society of Arkansas have for years observed with pain and mortification the patronage given to charlatanism in all its multifarious aspects by the religious press of our country.

*Resolved, further and most specifically*, That the appearance in religious papers, ostensibly published for the inculcation of truth and morality, of serious homilies on prayer and praise, side by side with cures for consumption, cancer, Bright's disease, and other incurable ailments to which an editorial indorsement is often given, as well as secret preparations under the cloak of remedies for disease, but really intended for purposes of fœticide and other immoral uses, largely tends to shake the confidence of the profession of medicine in the integrity and purpose of the managers and editors of such journals.

*Resolved, further*, That it has been the well-known custom of the profession to render services gratuitously to clergymen, which we do not regret nor do we propose to recall, yet we must assert that the frequent occurrence of indorsements and recommendations of the clergy of peripatetic doctors and advertising charlatans has in many instances been the only reward of our gratuitous services.

*Resolved, further*, That we are aware that the editors of religious newspapers admit the painful situation in which these advertisements place them, and attempt to excuse themselves by saying that it is necessary to take these advertisements in order to obtain means to conduct their papers; but in the language of orthodox theology we would say: "Put behind you that damnable doctrine that we must do evil that good may come."

*Resolved, further*, That, as a society, we declare that the continued perpetration of the above offenses by some of the clergy and religious press brings harm to the bodies of their constituency, and damages materially their influence upon the thinking class of the medical profession.

*Resolved*, That the secretary be instructed to furnish copies of these resolutions to the religious and medical press of the United States, to the American Medical Association, and to the State medical societies, soliciting their co-operation in bringing about a correction of these grievous and palpable errors.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending May 25th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending May 5th corresponded to an annual rate of 18·7 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 15·1, and the highest in Salford, viz., 28·1 in a thousand. Small-pox caused 8 deaths in Sheffield, 2 in Bristol, 1 in Oldham, and 1 in Hull.

*London.*—One thousand four hundred and twenty-nine deaths were registered during the week, including measles, 14; scarlet fever, 23; diphtheria, 15; whooping-cough, 87; typhus, 1; enteric fever, 11; diarrhœa and dysentery, 19. The deaths from all causes corresponded to an annual rate of 17·4 in a thousand. Diseases of the respiratory organs caused 287 deaths; different forms of violence, 39; and 4 suicides were registered. In greater London 1,812 deaths were registered, corresponding to an annual rate of 17·1 in a thousand of the population. In the "outer ring" 24 deaths from whooping-cough and 5 from fever were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending May 5th in the sixteen principal town districts of Ireland was 25·1 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 14·5, and the highest in Drogheda and Kilkenny, viz., 38·1 in a thousand. In Dublin 147 deaths were registered, including 7 from whooping-cough; enteric fever, 2; measles, 1; diarrhœa, 1; and dysentery, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending May 5th corresponded to an annual rate of 19·5 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Perth, viz., 14·4, and the highest in Glasgow, viz., 22 in a thousand. The aggregate number of deaths registered from all causes was 493, including 6 from measles; scarlet fever, 3; diphtheria, 9; whooping-cough, 11; fever, 3; and diarrhœa, 3.

*Bordeaux.*—Five hundred and four deaths were registered during the month of April, 1888, including typhoid fever, 9; and diphtheria and croup, 16.

*Havana.*—The sanitary inspector reports 7 deaths from yellow fever and 8 from small-pox during the week ending May 12, 1888.

*Hobart.*—Sixty-six deaths were registered during the month of February, 1888, including 9 from enteric fever.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | May 5. | 2,260,945 | 1,010 | .. | .... | 5 | .... | 13 | 4 | 48 |
| Glasgow | May 5. | 545,678 | 223 | .. | .... | .... | .... | .... | 1 | 8 |
| Warsaw | April 21. | 444,814 | 233 | .. | .... | 5 | .... | .... | 1 | 4 |
| Warsaw | April 28. | 444,814 | 233 | .. | .... | 3 | .... | .... | .... | 7 |
| Calcutta | April 7. | 433,219 | 252 | 68 | .... | .. | .... | .... | .... | .... |
| Amsterdam | May 5. | 389,916 | 178 | .. | .... | .... | .... | .... | .... | 5 |
| Rome | March 31. | 382,973 | 202 | .. | .... | 4 | 3 | 2 | 1 | .... |
| Copenhagen | April 24. | 300,000 | 141 | .. | .... | .... | .... | .... | 2 | 6 |
| Copenhagen | May 1. | 300,000 | 116 | .. | .... | .... | .... | .... | 2 | 8 |
| Munich | April 28. | 275,000 | 143 | .. | .... | .... | .... | .... | 6 | 5 |
| Palermo | May 5. | 250,000 | 108 | .. | .... | .... | .... | .... | 4 | 3 |
| Belfast | April 28. | 227,022 | 124 | .. | .... | .... | .... | .... | 1 | .... |
| Havana | May 5. | 208,000 | 112 | .. | 6 | 7 | .... | 1 | .... | .... |
| Genoa | May 5. | 179,505 | 96 | .. | .... | .... | 1 | .... | .... | .... |
| Leipsic | May 5. | 170,000 | 68 | .. | .... | .... | .... | .... | 1 | 1 |
| Trieste | April 21. | 154,500 | 94 | .. | .... | .... | .... | .... | 1 | 1 |
| Trieste | April 28. | 154,500 | 89 | .. | .... | 1 | .... | .... | .... | 1 |
| Stuttgart | May 5. | 125,510 | 43 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | April 28. | 122,000 | 50 | .. | .... | .... | .... | .... | .... | .... |
| Havre | May 5. | 112,074 | 75 | .. | .... | 5 | 2 | .... | .... | .... |
| Barmen | April 28. | 109,000 | 44 | .. | .... | .... | .... | .... | .... | .... |
| Leghorn | May 6. | 101,718 | 32 | .. | .... | .... | .... | .... | .... | .... |
| Mayence | April 28. | 65,802 | 31 | .. | .... | .... | .... | .... | .... | 1 |
| Cienfuegos | May 7. | 40,753 | 17 | .. | 1 | 4 | .... | .... | .... | .... |
| Vera Cruz | May 10. | 23,800 | 18 | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | April 29. | 23,631 | 9 | .. | .... | .... | .... | .... | .... | .... |
| Antigua | April 29. | 15,847 | 6 | .. | .... | .... | .... | .... | .... | .... |
| Cape Haytien | May 6. | 15,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Cartagena, Colo. | April 21. | 13,000 | 11 | .. | .... | .... | .... | .... | .... | .... |
| Cartagena, Colo. | April 30. | 13,000 | 12 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | May 5. | 12,000 | 9 | .. | .... | .... | .... | .... | .... | .... |
| Turk's Island | April 25. | 5,000 | 3 | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

Dr. Cyril Williams, secretary of the health department, San Francisco, Cal., writes as follows:

"San Francisco, Cal., *May 9, 1888.*

"I inclose copy of a letter to the health department, New York, March 20th; also a paragraph from one of to-day's San Francisco papers. The health officer desires to call your attention to the speedy manner in which infected passengers are sent west from the Atlantic ports."

(Extract from newspaper inclosed.)

"The steamship Main, from Bremen, which had been detained at quarantine for two days on account of a case of small-pox being discovered on board, reached Pier 8, Locust Point, Baltimore, yesterday. Her 1,147 emigrants were discharged and sent west by the Baltimore and Ohio Railroad.—'Dispatch.' That is the way they do it in the East. On this coast she would have been kept in quarantine about a month."

(Inclosure.)

"San Francisco, Cal., *March 20, 1888.*

"Dear Sir: Yesterday Anton Anderson, aged twenty-one, a native of Norway, was sent to the small-pox hospital. He stated that he came from Glasgow by the steamship Circassian. Immediately on landing at New York he left for this place, arriving here on the 17th instant by the Southern Pacific Railroad. According to his account, he was taken sick on the 11th, the eruption appearing on the 14th. It is a bad case of confluent small-pox.

"The Health Officer, New York."

*Key West, Fla.*—The medical officer in charge of the Marine-Hospital Service reports, under date of May 17th, that "the master of a sponging-schooner came ashore last night and was found this morning to be suffering with small-pox. The vessel had been absent from here for twelve days. The case has been sent to the pest-house. The crew were collected, put on board, and sent in vessel to the local quarantine."

*Memphis, Tenn.*—The medical officer in charge of the Marine-Hospital Service reported by telegraph, under date of 23d instant, "two cases of small-pox reported in city."

The following letter has been received from Dr. C. P. Wilkinson, president of the Board of Health of the State of Louisiana:

"New Orleans, *May 17, 1888.*

"I have reliable information that baggage from Havana is transferred from steamer to railroad at Port Tampa without any disinfection whatever, and is distributed to various points in the United States."

Upon receipt of the letter, the following telegram was sent to Dr. J. P. Wall, president of the Board of Health of Tampa, Fla.:

"Washington, D. C., *May 19, 1888.*

"New Orleans Board of Health states that baggage from Havana is transferred from steamer to railroad without disinfection. Is this correct?"

To which a reply was received as follows:

"Tampa, Fla., *May 21, 1888.*

"Disinfection on steamer in hold. Having disinfecting apparatus fitted up at Port Tampa. This is the new wharf of Plant Steamship Line, nine miles from town. New Orleans need not fear anything from here. Will write you. Plant City has been thoroughly cleaned up and disinfected, and free of sickness. J. P. Wall,

"*President Board of Health.*"

*Pittsburgh, Pa.*—Information has been received from unofficial sources that three cases of glanders have appeared at Pittsburgh.

**The Massachusetts Medical Society.**—The one hundred and seventh annual meeting will be held in Boston, on Tuesday and Wednesday, June 12 and 13, 1888. The following papers are included in the programme: "Private Mental Sanitaria and the Inebrieties," by Dr. A. W. Thompson, of Northampton; "Therapeutic Nihilism," by Dr. M. D. Clarke, of Haverhill; "Uterine Displacements and their Influence on the General Nervous System," by Dr. F. H. Davenport, of Boston; "The Modern Practice of Surgery," by Dr. O. K. Newell, of Boston; "The Treatment of Hypertrophy of the Prostate, with especial Reference to Operative Measures," by Dr. F. S. Watson, of Boston; "A Study of Phthisis and Pneumonia in Massachusetts; Statistical and Climatological," by Dr. W. E. Smith, of Boston; "Postural Treatment of Constipation," by Dr. E. T. Williams, of Roxbury; "The Surgical Treatment of Malignant Growths," by Dr. M. H. Richardson, of Boston; "The Value of Corrosive Sublimate as a Practical Disinfectant," by Dr. W. B. Bills, of Cambridge. The annual discourse will be delivered by Dr. B. Joy Jeffries, of Boston.

## ANSWERS TO CORRESPONDENTS.

*No. 187.*—At Newport, R. I., June 11, 1889.

*No. 188.*—Our impression is that you are liable for the amount charged, if no objection was made at the time the attendant called in the other physician.

*No. 189.*—In New York only those institutions which belong to the association receive a proportion of the collection, the distribution of which is controlled by by-laws of the association, but is substantially on the basis suggested by you.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### PLEURISY AS A PREDISPOSING CAUSE OF PHTHISIS PULMONALIS.*

BY BENJAMIN F. WESTBROOK, M. D.,
BROOKLYN.

Now that it has been proved almost beyond a doubt, by the researches of modern bacteriologists, that the *Bacillus tuberculosis* is the exciting cause of phthisis pulmonalis, it remains for us, as practical physicians, to inquire whether there are any demonstrable local or general pathological conditions which may so affect the tissues as to render them specially liable to the invasion of this micro-organism.

In view of the fact that but one out of every seven of our population succumbs to this disease, it needs must be admitted that something of the nature of a predisposing cause is operative in susceptible individuals. Whether abnormal conditions of the pleura are, of themselves, capable of bringing about such a vulnerability of the tissues of the lung as to make them a favorable nidus for the development of the tubercle bacillus, it is difficult to say in the present state of knowledge. But that this is so in some persons is rendered strongly probable by the occurrence of such cases as I shall presently relate. In other instances, in which the development of a pleuritis, though non-tubercular, is shortly followed by the advent of pulmonary tuberculosis, the local inflammation may be taken as an indication of constitutional weakness, which would probably have led to the development of the major disease sooner or later. In this case the pleurisy would constitute a warning which should not be disregarded by either the physician or patient. Pleurisy has been so frequently observed as an antecedent, either immediate or remote, of tubercular disease of the lungs, that it has not failed to attract the attention of clinicians from the earliest times, and there has been much discussion as to the true relationship which the two diseases bear to each other. Without entering into the history of this discussion, which is undoubtedly quite familiar to my hearers, I will proceed at once to make a classification which will, I hope, serve to throw some light upon this much-vexed question.

Cases of pleurisy antedating the outbreak of phthisis of the lungs may be divided into five classes:

1. Those in which a pleurisy with effusion, occurring in a person apparently in good health, is immediately followed by evidences of pulmonary tuberculosis which usually runs a rapid course to its fatal termination. This is the phthisiogenic tubercular pleurisy *d'emblée* of Renaud.† It is a form of the disease which is frequently observed both in hospital and in private practice, and of which I have seen many instances. But as the pleurisy is undoubtedly tubercular in its origin, and forms but a part of the general disease, its discussion is not germane to our subject. Under this head might also be included the cases reported by Knaevenagel and Jaccoud,* in which cascous foci are found in the lung immediately subjacent to the inflamed pleura, from which foci Jaccoud maintains that auto-infection results.

2. This class includes those instances in which a serofibrinous pleurisy is followed by the slow development of chronic interstitial pneumonia—the fibroid phthisis of Sir Andrew Clark. Whether the interstitial formation of connective tissue in this disease is due to a simple extension of a low grade of chronic inflammation from the pleura inward to the interlobular and peribronchial connective tissue, or is the result of a very chronic tubercular process, is not, I believe, fully ascertained. But the final occurrence of distinct tuberculosis in such cases is to be looked for. The following case may be taken as fairly illustrative of the class:

CASE I.—W. S., aged twenty-six, United States, oyster-opener. Admitted into the Methodist Episcopal Hospital, January 27, 1888. The patient says that up to three years ago he was always strong and well, and had never been subject to colds. His father had been a heavy drinker, and had died of "gangrene." His mother is alive and strong. No tendency to any lung trouble can be found to exist in the family. The patient has had gonorrhœa a number of times, and says that seven years ago he had a chancre, but this was not followed by any eruption. He has had rheumatism with the gonorrhœa. Up to a year ago he never drank any, but since that time he has taken a moderate amount of liquor. About three years ago, after exposure to cold and wet, he had a chill and epistaxis. This was followed by a prolonged illness that kept him in bed for four months. During this time he suffered from fever, headache, dyspnœa, loss of appetite, and diarrhœa. With these there was also a severe cough, considerable expectoration, and shooting pains in the left side and down the spine. During this attack the left chest was aspirated and a pint of fluid withdrawn. Improvement immediately followed upon the operation. During the next year he was very well, but at the end of this time he had a second attack, not so severe as the first. Six months later he had a third, but this was less severe than either of the previous ones. A needle was introduced at this time, but no fluid was found. About five months ago he had a "very heavy cold," which lasted for about three weeks, after which he felt very well until a week ago, when he had a very severe fall on the ice, striking on his back. The next day he began to have chilly sensations, lost his appetite, and developed a cough, fever, and diarrhœa. During his previous illnesses the expectoration was yellow, thick, and very tenacious, but now it is of a greenish-yellow color. The patient has headache a great deal of the time, no appetite, a cough with considerable expectoration, rather loose bowels, and pain over the left lung, especially behind.

On admission, the temperature is 101·8° F., and the respiration 39.

*Physical Examination.*—The respiration is rapid, the face is rather dusky, the lips are cyanotic, and the alæ nasi dilate with each inspiration.

*Chest.*—The left side is retracted and its movements restricted. The percussion-note is very dull in front from the third rib to below the nipple, and behind from the spine of the

* Read before the New York Academy of Medicine, May 17, 1888.

† J. Renaud, "La pleurésie tuberculeuse phthisiogène d'emblée," "Gaz. méd. de Paris," 1884; 7 sér., i, p. 517–519; 530–533.

* Jaccoud, "Curability and Treatment of Pulmonary Phthisis," New York, 1885, p. 69.

scapula to the inferior angle. Over the area of dullness the respiration is weak, with an occasional bronchial quality. Some friction-sounds are heard posteriorly. In front, at the apex, the breathing is tubular in character, with occasional moist râles. Vocal fremitus is absent over the left chest. On the right side the breath sound is harsh down to the third rib. Below that it is puerile. A specimen of sputum, examined by Dr. Eugene Hodenpyl, pathologist to the hospital, showed a moderate number of tubercle bacilli.

The larynx has the pale, waxy appearance characteristic of phthisis. Under the administration of tonics and alteratives, with complete rest in bed, the patient rapidly improved in strength and flesh, the fever entirely disappeared, and the cough and expectoration were very greatly diminished. When he left the hospital, March 3d, he expressed himself as feeling quite well, though the physical signs were unchanged. The original diagnosis of pleurisy with effusion was made by Dr. A. L. Loomis.

In view of the length of time which had elapsed since the onset of the primary disease, the long intervals of apparent good health which had intervened, and the rapid improvement under treatment, it is difficult to believe that the original pleurisy was other than a simply primary inflammation. Several similar cases might be recorded, but they are such as are familiar to every hospital physician, and it is unnecessary to introduce more than one as an illustration of the class. Besides those in which a clear history can be obtained, many others come into the hospital which, in all probability, are of the same nature, but their identification is impossible on account of the uncertainties of what the late Dr. Flint called a "retrospective diagnosis."

3. Those cases in which an acute or subacute attack of sero-fibrinous pleurisy, terminating in complete recovery, is followed, after some months, by the development of tuberculosis in one or both apices. They are usually observed in persons who are either constitutionally weak, or whose health has been injured by overwork, dissipation, or other debilitating influences. When there is a family history of tuberculosis, it can not be positively denied that the original pleurisy was specific in character; but this is rendered at least doubtful by the occurrence of the inflammation in the lower portion of the chest, and by the subsequent complete disappearance of all signs of it before the apex is invaded.

Case II.—T. J. N., aged twenty, United States, clerk, a patient of my colleague, Dr. Glentworth R. Butler, who kindly furnishes the following history: His mother and a maternal uncle died of phthisis. The patient was first seen by me on May 25, 1886. Very tall—six feet three inches. Had been in good health previously, though considered "delicate." For the past week he had been feeling out of sorts—tired all the time, appetite poor, tongue covered with white fur, pulse 86, temperature 99·5°. He explicitly denied the presence of any pain, excepting a slight frontal headache. Careful inquiry elicited the fact that in walking rapidly up stairs there was slight dyspnœa. No cough. Examination of the chest showed the physical signs of fluid in the left pleural cavity, the line of dullness and absence of respiratory murmur lying two inches above the angle of the scapula. He was put on half-drachm doses of syr. ferri iodid., t. i. d. The dose was soon increased to one drachm. Tincture of iodine was used freely over the side. Aspiration was refused. The fluid was rapidly absorbed, so that at the end of six weeks from his first visit there was only slight dullness remaining. The respiratory and voice sounds were clearly audible over the entire left chest, and the patient expressed himself as feeling perfectly well. He continued in good health until October 20, 1887, when he came to my office suffering with slight cough and hoarseness. The temperature was normal. The chest presented no abnormal signs. He felt well except that there were some laryngeal symptoms. Laryngoscopic examination showed subacute laryngitis and tracheitis. He improved slowly until the 29th of October, when he had a fever lasting four days, the temperature rising to 103° in the evening, with morning remission. This subsided under quinine. A daily and careful auscultation of the chest revealed nothing abnormal. After this he felt so well that I did not see him again for three weeks, when he came complaining of a slight dry cough and some slight pain and uneasiness in the left upper chest. The evening temperature was 99·5°. Examination of the chest at this time showed slight but unmistakable dullness at the left apex, fine râles with expiration and inspiration, and prolonged expiration. The chest was poorly developed. Expansion poor. Subsequently he had several slight hæmorrhages. The evening temperature ranged from 99° to 100°.

On the 18th of November, Dr. Butler sent him to me for treatment by the pneumatic cabinet. The physical signs at that time were the same as those described by the doctor. There was a well-marked catarrh of the pharynx, larynx, and trachea. In spite of the cabinet treatment, combined with the administration of vegetable tonics, there was no improvement in the pulmonary condition, though the catarrh of the upper air-passages was benefited by local applications. He left the city in the latter part of January, 1888, at which time the physical signs were much more marked than when first discovered. Since leaving the city and living in Texas he is much improved. He has gained in weight, eats heartily, has a normal temperature, and is much stronger.

Case III.—A. B., aged twenty-five, United States, salesman. Three brothers had died of phthisis. He was in good health up to September, 1886, when he had an attack of acute sero-fibrinous pleurisy of the right side. I saw him in consultation with Dr. T. M. Ingraham, of Flatbush, about two weeks after the beginning of his illness, at which time three pints of straw-colored serum were withdrawn by the aspirator. The operation was repeated at the end of another week, and another quart withdrawn. He subsequently developed an inflammation of the veins of the right lower extremity, supposed to be malarial in its origin. He finally made an apparently good recovery and resumed his business. During the winter of 1886 and 1887 he went South on business for the firm with which he was connected. During his absence he dissipated very freely. On his return, in June, 1887, he came to my office complaining of a cough, with a feeling of general malaise and occasional night-sweats. He presented no sign of emaciation, but the face was flushed, the pulse rapid, and the afternoon temperature 102°. On the most careful examination, I was unable to find any evidence of the pre-existence of the pleurisy on the right side, but there was dullness on percussion from the supra-clavicular region to the second intercostal space anteriorly on the right side, with broncho-vesicular respiration and fine mucous râles, heard with both inspiration and expiration. The tubercular disease, which was apparently complicated by a malarial toxæmia, ran a rapid course, and he died in the following autumn.

Case IV.—D. B., aged thirty-six, United States, agent. Admitted into St. Mary's Hospital, March 21, 1887.

One year ago the patient had been exposed to rain and had contracted a "severe cold." He had had a chill which had been followed by pain in the right side, and cough. A physician had

been called in, who, on examination, had found that he had pleurisy with effusion, and had aspirated the right pleural cavity, obtaining a quantity of serum; this operation had been repeated some days later, the amount obtained being less at the second operation than the first.

Family history good. Admits alcoholic excess. Examination at the date of his admission to the hospital reveals the following: On the right side, dullness over the infra-clavicular space; posteriorly, dullness below the spine of the scapula; at the apex, broncho-vesicular breathing and fine moist râles, both on inspiration and expiration. Over the whole of the left side the breathing is harsh, with a few dry and moist râles at the apex. The patient only remained in the hospital about a week. His subsequent history is unknown.

In this case, though there was some dullness remaining at the right base, it was only that observed in many cases of ordinary innocuous pleurisy for some months after the fluid effusion has been absorbed. There were no râles or bronchial breathing, and nothing to indicate the presence of any active disease.

Cases of this kind, I believe, are not very numerous, but they are probably sufficiently common to have fallen under the observation of almost every one who has had much experience in the treatment of pulmonary disorders.

4. This class includes cases occurring usually in those of middle age or in the decline of life, in which a serofibrinous pleurisy has become chronic, and in which, on account of the density of the false membrane covering the lung and the diminished pliability of the parietes of the chest, absorption has not occurred. They are typical cases of chronic serous pleurisy which have either failed to be recognized, or been left to the mercy of that very unreliable agent, the *vis medicatrix naturæ*. While it is true that many such patients live for years without the supervention of any serious symptoms, it is nevertheless a fact that some of them finally develop tuberculosis, either in the lungs alone or in a general, disseminated form. The interval between the occurrence of the initial disease and the development of phthisis is so great, and the post-mortem appearances are so indicative of a very early stage of the latter process, that the pleurisy can not but be regarded as primary and simple in its character.

Case V.—P. B., aged sixty, native of Ireland, laborer, was admitted into St. Mary's Hospital, September 10, 1886.

The patient stated that he had first been taken ill the previous June, when he noticed a difficulty in breathing, fatigue from very slight exertion, and cough. He gave no account of any chill or fever. Since that time his condition had gradually grown worse, and of late he had frequently had night-sweats. He was considerably emaciated, and, upon examining the chest, it was found to be large and rounded, as is seen in the slight general emphysema of approaching senility. The left side was super-resonant throughout. On the right side, below the third rib anteriorly and below the spine of the scapula posteriorly, there was resonance upon percussion, and the respiratory and vocal sounds were absent. There was no inspiratory expansion below the third rib, and very little above it. The respiratory movements on the left side, though limited, were good for a man of his age. Below the right clavicle, on deep inspiration and coughing, there were occasional fine subcrepitant râles, and the expiration, though somewhat prolonged, was not more so than is common in this situation. There was no elevation of temperature; the pulse was strong—about eighty beats a minute. The sputa were not examined microscopically. Aspiration was attempted, and the needle, upon being introduced through the sixth intercostal space in the axillary region, could be moved freely in every direction, even when introduced its entire length. After the evacuation of four or five ounces of a yellow serous fluid no more could be obtained, but the continued use of the aspirator was productive of great pain, and the intercostal spaces were visibly depressed. The patient's condition was otherwise so good that, though there were slight signs, as before stated, which led us to fear the beginning of a tubercular deposit at the apex, my colleague, Dr. Glentworth R. Butler, and myself thought that it would be justifiable to attempt to relieve the patient by making a resection of two or three ribs on the affected side.

On the 4th of October the patient was anæsthetized, and we made an incision about three inches long, over the sixth rib, the middle of the incision corresponding to the midaxillary line. The periosteum was separated for about the distance of an inch and a half, and a piece of the rib of about that length removed with the chain-saw, care being taken not to wound the periosteum on the inner side of the rib. A similar incision was then made over the seventh rib, and a portion an inch and a half long removed. The incisions were closed by deep and superficial sutures. The whole was then sprinkled with iodoform and dressed with the manilla-paper dressing of Dr. George R. Fowler.

On the 9th of October, five days after the operation, the dressings were removed, and primary union was found to have occurred in both wounds. There had been no elevation of temperature or other bad symptom. On the 18th it was observed on palpation that the cut ends of the ribs had come together. There was still some pain in the neighborhood of the cicatrices, but only on coughing or deep inspiration. His appetite was better and the cough diminished. He was allowed to get up and go about the ward.

On the night of October 24th, twenty days after the operation, he became very restless and delirious. On the 25th he was more quiet, but his speech became incoherent and he passed into a condition of mental hebetude and was very feeble. The pulse was rapid and weak, and the respiration corresponded. There was no elevation of temperature.

On the 27th the delirium increased in violence so that constant restraint was necessary in order to keep him in bed; still no elevation of temperature; pulse very feeble. On the 29th the bladder and rectum became paralyzed, and it was necessary to use the catheter. The restlessness and delirium progressed until 10 P. M., when he died.

At the post-mortem examination, which was made on the following day, I found that the union of both wounds was complete throughout. The cut ends of the ribs were in contact and firmly united by fibrous tissue without any ossification. On removing a portion of the thoracic wall, the lung was found firmly contracted and carnified, adherent down to the third rib and to the mediastinum as far down as the diaphragm, leaving a space between the lungs and the ribs about one inch in depth, which was filled with serous fluid, traversed by many strong fibrinous bands, some of them apparently in the process of conversion into connective tissue. The upper portion of the lung contained numerous miliary granulations, without any patches of lobular hepatization or caseation; it was crepitant throughout, and when thrown upon water floated buoyantly. The lower portions were collapsed, but still pervious to air—that is, they did not sink in water. The apex of the left lung also contained miliary granulations corresponding in appearance to those in the right, all in the first stage, but they were not sufficiently

numerous in either lung to give rise to any marked physical signs. Neither the lower portion of the upper lobe nor the lower lobe of the left lung presented any pathological appearances. The heart showed nothing beyond some dilatation of the right side. The abdominal organs showed no lesions except in the kidneys, where there were fine gray and grayish-yellow granulations. I was not permitted to examine the brain. Microscopical examination of the lungs and kidneys showed that the miliary granulations were tubercular. Judging from the clinical history, death was due to tubercular meningitis.

Case VI.—M. A., aged thirty-four, native of Ireland, occupation stableman, admitted into St. Mary's Hospital, March 13, 1884.

For the past twelve years the patient had had a troublesome cough during the winter months, which had almost entirely disappeared in the summer. During the past winter the cough had been much less, but he had developed marked dyspnœa, with expectoration of muco-purulent matter, colliquative sweats, and loss of flesh and strength.

*Physical Examination.*—Right side: dullness from the second interspace to the free border of the ribs, respiratory murmur weak above the second interspace, and below weak tubular breathing. Left side: a few râles with inspiration. Suspecting fluid in the right pleural cavity, an aspirating-needle was introduced, and one pint of flocculent fluid withdrawn. Five days later the operation was repeated, but no fluid obtained. When the needle was withdrawn, a small quantity escaped through the puncture. A third aspiration was attempted, but no fluid was found. The patient was anæsthetized, and an incision made over the sixth rib, the periosteum separated for the distance of about two inches, and a piece of the rib removed with the chain-saw. Adhesions were found between the pleura and the chest-wall, which appeared to pocket the fluid, so that but a small quantity could escape. A tube was introduced to secure drainage. The patient took the ether badly, and in the midst of the operation his respiration ceased and he became cyanotic. Restorative measures were applied and he soon rallied, but did not fully recover from the shock. He gradually sank, and died at five o'clock on the following morning.

The autopsy revealed the presence of a large quantity of coagulated fibrin in the right pleural cavity; this fibrin was loculated, the spaces being filled with serous fluid. Throughout both lungs scattered miliary tubercles were found. There were no caseous foci or cavities. The other organs presented no signs of tubercular disease.

Case VII.—P. F., aged fifty-three, fishman, native of Ireland, admitted into St. Mary's Hospital, September 15, 1884.

For three months previous to his admission to the hospital he had complained of a slight cough and shortness of breath. The distress had gradually increased, with the addition of a copious muco-purulent expectoration, loss of appetite and flesh. At the time of admission his temperature was elevated, tongue coated, and bad colliquative sweats were of nightly recurrence. Physical exploration of the chest disclosed the presence of fluid in the right pleural cavity; the upper anterior portions of the lung were dull on percussion, and gave auscultatory evidence of partial consolidation. An attempt to withdraw the fluid was only partially successful; after the abstraction of about a half-pint the flow ceased, and severe pain was felt in the intercostal spaces and in the epigastric region. Several subsequent attempts were still less satisfactory, for we were only able to withdraw a few ounces, though the needle and tube were clear, the vacuum good, and the needle freely movable in the cavity. When the suction was strong the intercostal spaces could be seen to sink in. Had not the phthisical process already commenced in the upper lobe, I should have resected some of the ribs, but, under the circumstances, it was not thought advisable to operate.

On the 1st of January, 1885, the patient was discharged at his own request. On the 13th of May he was readmitted, his condition being much worse at this time. Physical examination revealed flatness on the right side down to the fifth rib, and bronchial breathing. On the left side there were dullness and bronchial vesicular breathing down to the cardiac area. The patient failed rapidly, and died on the 20th of May, just one week after re-admission. No autopsy.

In all of these cases it will be observed that persons previously healthy were attacked with the unilateral sero-fibrinous pleurisy, the existence of which was anatomically demonstrated. In none of them was any attempt made, at an early stage of the disease, to remove the fluid effusion and restore the expansion of the lung. They all deteriorated in health slowly, and in the first two tuberculosis undoubtedly developed but a short time prior to death. In Case VI, in which a post-mortem was made, the miliary granules were scattered, and there was no cheesy degeneration. In Case V there was scarcely enough in the way of physical signs to justify one, after the most careful examination, in predicating the existence of tubercle even at the apex of the diseased side, and the general condition of the patient, the entire absence of fever, and, finally, death from tubercular meningitis, would indicate that there had been no phthisical process going on in the lung up to a very recent period. In Case VII the slight auscultatory phenomena observed at the time of admission into the hospital were indicative only of an early stage of phthisis.

5. Those cases of empyema the appearance of which antedates the occurrence of tuberculosis. This class is simply introduced to make the list complete, and will not be discussed in the present paper.

The list of cases which I have presented as illustrative of the particular forms of pleurisy to which I desire to call attention might have been much longer, but to make it so would have unnecessarily occupied the time of the Academy. It will be observed that in all there has been distinct anatomical demonstration of the existence of pleuritic effusion, with the exception of the one reported by Dr. Butler. But my knowledge of that gentleman's skill in diagnosis warrants me in unhesitatingly accepting the result of his examination.

From the evidence given, I feel justified in stating the following conclusions:

1. That sero-fibrinous pleurisies, apparently simple in origin and terminating in complete recovery so far as the local manifestations are concerned, may be followed, after the lapse of a few months, by the development of phthisis pulmonalis.

2. That, in all probability, the pleurisy in these cases acts as a predisposing cause of the tuberculosis.

3. That primary sero-fibrinous pleurisy may result in fibroid phthisis, with the subsequent occurrence of tuberculosis pulmonum.

4. That fluid effusions remaining in the chest for a long time may finally so interfere with the nutrition of the lungs or of the body at large as to render it liable to tubercular infection, either local or general.

5. The rational deduction from these facts is, that no case of pleurisy should be neglected; that after apparent recovery great care should be taken that the health of the patient is completely restored before he is lost sight of by the physician. In the words of Sir Andrew Clark, "When we have a patient with basic fibrinous pleurisy, let us hold him fast, restrict his freedom, and treat him carefully until every remnant of it is gone." When all signs of effusion have disappeared, care should still be taken that the health of the patient is entirely restored before he is permitted to resume his former occupation, and if that occupation is one which involves any hygienic irregularities, he should be advised to change it. Where there is a previous history of phthisis in the family, still greater pains should be taken. The patient should remain away from business a long time, change his climate and entire mode of life if necessary, and should not be lost sight of by the physician for at least a year, even if his health is apparently entirely restored. When the patient has arrived at middle life, when the costal cartilages begin to lose their elasticity, and the general mobility of the thorax is apt to be somewhat diminished, effusions should not be allowed to remain in the cavity of the chest for more than two or three weeks. If the fluid accumulates after aspiration, this should be frequently repeated, and at moderately short intervals. In the case of a lady about fifty years old, after five or six aspirations at intervals of from one to two weeks, I found that, in order to keep the lung expanded, and so secure a chance of its adhesion to the chest-wall, it was necessary to draw the fluid every second or third day. By doing this the desired object was finally accomplished, and the patient made a good recovery. In such subjects, not only are the chest-walls less mobile than in the young, but the presence of inflammatory exudation actually increases the immobility by hastening the process of calcification of the costal cartilages.*

It is probable that the lives of three of the subjects of this form of disease whose cases I have narrated might have been saved by early and repeated aspiration. If they are encountered at a late period of the disease, when it is impossible to secure re-expansion of the lung, I believe that the operation of resection of the ribs, which was practiced in Case V, is worthy of a trial. The post-mortem appearances in this case would indicate that, so far as the local disease was concerned, it was well calculated to accomplish the object for which it was performed.† When the fluid is reabsorbed, but there are still dullness and feeble respiratory murmur at the base, the patient should be kept for a long time on the use of the most efficient tonics and alteratives, with very liberal diet and plenty of out-door exercise. He should also be instructed in the practice of respiratory gymnastics. When the health is sufficiently good, it is well even to inaugurate such exercises as the use of Indian clubs and dumb-bells. Under judicious exercise of this kind, I have seen a very markedly contracted side expand till its dimensions were equal to those of its fellow, with great improvement in the general condition of the patient. In more delicate subjects, in whom it is frequently advisable to use some passive means for expanding the chest, the inhalation of compressed air, or the equivalent treatment by the pneumatic cabinet, will sometimes give brilliant results.

* Wintrich, Virchow's "Handbuch d. spec. Path. u. Therap.," Bd. v, 9tes Abth., 2tes Hft., S. 247.

† For a full description of the operation, with the reasons for its performance, see a paper by the author in "New York Medical Journal," March 12, 1887.

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# DISSECTION OF THE LOWER ORDERS OF VERTEBRATES AS A REQUIREMENT IN MEDICAL STUDY,

WITH A COMPARISON OF SOME OF THE PARTS OF THE DOMESTIC CAT WITH CORRESPONDING PARTS IN MAN.

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The comparison of the organs and structures of animals with those of man is always interesting and instructive. Very few, however, who have studied human anatomy alone fully recognize how closely the structures and organs of animals approach those of man. The *grosser* appearances of the lower animals have indeed long been recognized as bearing a general resemblance; thus the spinal column, the eye, and most of the viscera are readily acknowledged, even by the non-professional, as correlative with corresponding parts in the organism of man. But it is not fully appreciated by the profession generally that the structures of the lower vertebrates may be made the basis of accurate anatomical investigation, or utilized as useful adjuncts in the study of human anatomy. Professor Huxley says: "There is so close a solidarity between ourselves and the animal world that our inaccessible inward parts may be supplemented by them. A sheep's heart, or lungs, or eye, must not be confounded with those of man, but, so far as the comprehension of the elementary facts of the physiology of circulation and of respiration and of vision goes, the one furnishes the needed anatomical data as well as the other."

There is such harmony of opinion among leading scientists and educators that vertebrate dissection is a useful auxiliary to the study of human anatomy that it is astonishing that it has not assumed practical form as a requirement in our medical schools, or as a preparatory study for admission.

Anatomy is justly recognized as the basis of medical study, and just so far as it is thoroughly learned by the student will be his after success as a surgeon or diagnostician. A medical student required to dissect some of the lower forms of animal life which compare anatomically and physiologically with those which he is preparing himself to investigate would obtain a familiarity with anatomical methods that would give him an immense advantage over the student who presented himself for admission without such knowledge. He would have acquired skill in the use of the scalpel and such knowledge of tissues and organs as to be able to distinguish them readily. He would have learned how to observe and what to observe. He would begin just where he now leaves off in the meager amount of dissection required for the medical degree. How many medical students

have dissected the sympathetic nerve? How many know from personal observation how the common duct of the liver enters the duodenum, or the ducts of Santorini and Wirsung? How many have learned by actual dissection of the relations of the peritonæum to the abdominal organs? These and other parts are neglected principally from lack of skill and method in manipulation, which could have been acquired by the dissection of animal organs.

So impressed was Cleavanger with the importance of animal dissection that he said "no medical student should be allowed to dissect the human cadaver until he has familiarized himself with the anatomy of the cat," and Professor Wilder, author of "Anatomical Technology," based upon the domestic cat, has said: "Felitomy should be the stepping-stone to anthropotomy."

Possibly the subject can be enforced in no better way than by the general comparison of analogous structures in the domestic cat and man.

*Brachial Plexus.*—Taking the brachial plexus, we find many points of resemblance. *First*, in the manner of its formation; *second*, in the number and distribution of its branches. This may be shown by Figs. 1 and 2, and the following table:

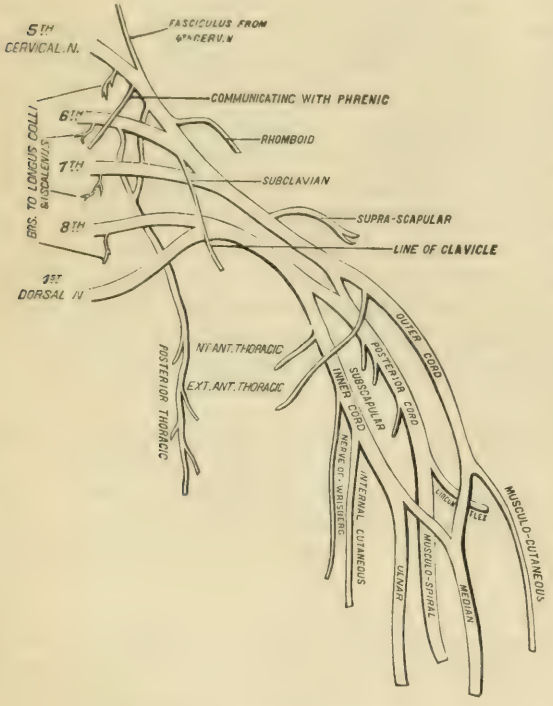



Fig. 1.—The brachial plexus of man.

Formed in man by the anterior branches of the fifth, sixth, seventh, and eighth cervical, and first dorsal; in the cat by the anterior branches of the sixth, seventh, and eighth cervical, and first dorsal.

It is well known that in man the distribution of the nerves in the formation of the plexus is in such a way as to form cords from which the branches arise; thus we have the outer, inner, and posterior cords. Although this anatomical arrangement does not occur in the cat, the branches arise in most instances from corresponding parts of the plexus. The form of the two plexuses, as might be expected, is quite unlike. In man it is broad in the neck, becoming narrower as it passes through the axilla, and again widening

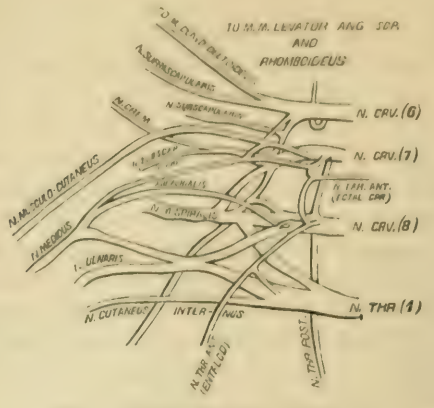



Fig. 2.—The brachial plexus of the cat.

as it divides into its terminal branches. In the cat the plexus is nearly quadrilateral. It is in the number and distribution of its branches that the resemblance is close.

The following table gives the branches of each:

*Man.*—Communicating, muscular, anterior thoracic, subscapular, musculo-cutaneous, suprascapular, internal cutaneous, lesser internal cutaneous, median, ulnar, musculo-spiral, posterior thoracic, circumflex.

*Cat.*—Suprascapular, subscapular, musculo-cutaneous, circumflex, thoracicus anterior, median, musculo-spiral, ulnar, internal cutaneous, nerves which pass to the clavo-deltoideus, the levator anguli scapulæ, and the rhomboideus, nervus latus, anterior thoracic, posterior thoracic, muscular.

To trace the origin and course of these nerves would be beyond the scope of this paper. They generally arise from corresponding portions of the plexus, and are distributed to analogous muscles. The musculo-spiral in the cat, like its homologue in man, is the largest nerve of the plexus. It follows the same course, winding obliquely around the humerus at about its middle, and is followed by the superior profunda artery.

The median nerve in the cat arises by three heads, instead of two as in man, but otherwise resembles its human homologue, as, in its middle course, the brachial artery passing between two of its divisions (cephalic and intermediate), and in its distribution to the structures of the forearm and hand.

A glance at the figures will show the remarkable length of the course of the posterior thoracic nerves. They arise from nearly the same portion of the plexus and pass to the serratus magnus muscle. The subscapular nerves are nearly identical. In both there are three subscapular nerves. They arise from the posterior aspect of the cord, and are distributed to the same muscles. The first is distributed to the subscapularis, and the remaining ones supply the teres and latissimus dorsi.

The circumflex in the cat resembles the circumflex in man by its circular course about the proximal end of the humerus and by its relation to the circumflex artery.

The spinal nerves of the cat present a striking resem-

blance. Each nerve-trunk arises by two roots—the posterior from the posterior and lateral aspect of the cord, the anterior from the antero-lateral aspect. They unite in the intervertebral foramen, and the ganglion appears on the posterior root just as they unite. The pneumogastric, phrenic, spinal accessory, and glosso-pharyngeal form an equally interesting and reliable basis of study. Turning to the abdominal viscera, the student will find a remarkable analogy. He may demonstrate with sufficient precision to make their after demonstration in man almost a repetition the pyloric valve, the entrance of the ducts of the liver and pancreas into the duodenum, and the foramen of Winslow, trace the portal and mesenteric veins, and make out the relations of the peritonæum to the abdominal organs.

Perhaps the articulations of the cat furnish the most accurate correlation to corresponding parts in man. They are also a comparatively unexplored field in comparative anatomy.

*Hip Joint.*—In the cat, as in man, the hip is an enarthrodial or ball-and-socket joint, formed by the joining of the head of the femur with the cotyloid cavity. The head of the femur in the cat is covered with cartilage, which, as in the human subject, is thicker at the head of the femur than on the neck near the shaft.

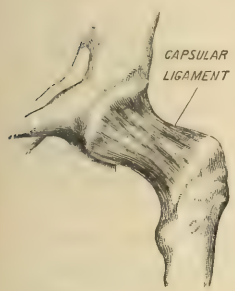


Fig. 3.

The ligaments of this joint in man are: teres, ileo-femoral, capsular, cotyloid, transverse. In the cat, capsular, cotyloid, teres, transverse.

*Exposure.*—The skin having been removed, carefully clear away the muscles, being careful not to injure the underlying capsular ligament, which may be recognized by its lighter color, and by moving the femur outward and inward so as to make the ligament tense. As the ligament is approached, it is best to clip off the overlying tissues with the scissors and by scraping with the scalpel so as to fully expose the extent of its insertion. It will be found, like its homologue in man, a strong, dense capsule, completely surrounding the neck of the femur; being attached above and in front to the base of the great trochanter and to the intertrochanteric line, and beneath to near the middle of the neck. It not only resembles the same ligament in man in the similarity of its attachment to the femur and the margin of the cotyloid cavity, but in being thinner inferiorly than on its upper and anterior part, and by its connection with the transverse ligament and the extension of its fibers to the obturator foramen.

*Ligamentum Teres.*—After examining the capsular ligament, draw a sharp scalpel around its attachment to the margin of the cotyloid cavity. Draw the femur steadily downward and rotate the head of the bone outward sharply, when the ligamentum teres will appear as shown in Fig. 4. It appears as a reddish, triangular band of fibers, attached to the depression near the head of the femur. They pass to the bottom of the cotyloid cavity, dividing a few lines from the head of the femur into two bundles of fibers. The *inferior* bundle is attached to the margin of the notch which crosses the bottom of the cotyloid cavity. It is also blended with the transverse ligament. The superior bundle of fibers is attached to the upper half of the cotyloid cavity in advance of the notch, thus differing from man, in whom *both* bundles of fibers are attached to the margins of the notch, according to Gray and Wilson.

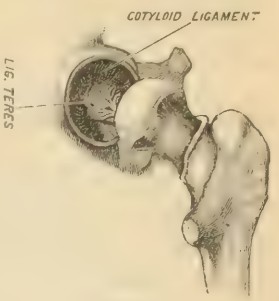


Fig. 4.

The *cotyloid ligament* resembles the same ligament in man in being a simple ring of fibrous tissue which surrounds the acetabulum. In the cat it appears as a simple reddish line surrounding the acetabulum, thicker on its upper and posterior portion than on the anterior and inferior. It is continuous with the transverse ligament. In both respects it is precisely like the same ligament in man.

The transverse ligament in the cat is a simple bundle of fibers, which fibrous tissue passes across the notch where the margin of the cavity is deficient. It fills the cavity rather than converts it into a foramen, as is the case in the human subject.

*Knee Joint—Exposure.*—Remove carefully and thoroughly the muscles near the joint, observing the same precautions as the joint is approached as in the exposure of the hip joint. This joint in the cat is formed, like the knee joint in man, by the condyles of the femur above, the tuberosities of the tibia below, and the patella in front. These bones are connected by nearly the same ligaments, some placed on the exterior, while others are found occupying the interior.

*Ligaments in Man.*—Anterior, or ligamentum patellæ, posterior, internal lateral, two external lateral, transverse, synovial, anterior crucial, posterior crucial, two semilunar fibro-cartilages, coronary, ligamentum mucosum, ligamenta alaria.

All of these ligaments can be plainly made out in the cat with the exception of the long external lateral, coronary, semilunar fibro-cartilages, and transverse.

*Synovial Membrane.*—The synovial membrane comes first into view after the muscles are removed. It is a broad, whitish membrane spread out over the anterior and posterior surfaces of the joint, covering the condyles of the femur, head of the tibia and fibula, under surface of the patella, and sending processes inwardly.

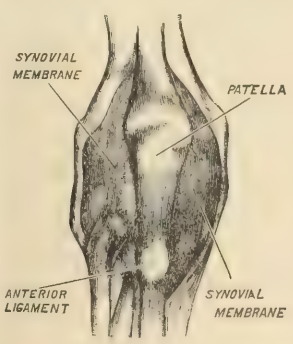


Fig. 5.

We find the anterior ligament in the cat, as in man, a prolongation of the rectus femoris, and trace it from the lower border of the patella to the tuberosity of the tibia. The external lateral and internal lateral have similar attachments as in man. The external lateral is attached above to the lower part of the outer condyle above, and to the up-

per and outer portion of the fibula below. A single cartilage is found between the external condyle of the femur and the outer tuberosity of the tibia. It is generally triangular in form. It is confined to the joint by attachments of the synovial membrane and by a short, narrow ligament attached to the apex of the patella and the tissues about its base. This is probably the homologue of the transverse ligament in man.

The internal lateral resembles its human homologue in being placed nearer the back than the side of the joint. It is attached above to the inner and back part of the internal condyle above and to the inner aspect of the inner tuberosity of the tibia.

The *ligamentum posticum Winslowii*, or posterior ligament, is found as a broad expansion of fibers which covers the popliteal space. It is attached above, like the same ligament in man, to the condyles of the femur, principally to the external condyle; below it is connected with the back part of the head of the tibia.

*Ligaments within the Joint.*—The ligaments within the joint are the ligamentum mucosum, two alar, and the anterior and posterior crucial. These are readily made out in the cat, and are essentially the same as the corresponding ligaments in man. To bring these into view, the synovial membrane and lateral ligaments must be divided and the leg drawn down from the femur, when the two alar ligaments will come into view as two whitish, somewhat fringed cords, which are attached as follows: The inner passes from the synovial membrane, of which it is a part, at the base of the patella to the fossa intercondyloidea, while the outer is continuous with the synovial membrane on the outer aspect of the joint.

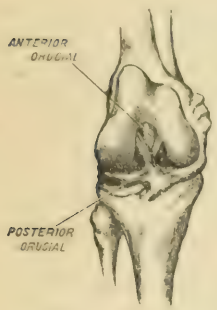


Fig. 6.

*Anterior and Posterior Crucial.*—These ligaments are brought more fully to view by dividing the two alar ligaments, when they will appear as represented in Fig. 6. They are precisely like the same ligaments in man, crossing each other in the same manner, from which fact they have received the name "crucial." The *anterior* is attached to the depression in front of the spine of the tibia, and passes obliquely upward to the back part of the external condyle. The *posterior* is attached behind the spine of the tibia and to the outer and anterior part of the internal condyle. The ligamentum mucosum is a conical fold of synovial membrane extending inward, between the bones, and connected with the ligamenta alaria.

It is not alone in the resemblances that the student will find assistance in his study of human anatomy, but the differences themselves serve to fix the subject more surely, as well as to widen the limit of observation. Finally, it is not too much to say that a student in his first year of study, who dissected the cat with such a text-book as Strauss-Durckheim, or, better yet, Wilder and Gage's "Anatomical Technology" in connection with his human anatomy, would acquire a greater knowledge of anatomical methods and detail than he now possesses at the expiration of his first or second term, when he receives his certificate as having passed in anatomy.

## OZONE-OXYGEN.

### A HISTORY AND A SUGGESTION.

By SAMUEL S. WALLIAN, A. M., M. D.

It is now nearly three quarters of a century since English physicians of repute and skilled in their art, stimulated by the reports of chemists as to the physiologic significance of many gaseous elements, conceived the idea of using various gases by inhalation in the treatment of some diseased conditions. These crude pioneer efforts and experiments were seconded by leading scientists of the day, including James Watt and Sir Humphry Davy. Among the gases and gaseous compounds thus tentatively investigated were oxygen, hydrogen, carbon dioxide, and other carbon-oxygen compounds, hydrocarbons, nitrogen, and various other gases and vapors. Of all these, none were finally esteemed as having therapeutic value except oxygen, nitrogen monoxide or "laughing gas," carbon dioxide, and, theoretically, peroxide of hydrogen, which is available only through the readiness with which it parts with one equivalent of its oxygen. This latter compound had but recently been described by Thenard, its preparation being difficult and expensive and its properties but little understood.

Having demonstrated that oxygen effectually antagonized the asphyxiating tendency of "choke-damp," it was assumed that it was contra-indicated in all acute and inflammatory conditions; and, on the other hand, it was hoped that its direct antagonist, carbonic acid, would subdue inflammation on the same principle that it quenches fire, and would thus prove a rational and reliable remedy in sthenic fevers and all hyperæmic conditions. It did not take long to demonstrate the futility of this assumption.

With oxygen, variously exhibited, some fairly wonderful results were announced—too wonderful, indeed, to be credited except by those who were the immediate witnesses of the trials. The reports savored of the miraculous, and were so far in advance of what the rank and file of the profession then considered possible as to arouse almost universal distrust as to their genuineness. From incredulity to intolerance in medical matters is but a step; hence, notwithstanding the eminent names associated with these earlier experiments, including, in addition to those already mentioned, such as Menzies, Cavendish, Coleman, Cavallo, and others of equal prominence, and notwithstanding the fact that both the accuracy of the experiments and the genuineness of the results were vouched for by witnesses whose testimony was acknowledged to be unimpeachable, these pioneer experimenters were accounted innovators, and treated to the usual reception accorded to such. Ridicule deepened into downright persecution, and those who were directly associated with the practical details of the new treatment were compelled to desist from their novel practice under pain of professional ostracism, if not of actual prosecution.

At the outset of this study of what was termed pneumatic therapeutics it was naturally presumed that the use of

the gases would be chiefly or wholly limited to diseases of the respiratory tract. Unfortunately, this impression largely still prevails, although a little reflection would suggest that the direct effects should be looked for in the circulating fluid rather than in the mere organs of respiration. And this fact soon impressed itself upon Dr. Beddoes, whose name, second only to that of Priestley, heads the list of early experimenters. He was professor of chemistry at Oxford, and in his day was esteemed well up in general medicine. He soon satisfied himself that none of the gases tried possessed any positive or available therapeutic value except oxygen and its immediate congeners. This element was then known by the rational name of "vital air," a name far more expressive of its properties than the one now used, and was found to be applicable to a wide range of diseased conditions. As a natural consequence, Beddoes became over-enthusiastic and indulged in visions of a new era about to dawn in the medical world. But he was doomed to the disappointment which sooner or later comes to most enthusiasts. Considering the crude state of chemical science at the time and the bigoted opposition of croaking conservatives—a race which has not yet become extinct—it is not to be wondered at that Beddoes at last desisted in sheer desperation, although protesting and insisting to the last that "vital air" would prove one of our most natural, powerful, and reliable therapeutic allies, and that it would ultimately be made available.

Following Beddoes, Daniel Hill, of Great Russell Street, Bloomsbury, a general practitioner of considerable eminence, gave some years of patient and thorough study to the subject, used oxygen extensively in his practice, reported some almost incredible recoveries from its use, and published a very candid and instructive brochure, recounting his experiences and summing up his conclusions. He treated *asthma*, *cardiac weakness*, *hydrocephalus*, *epilepsy*, *paralysis*, *knee-joint disease*, *hip-joint disease*, *arrested development*, *spinal diseases and deformities*, *caries*, *lupus*, *malignant tumors*, *intractable skin affections*, *neuralgia*, *hysteria*, and various forms of *diseases of women*.

His little book was full of suggestive material, and merited a better reception and recognition at the hands of the profession than were accorded to it.

His conclusions were educed from the scientific experiments of Priestley, Lavoisier, Cavendish, Menzies, Watt, Davy, and others, and from the promising clinical results reported by his predecessor and virtual preceptor, Beddoes; and his practice, although strictly tentative, can not be said to have been wholly empirical. In abstracting some salient points from Mr. Hill's work there is little risk of reproducing anything already familiar to, perhaps, a single reader of this Journal.

His first trials of "vital air," based on theories advanced by Dr. Beddoes, were made in cases of *asthma*, and were followed by considerable success. As a result of his experience he was led to assert that, "in all cases of debility where the action of the heart and arteries was weak, oxygen should prove extremely beneficial to the patient."

Himself a sufferer from this form of weakness, he made a careful personal trial of the remedy, and thus states results:

"After having inhaled vital air by measure for several weeks . . . I had the satisfaction to find myself in a state of health and strength which I had not experienced for the last seven years, owing to a gouty constitution, accompanied with nervous irritation, for which the use of medicine, under the direction of the late learned Dr. Warren and others of the faculty, had not afforded me the least relief.

"This speedy renovation of constitutional vigor was marked by an unusual redness of the skin, more especially of the face and both extremities, which occasioned my having no doubt in my own mind that this very active remedy might be successfully applied in many bad surgical cases, as ulcers, gangrenes, etc., since one great object in surgical practice is to excite a due action in the languid vessels of old and indolent ulcers, so as to promote a granulating and healing process.

"The first trial I made, in order to confirm this opinion, was in the case of a Mrs. Munt, an elderly woman, of Fore Street, Cripplegate, who, after having suffered eighteen years from an extremely irritable and obstinate ulcer in her leg, was perfectly cured in three weeks by following the same alterative plan of inhaling vital air, with the occasional use of other indicated remedies.

"The second was a more desperate case, that of Rev. J. C. Atwood, in whose left leg a large gangrenous ulcer had existed for above a year and a half; and, although he had been under the care of two eminent surgeons, so little success attended their endeavors that amputation seemed inevitable, and was nearly decided upon when he came to see me.

"This case was also cured in six weeks.

"Having been so far successful, I was led to conclude that as vital air had produced such good effects in the soft and fleshy parts of the body, it would likewise on the more solid and bony parts; for, the living principle being thus imbibed by the blood from the lungs in breathing, thence conveyed to the heart, and, from the known laws of the circulation, transmitted by the heart through the arteries by an infinite number of branches and ramifications, it must not only penetrate the soft parts, of which I had sufficient proof by these facts, but all the different organs and various bones of the body. Hence I further hoped it might give sufficient energy, when judiciously administered, to cure white swellings and diseases of the bones, and more especially assist in the process of growing, and cases of deformity. This conjecture is happily confirmed by numerous experiments."

At this day it seems strange that a treatment so unquestionably rational and so practically promising should have been remanded to half a century of neglect. Hill's little volume bore the imprint of 1820. To-day perhaps not half a dozen copies—possibly not a single complete copy—can be found.

Since the days of Beddoes and Hill, oxygen has been much studied, both as an element and in its countless combinations, more especially as to its chemical, and incidentally as to its physiological, relations; but, until quite recently, comparatively little has been done toward developing and determining its therapeutic value. Abroad there has never been a cessation of effort to further this inquiry, but, for a wonder, American enterprise has virtually ignored the significance of the earlier experiments, and has permitted foreign scientists to precede and distance it in a study which is full of practical interest and by no means abstruse.

To illustrate the contrast between recognized authori-

ties in the two hemispheres, compare the standard works on materia medica of the two sections. Our own Stillé disclaims any personal knowledge of the subject, but proceeds to quote other authorities to the effect that no greater than the unvarying proportion of oxygen found in the normal atmosphere can be absorbed into or utilized by the blood. To the casual or unthinking reader this would seem to dispose of the whole question, whereas it has very little bearing, and really proves nothing. It would be quite as satisfactory, scientific, and final, to say that the quantity of nourishment afforded by ordinary articles of diet can not be increased!

On the other hand, the English Phillips, in his very able and comprehensive work, devotes considerable space to the subject, citing copiously from eminent authorities to the effect that the therapeutic applications and possibilities of artificial or factitious oxygen are both comprehensive and unquestionable.

To negative Dr. Stillé's easy-going dismissal of the subject, we have only to recapitulate a few of the many established facts of physiology:

All vital activity arises from the action of oxygen and the elements of food. The first conditions of animal life are nutritious matters and oxygen introduced into the system. . . . Man takes from the atmosphere in one year, according to Menzies, 837 pounds of oxygen (or about 1,000 gallons per week). The amount of nourishment required must be in direct ratio to the quantity of oxygen taken into the system. Oxygen consumes without exception all such substances as are capable of entering into combination with it (including uric acid, urate of soda, and carbonaceous matters, which are the causes of rheumatism, gout, catarrh, etc.). From the first moment that the function of the lungs or skin is interrupted or disturbed, compounds rich in carbon appear in the urine, which acquires a brown color Over the whole surface of the body oxygen is absorbed. The chemical action, which the elements of food and oxygen exercise for each other, is the only ultimate cause of vital force. The globules of blood serve to transport oxygen through the capillary vessels. Here the oxygen combines with the carbon to form carbonic acid, and with the hydrogen to form water. We know that the animal system absorbs oxygen from the atmosphere, and that this oxygen is again given out in combinations with carbon or hydrogen, and that a process of oxidation is the only source of animal heat. But the oxygen is not given out in a free state, because it meets in the organism with substances possessing the property of entering into combination with it. Oxygen in the arterial blood and moisture (water) present the chief conditions of all transformations in the body. In the action of the gastric juice on the food, no other element takes a share, except oxygen and water. The results here described have surprised me. They are not the creation of fancy, and the method which has led to them is the only one by which we can hope to acquire insight into the nature of the organic processes. The organs are formed from the blood. . . . They become transformed with the addition only of oxygen and water. The disappearance of uric acid . . . plainly stands in a very close relation to the amount of oxygen absorbed. . . . When uric acid is subjected to the action of oxygen, it is first resolved into alloxan and urea. Uric acid disappears in the urine of man when he receives through the skin and lungs a quantity of oxygen sufficient. . . . If to one atom of uric acid we add six atoms of oxygen and four atoms of water, it resolves itself into urea and carbonic acid.—*Liebig.*

The blood has great affinity for oxygen, absorbing two and a half times as much of it as water at the same temperature (Magnus). If freshly drawn venous blood is shaken in a bottle with pure oxygen, its color *at once* changes from purple to red, and the same change will take place, though more slowly, if the blood is agitated with atmospheric air (Dalton). Twenty-five per cent. of the inspired oxygen disappears in the body of omnivorous animals, as, for instance, dogs, while fed on animal food only; but when fed on starchy food, *all but eight per cent. reappeared in the expired carbonic acid* (Regnault, Rieset).

Hence, as regards the theory of respiration, the fact is as important as it is remarkable that in the same animal *the proportion of oxygen absorbed to that of carbon dioxide or carbonic acid exhaled varies according to the quality of the food.*

Again, the proportion of oxygen which disappears in the interior of the body, over and above that which is returned with the breath, under the form of carbonic acid, varies in different kinds of animals. In the herbivora it is about ten per cent. of the whole amount of oxygen inspired; in the carnivora, twenty or twenty-five per cent. (Dalton).

Scientists have established the fact that the actual or theoretical proportion of oxygen in the atmosphere is everywhere and at all times the same, in the lowest valleys and on the highest mountains; but we well know that the practical and available proportion of the vital element found in the atmosphere of living-rooms, crowded tenements, factories, school-rooms, and public halls, is extremely variable. None but those who inhabit climates suited to such practice, and who dwell constantly in the open air, can be said to have access to a normal supply of oxygen. The natural reaction from famine is feast, and there is no reason why this law should not hold good in the domain of physiology. Your starved horse, or other domestic animal, is plied with extra rations; the emaciated war-prisoner or repentant and hungry prodigal is feasted on the best the land affords, even to the sacrifice of the favorite fatted calf. By a similar law it is entirely rational to guardedly supply an excess of oxygen to those who have necessarily been cheated of their due and normal allowance.

The immense importance of the vital element of the air we breathe is universally acknowledged, though in a passive and unthinking sort of way. The annual exodus of invalids to Europe, to the mountains, and to the seaside, are spasmodic gasps for more oxygen. The sea voyage affords a faint flavor of ozone, and ozone is oxygen. Yet very few, even well-educated people, in truth, not even a majority of physicians, adequately realize its dominant agency over every phase of animal life. For example, the human adult requires for his daily sustenance about *two pounds* of solid food; while of atmospheric air—aeriform or pneumatic food—he consumes, and peremptorily requires, *thirty to fifty pounds* in the same time.

There is another point to which little or no attention has been paid, although the practical fact on which it is based is well known and universally admitted. It is this: that *nascent or factitious oxygen is, physiologically and therapeutically, quite as distinct from the ordinary oxygen of the at-*

*mosphere as though it were in reality quite another element.* Hence all comparisons between the two, and inferences based on a non-recognition of this fact, are both irrational and delusive. There is always present in the former that over-active allotropic condition which chemists have named *ozone*, and for which some of them hesitatingly suggest the symbol or formula $O_2O$, others writing it $O_3$. This almost mysterious substance or state is always present in sea-air, in the atmosphere of mountain countries, and everywhere after sudden storms accompanied by lightning or other electrical phenomena.

It is evident that even as to the chemical, and certainly as to the physiological and therapeutic, relations of this universal and essential element we have much to learn. This much we have determined, that ozone or ozonized oxygen is condensed or contracted in volume in proportion, according to Soret, of 3 to 2. It is therefore *intense* oxygen, or *oxygen at high tension;* and in this respect it may be compared with that other mysterious force, with which so many conceitedly bungle and which so few yet half understand—electricity. In case of the latter, we have learned a few letters of its alphabet, and now prate timidly of *volts*, *ohms*, and *ampères;* of currents of high and low tension, primary, secondary, and constant; of great intensity and little volume, and *vice versa*. Similar characteristics and peculiarities must be recognized in relation to ozone and oxygen.

First of all, misapprehensions are to be corrected, since it frequently takes longer to unlearn wrong conceptions than to inculcate correct ones. For example, it is almost universally taught and believed that ozone is invariably violent and dangerous in its effects on the animal economy. On the contrary, Professor Binz, of Bonn, has shown that pure ozone, suitably diluted, can be inhaled with perfect impunity, and without producing any of the irritant effects on the air-passages usually ascribed to it. Instead of irritating, if its inhalation is kept up for some time, it induces a calm and pleasurable but transient sleep, not unlike the anæsthesia following the inhalation of nitrogen monoxide.

It is therefore impossible to escape the conclusion that *the therapeutic efficiency of oxygen is largely due to this indefinable state*, called—for the present and for want of a more accurate term—*ozone*.

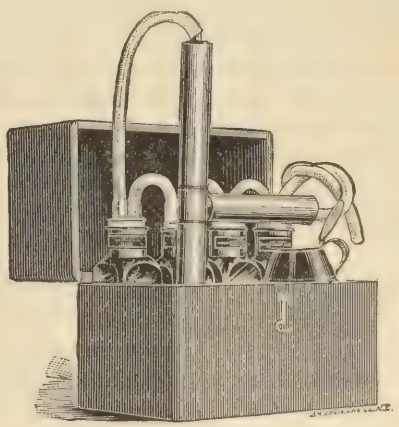
This is a feature of the subject which, as yet barely suggested, will surely repay much further and more searching investigation at the hands of advanced scientists.

Another of the stereotyped stupidities constantly reiterated in text-books of chemistry, as well as in works on physiology, materia medica, and therapeutics, is that pure oxygen, inhaled, acts as a powerful and direct physiological *stimulant*, using this word in its usual rather than in its actual signification. This impression—for it has never amounted to a demonstration—belongs with scores of other therapeutic delusions. For example, that mercury is a reliable antiplastic and "antiphlogistic," whatever that term may once have meant; that quinine is a general tonic; and that overwhelming a given symptom is a rational method of "curing" a given disease. If the word stimulant be used in its higher signification, that of *tonic*, there is less objection to it.

The feeling experienced after inhaling a reasonable quantity of pure oxygen, and more distinctly after using a mixture of oxygen, nitrogen monoxide, and common air, in suitable proportions, is one of restfulness rather than of stimulation. The rapid pulse is slowed, the irritable one steadied, and *arterial tension lessened*. These are surely not the sequelæ of stimulation.

A word as to practical results. The conditions in which, in my hands, oxygen, variously modified and administered with judgment and reasonable persistency, has given the most thoroughly satisfactory results, are uncomplicated *asthma* and the *chronic indigestions*, for the various manifestations of which the names are legion. If any given remedy, or line of treatment, will gradually but surely correct a morbid or vicious assimilative function, and arouse to normal vigor a weak and disordered digestion, it follows that there is, practically, no constitutional condition which it will not favorably influence, since digestion and assimilation are the foundation of all sound physiology, as indigestion and malassimilation are at the bottom of most pathological conditions, not excepting those fatal scourges of the human race, diabetes, rheumatism, tuberculosis, and carcinoma.

And whether we accept or reject the bacillary theory of the origin and propagation of phthisis, in ozone-oxygen and its congeners—when we shall have learned to properly combine and exhibit them—we have certainly its most direct and rational antagonist, if not its physiological antidote; since, causes or concomitants, whichever they shall eventually prove to be, the lower organisms can not long survive and reproduce their kind in fluids freely supplied with nascent oxygen. Thus exposed, they rapidly degenerate, lose their virulence, and become inert, or are absolutely destroyed. And, since it has shown such universal activity as a germicide, whether we accept or deny the germ theory of any disease, we may find in ozone-oxygen, or oxygen at high tension, one of our most reliable weapons of offense and defense; while happily its use is devoid of all dangerous tendencies, a fact which can not be asserted of any other really potent antiseptic.



The cut shows a convenient and easily portable form of apparatus, recently perfected, for promptly evolving nascent or fresh gas at the bedside.

152 East Eighty-sixth Street.

# THE DANGERS OF INTESTINAL PUNCTURE IN THE TREATMENT OF TYMPANITES.*

By B. FARQUHAR CURTIS, M. D.,
ATTENDING SURGEON, ST. LUKE'S HOSPITAL; ASSISTANT SURGEON, NEW YORK CANCER HOSPITAL.

Every little while there appears a new advocate for the use of puncture of the bowel as a means of relieving tympanites in peritonitis, intestinal obstruction, and kindred conditions. There can be no question that the method has been employed very often with good results and without any signs of subsequent fæcal extravasation, but there can also be no doubt that there is very great danger of such an accident and of fatal consequences therefrom. Evidence upon this point is not scanty.

In a case in which enterostomy was performed for intestinal obstruction by Müller ("Arch. f. klin. Chir.," xxiv, 178), while the gut was being secured to the edges of the wound in the abdominal wall, before it was incised, a fine stream of fluid fæces was observed to issue from the intestine every time the needle penetrated the wall of the gut, although the needle and thread employed were very fine. In this case the tympanites is said to have reached an unusually extreme degree, and one of the safeguards of puncture with a hollow needle was of course wanting, for, when the latter instrument is used, the tension of the gut is at once relieved by the escape of gas and fæces, and the collapse of the bowel facilitates the closure of the wound made by the needle. But the case is an instructive illustration of what minute wounds will permit fæcal extravasation.

Among the cases of laparotomy for the relief of intestinal obstruction there are numerous instances in which punctures have been made in the bowel with fine aspirating needles during the operation, in order to lessen the amount of distension and assist the return of the intestine to the abdominal cavity. In some of these cases it has been observed by the operator that the openings did not close, and that gas and fæcal matter escaped from the openings after withdrawal of the needle. Thus I have found cases in which this phenomenon was observed by Hulke,† Howse,‡ Fincham and Cowell,* Halsted,‖ Gerster,△ Atherton,◊ and Obalinski.‡ In the case of Fincham and Cowell the oozing of fæces was arrested by the pressure of a sponge wet with a 1-to-20 solution of carbolic acid. But it has generally been customary to occlude the wound made by the needle with a couple of Lembert sutures—in fact, these punctures are considered by surgeons to be so hazardous that it has been the rule to apply the sutures even when no oozing was perceptible.

It has also been observed that these punctures remain open—at least for some time. In the recent discussion upon intestinal obstruction at Albany, Dr. Jacobi stated that some twenty years ago he presented post-mortem specimens to the New York Pathological Society which showed that the punctures remained open and discharged fæces into the abdominal cavity. Unfortunately, I have been unable to find the published account of this case. Bryant has observed the same condition in two cases, and Silver in one case ("Brit. Med. Jour.," 1878, i, p. 124). In 1869 a case was reported at the London Clinical Society ("Transactions," vol. ii, p. 64) in which a boy was struck in the left groin by a cricket-ball, and peritonitis developed, with great tympanites. On the seventh day after the accident a puncture was made with a fine needle, and the tympanites was relieved. The boy died from the peritonitis twenty-eight hours later, and the autopsy showed that the latter had been caused by a rupture of the ileum, but that the opening made by the needle in the wall of the gut was patent, and had allowed some fæcal extravasation to take place.

There is probably less danger of fæcal extravasation when the intestine is not distended when wounded, as might occur in searching for pus in cases of abdominal abscess, than when it has been extremely distended for a long time, as in intestinal obstruction or peritonitis, for in the latter case the contraction of the wound in the gut must be very slow on account of the paralysis of the muscular coats caused by the overdistension. In peritonitis, the effused lymph upon the outside of the bowel would stiffen its wall and prevent the contraction of the wound; but, on the other hand, it would remove all danger if there were adhesion of the intestine to the inner surface of the abdominal wall, and even if this were not the case at the point of puncture, the neighboring adhesions would limit any fæcal effusion which might occur. Thus the danger would be greatest in extreme and long-continued distension of the gut without peritonitis.

These facts are not presented with the idea that they afford sufficient ground for the absolute condemnation of this method of treatment, but as a warning that there exists a real danger of fæcal extravasation after its employment, and as an argument for the restriction of its use to those cases of extreme tympanites in which it is evident that the patient will succumb to the pressure of the gas in the intestines upon the diaphragm unless immediate relief is given. A very striking case of this kind, which I witnessed, and reported in the "Annals of Surgery," January, 1887, p. 24, by the kind permission of the gentlemen in charge, was in a patient upon whom Dr. Thomas performed laparotomy for a fibro-cyst of the uterus, and who had been left in the charge of Dr. J. B. Hunter. A drainage-tube had been inserted into the cyst, the latter was irrigated every day, and everything went well until the tenth day, when the patient was frightened and made a sudden movement in bed. A low grade of peritonitis followed, and excessive tympanites developed. On the twelfth day the patient was cyanotic and evidently about to die, making only four respirations a minute, and as a last resort Dr. Hunter introduced a fine aspirating needle into the abdomen. A very large quantity of odorless gas escaped, the abdomen became perfectly flat and the patient rallied at once and made a slow but steady recovery. The large quantity of gas escaping from a single

* Read before the New York Clinical Society, February 24, 1888.
† "Med. Times and Gaz.," 1872, ii, p. 463.
‡ "British Med. Jour.," 1876, i, 365.
* "Medical Times and Gazette," 1876, ii, 651.
‖ "Medical News," Philadelphia, 1883, xlii, 113.
△ *Ibid.*, 115.
◊ "Boston Med. and Surg. Jour.," 1883, cviii, 553.
‡ "Wiener med. Presse," 1885, p. 203.

puncture, and its freedom from any odor, make it probable that it was contained in the general peritoneal cavity and not in the intestine, but, unfortunately, no examination was made at the time of the area of dullness on percussion over the liver, so that the evidence is incomplete.

35 West Thirty-fifth Street.

## CASCARA SAGRADA IN RHEUMATISM.

By H. T. GOODWIN, M. D.,
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In addition to the many things already said relative to the buckthorn family, I beg to invite the attention of the profession to two important facts in regard to the therapeutics of the *Rhamnus purshiana* (*Cascara sagrada*) that, so far as I know, have not before been noticed. One is its uselessness as a laxative in the majority of cases of phthisis; the second, its almost specific action in certain forms of rheumatism.

My attention was first directed to its failure as a laxative in phthisical patients by the steward of the New Orleans Marine Hospital, an observing man, who informed me that he had noticed that, though it had been administered by nearly every surgeon with whom he had served at the various hospitals to such patients requiring a laxative, it had failed in every instance.

Desiring to confirm or disprove his observations, I commenced its administration to every phthisical patient in the wards, and to each one was given 1·5 c. c. of the fluid extract t. i. d. This quantity having no effect, I gradually increased it to 4 c. c., at the same hours, and in no single instance was its usual action obtained. I have since used it repeatedly with like effect.

Its effect on rheumatism I discovered by accident. About three months ago I was attacked with severe rheumatic pains in my shoulder, the slightest motion causing intense pain. The third day of the attack I commenced taking as a laxative ten drops of the cascara t. i. d. The first morning after taking it the pains were so much less severe that I could move my arm freely. The day following I was entirely free of all discomfort.

Although, as I have intimated, I had not taken the cascara with any idea of relieving the rheumatism, it occurred to me a few days later that possibly the sudden subsidence of pain might have been due to the drug. There being a few cases of rheumatism in the wards, I determined to try to verify my suspicions. Discontinuing the salicylates, iodides, etc., which these patients were taking, I substituted ext. cascaræ sagradæ fl., 1 c. c., t. i. d. The result astonished me. Within twenty-four hours there was marked improvement in every case. One case especially is worthy of notice. The patient was a Swedish sailor who had been admitted three months previously. He suffered intensely, and, although almost everything had been given from which relief might be expected, his suffering was not allayed. For a day or two after admission he improved on large doses of salicylate of sodium, but subsequently the pains returned as badly as ever, and the salicylate had no further beneficial effect. Iodide of potassium was given several different times, but, owing to an idiosyncrasy, could be continued only two days at a time, a profuse rash making its appearance over the patient's entire body, the pains remaining as acute as ever. They were not confined to any two or three joints, but felt in all, being more severe, however, in the wrists, finger joints, and ankles, all of which sometimes became œdematous. On the evening of February 5th I commenced the exhibition of fifteen-drop doses of *Cascara sagrada* three times daily. The following morning he was about the same; the second day he was much better; on the seventh he was so far recovered that he asked and obtained permission to walk out. From this on he continued to improve steadily, and on the 17th of February was discharged recovered.

I have since used the cascara in fully thirty cases, some ten of which were in out-patients, and, with the exception of three or four in which there was a syphilitic taint, I have obtained the most satisfactory results. I commenced with 1 c. c., t. i. d., and have so far never had to increase it beyond 1·5 c. c., and even to this extent in but two cases. I have seldom had to wait beyond twenty-four hours for beneficial effects. In two cases I had to stop it temporarily owing to its opening the bowels too freely. In such cases I would suggest that one of the preparations of iron be given (separately) at the same time. I usually combine it with syrup or glycerin in equal parts, and instruct the patient to take from thirty to forty drops in water. In one case in which neither it nor the salicylate of sodium appeared to give much benefit I combined the two with good effect. It is but seldom the bowels are opened too freely by it, the cases above referred to being the only ones I have so far observed.

Among the out-patients upon whom I have used it were two intelligent officers of vessels.

One was an old river pilot who had periodically suffered intensely for years. I gave him equal parts of the cascara and syrup, of which I instructed him to take 2 c. c., t. i. d., and requested him to see me again in three days. He returned a month later, and then only to get the medicine renewed. He reported that he had never before had anything relieve him so quickly. The pains began to abate within twenty-four hours after taking the first dose, and in three days after left him entirely. He had had no return, but, for fear of another attack, had come to ask for a bottle to keep with him.

The second case was that of Mr. R., first clerk on a large river steamer. He was suffering so much with pain in the hip joint and thigh that he could scarcely get to the office. I put him on large doses of salicylate of sodium, with colchicum and iodide of potassium, and instructed him to return in a day or two. In a week he sent a friend to say that the pain, instead of lessening, was so severe that he could not get to the office. The salicylate, etc., were stopped and he was given cascara and syrup, thirty-five drops, t. i. d. This was on Friday afternoon. On Sunday he came to the hospital and reported that he had commenced taking the second prescription Saturday morning, and that on Sunday he had felt decidedly better. He was ordered to continue the drops, and report on Wednesday. Tuesday he sent word that he should be unable to report, as he was sufficiently recovered to resume his usual place on the steamer.

I am not able to explain the action of the drug in relieving rheumatism; I leave that to other observers. I write

this in the hope of inducing other medical men to use the cascara, report their experience, and indicate, more particularly, in what class of cases they have found it of most benefit.

New Orleans, La., *May 9, 1888.*

# LAPAROTOMY PRACTICALLY CONSIDERED,

*WITH REPORT OF FIVE CASES* *

By RICHARD DOUGLAS, M. D.,

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*Hæmato-salpinx; Laparotomy; Recovery.*—Reported in full in the "American Journal of Obstetrics and Diseases of Women and Children," April, 1888.

*Ovarian Abscess; Laparotomy: Recovery.*—Priscilla P., aged twenty-five, married, has never been pregnant. For years she had suffered with painful menstruation, with scanty and protracted flow recurring about every three weeks. She gave a history of two attacks of severe pelvic inflammation, one in 1885, the second in November last. I was first called on February 1st. She had been confined to her bed for three weeks, her attending physician treating her for typhoid fever. I found her prostrated, with the pulse 120, the temperature 103° F.; she had that morning suffered with a severe rigor; the night before and for several nights previously she had suffered with colliquative sweats. There was constant, persistent, and most distressing vomiting. This, I would remark, is an important diagnostic symptom generally present in ovarian disease, in differentiation from tubal disease. Her abdomen was tympanitic in the left ovarian region; palpation revealed a firm tumor of about the size of a large orange; by vaginal examination the tumor was found to be closely adherent to the uterus and completely filling that side of the pelvis, retroverting and displacing the uterus to the extreme right. *Per vaginam* fluctuation could not be elicited, but by rectal examination it was very distinct. My diagnosis was pelvic abscess, most probably ovarian. The proper course to pursue would have been to perform an immediate operation, but I allowed myself to stand too much in awe of her extreme prostration, and attempted, by local and constitutional remedies, to alleviate her sufferings and improve her general condition. On February 8th, seven days after my first visit, there was no improvement in the patient, and I was satisfied of my diagnosis of pelvic abscess. I performed abdominal section. Upon opening the cavity the dark surface of the tumor was seen. Adhesions were strong and firm on all sides. With difficulty I succeeded in freeing the anterior surface of the tumor, carefully attempting to enucleate the mass, hoping to preserve the cyst from rupture; unfortunately, however, the walls were too thin, the sac was opened, and about half a pint of pus escaped into the peritoneal cavity, a complication for which I greatly censured myself. I should have drawn off the contents of the sac by aspiration, cleansing the cavity as quickly as possible. The diseased mass was brought up and tied off. Finding the right tube enlarged, the ovary large, soft, and pulpy, these appendages were likewise removed. There was no hæmorrhage from either pedicle, but, as a matter of precaution, each fresh surface was seared with the cautery. After a careful toilet of the peritonæum, Sims's drainage-tube was introduced; through this excellent channel the cavity was irrigated every six or twelve hours. Owing to the fact that pus had escaped into the peritoneal cavity, I feared the advent of septic inflammation, consequently did not think it prudent to remove the tube before the sixth day. There having been no temperature over 100° up to that day, I attempted removal of the tube, and found it fast, after considerable trouble, and I determined to wait a day longer; I then made repeated efforts by twisting and pulling to free it, but fast it was; truly speaking, it was in *morsus diaboli*. The tube was doing no harm as yet, but it was quite an unpleasant predicament for me. I waited twenty-four hours longer; on the evening of the eighth day after the operation there was tenderness with a temperature of 102°. I could wait no longer; with the patient chloroformed, I opened the wound at the lower angle, which had healed throughout, introduced my finger upon the tube as a guide, and found that a piece of tissue had prolapsed into the fenestra of the tube; this it was that was holding it so fast. Satisfying myself that this tissue was neither bowel nor bladder, but probably omental, I mashed it off by pressing with my finger-nail against the margin of the fenestra. This being done, the drainage-tube was removed without difficulty. Two deep and two superficial catgut sutures closed the wound. This second opening of the peritoneal cavity did not seem to retard the recovery in the least. On the fifteenth day after the primary operation the patient was sitting up; in three weeks she was sent home well.

The specimen removed from the woman showed but little Falloppian trouble. The ovary itself was as large as a small orange and showed two distinct pus cysts: one, as before stated, held about eight ounces; the other contained half an ounce of bland pus. Pyocystic disease of the ovary in its pathology is not identical with abscess, though no doubt the same symptoms are present in each. Associated with ovarian suppurations the tubes may be simply congested or filled with purulent contents; sooner or later rupture with its disastrous results must follow. We have no assurance that if pus is present it will ever be absorbed. Therefore, having diagnosticated the case as pelvic abscess, what is before us? One of two procedures. The vaginal incision is the chosen method of such distinguished men as Mundé, Byford, Schröder, and others. The objections raised against this operation are strong, and I am convinced that pelvic abscess, whatever be its origin, is best treated by laparotomy. Tait advocates the method. Professor Gill Wylie, one of our best American authorities, spends hours before his classes at the Polyclinic explaining the prolapse and folding over of the broad ligament and the technique of this special operation. Of course, in the minds of some men there yet remains the "inherited dread" of opening the peritoneal cavity. To those so impressed we can only say, Confine yourself to some other branch of medicine; leave laparotomy and the question of its propriety to others. Fear of censure is a horrid chasm into which the brilliant spark of many a professional career sinks into oblivion. Then, gentlemen, in treating pelvic abscess, be strong in the courage of your conviction. Bear in mind the Shakespearian admonition—

> "To thine own self be true;
> And it must follow, as the night the day,
> Thou canst not then be false to any man."

The third case I offer is one of entirely different nature. In this case laparotomy was done for the

*Relief of Constant Pelvic Pains and Reflex Nervous Symptoms; Recovery.*—Mrs. S. S., aged thirty-four, had been mar-

* An abstract of a paper read before the Tennessee State Medical Society, April 10, 1888.

ried fourteen years, was mother of one child twelve years old, and had never been pregnant since that labor. This was one of those cases filled with historic episodes characteristic of chronic inflammation in the tubes and the ovaries. For ten years she had suffered almost constant pelvic pains, menstrual derangement, and profuse and irritating leucorrhœa. Gradually the local symptoms had made their impressions upon the nervous system. For the relief of all these ailments, she had passed through many hands, was nervous, irritable, never free from pains, suffered from insomnia, headache, dyspepsia, etc. The act of intercourse was almost death to her. The uterus was enlarged, with lacerated and granular cervix, and retroverted; both ovaries were large and prolapsed, especially the left ovary. The most delicate touch of the left ovary would cause her to scream with pain. Surely if there was ever a case of nervous trouble due to disease of the tubes and ovaries, this was one. An operation was evidently called for, yet I resorted to every means of relief before making a sacrifice of these organs. For nearly four months I gave her the benefit of such treatment as I thought best. All local treatment aggravated her suffering. At last I saw the inevitable necessity of more radical measures. On February 22d I performed Tait's operation. It was with great difficulty the displaced ovaries were freed from their attachments. Both glands were enlarged, and the left was cystic and firmly adherent; the tubes were thickened and congested, and bore evidence of long-continued inflammation. Drainage was not demanded. Everything progressed favorably in this case until the ninth day, when, owing to a mistake, she received an overdose of belladonna; for several hours she was profoundly under the influence of the drug. She is now walking about, gaining flesh, and is better; her nervous system is more quiet, she has not menstruated since the operation, and I think hers a promising case of absolute recovery, not from the operation, for that is already a success, but restoration to health, which would be a gratifying fulfillment of the hopes and purpose of the operator.

*Uterine Myoma; Exploratory Laparotomy; Recovery.*—Miss A. B., aged thirty-four, white, presented herself to me with this history: In August last she had suffered from an acute exacerbation of pelvic inflammation, and had been confined to her room for two weeks. Up to that time her general health had been excellent. She was an active, robust woman, weighing one hundred and fifty-six pounds. When first seen by me, on March 13 last, she stated that she had been under the care of a physician for the last six weeks. He had applied local treatment to the uterus every day. Finding no improvement, she had sought my advice. I found on examination a distinct tumor, of about the size of a fœtal head, situated over and a little to the left of the uterus. The physician had called it a lump that would soon pass away. The patient herself had discovered the growth, but was positive that, as far as she was able to detect, the swelling had only existed six weeks. Slight menorrhagia, heavy, dull pains in the pelvis were the only symptoms.

Examination showed the tumor to be distinctly uterine, firm, hard, and inelastic. Taking into consideration the history of the case, the rapid development of the tumor and the great decline of health, exploratory laparotomy was determined upon, in the hope that the tubes and ovaries might be removed to arrest the growth of the neoplasm, the patient protesting against hysterectomy. During the two weeks of observation and preparatory treatment prior to operation, I could but notice a decided increase in the size of the tumor. On March 2d I opened the cavity, and found a large tumor springing from the fundus of the uterus and extending a prolongation into the left broad ligament. The tumor was firmly adherent to the bowel and all adjacent parts. The ovaries were so firmly adherent and small that it was thought advisable to let them alone. Seeing the hopelessness of the case, without entire removal of the uterus and tumor, the cavity was closed. The stitches were removed on the eighth day after the operation; the wound had healed entirely under one dressing. Two weeks after the operation, from some quite inexplicable cause, her temperature marked 105° F., pulse 130. She had one severe rigor, followed by sweat, nausea, and vomiting; gradually the symptoms passed away. She has now fully recovered and returned to her home in Kentucky. She is certainly none the worse for the operation; upon the contrary, the tumor, which was so large at the time of operation, has markedly diminished in size. Regarding the case as malignant, of course the outlook for this woman is gloomy.

Were we to place on record only our successful cases, our motives might be impugned. In the four cases, as reported above, good fortune has attended all my operations. Not so in this last case, which terminated fatally.

*Gunshot Wound of the Abdomen; Laparotomy; Death.*—At 1.30 A. M., on Friday, March 23d last, I was summoned to see John Mc. Some two hours before, while engaged in a difficulty, he had received a pistol-shot wound of the abdomen. I found him at his home, to which he had been removed after receiving the wound. He was in a state of profound shock, pulse barely perceptible. Administering hypodermatic injections of atropine, enemata of brandy, and hot water, I examined the wound, which was situated three inches above the umbilicus, an inch and a half to the left of the median line. Probing gave no satisfactory evidence as to the direction the ball had taken. Taking into consideration the size of the ball, the proximity of the weapon—about four feet—and the position of the wound, the inference was that it had penetrated the cavity. In support of this opinion, we had the general symptoms of visceral injury, prolonged and profound shock, tympanites, great pain, restlessness, and vomiting. This subject of penetrating wounds has been so well ventilated in late surgical literature, and the position taken by all men of authority is so determined, I could conceive of but one course open to me in the management of this case—*i. e.*, to enlarge the wound of entrance, ascertain if the ball had entered the cavity, and, if so, perform exploratory laparotomy. Briefly stating the supposed nature of the case to his family and friends, and gaining their full consent, I began preparations for an antiseptic operation, feeling convinced that the ball had entered the cavity. Owing to unavoidable delay, the operation was not commenced till 8 A. M.—about six hours from the time of my call. Morphine sufficient to relieve pain had been given him hypodermatically. With the patient anæsthetized, the wound of entrance was enlarged; it was found that the ball had passed directly into the cavity. Without more ado, the abdomen was opened by an incision eight inches in length; a decided fæcal odor was at once detected. The cavity was filled with blood, serum, fæcal matter, etc., all of which was sponged out carefully, without disturbing the relations of the intestines. Immediately under the parietal wound lay a coil of small intestine, dark with congestion and rough with the deposit of lymph. The convolution was found to be perforated; the wound received immediate attention, its edges were cleansed and dusted with iodoform, and the wound was closed with Lembert's silk suture. Now, removing the bowels from the cavity and protecting them with a towel wet with hot Thiersch's solution, further examination disclosed a perforation of the transverse colon. Through this the bullet had passed obliquely, its course being directed from the median line toward the left, so that the wound of exit from the colon was four inches to the left of that of entrance. The track was

distinctly marked along the wall of the bowel. The wound of exit from the colon was large; the edges were everted and patulous. The contents escaped freely. Upon passing out of the colon, the ball had wounded a second convolution of the intestine. From this point the destination of the ball could not be ascertained. We were satisfied, however, from the anatomical relations, that there was no other wound of the viscera. The perforations in the colon were treated after the same manner as those in the jejunum. Now began the toilet of the cavity. Irrigation with hot Thiersch's solution and sponging at last cleansed the cavity. As the bowels were returned, careful search was again made for other wounds, but none were found. The line of incision was now closed and an ordinary dressing applied. Although the operation lasted an hour and a half, the pulse remained good. Immediately after the operation the temperature was 98°; it soon went up to 100°, with the pulse 110. I shall not enter into the details of this case further than to say that there was no nausea, but little pain or restlessness, no temperature over 100°, pulse 110, from the time of operation, Friday morning, until Sunday morning at three o'clock—forty-six hours. He then vomited freely, the pulse went up in an hour from 110 to 160, and the temperature from 101° to 105·5°. At first the pulse was full, but soon became weak and thready. On Sunday, at 12.30 P. M., after vomiting an enormous quantity of dark-green water, he died. The immediate cause was, I think, septic peritonitis.

This completes the record of my first five cases of abdominal section. In presenting them to you I have said nothing of antiseptic surgery. This was not an intentional oversight. I did not deem it necessary, for the reason that in this day of advanced surgery antiseptic methods are essential principles. I would as soon attempt an amputation without a knife as laparotomy without every antiseptic detail in the most minute particular. If antisepticism is a myth, its practice can do no harm. If it is a science, we reap the benefits. For excellence of results the advocates of antiseptic wound treatment challenge comparison.

## Correspondence.

### LETTER FROM PARIS.

*Tar-water as a Hæmostatic.—Dilatation of the Stomach in connection with Surgical Operations.—Naphthol as a Germicide.—Salicylate of Lithine in Rheumatic Scleritis.*

Paris, *May 24, 1888.*

About the middle of the last century Berkeley published a book which was an enthusiastic study of the medicinal virtues of tar, but his over-praise only increased the rapidity of the fall of this agent in esteem. Of late years, however, a number of others have arisen to advise the use of tar in some form. One of the latest, Dr. St. Marc, details, in a late thesis presented to the faculty of medicine, the benefits to be derived from the use of distilled tar-water in all forms of hæmorrhage. To prepare distilled tar-water he advises as follows: Take two and a fifth pounds of tar, four and a half pounds of saw-dust of pine wood, and twelve quarts of water. Distill, and obtain six quarts of liquid. This is of a clear color and strong empyreumatic smell, provokes sneezing, has a slight astringent taste, and gives a sensation of heat to the mouth and throat. In hæmoptysis occurring in the first and second stages of phthisis it has produced considerable benefit. In order to cover the taste of the tar, it is often given as follows: Distilled tar-water, 15 drachms; syrup of tolu, 1 ounce; essence of lemon, 2 drops. The dose for twenty-four hours is about 2 ounces to stop any hæmorrhage, such as that from gastric ulcer, the epistaxis seen in chlorotic girls, and that of hæmophilia or congestive metritis. Its success is not certain, however, in carcinoma. Turpentine mixed with equal parts of olive-oil is used in cancer of the uterus, from much the same idea. In this case the vagina is carefully disinfected with permanganate of potassium, and small pieces of antiseptic cotton are imbued with the turpentine and oil, placed upon the ulcerated surface, and held in position by a vaginal tampon, which is changed frequently.

M. Bazy, one of our local surgeons, formerly attached to Professor Guyon's service, where so much rectal and genito-urinary surgery is done, calls the attention of the Academy of Sciences to the importance of dilatation of the stomach in patients who are to undergo a surgical operation. It is quite possible that a dilated stomach may coincide with certain pathological states occurring before or after any surgical intervention, and there is an important relation between these states, because dilatation of the stomach, according to Dr. Bazy, creates a favorable center for the spontaneous growth of micro-organisms, which will certainly degenerate into the infectious forms, and destroy the patient who may have been operated upon by a surgeon who does not himself, or through the patient's physician, search for this trouble. Dilatation then presents the danger of infection, and should be carefully sought for before all surgical operations, and so treated that it will not be a focus of infection after the operation. If it is noticed after an operation, suitable gastro-intestinal antiseptic treatment must be instituted at once to prevent other and more serious troubles.

While speaking of intestinal antisepsis it may be mentioned that in Professor Bouchard's laboratory and service at the hospital they are still experimenting on naphthol in this connecr tion. In cultivations of various microbes to which three pecent. of *a*-naphthol is added, in twenty-four hours all the micro-organisms were dead or dying. It took several days, however, before the same mixture became harmless when injected under the skin of animals.

The yearly congress of the *Société française d'ophthalmologie* has just been held in Paris. One or two of the papers were of general interest. M. Dufour, of Lausanne, Switzerland, spoke on the treatment of scleritis by the salicylate of lithine. He believes that this trouble is mostly of rheumatic origin, and in a test series of eleven patients he found that they all were ill during damp weather, and most of them better in warm, dry seasons. Gout would seem also to have its influence in scleritis, as it seems to affect the rich classes mostly, and when they go in for high alimentation—all those, in fact, who have a considerable deposit of uric acid in the urine. The doctor thinks that in these cases it is almost useless to continue local treatment, but better to try general treatment, and he relates his experience with many drugs—quinine, arsenic, even salicylate of sodium—but nothing seemed of use until he took to giving salicylate of lithine, in doses of thirty grains. This was well supported by the stomach and cured most of the cases. M. Grandelément, of Lyons, said that he had found that antipyrine, given by subcutaneous injections in the temporal region, had given him the best results, not only in this trouble but in all eye diseases where there was circumorbital pain, and whenever there was any spasm. It would also modify all the inflammatory processes of the globe of the eye, with ciliary pain. This referred to keratitis, iritis, and, in fact, all the painful affections of the eyes. The dose used was four grains of antipyrine in ten drops of distilled water, to which was added one twelfth of a grain of hydrochloride of cocaine.

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## ALSACE-LORRAINE IN MEDICINE.

WITHOUT venturing to comment upon the political aspects of the recent summary suppression of the *Société de médecine de Strasbourg*, we may express our regret at the occurrence—a regret that we are confident must be shared by medical men everywhere, even in the empire under whose sway the Rhenish provinces are now held. An organization that has contributed materially to the progress of medicine, as well since as before the Franco-Prussian war, has been swept out of existence; only for the time being, let us hope. The importance of its work has been moderately, but most effectively, set forth in a recent issue of the "Gazette hebdomadaire de médecine et de chirurgie," in a *feuilleton* signed by the editor-in-chief of that journal, M. Lereboullet. He gives a list of those who founded the society, in 1842, and recounts their notable contributions to literature, together with those of others who have since become members of the organization.

It seems that but few of the original members are now living, including Stoltz, Tourdes, Eugène Bœckel, and Strohl. Stoltz was one of the pioneers in insisting on the value of anæsthetization in obstetrics; he introduced into France the practice of bringing on premature labor in cases of pelvic contraction; and he is well known for his writings on perforations of the cervix uteri during labor and on vesico-uterine and vesico-abdominal fistulæ, and for his modifications of many obstetrical instruments. Tourdes, who for many years edited the reports of the society's proceedings, has also been an important contributor to the "Dictionnaire encyclopédique," and has furnished many other articles to recent literature, on such subjects as epidemics of cerebro-spinal meningitis, the pathogeny of goître, the mode of death by etherization, and on various anæsthetics. Eugène Bœckel, who has twice been the society's president, is widely known by his writings on phlegmonous periostitis, metallic sutures, the treatment of cysts, resections, urethrotomy, autoplastic operations, hip-joint disease, etc. Strohl, formerly an adjunct professor, is known as the author of works on therapeutics and hygiene.

Besides the founders, there are to be found in the list of members such names as those of Ehrmann, Sédillot, Rigaud, Schützenberger, Hirtz, Forget, Stœber, Caze, Kuss, the elder Lereboullet, Herrgott, Hecht, Feltz, Ruef, Dagonet, the Aronssohns, Eissen, Gros, Godelier, Michel, Monoyer, Netter, Willemin, Kœberlé, J. Bœckel, Meyer, Müller, Reibell, Herrenschmidt, Sieffermann, Kien, Goldschmidt, Ruhlmann, and Lévy. Many of these names are almost as familiar to American physicians as to those of France, and their mere enumeration is enough to show the material of which the extinguished society was made up. As individuals, such men can not be gagged, but those of them who are still living may be looked to for many further contributions to the advancement of medicine. It is to be hoped, however, that before long their usefulness may be increased by the revival of the society to which they belonged.

## *MINOR PARAGRAPHS.*

### THE MICRO-ORGANISM OF SCARLET FEVER.

IN the May number of the "Cincinnati Medical News" we find an interesting correspondence between Dr. James Barnsfather, of Dayton, Ky., and Dr. Henry Cundell-Juler, of Cincinnati, in which the former refers to an old memorandum and drawing of his relating to the microscopical appearances that he found in 1875 in some liquid removed by aspiration from the thyreoid gland of a child suffering with malignant scarlet fever. His notes describe a comma-shaped bacillus occurring in clusters, with multitudes of minute purple granules evenly distributed through the menstruum. He states that at the time he took the granules to be spores, and supposed that he had discovered the microbe of scarlet fever, which fact it was his intention to announce in the "Cincinnati Medical News," the editor of which, however, advised him to wait until he met with the organism in another case. He adds that he has never since encountered it, but that he has not met with another case of the disease so malignant as the one that furnished the specimen. He asks the discoverer of any micro-organism now purporting to be that of scarlet fever to compare his observations with the one referred to.

### THE NEW REPORTS OF THE CITY BOARD OF HEALTH.

IN addition to many other signs of recent renewed vigor on the part of the Board of Health, it is to be commended for the excellent weekly reports which it now issues, more comprehensive and going more into details than any other similar publications that have come to our notice. Besides analytical tables of the New York mortality, they contain a tabular statement of the mortality of various American and foreign cities, returns of births, marriages, and still-births, and a record of meteorological observations at the Central Park Observatory. The reports reflect great credit upon the Register of Records, Dr. Tracy.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 5, 1888:

| DISEASES. | Week ending May 29. | | Week ending June 5. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 8 | 5 | 7 | 7 |
| Scarlet fever | 193 | 24 | 173 | 38 |
| Cerebro-spinal meningitis | 3 | 2 | 3 | 2 |
| Measles | 188 | 11 | 233 | 20 |
| Diphtheria | 154 | 47 | 152 | 67 |
| Small-pox | 4 | 1 | 15 | 3 |

**The Association of American Institutions for Idiotic and Feeble-minded Persons** will begin its twelfth annual meeting in Toronto, Canada, on Monday, the 18th inst., and proceed to Orillia the next day. Reports will be called for as follows:

"On the Causation of Idiocy, etc."; "On the Status of the Work before the People and Legislatures of the Various States"; "On the Development and Progress of the Institutions represented"; "Improvements in School Training and Hospital Care introduced during the Past Year"; and "Clinical Reports of Special Cases." An annual address, by Dr. George H. Knight, of Lakeville, Conn., is announced, to be succeeded by the following-named papers: "Clinical Notes on 'Mongolian' Idiocy," by Dr. A. W. Wilmarth, of Elwyn, Pa.; "Special Treatment of Paralytic and Epileptic Idiocy," by Dr. A. E. Osborne, of Santa Clara, Cal.; "Industrial Education at the Kentucky Institution," by Dr. J. Q. A. Stewart, of Frankfort, Ky.; "Kindergarten for Feeble-minded Children," by Dr. S. J. Fort, of Ellicott City, Md.; "A Study of Twenty Cases of Hemiplegic Idiocy at Elwyn," by Dr. William Osler, of Philadelphia; "Notes on Examination of Eyes at Elwyn," by Dr. Charles Oliver, of Philadelphia; "What is Meant by Physiological Education," by Dr. Isaac N. Kerlin, of Elwyn, Pa.; and "The Present Condition of the Education of Imbeciles in Great Britain," by Dr. George E. Shuttleworth, of Lancaster, England.

**Dartmouth Medical College.**—At the request of the faculty, Dr. Paul F. Mundé has consented to give the course of lectures on gynæcology this year, as it has been found impracticable to fill otherwise the vacancy caused by the death of Dr. Dunster. Dr. William H. Parish will give the course in obstetrics.

**The Harvard Medical School.**—The faculty has recommended the following appointments to the Board of Overseers: Dr. Frederick I. Knight to be professor of laryngology, Dr. William H. Baker to be professor of gynæcology, and Dr. Clarence J. Blake and Dr. J. Orne Green to be professors of otology and clinical otology.

**The Cincinnati Press Club** has established permanent quarters during the Centennial Exposition of the Ohio Valley and Central States at the exposition buildings, and is to dedicate them this evening, June 9th, by a reception and banquet. The exposition will continue from July 4th to October 27th. We beg to acknowledge the courtesy of an invitation to be present at the club's dedication of its quarters.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending June 2, 1888:*

Craig, F. C., Passed Assistant Surgeon. Detached from the Naval Hospital at Norfolk, and ordered to the Naval Hospital at New York.

Wentworth, A. R., Assistant Surgeon. Detached from the U. S. Steamer Galena, and ordered to the Naval Hospital at Norfolk.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending June 2, 1888:*

Devan, S. C., Passed Assistant Surgeon. Granted leave of absence for ten days. May 29, 1888.

Carrington, P. M., Passed Assistant Surgeon. Granted leave of absence for five days. May 29, 1888.

**Society Meetings for the Coming Week:**

Monday, *June 11th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *June 12th:* Massachusetts Medical Society (first day, Boston); Maine Medical Association (Portland); Delaware State Medical Society (Georgetown); Medical Society of the State of New Jersey (Lake Hopatcong); Oregon State Medical Society (Portland); New York Medical Union (private); Medical Societies of the Counties of Chemung (annual—Elmira), Chenango (semi-annual), Delaware (annual), Erie (semi-annual—Buffalo), Genesee (annual—Batavia), Livingston (annual—Geneseo), Onondaga (annual—Syracuse), Oswego (annual—Mexico), Rensselaer, St. Lawrence (semi-annual), Schenectady (semi-annual—Schenectady), Steuben (annual—Bath), Warren (annual—Lake George), and Wyoming (Warsaw), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Baltimore Gynæcological and Obstetrical Society.

Wednesday, *June 13th:* Massachusetts Medical Society (second day); Ohio State Medical Society (Columbus); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Societies of the Counties of Albany, Cayuga (annual), Cortlandt (annual), Dutchess (semi-annual—Poughkeepsie), Montgomery (annual—Fonda), and Sullivan (annual—Monticello), N. Y.; Philadelphia County Medical Society; Middlesex, N. J., County Medical Society (annual).

Thursday, *June 14th:* Michigan State Medical Society (Detroit); Rhode Island Medical Society (Providence); Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; New York Laryngological Society; Medical Society of the County of Cayuga (annual), N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *June 15th:* Chicago Gynæcological Society; Baltimore Clinical Society.

Saturday, *June 16th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

## OBITUARY NOTES.

**Henry Newton Crandall, M. D.,** of Westerly, R. I., died suddenly, of pneumonia, on the 31st of May. He was born in De Ruyter, N. Y., in 1848, and was graduated from the Jefferson Medical College, of Philadelphia, in 1869. Dr. Crandall was successful in his profession, and was widely esteemed for his sterling qualities as a man and as a physician.

# Proceedings of Societies.

## OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Meeting of April 5, 1888.*

The President, Dr. Thomas M. Drysdale, in the Chair; Dr. J. M. Baldy, Secretary.

**Multilocular Papilloma of the Broad Ligament, producing Obstruction of the Bowels; Operation; Death from Uræmia.**—The President reported the case of a widow, fifty-four years old, to whom he had been called on the 7th of January, at the request of the family physician, Dr. A. G. B. Hinkle. In March of the year before she had been seized with intense

abdominal pain and obstinate constipation, which, after the failure of other measures, had finally yielded to treatment for lead colic. She had continued, however, to suffer with constipation and colic, and her abdomen was constantly swollen. In August she had first felt a hard tumor low in the right side, and since that time her abdomen had increased rapidly in size and she had become emaciated. When the speaker first saw her she was anæmic, and had a cachectic appearance like that of malignant disease. The abdomen was greatly enlarged and resonant everywhere except below a line half-way between the umbilicus and the pubes; there it was dull, and fluctuation could be detected. In the right iliac region there was a hard, nodulated tumor, which appeared to be moderately movable. The bladder was prolapsed and projected between the thighs, but the uterus was apparently held up by being fixed to the tumor. As frequency of micturition was a prominent symptom, Dr. Hinkle had made frequent examinations of the urine, but had found nothing abnormal about it. The speaker also examined two specimens, and found them free from albumin and sugar, and of a specific gravity of 1·020. On the 17th she was found to have been suffering continually; the abdomen was extremely hard and dull on percussion throughout, with general fluctuation, showing that rapid effusion had taken place. On the 22d the speaker operated, with the assistance of his son and in the presence of Dr. Hinkle, Dr. James F. Wilson, Dr. J. Howard Beck, and Dr. G. B. McCracken. The tumor, which filled the upper part of the pelvis and the lower part of the abdomen on the right side, was extensively adherent, and its removal was consequently tedious, lasting over an hour. During the operation the pulse was well maintained, but this was followed by profound shock, shown in the pale face and thready, almost imperceptible pulse. As soon as the patient regained consciousness she complained of intense pain in the back. Under the use of stimulants and the external application of heat, she reacted in about an hour. Four hours after the operation the nurse removed an ounce and a half of urine with the catheter, but three hours later Dr. Hinkle and the speaker found the bladder empty. The pulse was then 112 and the temperature 100·2° F., which was the highest point reached. She complained of feeling sore in every part. To relieve the suppression of urine, a mustard plaster, made with warm water, was ordered to be applied over the kidneys, and a tablespoonful of the following mixture, well diluted with water, to be taken every four hours:

| | |
|---|---|
| Potassium acetate | ½ oz.; |
| Spirit of nitrous ether | ½ fl. oz.; |
| Distilled water | 3½ oz. |

Other diuretics were used, including calomel, and the hot vapor bath was employed, but the subsequent secretion of urine was trifling, and the patient died on the evening of the third day. At the autopsy the right kidney was found to have been almost wholly converted into a cyst, only a small portion of its normal tissue remaining. The left kidney was enlarged and intensely congested; when its adherent capsule was removed, the surface of the gland presented the rough, granular appearance of inflammation; there were several small cysts in its cortical substance.

The case presented several features of interest, but it had been related chiefly to show how one might be deceived as to the state of the kidneys even when all signs of disease were lacking in their secretion. The patient's life had depended on the action of one kidney, itself diseased, and the toxic effect of the ether had so added to its burden that it had yielded.

Dr. Parrish alluded to the case of a patient of his who, some years before, had died of acute suppression of urine after the Porro-Müller operation. It was a serious question, he said, what anæsthetic should be used under such circumstances.

Dr. J. Price said that there was only one author who made any mention of the condition of the temperature under ether anæsthesia. Some years ago Dr. Burk had taken the temperature of a number of etherized subjects, and had found that there was invariably a depression of from one to two degrees, due to cessation of combustion.

The President thought that the fall of temperature was not due to the anæsthetic, but to the uræmia, as he had repeatedly noted a similar depression in advanced stages of Bright's disease.

**Rupture of a Branch of the Umbilical Vein.**—Dr. Hamill showed a placenta illustrating this lesion. Hæmorrhage into the placenta, or placental apoplexy, he said, was not rare. In the earlier stages of placental development the maternal capillary loops thrown into a network around the chorionic villi not infrequently ruptured, with consequent effusion of blood over a greater or lesser area, and at a later period of development the blood-current in the intervillous blood-spaces, always sluggish, might become so very slow that the blood coagulated, and at birth a clot might be seen of varying extent, more or less perfectly organized, and in some cases presenting just the laminated appearance seen in an aneurysm undergoing obliteration. Rupture of the umbilical vein in the cord, with a rather extensive effusion of blood, had also been noted, but in such a case the quantity of blood that could escape was of necessity limited to the comparatively small capacity of the cord. In the case to which the specimen belonged the placental apoplexy had been of fœtal instead of maternal origin; the ruptured vessel was one of the large branches of the umbilical vein running across the fœtal surface of the placenta, and the quantity of blood effused must have left the fœtal body absolutely exsanguinated. All these circumstances made the specimen a rare one, and the last two made it quite unique so far as his knowledge went. He had been unable to account for the rupture of the blood-vessel; there was nothing in the condition of the fœtus or in the history of the mother that would explain it.

Dr. Hirst thought that a somewhat similar case had been described by Baudelocque.

Dr. Kelly said that he had in his possession the placenta and membranes from a recent case of delivery, in which moderate traction on the cord, after the birth of the child, had resulted in a large hæmorrhagic extravasation between the placenta and the amnion, which was found to have come from a minute rupture in the vein on the placenta just as it left the cord, about 2 mm. in length, and transversely to its axis.

**Morning Sickness in the Husband.**—Dr. Hamill remarked that the occurrence of morning sickness in the husband, after the fact of pregnancy was known or suspected, he had frequently noted; but the case which he was about to speak of was unique from the fact that the sickness appeared in the husband at such an early period of pregnancy. Two weeks after the appearance of menstruation for the last time, the husband had daily morning attacks, and not until it was time for the next menstruation had the woman any other evidence that conception had taken place. The husband's attacks continued for two months. During his wife's previous pregnancies he had suffered from like attacks, but not until he and his wife had both become aware of the existence of pregnancy.

**A Strangulated Ovarian Cyst** was shown by Dr. Parrish. The patient had not been aware that anything ailed her until one night she was seized with intense abdominal pain, and, jumping out of bed, ran about the house screaming with her suffering. Dr. J. H. Musser was sent for, and gave her a hypodermic injection of morphine. The dose had to be repeated frequently, and in two days the pain began to subside, and was altogether gone in five days. The temperature remained nearly

normal until the fourth day, when it was found to be 103°, and it was the same on the next day, when an operation was performed. It was noteworthy that the temperature and pulse had both risen steadily, while the pain had as steadily decreased after the third day. The tumor was found to spring from the left ovary, and was very black. Besides the ordinary contents of an ovarian cyst, it contained coagulated blood. The pedicle was twisted three times, and was quite black. The patient had recovered rapidly. Twisting of the pedicle was a well-recognized accident, but not in all cases were such marked changes found as in this one.

In connection with this case, the speaker would mention one in which he had operated three months before. The woman had complained of sudden intense pain in the pelvis, and been confined to bed from that moment, remaining in bed for more than two months with general peritonitis. A number of physicians had attended her, and one of them had introduced an exploring needle into the abdomen. She was extremely exhausted, and had a constant temperature of 103°, or higher. An incision was made above Poupart's ligament, opening into a tumor, which was found to contain pus and coagulated blood. Its cavity was cleansed, and the incision was closed around a drainage-tube. The cyst was thought to be intraperitoneal. In three days strangulation of the bowels developed, with fæcal vomiting. The bowels could not be made to act, and a second operation was proposed on the next day, but was declined. On the following day, however, a second incision was made, from a point below the spleen toward the first incision. There was distension of the abdominal wall in the lumbar and hypochondriac regions, and great pain under the spleen had developed. The intestines were found adherent in a mass, and three large bands were found extending from the region of the spleen to the right inguinal region. The adhesions were broken up, and these bands were tied and cut. No irrigation was used. The whole wound was closed, and a large piece of adhesive plaster was placed over it to protect it from the discharges from the lower incision. Recovery was slow, but satisfactory.

**Hydramnios.**—Dr. Hirst reported two cases of hydramnios. The ætiology of this affection, he said, was so obscure that, according to Bar, forty-four per cent. of all cases admitted of no explanation; therefore, every case that could be traced to a distinct cause was of interest. The first case was that of a young primipara, who was brought to the Maternity Pavilion of the Philadelphia Hospital in the first stage of labor. The abdomen was enormously distended, globular, and distinctly fluctuating. The os uteri was of about the size of a dollar, and an amniotic sac, very tense, filled the greater part of the pelvis; to one side of and above this a small fœtal head could be felt, evidently macerated, covered with its membranes, with no intervening liquor amnii. The diagnosis was plain—twin gestation, with dropsy of one amniotic sac, which was obstructing labor by preventing the descent of the fœtus contained in the normal sac. The distended sac was ruptured, the edges of the rubber sheet on which the woman lay were gathered up, and all the escaping fluid was caught; it measured five quarts. The macerated fœtus was speedily expelled, and a living one soon followed. The latter corresponded to about the eighth month of gestation; the former had apparently died at an earlier period. The woman said that until within five weeks she had noticed nothing unusual in her condition, but that since that time her abdomen had rapidly increased in size, without, however, causing her much inconvenience. To explain this case, the speaker thought, Werth's theory should be called upon. According to that observer, an hypertrophied placenta, by absorbing more fluid from the maternal blood than the fœtal economy could dispose of, brought about hypertrophy of the fœtal heart and kidneys, with consequent polyuria; in addition, the increased pressure within the umbilical vein favored a transudation of fluid through the amniotic covering of the placenta. In the case under consideration the placenta was of quite twice the size of a normal single one, with extensive anastomoses between the two sets of fœtal vessels. One fœtus having died, the other one had suddenly been called upon to deal with the very large quantity of fluid abstracted from the maternal blood by an enormous placental surface—an impossible task, so that the excess of liquid had to be got rid of by excretion and transudation into the amniotic cavity.

In the second case the woman was a multipara with serious heart disease—mitral regurgitation and aortic stenosis. The quantity of liquor amnii was estimated to be four quarts. If one accepted Tarnier's idea, the speaker remarked, all cases of hydramnios might be divided, ætiologically, into two broad classes, depending either on overproduction of liquor amii or on its insufficient absorption. It would seem that this case should be classed under the latter division. The veins were choked with blood, the circulation was sluggish to a degree, and, if it was true, as it seemed to the speaker, that some of the liquor amnii was absorbed by the maternal vessels, the absorption was here reduced to the minimum.

**Adherent Placenta; Post-partum Hæmorrhage.**—Dr. Hirst also said that he had recently been called by a medical student to see a woman who had just given birth to a child. He found her almost bloodless and the child dead. The woman's friends declared that the baby had been born while the mother was on her feet, and been killed by dropping to the floor; also, that the after-birth had not come away. A vaginal examination showed no trace of cord or placenta. On passing the hand into the uterus, however, the placenta was found glued fast to the uterine wall, and so firmly adherent that considerable force was necessary to detach it. The cord had been torn away from the fœtal surface of the placenta, leaving a spot about as large as a dollar bare of amnion. The large branches of the umbilical vein had been torn across.

**A Comparison of Hospital and Out-door Obstetrical Practice.**—Dr. J. Price made a report on this subject, premising that he did not intend to discuss at length the old question of home *vs.* hospital practice in obstetrics, for that whole matter had been fully considered, and there were some excellent publications on the subject. Maternity hospitals must exist for destitute women in need of shelter and assistance. To compare the results in out-door practice, where patients resided in unsuitable and insanitary localities, with those of a well-organized maternity hospital was impracticable without an immense amount of labor and statistics. To diminish maternal mortality was the chief object of the obstetric art. In a maternity hospital difficult and complicated cases were met with, among a class of patients particularly prone to the accidents incident to parturition. Such patients could not receive the services of trained attendants at their homes; they were admitted into the hospitals because there skill could do more for them in averting danger and death. There were many cases which foiled the most consummate skill; again, there were simple complications that defeated the inexperienced physician and the midwife. At the Retreat he aimed at the highest degree of surgical cleanliness; if dirt were done away with, all would go well. All effete and refuse matter was removed from the building at once, the air in the wards was kept in motion, and every attention to matters of detail, especially to kindly and cleanly nursing, was insisted on. The speaker had never been able to understand why the results of out-door practice among the poor, who had inadequate means of procuring the necessary comforts of life even in health, and who made no provision for them-

selves in childbirth, should be perceptibly better than the results in hospital practice. He was aware that the statistics of outdoor lying-in patients had been pronounced unreliable and wholly worthless. In order to satisfy his own mind on this question, he had made a careful analysis of the cases that had come under his own charge for a period of almost three years. The rule in regard to dispensary cases had been attendance by graduates or students in medicine, during confinement and convalescence, for at least ten days, and in the same manner as in private practice. All complications required the presence of himself or some physician of experience. All accidents in cases of difficult labor had been due to delay in asking for assistance; everything lay in promptness. The speaker then gave a statistical summary of the practice at the Preston Retreat and at the Philadelphia Dispensary.

**A Report of Cases of Laparotomy during the Year 1887** was read by Dr. WILLIAM GOODELL. There had been 53 operations: 27 ovariotomies, with 22 recoveries and 5 deaths; 19 oophorectomies, with 18 recoveries and 1 death; 1 hysterectomy, ending in recovery; 1 operation for malignant tumor of the omentum, ending in death; 2 operations for pelvic abscess, both ending in recovery; and 3 exploratory incisions, all followed by recovery—in all, 46 recoveries and 7 deaths. With regard to the fatal cases, the first one was a case of malignant papillary cystoma of both ovaries, in which every abdominal organ had seemed to be infected; bleeding from intestinal adhesions called for several ligatures and the application of Monsel's solution; insurmountable intestinal obstruction took place, and the woman died on the seventh day. The second fatal case was that of a short but exceedingly fat woman, weighing 254 pounds, who could not walk without assistance. The area of raw surface made by the wound was the most extensive that the speaker had ever seen. Both ovaries were diseased, and were removed; they had contracted adhesions to the abdominal wall, and the larger one weighed only about twenty pounds. The lady was operated on at her own home, in the country, and was not again seen by the speaker. She died on the fourth day, from peritonitis. The third case was a forlorn hope; at the time of the operation the patient had septicæmia, was delirious and very ill, and suffered great pain, so that her shrieks disturbed every patient on the same floor with her at the University Hospital, although she had been placed in a remote room. The cyst was intraligamentous, and was adherent to the abdominal wall, the intestines, the stomach, the aorta, the uterus, and the whole pelvic cavity. All but the pelvic adhesions were severed; those were not touched, as the woman seemed to be dying and it was apparent that she could not survive the shock of a completed operation. Many stimulating hypodermic injections were given during and after the operation, but she never rallied, and died seven hours afterward. The fourth case was that of a bedridden and very emaciated woman in whom the cyst had burst several weeks before, and who was being slowly poisoned by the absorption of the colloid matter. The cyst was adherent everywhere, and every abdominal organ seemed infected. The peritoneal cavity was flushed and drained. The patient died on the eighth day, from sheer exhaustion. The fifth death was in a case of putrid dermoid cyst, the patient being bedridden with septicæmia. During the operation, while very firm adhesions were being severed, the cyst-wall was torn and a very small quantity of the offensive liquid escaped into the abdominal cavity. The cavity was flushed and drained, but the lady died on the fifth day, of septicæmia. Of the nineteen oophorectomies, more than the usual number were difficult, both from adhesions and from the size of the fibroid tumors for which the ovaries were removed. In the only fatal case death was due to uræmia from suppression of urine, unsuspected kidney disease having probably existed previously. Of the seven remaining laparotomies, one had resulted in death on the forty-eighth day. It was a case of malignant solid tumor of the omentum, causing ascites and excessive pain, with which the patient had been confined to bed for many weeks. The great vascularity of the parts and the very extensive adhesions to the intestines made the operation a difficult one. For two weeks the patient did well; then large abscesses burst from the wound and into the intestines, and the drain destroyed her life. In the two cases of pelvic abscess the sac was sewed to the lips of the abdominal wound and a drainage-tube inserted. The hysterectomy was performed on account of the pain and vesical irritation produced by a two-pound subperitoneal uterine fibroid. The three exploratory incisions were made respectively for sarcoma of the uterus and ovaries, for malignant disease of the intestines, and for a uterine fibroid. In the last one, the intention had been to remove the ovaries, but, on account of very firm and deep-seated adhesions, those organs could not be reached. In the two other cases malignancy was suspected, but the operation was performed to make out a positive diagnosis. An unusually large proportion of the ovariotomies had been difficult, but the speaker had not declined to operate in any case that had presented itself.

Dr. KELLY had been much pleased with the careful attention given by Dr. Goodell to points that were usually looked upon as of minor importance, but that were essential to success. One of the most important was that of checking hæmorrhage from intestinal and other adhesions. A satisfactory method for small areas on the abdominal wall was that of passing a needle under the peritonæum and carrying several threads across the bleeding area; then tying them so as to bring raw surface to raw surface. The speaker had seen Zweifel, of Leipsic, invert a *large* bleeding area on the abdominal wall, and, transfixing skin, muscles, and peritonæum from without, fasten a number of sutures to ivory rods on either side of the skin-flap thus formed. He had frequently used the cautery in times past, but not recently. In a recent case of severe general hæmorrhage from the whole broad ligament, after removal of a distended Fallopian tube, he had checked the bleeding by a series of ligatures inclosing the whole broad ligament from its pelvic attachment to the uterus, introduced entirely beneath the raw surface. A practical point of the utmost importance, on which the speaker would insist, was that when the bleeding was checked all danger was not over; whenever there had been much stripping of peritoneal adhesions, in spite of the fact that the bleeding might have been checked, sometimes a profuse flow of lymph took place into the abdomen, and, if it was not carried off at once by the peritonæum, formed an excellent cultivation field for the few bacteria which were almost sure to enter at any operation. The drainage-tube met this danger. He had seen a good many cases of rectal fistulæ that had been very troublesome, but the tendency seemed to be to heal. The peculiar liability of purulent cases to this accident was readily accounted for by the tendency of the abscess to form rectal adhesions, and, ulcerating through, empty itself by the rectum; in many cases the wall between the rectum and the abscess must be very thin. The best after-treatment in abdominal cases was to put the patient into the hands of a trained nurse, and leave much to her judgment.

Dr. GOODELL liked to give credit to his fellow-countrymen whenever it could be done, and, if he was not mistaken, the credit of first doubling the peritonæum on itself, and maintaining the bleeding surfaces in contact with pins or quill sutures, was due to Dr. Kimball, of Lowell. Several years ago the speaker had resorted to this plan, but not since he had used Monsel's solution or Paquelin's cautery.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of February 16, 1888.*

The President, Dr. A. Jacobi, in the Chair.

**Cholera Infantum and the Weather, with Charts.**—Dr. A. Sumner, the author, said that it might seem almost superfluous to read a paper on acute gastro-intestinal disturbances of infancy and the weather, yet if one would take the trouble to inquire, he would be astonished at the variety of opinions on this subject, showing that definite knowledge concerning it had not yet been arrived at. He had collected all the cases of acute gastro-intestinal catarrh in children under five years of age that had been treated during the time of his service in the children's department of the German Dispensary, a period of ten years (from 1878 to 1888); these cases he had arranged according to their date, and had then compared their frequency with the exact meteorological phenomena of every day during those ten years.

From January, 1878, to January, 1888, the total number of cases had been 8,036. By adding up the total number of cases for the several months separately he had produced the black line in the chart, while the red line indicated the temperature for the corresponding periods. The charts demonstrated that in November, December, January, February, March, and April there were but very few cases of acute gastro-intestinal catarrh in children; that in May there were a few more; that during June, July, August, September, and October this disease was frequently met with. The difference between these two halves of the year was so marked that the term summer complaint seemed very proper. This difference suggested that potent agencies must prevail during the warm months leading to the development of this malady. During the ten July months there had been 2,443 cases, during the ten February months 117 cases. The monthly averages were only guides to the truth in statistics of this kind, but were utterly unreliable as conclusive evidence. It would be seen that the disease was present even during the coldest months. There was the greatest difference in morbidity during June and July, while the difference in temperature was not so great between June and July as between May and June. The August months had a morbidity of 1,524 cases, one third less than the July months, while the corresponding red line showed the difference of temperature to be smaller. The mortality from diarrhœal diseases in children under five years of age, as shown by the statistics of the health board, was one half as great for August as for July. The statistics showed that the mortality from the disease was relatively the same all the year round; if one in four who had the disease during July died, it would be found that one in four who had it in February also died.

In July, 1881, the mean temperature had been 80° F., in August it had been also 80°, while in September it had been 81°. Yet there had been 290 cases of acute gastro-intestinal catarrh in July, only 223 in August, and only 137 in September. Also, when a comparison based on the temperature was made for different summers, it was found that the death-rate might be greater for one summer than for another, while the temperature in the former was on the average lower. The same rule held when the morbidity and mortality of the same month of different years were compared; there was no certainty that a month of one year having an average low temperature would give a smaller morbidity or mortality than the same month of another year when the temperature average was higher. It was also shown by charts that this relative morbidity and mortality for summer months was not apparently affected by much or little rain-fall nor by dry or humid days. Nor was the mortality greatest in those months having the greatest number of hot days. There might also be free air-currents with moderate summer temperature, yet the charts in these cases did not show lower morbidity than under other meteorological conditions.

Thus far, the author said, we were justified in making the following statements—namely, that hot weather, either dry or moist, was not necessary for an epidemic appearance of summer complaint; second, warm weather, either dry or moist, showing minimum daily temperatures of not less than 60° F., brought on an epidemic appearance of cholera infantum invariably in every year, irrespective of the height of the maximum daily temperature; third, summer complaint lost its epidemic character as soon as the minimum daily temperature remained below 60° F., as in the latter half of October of nearly every year; fourth, therefore this disease could not be brought about by the direct working of high temperature on the infantile body, but must have other causes.

What might those causes be? The speaker suggested that milk food was one cause, for milk was brought to the city at night, was milked in the evening, was jostled over the streets, and was thus exposed to conditions favoring decomposition before it reached the children. Dr. Cyrus Edson had written to him that milk exposed to a temperature of 60° F. turned readily; and Superintendent Birdsall had stated that when the water in the lakes supplying the city reached a temperature of 60° F., it assumed a taste indicative of decomposition of vegetable or animal organisms. He would explain the higher morbidity in July as compared with August by the fact that in the latter month public attention had been fully aroused to the dangers surrounding the children, and perhaps to other conditions.

Dr. L. E. Holt said that, as bearing on the minimum daily temperature necessary to create an epidemic of acute gastro-intestinal catarrh, it was an interesting fact, taken in connection with the minimum temperature set by Dr. Seibert—namely, 60° F.—that a gentleman in Liverpool had found that in that city a difference of temperature of only three tenths of a degree had led to a mortality nearly three times as great, the minimum daily temperature during the two periods having been a little less than 60° F. But in another respect the statistics referred to differed from those given by the author of the paper. They showed that the average temperature of September had been about 4° lower than that for August, it having been 58° in September, while in August it had been 62° F., yet the mortality had been greater in September than in August. The speaker thought that in discussing cholera infantum we had not yet arrived at the point where we could say what cases were cholera infantum and what should be considered as some other form of diarrhœal disease. To him it seemed that the factors in the production of the disease under discussion were four—namely, heat, feeding, surrounding, and constitution. The more of these factors present, the greater the frequency of the disease, and also the greater the mortality. Heat was directly or indirectly the most important single factor.

Dr. J. Lewis Smith agreed with Dr. Holt that cases of what were called summer diarrhœa were not all of the same disease. The gross anatomical characters might be the same, yet the ætiology might be different in the different cases. He thought there was perhaps an error in comparing the diarrhœa occurring during hot weather with that occurring during cool weather, for while the cases might appear very much alike, yet the causation was probably different. The two classes of cases differed as much as the bronchitis caused by measles differed from an idiopathic bronchitis. Again, there was liability to error in comparing the mortality from summer diarrhœa in July, August, and September. Deaths occurring in the last two months were likely to be largely in the cases of patients whose disease had developed in the previous month. The mortality was greater

in September than in May, although the speaker believed that the temperature was somewhat lower in September. In his own statistics he had not observed that difference in favor of July over August which Dr. Seibert had pointed out. He believed that the statistics of the Health Board showed nearly as large a mortality in August as in July. The speaker thought we could state in a general way that heat was the cause of summer diarrhœa, but in what way it acted had not been thoroughly ascertained. Inasmuch as the disease occurred principally in cities and not in the country, it would appear that something besides heat was required to develop it. The opinion was gaining ground among scientific investigators that the disease was due to a micro-organism.

Dr. Caillé objected to the title of the paper, "Cholera Infantum." While he agreed with Dr. Seibert that decomposing milk might cause summer diarrhœa in children, yet he believed that heat alone was a factor, for it was known that this agent exerted a pernicious influence upon the human economy, and therefore it might pave the way for the reception of the noxious material which directly caused the diarrhœa. To explain the lesser mortality in August, the speaker suggested that many children were taken from the cities after July.

Dr. Jacobus suggested that the greater mortality in July over August might be due in part to the more delicate constitution of children at the close of winter.

The President said it appeared to him that what we were in the habit of calling cholera infantum was not always the same thing; that some of the cases were those of gastro-intestinal catarrh, while others which often came on suddenly and terminated fatally in a few days were of another disease. The latter were more apt to occur during hot weather and were probably due to heat. The author's observations on the minimum daily temperature at which summer diarrhœa developed were very interesting, and gave the speaker renewed encouragement to teach what he had been teaching for the past thirty years regarding the preservation of milk in refrigerators, and the use of barley-water—how to select, prepare, and give the food.

Dr. Seibert said his cases included only acute gastro-intestinal catarrh, and he employed the term cholera infantum only because it was short. Regarding the greater mortality in July than in August, his statistics were accurate, notwithstanding the impression of all whom he had asked, except the president, was that the mortality in August was as great as that in July; but their impression had not been based on the study of statistics. While September, he said, might have an average temperature nearly the same as that of May, yet its average minimum temperature was higher, which would account for the greater frequency of summer diarrhœa during that month. He emphasized the importance of teaching the poor people that they should take precautions against summer diarrhœa, and put their milk into a refrigerator as soon as the season became warm, and not wait for hot weather.

## Book Notices.

*Medical Lectures and Essays.* By George Johnson, M. D., F. R. C. P., F. R. S., Fellow of King's College, London, etc. London: J. & A. Churchill, 1887. Pp. xxxii–900.

The greater part of this portly volume is composed of a revised republication of numerous papers written during the past twenty years, and the small amount of revision needed in even the earliest of them, notwithstanding the rapid pace of pathological investigation in the interval, gives evidence of the sound judgment and clinical acumen of their accomplished author, and should obtain respectful consideration for such of his views as have not yet gained general acceptance.

The key-note, so to speak, of some of Dr. Johnson's best-known doctrines is to be found in his explanation of the "stop-cock" action of the arterioles in regulating, and under certain conditions arresting, the circulation of the blood, to which he was the first to ascribe many of the phenomena of cholera, epilepsy, Bright's disease, acute apnœa, etc. Four of the opening chapters are devoted to a republication of his former utterances concerniug the physiology and pathology of the circulation, after which we come to a newly written essay on cholera, embodying and enlarging upon the arguments originally published in 1866, wherein, as our older readers will doubtless remember, the author stoutly combated existing opinions regarding the pathology and treatment of the Asiatic disease, pointing out that the phenomena of collapse were not commensurate with a drain of liquid from the blood, that, on the contrary, arrest of the purging was commonly a sign of fatal import, and advocating the evacuant plan of treatment. It would be unjust to attempt to discuss the merits of this elaborate disquisition within the narrow limits of our space, but, however it may contravene the teaching of some contemporary writers on cholera, it is worthy of thoughtful perusal by every rational physician.

In Chapter XLV Dr. Johnson has revised the "Lectures on Bright's Disease" which made his name a household word fifteen years ago, and in the present edition he retracts nothing of his previous conclusions, but rather re-enforces them in the light of later observation. He differs with Senator, Bartels, and other modern writers as to the mechanism of albuminuria, holding that a morbid condition of the blood, of constitutional origin, exerts its influence primarily and chiefly upon the glandular epithelium of the convoluted tubes, changes in the Malpighian capsules being secondary results, not dependent on local inflammatory action. He still disputes the distinction of "parenchymatous" and "interstitial" nephritis, contending that the process in the cirrhotic kidney is essentially tubular and intratubular, leading to destruction of the glandular epithelium of the convoluted tubes, with thickening of the arterial walls, and that what has been mistaken for increase of connective tissue is really the conjunction of thickened and fibrillated tubular basement membrane with atrophied remains of shrunken tubes and intertubular capillaries. He describes an increase of connective tissue between the elastic and endothelial layers of the arterioles, with hypertrophy of the muscular coat, as a compensatory accompaniment of augmented pressure from the hypertrophied left ventricle, and denies the "hyaline fibroid" change in the adventitia, taught by Gull and Sutton, which he pronounces to be simply a glycerin-soakage of the thickened muscular coat. The "large white kidney," commonly resulting from an acute attack, and adopted by some writers as the type of chronic parenchymatous inflammation, he divides into three stages: simple enlargement, granular fatty degeneration, and atrophy with coarse surface granulations. The section on albuminuria not associated with Bright's disease is very instructive, especially as regards the different possible sources of puerperal albuminuria. Chapter XLVII contains a critical comparison of the various tests for glycosuria, with a defense of the author's favorite method by means of picric acid, and a philosophical distinction between saccharine dyspepsia and saccharine diabetes.

Among other excellent papers, particular notice is due to one on the varying clinical significance of hæmoptysis, pointing out that it may sometimes be as harmless an accident as bleed-

ing from the nose, and another on differences between the physical signs beneath the clavicles on the two sides of the chest in healthy subjects, with which every diagnostician should make himself familiar.

As a whole, the volume is not a mere collection of ephemeral papers, but a monument of able and industrious pathological and clinical work, covering a wide range of practice, and fully justifying the high professional reputation of its author.

## BOOKS AND PAMPHLETS RECEIVED.

A Year's Work in Abdominal Surgery, with a Report of Eighty Laparotomies done in 1887. By W. Gill Wylie, M. D., New York. [Reprinted from the "Medical Record."]

One Hundred and Ten Laparotomies for the Removal of the Uterine Appendages. Sixty-one Consecutive Operations without a Death. By W. Gill Wylie, M. D., New York. [Reprinted from the "Annals of Gynæcology."]

Ueber den Zusammenhang von chronischen Verstopfungen der Nase u. des Nasenrachenraums mit Unterleibsbrüchen. Von Dr. W. Freudenthal, Arzt an der deutschen Poliklinik in New York. [Separat-Abdruck aus der "Monatsschrift f. Ohrenheilkunde sowie f. Nasen-, Rachen-, Kehlkopf- u. Luftröhren-Krankheiten."]

A Case of Icterus Infantum from Congenital Deficiency of the Ductus Communis Choledochus. By John Blake White, M. D., New York. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Six Cases of Uterine Displacements treated by Shortening of the Round Ligaments, with Remote Results. By Charles P. Strong, M. D., Boston. [Reprinted from the "Boston Medical and Surgical Journal."]

Cerebral Symptoms in the Pneumonia of Children. By L. Emmett Holt, A. M., M. D., etc. [Reprinted from the "Medical Record."]

Suppurative Exfoliative Cystitis. By H. J. Boldt, M. D., New York. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Inguino-properitoneal Hernia. By William Stone Torrey, M. D., Brooklyn, N. Y. [Reprinted from the "Annals of Surgery."]

The Milroy Lectures. On Epidemic Influences. On the Epidemiological Aspects of Yellow Fever. On the Epidemiological Aspects of Cholera. By Robert Lawson, LL. D., Inspector-General of Hospitals, late President of the Epidemiological Society, etc. London: J. & A. Churchill, 1888. Pp. iv–95.

Pathology and Treatment of the Infectious Diseases. Part I. The Miasmatic and Miasmatic Contagious Diseases: Intermittent Fever, Typhoid Fever. By Professor Karl Liebermeister, Professor of Clinical Medicine in Tübingen, Germany. Translated by E. P. Hurd, M. D., Newburyport, Mass. With Notes and Appendices. Detroit: George S. Davis, 1888. [The Physician's Leisure Library.]

A Manual of the Minor Gynæcological Operations. By J. Halliday Croom, M. D., F. R. C. P. E., F. R. C. S. E., etc. First American from the Second Edinburgh Edition. Revised and enlarged. By Lewis S. McMurty, A. M., M. D., etc. With numerous Illustrations. Philadelphia: Records, McMullin & Co., 1888. Pp. 228.

The Results of Laparotomy for Acute Intestinal Obstruction. By B. Farquhar Curtis, M. D., Attending Surgeon to St. Luke's Hospital, etc. [Reprinted from the "Transactions of the Medical Society of the State of New York."]

Early Diagnosis of Tubercular Meningitis in Children. By H. L. Elsner, M. D., Professor of Clinical Medicine, Syracuse Medical College. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Atlas of Venereal and Skin Diseases. Comprising Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus V. New York: William Wood & Co., 1888.

Sulla natura parassitaria dei tumeri cancerosi. Comunicazione preventiva del Dottore Ignazio Lampiasi-Rubino. [Estratto dal giornale "La Riforma Medica."]

Proceedings and Addresses at a Sanitary Convention held at Traverse City, Michigan, August 24 and 25, 1887, under the Direction of a Committee of the State Board of Health and a Committee of Citizens of Traverse City. [Supplement to the "Report of the Michigan State Board of Health" for the Year 1887.]

The Principles of Cancer and Tumor Formation. By W. Roger Williams, F. R. C. S., Surgical Registrar to the Middlesex Hospital, etc. London: John Ball & Sons, 1888. Pp. 194.

Heart and Blood-Vessels in the Young. By A. Jacobi, M. D., New York. Address before the Association of the Alumni of the Long Island College Hospital, February 27, 1888. [Reprinted from the "Brooklyn Medical Journal."]

The Sixty-fourth Annual Report of the Officers of the Retreat for the Insane at Hartford, Conn., April, 1888.

Vesico-vaginal Fistula. By Reuben A. Vance, M. D., Cleveland, O. [Reprinted from the "Cleveland Medical Gazette."]

Fifty Aphorisms in Pregnancy. By E. J. Kempf, M. D. [Reprinted from the "American Practitioner and News."]

A New Method in the Treatment of the Vegetable Parasitic Diseases of the Skin. By Henry J. Reynolds, M. D., etc., Chicago. [Read before the Section in Dermatology of the Ninth International Medical Congress.]

Stricture of the Urethra. Urethrotomy under Cocaine Anæsthesia. By Henry J. Reynolds, M. D., etc., Chicago. [A Clinical Lecture delivered at the College of Physicians and Surgeons, Chicago.]

Certain Facts regarding Fertility, Utero-gestation, Parturition, and the Puerperium in the so-called "Lower" or "Laboring Classes." Observations made in the Woman's Clinic of the Central Dispensary and Emergency Hospital, Washington, D. C. By George Woodruff Johnston, A. M., M. D., Director of the Clinic. [Reprinted from the "American Journal of Obstetrics and Diseases of Women and Children."]

Annual Report of the Provost of the University of Pennsylvania, including Reports of Departments and Abstract of the Treasurer's Report. For the Year ending October 1, 1887.

On Exercise for the Prevention and Cure of Deformities. By A. H. P. Leuf, M. D., of the University of Pennsylvania. [Reprinted from the "Medical and Surgical Reporter."]

The Intra-uterine Stem in the Treatment of Flexions. By A. Reeves Jackson, A. M., M. D., etc., Chicago. [Reprinted from vol. xii, "Gynæcological Transactions."]

The Trituration of Alkaloids. By Edwin Pynchon, M. D., Chicago. [Reprinted from the "Western Medical Reporter."]

A Text-book of Biology: comprising Vegetable and Animal Morphology and Physiology. Designed more especially to meet the Requirements of the Intermediate Science and Preliminary Scientific Examinations of the London University. By J. R. Ainsworth Davis, B. A., Trinity College, Cambridge; Lecturer on Biology in the University College of Wales, Aberystwith. With Numerous Illustrations, Glossary, and Examination Questions. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xiii–462. [Price, $4.]

A Manual for Hospital Nurses and Others engaged in attending on the Sick. By Edward J. Domville, L. R. C. P. Lond., M. R. C. S. Eng., Surgeon to the Devon and Exeter Hospital, etc. Sixth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. iv–5 to 100. [Price, 75 cents.]

Ocular Symptoms in Diseases of the Spinal Cord. By William Oliver Moore, M. D., etc. [Read before the Section in Neurology, New York Academy of Medicine, March 9, 1888.]

An Improved Sphygmograph and its Work. By H. R. Hopkins, M. D., Physician to the Buffalo Hospital. [Reprinted from the "Medical Press of Western New York."]

Hygiene of Reflex Action. By Henry Ling Taylor, M. D., New York. [Reprinted from the "Journal of Nervous and Mental Disease."]

The Relations of Mind and Body. By H. R. Hopkins, M. D., Clinical Professor of Nervous Diseases, Medical Department, University of Buffalo. [Reprinted from the "Medical Press of Western New York."]

Water; its Impurities gathered from the Air and Earth. The Organisms that grow in it, and the Modern Methods of Purification. By C. W. Moore, M. D., San Francisco. [Reprinted from the "Pacific Record of Medicine and Surgery."]

# Reports on the Progress of Medicine.

## OBSTETRICS.

By ANDREW F. CURRIER, M. D.

**Perforation or Cæsarean Section.**—Wyder ("Ann. de gyn. et d'obst.," Jan., 1888, abstracted). The author's conclusions are: 1. Contracted pelves being divided into four categories, according to the degree of contraction, if a given case is of the third or fourth degree of contraction, the question of premature labor should be considered in addition to those of Cæsarean section and perforation, and the patient should be allowed to choose between the three. 2. In cases of contraction of the first and second degrees, Cæsarean section should be recommended to primiparæ only in extreme cases, and it should be recommended to multiparæ only in those cases in which previous labors have been accompanied with grave complications. On the other hand, due weight should be given to the earnest desire of a patient to give birth to a living child. If gestation is not too far advanced it is proper to propose to the patient the induction of premature labor. So long as statistics demonstrate for the mother a mortality by Cæsarean section which is double that of perforation or of induced labor it is not right to affirm that the first of these operations should be substituted in every case for perforation. According to Credé, the mortality for the mother by Cæsarean section is now considered as 17·5 per cent. According to the author, the mortality for the mother when perforation is practiced is 8·4 per cent., the mortality after induced premature labor 8·2 per cent.

**The Treatment of Abortion.**—Dahlmann ("Ctrlbl. f. Gyn.," Jan. 14, 1888). The author's paper is based upon personal experience in 130 cases. In regard to prophylaxis, if syphilis is the probable cause of several miscarriages in any given case, it is important, in addition to antisyphilitic treatment, to prevent conception until the disease has been brought under control. By following such a plan, syphilitic women have frequently been able to carry their children to term. Pregnant syphilitic women should be enjoined to remain in bed during the time that menstruation would ordinarily recur, on account of the increased blood-pressure in the pelvic organs at such periods. If there are indications that miscarriage is imminent, the patient should take her bed for at least eight days, avoid straining in urination and defecation, and take five drops of the tincture of opium every hour. If it is evident that miscarriage can not be prevented, and a digital examination shows that the ovum is still intact, it is recommended that the vagina be tamponed with six or eight pledgets of cotton, about as large as a walnut, to encourage the expulsion of the entire contents of the womb. If the ovum has ruptured, and the fœtus alone has been expelled, the author advises the immediate removal of the remaining products of conception. This can always be done by the index or middle finger, the womb being firmly pressed downward by the other hand. If any fragments still remain, they should be removed with the curette, and, to insure thoroughness, it is advisable that this latter procedure be always resorted to. An application of iodoform ointment to the interior of the womb should then be made. It is believed that the irrigation of the uterus and vagina with disinfecting fluids is only indicated in those cases in which there is evidence that decomposition of retained products of conception has taken place.

**The Conduct of Labor in Occipito-posterior Positions.**—Boislinière ("Ctrlbl. f. Gyn," Feb. 4, 1888). The third position of the head—that is, occiput posterior and to the right—is, next to the first vertical position, the most frequent, and therefore worthy of study. With the ordinary extension of the occiput forward, there will usually be a spontaneous ending of the labor, but the latter will be necessarily delayed, and greater contractile force of the uterus will be required. If the contractile force is weak, or the perinæum relaxed or torn, or the hollow of the sacrum shallow, rotation forward will not take place. If, moreover, there is decided projection of the spine of the ischium, or the child's head is large, the occiput will be extended backward. Such a projection of the spine of the ischium can be felt from the lateral vaginal walls, about two centimetres above the pelvic floor, and will serve as a useful factor for prognosis. In those cases in which the occiput is extended backward, it will be born first, and the chin last. If the child is small, the pelvis capacious, and the perinæum relaxed, a face presentation may result, in which case the chin will first appear under the arch of the pubes. If the labor is protracted, and there is no tendency to rotation forward, the forceps should be applied and extension of the occiput backward into the hollow of the sacrum effected before traction is begun. This rotation backward is to be preferred to the rotation forward which is recommended by some, because the decided extension of the neck of the child by the latter method is not without danger. The traction efforts should first be directed backward, so as to bring down the head to the inferior pelvic strait; then, for the first time, traction should be along a decidedly curved line, so as to draw the occiput over the posterior commissure, and then the forceps must be lowered toward the anus of the mother. By this method the vertex will pass the posterior commissure in the sub-occipito parietal diameter, and, in its final extension, in the trachelo-parietal diameter, both of these being without danger for the perinæum. If the latter should seem to be about to rupture, episiotomy should be practiced. Two fingers in the mother's anus will sometimes afford protection to the perinæum. Tarnier's forceps may also be used until the pelvic outlet is reached.

**The Clinical Exploration of the Lower Segment of the Uterus before and after Labor.**—Blanc ("Nouv. arch. d'obst. et de gyn.," January, 1888). The conclusions of this paper are: 1. The dilatation of the cervix does not follow any uniform law. Most frequently it occurs during the last fifteen days of pregnancy. Its cavity gradually participates in the enlargement of the uterine cavity, and its walls are merged in those of the primary inferior segment. 2. Less frequently, especially in primiparæ, the cervix remains intact until labor sets in. 3. Long before any modification of the cervix has taken place a particular segment—namely, the inferior uterine segment—has developed, which has for its distinct limits without the ring of contraction, and within the upper part of the cervix, or rather the anatomical internal orifice. 4. It is only at a later epoch that the cervix will share in the enlargement of the uterine cavity, forming, in the cases in which it occurs, a secondary inferior segment, which is separated from the primary inferior segment by the definite adhesion of the membranes. The first pertains to the cervix, the second to the uterus. From a clinical point of view the inferior segment of the uterus must be considered a feature in the development of the uterus, which has no analogue in the organ in an unimpregnated state. It develops between the body and the cervix, probably at the expense of a portion of the muscular bundles which form the base of the neck. From the development and migration of these bundles into the layers of the body of the uterus the inferior segment is formed, and this will continue to enlarge with the development of the fœtus. The upper part of the cervix may, within certain limits and at an advanced period of pregnancy, contribute to the formation and the extension of this zone. The annular accumulation which has become merged in the walls of the uterus will continue its development upward until it is fixed in the peritonæum, that being its location when parturition occurs. Therefore, Bandl, when he speaks of a muscular displacement of the cervix toward the inferior segment, and Bayer, when he speaks of an unrolling of its supravaginal portion, say nothing which is not conformed to clinical facts. The ring of contraction during the first days of the puerperium plays the same rôle which devolves at a later period upon the anatomical os internum. It closes the cavity of the uterus; intermittently, it is true, but it allows the flowing out of the accumulated lochial discharges, and the anteflexion of the uterus insures and completes the protective rôle.

**Mitral Stenosis and the Third Stage of Labor.**—Berry Hart ("Edinburgh Med. Jour.," Feb., 1888). One of the most serious conditions in obstetrics is that which depends upon the co-existence of mitral steno-

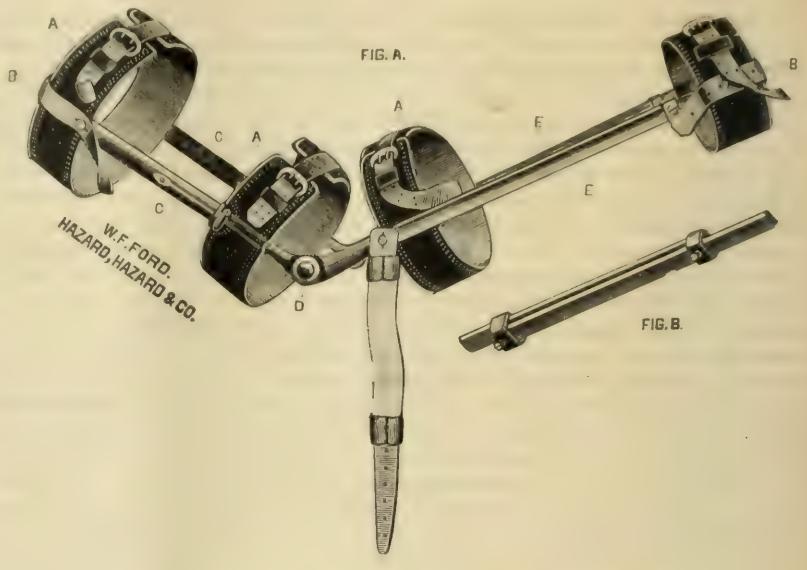
sis with pregnancy. The condition of pregnancy tends to develop with rapidity an already existing cardiac lesion, and if the patient survives the third stage of labor she may, notwithstanding, succumb quickly to cardiac and pulmonary complications. This subject has been exhaustively treated by Angus Macdonald in his work "Chronic Heart Disease in Pregnancy and Parturition." The serious character of the lesion may be understood in the fact that of eight cases recently seen by Hart, seven were fatal. Three cases are narrated, two of them at length. In the first case abortion at the fourth month occurred, after a slight injury. Heart failure began about seven hours before death. At the autopsy the right side of the heart was found engorged and the lungs œdematous. There was mitral stenosis and ulceration of recent origin on the aortic cusps. In the second case labor at term was completed and was followed, a few hours later, by pulmonary œdema and death. In the third case labor at term was complicated by a justo-minor pelvis and prolapse of the funis. The forceps was applied while the head was yet above the brim, and a small still-born child was delivered. The labor occupied five hours and a half, and, though the heart lesion was recognized and the patient was suffering from dyspnœa, chloroform was administered. The placenta was extracted ten minutes after the birth of the child, and little blood was lost. Gradual improvement in the mother's condition began immediately after delivery, but the flagging heart required constant stimulation by means of heat, alcohol, and tincture of strophanthus. The latter is believed to be especially indicated in cases in which stimulation of the heart solely or mainly is required. The difficulty in these cases is believed to be due to the overloading of the circulation, more especially the right heart and the lungs, by means of a portion of the blood which circulated in the placenta and the fœtus previous to parturition. The right heart has already become greatly enfeebled by the development of mitral stenosis during pregnancy and is unable to bear the additional strain; hence the frequent occurrence of fatal pulmonary œdema after labor has been completed. Should free hæmorrhage occur, it is to be looked upon as salutary rather than harmful. Concerning the question of treatment of women with mitral stenosis, marriage is to be discountenanced; but if marriage has been consummated and pregnancy has occurred, the patient should be kept at rest as much as possible, and tincture of strophanthus given as soon as circulatory disturbance begins. Chloroform should be given during labor as in uncomplicated cases. During and subsequent to the third stage the following rules are recommended: 1. No ergot should be given. 2. Free hæmorrhage should excite no alarm. 3. If the circulation becomes embarrassed, as shown by irregular heart action or dyspnœa, increased quantities of strophanthus should be given and the præcordial region dry-cupped. If this does not give relief, venesection upon the arm should be performed. 4. Particular caution should be observed if the hæmorrhage is scanty. 5. Even if all seems well, the patient must be constantly watched during the first day.

## New Inventions, etc.

### AN APPARATUS FOR MAINTAINING CONTINUOUS EXTENSION OF THE ELBOW JOINT IN ALL POSITIONS OF THE FOREARM.

By Joseph D. Bryant, M. D.

The accompanying cut illustrates an apparatus which was exhibited at the May 8th meeting of the New York Surgical Society (see page 609). It consists of two jointed parallel bars, connected with each other by four leather bands (Fig. A), two of which are attached to the bars of the forearm, and the remaining two to those of the arm, A A. The joint of the bars, D, is placed exactly in a line with the elbow joint, in which position it is kept at all times. The side-bars of the arm portion of the instrument, C C, are composed of two parts, so arranged by means of a ratchet and key that they can be lengthened or shortened at pleasure. The purpose of this arrangement is to overcome the result of the slipping of the instrument upward by increasing the length of this portion of it. By this arrangement the joint of the instrument and the elbow joint can be kept in an exact line with each other. The active mechanism of the instrument is in the forearm portion. Each side-bar of this portion, E E, is composed of two parallel bars (Fig. B),




so arranged as to slide on each other. The outer bar only is movable. It follows, therefore, that, if elastic traction is used to connect the two bars with each other, it will cause elongation of the side-bar of the instrument. The instrument is confined in position while not extended by adhesive strips attached to the skin, and passed over the upper and lower bands respectively and confined in place. Leather straps can be fastened to the strips at the outer and inner surfaces of the limb, and be caused to turn over the same bands and be fastened to outstanding screw-heads, B (Fig. A). To the screw-heads noticed at the outer side of the compound bar (Fig. B) can be fastened the elastic webbing seen hanging from the side-bar in Fig. A. When thus fastened, elongation of the instrument, and consequent extension of the forearm, will take place. The instrument should be applied cautiously, so as not to constrict the circulation. The portion of the limb between the bands next the elbow joint should be bandaged properly to obviate a tendency to swelling of the limb in this situation.

## Miscellany.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 1st:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending May 12th corresponded to an annual rate of 17·6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Cardiff, viz., 12·5, and the highest in Bolton, viz., 26·7 in a

thousand. Small-pox caused 3 deaths in Sheffield, 1 in Manchester, 1 in Preston, and 1 in Leeds.

*London.*—One thousand three hundred and sixty deaths were registered during the week, including measles, 22; scarlet fever, 19; diphtheria, 15; whooping-cough, 52; enteric fever, 9; diarrhœa and dysentery, 14. The deaths from all causes corresponded to an annual rate of 16·6 in a thousand. Diseases of the respiratory organs caused 260 deaths; different forms of violence, 51; and 12 suicides were registered. In greater London 1,710 deaths were registered, corresponding to an annual rate of 16·1 in a thousand of the population. In the "outer ring" 16 deaths from whooping-cough were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending May 12th in the sixteen principal town districts of Ireland was 22·9 in a thousand of the population. The lowest rate was recorded in Dundalk, viz., 0, and the highest in Lisburn, viz., 38·7 in a thousand. In Dublin 156 deaths were registered, including 9 from whooping-cough; enteric fever, 1; measles, 1; scarlet fever, 4; typhus, 1; and dysentery, 1.

During the quarter ending March 31, 1888, there were 27,252 deaths registered, corresponding to an annual rate of 22·8 in a thousand, including small-pox, 3; measles, 805; scarlatina, 257; typhus fever, 105; whooping-cough, 421; diphtheria, 138; simple continued fever and ill-defined forms of fever, 96; enteric fever, 154; diarrhœa, 290; simple cholera, 3; hydrophobia, 5.

*Scotland.*—The deaths registered in eight principal towns during the week ending May 12th corresponded to an annual rate of 21·1 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 14·7, and the highest in Glasgow, viz., 24·3 in a thousand. The aggregate number of deaths registered from all causes was 534, including 11 from measles; scarlet fever, 3; diphtheria, 1; whooping-cough, 19; fever, 3; and diarrhœa, 3.

Two thousand eight hundred and twenty-four deaths were registered during the quarter ending March 31, 1888, corresponding to an annual death-rate of 20·8 in a thousand.

*Honolulu, Hawaiian Islands.*—The United States consul, in his dispatch dated April 28, 1888, relative to the interest that is now manifested throughout the world in the disease of leprosy, and the controversy as to its contagious character, states that "in the case of Keame, who was condemned to death for murder, but had his sentence commuted to imprisonment for life upon his agreement to allow himself to be inoculated with leprosy, that the disease has finally made its appearance after a period of two years and a half since the inoculation, which has resulted in a general infection of his system with leprous virus. A very remote chance of his having previously had germs of the disease in his system may exist. This, in the opinion of Dr. Arthur Mowritz, physician in charge of the leper island where the unfortunates are segregated, is possible, but not probable, although Hawaii has been an endemic leprosy focus for the past century."

*Buenos Ayres.*—Nine hundred and seventy-seven deaths were registered during the month of February, 1888, including small-pox, 70; enteric fever, 39; scarlet fever, 3; and diphtheria, 51.

*Palermo, Italy.*—The United States consul, in his dispatch dated May 9, 1888, relative to his reports on cholera of last year, states: "I am of opinion that the disease has again manifested itself in this city. This opinion is based on the large number of deaths in proportion to the total thereof, which occurred in this city during the last week from 'intestinal catarrh,' a term almost synonymous with cholera in Palermo, in view of the initial cases of that disease being thus designated by the authorities (in order to prevent a panic) in recent epidemics, as well as upon the fact that the messenger to the consulate was attacked last night by so-called intestinal catarrh, and is now confined to his bed."

*Rome, Italy.*—The United States consul-general, in his dispatch dated May 4, 1888, states that "there exists a great deal of misapprehension in regard to the health of Rome as compared with other cities. By many persons Rome is supposed to be almost uninhabitable in summer, and they believe that a very dangerous disease, known as 'Roman fever,' prevails in Rome at all times of the year. No such disease is known to medical men in Rome, or is mentioned in any medical work. There is a certain amount of malarial and typhoid fever in Rome, but the so-called Roman fever is purely imaginary. Undoubtedly Rome has greatly improved in regard to its sanitary conditions since the establishment of the present government. The whole drainage system, which in former days was very bad, has been remodeled, and the city is now thoroughly drained. Large tracts of vacant land within the walls have been closely built over, and malaria, which formerly existed in those tracts, has since disappeared. The closing of all the wells in the city has done much to decrease zymotic diseases, and the enforcement of wise sanitary regulations has greatly lessened the death-rate. Outside of Rome, in the Campagna, the malaria in summer and autumn is very dangerous. While it does not extend within the walls, it produces a great deal of illness among the peasants, especially during the harvest season, when troops of men and women come down from the mountains and live night and day in the Campagna until the harvest is over. When these people fall ill of malarial fever they are brought to the Roman hospitals, and in case of death they contribute to swell the death-rate of the city. . . . The large increase of the death-rate in the month of September, 1887, was not normal, but was due to the presence in Rome of the cholera at that time. There were some 200 to 250 deaths of cholera here in the late summer and early autumn of 1887."

*Havana.*—The sanitary inspector reports 3 deaths from yellow fever and 7 from small-pox during the week ending May 19, 1888.

SANTIAGO DE CUBA, *May 19, 1888.*

No yellow fever has appeared this week at the military hospital. The town is also free from it.

*Marseilles.*—Nine hundred and twenty-one deaths were registered during the month of April, 1888, including small-pox, 10; enteric fever, 20; scarlet fever, 6; diphtheria and croup, 43; and measles, 54.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | May 12. | 2,260,945 | 1,027 | .. | .... | 6 | .... | 10 | 4 | 50 |
| Glasgow | May 12. | 545,678 | 246 | .. | .... | .... | .... | .... | 1 | 1 |
| Warsaw | May 5. | 444,814 | 210 | .. | .... | 5 | .... | .... | 1 | 6 |
| Calcutta | April 14. | 433,219 | 232 | 59 | .... | .. | .... | .... | .... | 2 |
| Amsterdam | May 12. | 389,916 | 166 | .. | .... | .... | .... | .... | .... | .... |
| Copenhagen | May 8. | 300,000 | 105 | .. | .... | .... | .... | .... | 1 | 3 |
| Edinburgh | May 5. | 262,733 | 106 | .. | .... | .... | .... | .... | .... | 1 |
| Edinburgh | May 12. | 262,733 | 107 | .. | .... | .... | .... | 1 | .... | .... |
| Palermo | May 12. | 250,000 | 77 | .. | .... | .... | .... | .... | 1 | 2 |
| Belfast | May 5. | 227,022 | 126 | .. | .... | .... | .... | 1 | 1 | 1 |
| Belfast | May 12. | 227,022 | 109 | .. | .... | .... | .... | 2 | 1 | 2 |
| Genoa | May 12. | 179,513 | 89 | .. | .... | 4 | 1 | .... | .... | .... |
| Leipsic | May 12. | 170,000 | 70 | .. | .... | .... | .... | .... | 1 | 1 |
| Trieste | May 5. | 154,500 | 95 | .. | .... | 2 | .... | .... | .... | 1 |
| Stuttgart | May 12. | 125,510 | 40 | .. | .... | .... | .... | .... | .... | 1 |
| Bremen | May 5. | 122,000 | 55 | .. | .... | .... | .... | .... | 1 | .... |
| Havre | May 12. | 112,074 | 65 | .. | .... | 6 | .... | 1 | .... | .... |
| Pernambuco | April 14. | 110,000 | 79 | .. | 1 | .... | .... | .... | .... | .... |
| Barmen | May 5. | 109,000 | 38 | .. | .... | .... | 1 | .... | .... | .... |
| Barmen | May 12. | 109,000 | 45 | .. | .... | .... | .... | .... | .... | .... |
| Reims | May 12. | 97,093 | 72 | .. | .... | .... | .... | .... | .... | 2 |
| Mayence | May 5. | 65,802 | 37 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | May 5. | 65,028 | 49 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | May 12. | 65,028 | 38 | .. | .... | .... | .... | .... | .... | .... |
| Merida, Yucatan | May 6. | 48,800 | 47 | .. | .... | .... | .... | 3 | .... | .... |
| Merida, Yucatan | May 13. | 48,800 | .... | .. | .... | .... | .... | 1 | .... | .... |
| Cienfuegos | May 14. | 40,753 | 11 | .. | .... | 1 | .... | .... | .... | .... |
| Curaçoa | May 12. | 25,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Vera Cruz | May 17. | 23,800 | 21 | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | May 6. | 23,630 | 6 | .. | .... | .... | .... | .... | .... | .... |
| Sagua la Grande. | May 5. | 15,605 | 9 | .. | .... | 1 | .... | .... | .... | .... |
| Sagua la Grande. | May 12. | 15,605 | 7 | .. | .... | 1 | .... | .... | .... | .... |
| Matamoras | May 12. | 12,000 | 14 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | May 19. | 12,000 | 11 | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | May 5. | 7,428 | 6 | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | May 12. | 7,428 | 12 | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

The following letter has been received from Dr. J. P. Wall, president of the Board of Health, Tampa, Fla., under date of the 23d instant:

"The Plant steamers from Havana landed at Port Tampa for the first time on the 13th instant. . . . The disinfection is done on board of steamer for the present, as in previous years. I am, however, having a fumigation-chamber and other disinfecting apparatus fixed up on the wharf at Port Tampa, which is about one mile from shore. The in-

complete condition of the wharf prevented my having this done earlier, before the steamer began to make that the place of transfer. I think that before the 1st proximo everything will be in working order. As you know, it is the company's policy to prevent the steamers from becoming infected, and, although every pains will be taken here as to the disinfection of baggage, the rules and regulations of the company as to not allowing unacclimated persons to take passage will be still enforced as in the two previous years. I went out to Plant City yesterday, in company with Dr. Jerome Cochran, of Alabama. The place is healthy, and there had not been any case of fever there since week before last. I had the place thoroughly disinfected, burning all beds and mattresses in houses where sickness had been, and otherwise disinfecting houses and premises. I think the fever has been stamped out, though we will not allow people to return there before week after next, keeping up a vigilant observation and resorting to aeration as much as possible in the mean time."

Additional rules and regulations for Tampa Bay and the Gulf coast of Hillsborough County have been adopted and promulgated by the Board of Health of Hillsborough County, locating the quarantine grounds in Old Tampa Bay. The following is an extract from said rules and regulations:

Rule 2. A yellow flag will be displayed at or near the station, where all boats and vessels, except those of regular established lines making regular periodic trips, will stop until visited by the quarantine physician or inspector, and the sanitary condition of the vessel and the health of the crew and passengers, as well as that of the city and port from which the vessel hails, are fully inquired into, when, if everything in connection with the vessel and hailing port is found satisfactory, *pratique* shall be granted, and the vessel can proceed to Port Tampa or other place within the county to land passengers and discharge cargo. Otherwise, the vessel shall be ordered into quarantine, subject to the further orders or disposition of the Board of Health—either to be ordered to the nearest United States quarantine station or to be subjected to such detention and processes of disinfection as the Board of Health may order and direct, under the supervision of the quarantine physician.

. . . . . .

Rule 4. All vessels or boats arriving in the waters of Hillsborough County from the high seas shall, if ordered into quarantine, proceed to the quarantine station near Port Tampa, in Old Tampa Bay; and all vessels or boats from any port or city, foreign or domestic, where infectious or contagious diseases are prevailing, shall be ordered into quarantine and undergo inspection before being allowed to land passengers and freight or hold any communication with the shore.

Rule 5. The quarantine rules and regulations adopted by the Board of Health for the port of the city of Tampa are hereby declared to be in full force and effect, so far as applicable, to all vessels from the high sea arriving in the waters of Hillsborough County.

Rule 6. The Board of Health shall appoint a quarantine physician and a quarantine inspector, the latter to remain permanently at the quarantine station during the season of quarantine, and pay such physician and inspector such salaries, respectively, as may be mutually agreed upon. The inspector shall be under the control and orders of the physician.

*Memphis, Tenn.*—The two cases of small-pox reported in the last abstract, passed through the first week of the disease before they were discovered by the health officer and isolated in the pest-house; but no new cases have since been reported.

**The New Hampshire Medical Society** will hold its ninety-eighth annual meeting at Concord on Tuesday, the 19th inst. The following papers are included in the programme: "Auto-Infection," by Dr. J. J. Berry, of Portsmouth, the discussion to be opened by Dr. J. W. Parsons, of Portsmouth; "Report on Surgery," by Dr. F. A. Stillings, of Concord, the discussion to be opened by Dr. M. W. Russell, of Concord; "Influences of Alcoholism on Surgical Injuries; Treatment, etc.," by Dr. D. S. Adams, of Manchester, the discussion to be opened by Dr. William Child, of New Hampton; "Milk," by Dr. Frank Blaisdell, of Goffstown, the discussion to be opened by Dr. I. A. Watson, of Concord; "Extent and Distribution of Consumption in New Hampshire," by Dr. I. A. Watson, of Concord, the discussion to be opened by Dr. Thomas Hiland, of Concord; "How are Drugs Medicinal?" by Dr. M. C. Lathrop, of Dover, the discussion to be opened by Dr. G. H. Sanborn, of Henniker; "Medicine *versus* Nature," by Dr. P. A. Stackpole, of Dover, the discussion to be opened by Dr. L. G. Hill, of Dover; "Report on Necrology," by Dr. John J. Berry, of Portsmouth. The councilors' meeting will be held on Monday, the 18th inst. The president, Dr. S. W. Roberts, of Wakefield, will deliver his annual address at noon on Tuesday.

## ANSWERS TO CORRESPONDENTS.

*No. 190.*—No.

*No. 191.*—Congo paper is made by impregnating bibulous paper with a solution of 1 part of Congo red in 7,500 parts of alcohol and 2,500 parts of distilled water. It is turned blue by acids. Congo red is a patented dye said to be prepared from tetrazodiphenyl chloride and naphthionic acid. Titration is volumetric analysis. To titrate is to test by means of standard solutions. We have never met with the word "titarmetric"; perhaps you have encountered it as a misprint for titrimetric, meaning volumetric.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### ON THE ADVANTAGES OF PLASTER-OF-PARIS DRESSINGS AS A MEANS OF SPINAL SUPPORT.*

By LEWIS A. SAYRE, M. D.

Since the days of Percival Pott, who first accurately described the correct pathology of caries of the spine in 1783, and who so strongly recommended the horizontal position to be constantly assumed during the entire existence of the disease—because by this position the diseased portion would be relieved from the pressure caused by the weight of the upper portion of the body on the diseased surfaces—I believe that there has been an entire consensus of opinion among the profession in all countries as to the correctness of this opinion of relieving the diseased parts from undue pressure as one of the most essential elements of successful treatment in this unfortunate malady.

We all know that undue *pressure* upon any part interferes with its normal circulation by cutting off a portion of its blood-supply, and thus diminishing its vitality and increasing its tendencies to disintegration—such as caries, sloughing, and other necrotic changes—the result of *malnutrition*, simply from this obstruction to its proper nutritive supply.

As I have before stated, the entire profession recognized the advantage of the *horizontal* posture, as diminishing this amount of pressure by taking off the superincumbent weight of the head and shoulders, which would have to be borne by the parts when the body was in the erect position.

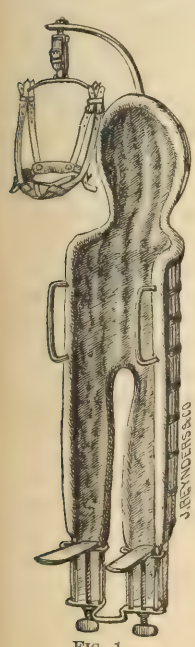


Fig. 1.

But there is another element of pressure, even when the body is in the horizontal position, and which tends to increase this absorption and disintegration, and which has been entirely overlooked by the profession. I mean the pressure caused by muscular contraction from reflex irritation, even when the body is in the horizontal posture, and it therefore requires *traction*, or extension and counter-extension, to overcome its ill effects, even when the patient has had the benefits of the horizontal position.

For this reason I have for some years past put all my smaller children, whose pelves were not sufficiently developed to apply the plaster jacket and jury-mast (to which I will refer hereafter), in the wire cuirass, with head extension, as in Fig. 1. In this cuirass, with the head extension, they can be stood up against the wall and look out of the window for hours, and thus amuse themselves, or be taken to the park to drive, or transported any distance in a railroad car, without the slightest inconvenience or discomfort, as seen in Fig. 2 and Fig. 3. In adults who are paralyzed and are too large to carry in the cuirass, I make the traction from the head and heels by weight and pulley attachments.


Fig. 2.


Fig. 3.

This horizontal posture, while it was of the greatest advantage to the local parts involved in the disease, was still a great detriment to the general health of the patient by the *in-door* confinement of the adult, and by limiting the muscular movements of the child when confined in the cuirass. It was to obviate this difficulty, and allow the patients the advantage of out-door exercise, that various surgeons in different parts of the world have invented and used different kinds of support to the spinal column, to prevent the deformity from increasing while the patients assumed the erect posture and had the advantage of free exercise in the open air.

To attempt a description of all these various braces would be a useless waste of time, as their number is legion, and, with the exception of Taylor's, Banning's, and Allen's, most of them are of no practical good, many of them, in fact, being absolutely injurious, not only increasing the disease and deformity, but at the same time giving the patient great physical agony, and sometimes even absolute torture.

The spinal support of Taylor, which is altogether the best of any of the iron braces, and that of Banning and of Allen, are based upon the principle of removing the *pressure* from the *anterior* portion of the bodies of the vertebræ (which are spongy in texture and easily absorbed) by bending the body directly backward, using the "bos" as a fulcrum, and thus transferring the weight to the transverse processes, which are of a different textural composition from the *bodies* of the vertebræ, and not so liable to undergo interstitial absorption under the influence of additional

* Read before the Orthopædic Section of the New York Academy of Medicine, May 18, 1888.

pressure. Taylor's and Allen's braces are of great service in the treatment of Pott's disease, inasmuch as they prevent an increase of the posterior angular projection by removing the pressure from the *anterior* portions of the bodies of the vertebræ; but they do not give the same amount of benefit as the plaster-of-Paris jacket (hereafter to be described), which removes the pressure from *all parts* of the vertebræ, *posteriorly* as well as *anteriorly*, when properly applied.

The principal objection, however, to both of these spinal supports is their mode of attachment. In order to be kept in position they have to be secured by a bandage around the body, called the apron, which has to be laced or buckled sufficiently tight to retain the spinal supports in a positively *fixed* position, and if they are not thus securely retained, they excite friction and chafing by their motion, and if the body apron is buckled or laced sufficiently tight to retain this exact position, it necessarily girdles the body to such an extent as to very materially prevent the full expansion of the chest, thus diminishing full inspiration; and to this extent at least they are injurious, as preventing proper oxygenation of the blood.

Banning's brace is superior to either of the others in its mode of attachment by elastic springs and the absence of the body belt, thus allowing of free expansion of the chest; but it is so very elastic and insecure as to afford but very little if any support in a case of spondylitis or Pott's disease, whatever benefit it may render in a case of lateral curvature.

The Knight brace or crib, formerly used in the Forty-second Street Hospital for the Ruptured and Crippled, has all the objectionable features of the Taylor and Allen spinal supporters, without one single redeeming quality.

I have tested the respiratory capacity of a very large number of patients (certainly over one hundred) with this spirometer, who were wearing at the time some one or the other of the braces above referred to, and in no single instance could they expire as much with the Taylor, Allen, or Knight brace upon them as when it was removed. And in every single instance where a plaster-of-Paris jacket was applied to the same patient the expiration was increased without one single exception, in some cases this increase amounting to ten, twelve, fifteen, and even twenty cubic inches.

In the Banning brace this difference in respiration was nothing like so marked, although it held the spinal column less securely than the Taylor or the Allen brace.

In the autumn of 1874 a poor child was sent to me from Chatham Center, Putnam County, paralyzed in the lower extremities for some weeks before from Pott's disease of the lower dorsal and first lumbar vertebræ of three years' standing, the eleventh and twelfth dorsal spines being very prominent, with a very sharp angle at the eleventh spinous process. The child was carried by the father, being unable to stand even when held by the hands. He had the projecting sternum, the peculiar catching, grunting respiration, with the well-marked features in countenance and expression, of spondylitis or Pott's disease in its far-advanced stage. As the child could not stand erect while Mr. Reynders measured him for a Taylor brace (which was the instrument I used at that time in all my cases of Pott's disease), and as I always preferred the measurement by the flexible lead tape to be made to the spine when in the erect position, rather than in the horizontal posture, I requested my son to hold the boy up by the arms while Mr. Reynders made his measurements and applied his leaden tape to the exact curvatures of the spinous processes. As my son lifted the child from the floor I was struck with the marked change that took place in the curves of the spine, which became apparently much straighter and the body more elongated, and the child immediately moved his feet, which he could not do before. He was then placed on his feet again, but, not being able to stand, was seated on the sofa, and as soon as my son let go of his hands his body dropped forward and folded together as before, with an immediate return of the peculiar grunting, catching respiration which was so conspicuous in his case, and which entirely disappeared every time that he was suspended by the arms.

As they were compelled to leave in the next train, and I had no time to apply my usual "turtle-shell,"* which takes some hours to complete, and as Dr. Yale, my assistant, was just completing the application of a plaster-of-Paris bandage to a child's club-foot, I told him to apply the same to this child's body, as we could do it more quickly than we could apply a "turtle-shell," while, if there should be any danger from respiration, we could easily divide it down the front, my object being merely to give the child some kind of support until Mr. Reynders could make the brace, and at the same time to protect the child from the danger of jar in traveling.

My son stood on the sofa and held the child up by the hands, Mr. Reynders had him by the feet, and I pulled his red flannel shirt down so tightly that it fitted almost like his skin, and Dr. L. M. Yale applied the plaster bandages very rapidly around his entire trunk, commencing at the waist, going down to the pelvis, and reversing, going up to the top of the sternum and back several times, until we thought it was sufficiently thick to sustain him.

At first I was much alarmed about his breathing, but as he hallooed quite loudly my fears were soon dispelled.

We then laid him on his stomach on the sofa to dry while we went to lunch; on our return to the office, you can imagine our surprise to find him standing at the window looking out into the street, the mother stating that he had got off the sofa and walked there a few moments before without any assist-

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* For some years before this, in cases of persons too poor to pay for a Taylor brace, I had been in the habit of applying as a spinal support what I called a "turtle-shell" of plaster of Paris. This was done by placing the child on the stomach and pulling the shirt down smooth, so as to have no wrinkles in it; a piece of flannel or any cloth of loose texture, like cheese-cloth, or an old towel, was cut so as to fit the back from the neck to the buttocks, and to extend two thirds around the body, nicking it at the waist and other places where it might be necessary to make the adjustment accurate. Several of these were cut after the same pattern, and then dipped in a mixture of plaster of Paris and saturated with the plaster.

Two assistants then gently extended the child by making traction by the arms and legs, and after the shirt had been pulled down smoothly, then plastered cloths were placed in position on the child's back and around his body, and a dry cloth or blanket of the same pattern was placed over them, and all these were secured in position by a nicely adjusted roller bandage around the whole body; the child was to be kept lying on the stomach until the plaster had hardened or become "set," after which the mother could roll the child on his back and accurately fit a piece of elastic webbing to the open space in front, which, being laced in the center, would accurately retain the plaster shell in its proper position on the back, and give the child a much more secure support and infinitely more comfort than any of the "Knight cribs" for which I had so frequently used it as a substitute.

ance, a thing he had not done before for many months. The child seemed to be perfectly comfortable, but I was afraid to leave his entire thorax in this inelastic casing, and I therefore slipped a paper-knife beneath his shirt and cut both shirt and plaster casing from sternum to pubes. I then secured the pelvic portion by a few turns of a roller bandage and left the upper part gaping open, instructing the mother to secure it by tying three elastic straps on either side, which were cut from her rubber garters, and directed the parents to bring the child on the following week to apply the Taylor brace. The present arrangement was a mere temporary expedient, without the slightest intention of making it a permanent plan of treatment.

Mr. Reynders brought the Taylor brace the following week, as by agreement; but the child made no appearance, and, as I did not know the name or address of the people, I lost sight of them until March, 1875—nearly four months after their first visit. In the mean time, as I had given up all expectations of ever seeing the child again, I had given the brace to another child that it happened to fit.

In March, 1875, they came to my office just as I was leaving for my clinical lecture at Bellevue, and I took them in my carriage to the hospital and described the history of the case, as here narrated, to the class.

The mother stated that the reason she had not returned according to her promise was because the child had been so perfectly comfortable all winter, running around the house the same as the other children, and she only came now because he had been bleeding from his belly for the last few days, and some of her friends had told her he had a cancer coming on his belly, although he seemed to be perfectly well. The child had grown quite stout, and was looking the picture of perfect health, walking around the room quite firmly.

On removing his clothes, I found the front of his plaster jacket all stained with blood. The bandage securing it around the pelvis was exactly as I had put it on four months before, except that it was exceedingly filthy. From about two inches below the umbilicus to the top of the jacket it gaped open, quite widely at the top, and was held together by the elastic ties the mother had sewed on.

At the umbilicus there was a mass of very red exuberant granulations, which bled quite profusely and which had been oozing blood for some days, and it was for this reason that she had returned.

On removing the bandage around the pelvis, for the purpose of taking off the jacket, the source of trouble was readily discovered. In cutting through the shirt and plaster the day that I put it on I had left a *single thread undivided* just on the umbilicus, and, as the child grew and the upper part expanded, this thread irritated the umbilicus, causing a warty growth, which was very hæmorrhagic. I snipped it off with a pair of scissors and touched the base with nitrate of silver, and that was the end of it. I then scolded the woman for neglect, and told her to go to Mr. Reynders and be measured for a new brace, as I had given her other one away, and to return the next week without fail, as I wished to show the class how to apply a Taylor brace. I then reapplied his dirty jacket, and as soon as I had finished the bandaging the mother said, "Now, sir, he can stand again." I asked her if he could not stand when I had it off, and she said, "No, sir." I had not noticed that fact, and therefore immediately removed the bandage and took off the plaster-cast, and sure enough the woman was right; the child immediately staggered on his legs, put out his hands to seize something to keep from falling, and could not or would not lift either foot from the ground. My assistant held the child up by the arms and I readjusted the jacket, and immediately he walked as before. This was to me a revelation, and I then and there prophesied that this was probably destined to be the future plan of treatment of Pott's disease. Dr. George, who was then a medical student and most excellent short-hand reporter, published this lecture in the "Philadelphia Medical Times" for April 10, 1875. I told the woman not to go to Reynders for a Taylor brace, but to wash the child clean, get it a closely fitting shirt, and bring it to my next lecture, and I would apply a proper plaster-of-Paris jacket to him.

This was done on the following Wednesday at my clinic, and was the first public exhibition of this plan of treatment. I next made a public demonstration of the treatment at the meeting of the American Medical Association in Louisville, Ky., in May, 1875. At the meeting of the American Medical Association in Philadelphia in 1876 I made a practical demonstration of the application of the plaster-of-Paris jacket in a case of Pott's disease. Dr. Alfred C. Post then remarked that "this method of treatment marked an era in the history of medicine," and moved a vote of thanks to me, which was carried without a dissenting voice.

In 1877 I made public demonstrations in Guy's Hospital, St. Thomas's, University College Hospital, and St. Bartholomew's, in London; Birmingham Infirmary, and twice before the British Medical Association at Manchester, the second lecture being in response to a unanimous request from the association, upon a motion made by Mr. Lund and seconded by Mr. Ernest Hart, secretary of the association, asking me to make the second demonstration. At this last lecture the room was insufficient to accommodate the audience, and they adjourned to the largest hall in the university, which was soon crowded to its utmost capacity, and for the ovation that followed the demonstrations I must refer you to the medical journals of that date both in England and in this country. In Liverpool, Cork, Dublin, and Belfast, at the different meetings of the British Medical Association, at the meeting of the International Medical Congress at Amsterdam (1881), and also at Copenhagen (1884), I made public demonstrations of the plan of treatment, and received a unanimous vote of thanks in each instance, and an indorsement of its superiority over any other plan yet devised.

This is not the time or place to describe my method of applying the plaster of Paris as a spinal support, as that has already been so fully done in my published works. But some substitutes have been offered to take its place, such as silicate of sodium, the porous felt, leather, etc. The objection to the first is its want of porosity and difficulty of removal. The felt splint is also impervious to the air, on account of the gum that is in it, and it has not sufficient firmness to retain its form unless sustained by iron supports, and can not be constructed in any part of the country by the ordinary physician independent of the instrument-maker, as the plaster-of-Paris jacket can.

The same objections apply to the rawhide of Darrach, the leather jacket of Bartow, and the wire corset of Roberts. They can not be made except by the skilled mechanic, and can not be compared to the plaster jacket for comfort and utility, even when made by the most accomplished instrument-maker.

Mr. Davy, of London, has also made some modifications in my mode of applying the plaster-of-Paris jacket by laying the patient in a hammock, instead of partially suspending him, as I always do. The objection to this mode is that the body is bent too much in a backward curve, and also that the thorax is more compressed when the child is lying on its stomach than when it is partially suspended, according to my plan, which necessarily expands the thorax to its fullest capacity, and this capacity of thoracic expansion I look upon as of most vital importance, and, in fact, the restriction of this thoracic expansion is one of the principal objections to some, if not most, of the other spinal supporters. It is true that Mr. Davy has now modified his plan somewhat by cutting a hole in the hammock to let the head fall through, and another for the feet, and then by having extension made by two assistants while the plaster bandages are being applied. But, as the child is lying with its face toward the floor you can not see the effect of your traction on its countenance, and therefore may apply it too strongly or not strongly enough; and, as the child is often too young to talk, you can only be governed in your amount of traction by the effect produced in its countenance by the expression of either pain or pleasure.

When applied as I suggest, the gradual traction can be continued until you reach the point of greatest comfort, which is easily recognized by the child's expression, and can then be securely retained until the plaster is accurately adjusted, when the retention in this position of perfect comfort will be permanent.

The various substitutes that have been suggested to take the place of plaster of Paris—such as silicate of sodium, shellac, porous felt, gutta-percha, etc.—are all objectionable on account of their want of porosity, and therefore being impermeable to the air, whereas the plaster jacket is perfectly permeable to the air, as is seen in this experiment: by blowing the smoke into this tight plaster-of-Paris box, you see it emerging from *all* its parts, thus proving its porosity, which is of such vital importance in retaining the skin in a healthy condition and not interfering with the insensible perspiration, which is a point of vast importance. In cases of rotary lateral curvature, where the deformity has been allowed to progress to the point of requiring artificial support, there is no substitute that can be applied that will so well retain the body in the improved position which partial self-suspension gives it, and which can be worn with so much comfort to the patient as the plaster-of-Paris corset.

*Conclusions.*—That the plaster-of-Paris jacket and jury-mast in cases of spondylitis or Pott's disease, and that the plaster-of-Paris corset in cases of rotary lateral curvature, are altogether superior to any other instruments yet devised for the relief of these infirmities, and for the following reasons:

1. They can be applied in any place and by any competent physician with perfect success, without the intervention or aid of any instrument-maker. This to the country practitioner is a point of most vital importance.

2. They can be worn with perfect ease and comfort to the patient in all cases where they can be properly applied.

3. The plaster-of-Paris jacket and jury-mast retains the spinal column in a more quiescent condition, and relieves the inflamed parts from the pressure of the superincumbent head and shoulders in cases of spondylitis better than any other device heretofore employed.

4. That, being applied while the hands are over the head and the body partially suspended, the thoracic cavity is expanded to its utmost capacity, thereby increasing the ability for full inspiration better than can be done by any instrument which is retained in position by girdling the thorax, either by fixed bands or by elastic straps.

5. That, being porous and permeable to the air, it does not interfere with the insensible perspiration, and is therefore infinitely more healthy than the shellac, gutta-percha, felt, leather, rawhide, silicate of sodium, or any of the other substitutes that have been suggested to take its place.

6. That it does not "breed vermin" or other filth, as has been charged against it, but is, on the contrary, more cleanly and more healthy on account of its porosity.

7. That, in cases of rotary lateral curvature, when the deformity can not be overcome by any amount of lateral pressure until the column has been elongated—as was most conclusively proved by Dr. A. B. Judson in his beautiful experiments before this Academy some years since—the plaster-of-Paris bandage can be more *accurately* applied than any other material, and, being thus accurately adjusted to all of the irregularities of the body, and closely fitting it in every place, will retain the body in the improved position which partial self-suspension gives it better than any other device, and be infinitely more comfortable to the patient.

From all these facts we feel justified in quoting the language of Mr. William Adams, of London, at the International Medical Congress held in Copenhagen in 1884, when he said: "The modifications in the plaster-of-Paris jacket which Dr. Sayre has recently introduced and exhibited to this meeting seem to have *perfected* the jacket as a mechanical support."

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# PRIMARY LAPAROTOMY IN EARLY EXTRA-UTERINE PREGNANCY,

*WITH THE REPORT OF A CASE.**

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By "primary laparotomy" is meant the operation defined by Janvrin † as "abdominal section performed for the removal of the tube and its contained fœtus before any hæmorrhage has occurred into the peritoneal cavity from a rupture, or a partial rupture, of the cyst-wall, the pregnancy having been diagnosticated prior to the laparotomy, and the operation performed with the expectation of delivering the tube and its contained fœtus *intact*. Furthermore, this must have been done before the fourth month of the gestation." The term is not to be confounded with that signifying abdominal section in the *later* months of the gestation,

* Read (in part) before the Obstetrical Section of the New York Academy of Medicine, May 24, 1888.

† "New York Medical Journal," April 28, 1888.

before the death of the child, but is to be confined strictly to laparotomy *prior to rupture of the sac* and during the first four months of gestation. The operation has been proposed for the last twenty years, but never performed, so far as is known, until September 11, 1887, when Dr. Price, of Philadelphia, removed the tube containing a fœtus by abdominal section. The case was reported in the "Annals of Gynæcology" for March, 1888, no details, no history, and no statement as to previous diagnosis being given, but simply the fact that "abdominal section was performed September 11, 1887; tubal pregnancy; tube removed intact; irrigation; no drainage; recovery." In a letter from Dr. Price to Dr. Janvrin is the statement in regard to the case: "The history was simply one of delayed bleeding for two weeks, constant pain, and nausea. I operated for extra-uterine pregnancy or pus-tube."

From this statement the inference must be drawn that the gestation had advanced but five or six weeks, if such construction can be placed on the expression "delayed bleeding for two weeks," and that the diagnosis was but a recognition of the possible existence of a tubal pregnancy. Nevertheless, to Dr. Price belongs the credit of establishing the feasibility of the operation, and of originating a course of treatment long under consideration, but never followed, and certainly destined to a recognized place among the resources of the gynæcology of the future.*

As to the question of priority in performing this operation, I say there is no record. Parry states positively, in 1876, that thus far "it has never been performed." The only statement that I have been able to find tending to show that it may have been done since that time was that made by Martin, who reported success in eight cases out of nine operations for tubal pregnancy, and stated that in the one fatal case "*the tube had already ruptured.*" Janvrin, however, states that, in conversation with Martin, he became satisfied that all the operations were secondary to rupture.

The case now to be reported, then, is certainly the second on record, or the first if positive diagnosis and deliberate operation in consequence are taken into consideration, though I fancy that this can hardly be a fair requisite for constituting an operation a primary laparotomy to any practical extent. A tentative diagnosis is the only possible conclusion justified by the symptoms in the early weeks of ectopic gestation, in the majority of cases, as the first suspicious occurrence is often the rupture of the sac. All other abdominal sections reported have been subsequent to that accident, or in the later months of gestation.

The following is the history of the case:

C. S., aged thirty-nine, of German birth, married twenty years, the mother of ten children, twin pregnancy occurring once, and having had one abortion, induced twelve years before, sterile for eight years, first consulted me in June, 1887, for the relief of menorrhagia, dating from the time of abortion, twelve years, but interrupted by three pregnancies during that period of time. Examination disclosing no evidence of inflammatory action of even remote occurrence, or of any growth in the pelvis, I advised and subsequently performed the operation of curetting, and removed a large number of ordinary fungosities, noting a rough patch near the right uterine horn, from which the growths were removed only after repeated attempts and the employment of some force. Only temporary relief followed, and in the autumn the menorrhagia was as troublesome as before. She refused to submit to another operation, but usually sent for me when menstruating.

On March 23, 1888, I was called to attend her, and was informed that she had last menstruated normally in the latter part of January, and had had no bleeding until some two weeks after the next period was due, when a very slight show was observed. On the following day she was seized with severe pain in the hypogastrium, lasting for an hour, and similar to the pain of labor. During this time the nausea, etc., of early pregnancy were well marked, and she felt certain that conception had occurred. The slight show of blood had continued for about two weeks before she sent for me, and at 5 P. M. on the day I called —my visit was made about 10 P. M.—she had a severe attack of pain, described as cramping and referred chiefly to the rectum, lasting for about three hours, and accompanied by much more hæmorrhage than had previously occurred. Believing that I had to deal with a case that threatened abortion, and not receiving the impression that the pains were to any degree accompanied by shock, I told her to remain quietly in bed, and to call me if any further trouble ensued. On the following day the hæmorrhage had ceased, there had been no return of the pain, and examination showed that the os was not dilated, and that no abnormal condition was apparent. This examination was made in a perfunctory manner, with the patient in poor position, and with the chief design of ascertaining the condition of the os. Though I was not so informed at the time, I have since learned that several more attacks of pain, at intervals of a few days, were experienced until about April 5th or 6th, when the hæmorrhage again became profuse to such an extent that I was obliged to tampon the vagina. This effectually stopped the flow for two or three days, when it returned, and, with but slight pain, a mass (which was thrown away before I arrived) was passed from the vagina. This mass was described as of "about the size and appearance of a 'medium' oyster, a part looking like blood-clot and the rest like a bag of fluid." This graphic description being fairly good as one of an eight-weeks' ovum, after reading her a lecture on the advisability of preserving any similar products in the future, I examined her, found the os well closed, and a feeling of fullness, ill-defined and somewhat sensitive, in the right ovarian region, and not larger apparently than a pigeon's egg. As I was at the time busily engaged in looking up the recent literature of extra-uterine pregnancy, the possibility of such being the present case came into my mind, but was soon dismissed as improbable, for I was then only partially informed as to the sequence of events, and could get but little definite information by questioning. After a few days, no untoward symptoms having appeared, I ceased my visits, and saw nothing more of the patient until April 27th, when she in-

* Since the foregoing was written, Dr. Price, writing under date of May 23d, has sent me the following details of the case: The patient had been married eleven years, had had two children at term, followed by six miscarriages; last period absent; rational symptoms of pregnancy—viz., nausea, frequent micturition, etc. Examination showed an enlarged cystic tube on the right side. "The history and physical signs were rather clear, but not positive. The period of gestation, about the seventh week; there was no evidence of hæmorrhage in the cyst-wall; the cause of the pain I could not explain, except as due to uterine adhesions." Dr. Jones, of Brooklyn, has also reported a case operated upon, December 5, 1887, in which the tube was distended to the size of an English walnut, and found to be the seat of ectopic gestation. No symptoms existed in this case indicating the possibility of pregnancy, and the tube was removed under the impression that salpingitis existed. The patient was twenty-four years of age, had been married two years, and was sterile. Good recovery from operation.

formed me that the bleeding still continued when she was on her feet, and that she had had another severe attack of pain two days before. I examined her, and was surprised to find a smooth, cystic, ovoid tumor, of about the size of a large lemon, occupying the *cul de sac* and displacing the uterus forward and to the left. The mass was only moderately sensitive, and was adherent to the uterus and the floor of the *cul-de-sac*. No history or physical signs of acute inflammatory action were had, and my diagnosis was immediately and positively made; for, as the history was recalled, and previously unknown facts were elicited by direct questioning, and from the position, character, and knowledge as to the recent development of the tumor, I could see no escape from the conclusion that it could be nothing else than the sac of a tubal pregnancy. Dr. Clement Cleveland saw the patient on the following day, and confirmed the diagnosis.

The tension of the cyst-wall had perceptibly increased since my examination twenty-four hours before, and a slight attack of pain had been experienced during the same time. Rupture seemed imminent, and the delay necessary to the employment of galvanism so dangerous that I decided to operate as soon as possible. The patient readily consented when the facts were explained to her, and on April 29th, forty-eight hours after the diagnosis was made, with the assistance of Dr. Cleveland, Dr. Traub, and Dr. Broun, I removed the cyst intact by abdominal section. It was found closely attached by recent easily separated adhesions to the posterior surface of the uterus, the intestine, and the floor and right wall of Douglas's pouch, and was formed of the pavilion and outer extremity of the left tube, which had curved around behind the uterus to the right ovarian region, where were found the most firm adhesions. There was no corpus luteum in the left ovary, and, from the position of the sac, the ovum must have originated in the right ovary, which was not disturbed, as nothing abnormal was detected by the touch. The hæmorrhage from the separated adhesions was so trifling as to need no treatment. The peritoneal cavity was irrigated with water which had previously been boiled, a glass drainage-tube passed down to the bed of the cyst in the *cul-de-sac*, and the wound closed. The patient's recovery was rapid and not interrupted by a single unfavorable symptom, the highest recorded temperature being 100·4° F. thirty hours after the operation.

Incision into the sac revealed a fœtus of not more than six weeks' growth, but no blood-clot or other apparent cause for its imperfect development was found.

The woman's husband has since informed me that the last sexual intercourse was had at least eight weeks before the operation, and even if this were a case of co-existent extra- and intra-uterine gestation, which is highly improbable—the former a case of superfœtation and the latter the supposed ovum expelled four weeks previous—the statement may be justly made that the fœtus had been dead from two to five weeks, and that the sac had rapidly increased in size, and premonitory symptoms of rupture had been exhibited notwithstanding that fact. Electricity, then, if used in this case, would have had no effect save one modifying the nutrition of the cyst-wall, if it indeed possesses any such action.

I am well aware that my course in selecting abdominal section as preferable to galvanism or faradization is open to very grave criticism in the minds of the majority of American gynæcologists at the present time; and though, in this case, the means were justified by the end, that fact is no argument in favor of what might have been a fatal procedure, especially as less dangerous means were available. But this very case seems to me to illustrate what I believe to be the true sphere of primary laparotomy for tubal pregnancy. The symptoms indicated impending rupture; the period of gestation was that most frequently marked by the accident; the cyst was rapidly growing, and had increased perceptibly as to the tension of its walls during a single day; and, believing thoroughly that no time was to be lost, and that the risk of abdominal section was less than that of rupture, I chose the former as the least undesirable horn of the dilemma. I am no advocate of indiscriminate laparotomy for trifling symptoms, as so often practiced to-day. I have a wholesome respect for the danger attendant on the simple exploratory incision so much recommended and practiced, for I have seen death follow it when made by one of our most experienced and expert operators. I am of the firm belief that true surgery demands, first, prompt, decisive, vigorous action when an emergency arises; secondly, the anticipation of a threatened emergency of the near future by action while all the conditions are most favorable to success; thirdly, conservative treatment when no danger seems imminent, or when danger may be easily averted at the time it may appear; and, lastly, by so suiting the action to the case, not the case to the action, that the indications for action are followed, not ignored. Hitherto laparotomy has been entirely reserved for emergencies by the supporters of electrical treatment; and the only argument against its early performance is, that it is too dangerous a method to employ when less dangerous and very efficient means are available, with the added very true statement that the operation can not be successfully done by the inexperienced practitioner, and should therefore give way to electricity. Moreover, if the latter fails, there is still the opportunity of employing the operation to arrest the hæmorrhage. In other words, the practitioner living far from a surgical center is not capable of performing this serious and delicate operation, and so must use electricity. But how if the sac ruptures during the treatment, or he is called to a case in which rupture has already occurred? Authorities answer in chorus, "*Aut sectio abdominis aut nihil*," and he who was incompetent to remove a tube by laparotomy under not unfavorable conditions, and with time to make the necessary preparations, must either do the operation under the most difficult and complicated circumstances on a patient perhaps moribund—at all events, pulseless from shock—with inefficient assistants or none at all, and with a peritonæum full of blood, or calmly allow his patient to die with never an effort to save her. Is it strange that the operation is cursed with a high percentage of mortality, equaling or exceeding that of Nature's work? But is it just to judge the merits of the primary operation by the mortality of the one done subsequent to rupture of the sac?

The chief argument brought against the primary operation—that it is too dangerous a method to be employed save as a last resort—diffuses a strange, moldy odor when haled from its niche in the family vault of medical and surgical opinions through the atmosphere in this year of grace 1888; at a time when laparotomy is habitually urged and performed for the relief of affections most trivial, so far as

their danger to life is concerned, and only interfering with the comfort of the patient on periodical and intermittent occasions, but is denied the patient when the most fatal and terrible, from its unsuspected presence, of all the varied and complicated diseases to which her sex is liable hangs over her head like the sword of Damocles, and because it involves danger to life! Is not this the last bond which unites the progressive surgeon of to-day to the moss-grown, worm-eaten tenets of the surgery of a half-century since, which made ovariotomy and licensed assassination synonymous terms? Were opportunities for making an early diagnosis more frequent, thereby rendering more irksome the shackles forged from the antiquated opinions of a dead past, men would not to-day come red-handed from the operating-room, bearing manuscript accounts of myomotomy or some specimens of hydrosalpinx in a jar, to condemn an earnest attempt by radical measures to anticipate what is known to be a deadly peril, and honestly believed to be momentarily expected to show itself, because, forsooth, this attempt is not devoid of danger! Every one apparently confounds the primary operation with that done after rupture of the cyst, the surgeon who attempts which is truly fortunate if his scalpel makes the neat incision of the laparotomist, and not the free-handed, clavicle-to-pubes gash of the pathologist. Hesitation, Micawberism, and timidity, when an emergency arises, are more prolific causes of death and unfavorable statistics than capital operations when given a fair field; and waiting for the miraculous passage of a five-inch head through a two-inch pelvic inlet until the patient is utterly exhausted has been the true cause of death in many a fatal Cæsarean section. What one has to do, let him do quickly, for prompt action is the only key to success in such cases. Thus, fifty years ago, after contemplating the appalling mortality of ovariotomy, which he never performed until the patient's vitality was carefully sapped, and the tumor firmly fixed to the abdominal viscera by repeated conservative tappings, the surgeon lifted up his voice and cursed the day the operation was born, threw away his knife, and thenceforth busily plied his trusty trocar; and when his patient ceased to struggle longer, drawing back into his hard shell, he congratulated himself that even if he could not save her life he at least had not robbed her of it by a dangerous operation; and then amputated the thigh for a punctured wound of the knee joint within an hour. Is it not the faint memory of the teachings of such a one that lends that curious heterodoxy to the surgical doctrines of to-day, which impels the bold, experienced, successful laparotomist to propose and perform the exploratory incision for reflex symptoms or hysterical manifestations with no more thought of danger than in making a vaginal examination, but to raise up his hands in holy horror at the iniquitous and murderous proposition to employ the same simple means to settle the diagnosis, or remove the cause, of a most appallingly fatal danger, and to press the claims of a method of treatment which, when successful, leaves behind what may prove a source of irritation or suppuration, the presence of which he would never dream of tolerating for a moment under other circumstances?

It is much to be regretted that this jealously guarded principle of conservatism is not always enriched by the bright jewel consistency, for the sake of the reputation of its guardians as scientific theorists and practical surgeons; and why this virtuous condemnation of a radical and eminently surgical operation, which strives, by taking a slight risk, to place the patient beyond the pale of an impending death, should be confined to this one condition—of all others the least demanding it—is one of those strange nondescript things which one only sees when unprovided with a suitable weapon.

Another strange aspect of the controversy is presented by the fact that—though the primary abdominal section for tubal gestation has been proposed and discussed by gynæcologists for many years, and has been earnestly advocated and as uncompromisingly condemned, without a solitary instance on record of the employment of this means of treatment—all other proposed laparotomies for divers abnormal conditions in the female pelvis have been welcomed with indecent haste, and only abandoned, or restricted in use, after a bitter experience—for the patient. As an example of the unfair manner in which this operation has been judged, I will quote one or two statements from a recent article in the "American Journal of Obstetrics and Diseases of Women and Children" for May, 1888, pp. 474 *et seq.* The writer, in pressing the merits of electricity as the preferable treatment as compared with laparotomy, says: "Lawson Tait . . . recommends abdominal section, and *is sustained by a brilliant series of successes*" (Italics mine). "*But in the experience of other gynæcologists laparotomy has not been so successful.*" He then instances statistics of the abdominal section *for extra-uterine gestation, collected eight years ago* (when abdominal surgery was just out of its swaddling clothes), showing a greater mortality than when Nature was given full charge of the case, and with no explanation as to the period of pregnancy, its variety, or the intact or ruptured condition of the sac; and even drawing from these considerations of an entirely different operation the final conclusion that when the diagnosis has been made in early ectopic gestation, all cases will be treated by electricity, and abdominal section will become a thing of the past! And this when only one instance, and that successful, is on record of the operation he deprecates. All authorities agree that the only treatment, save the *laisser faire* variety, at the time of rupture is necessarily laparotomy, elytrotomy being justly ignored. Had the writer of the foregoing not been too zealous to advocate the treatment he found so successful, to the utter exclusion of its so-called rival, he would not have lost sight of the fact that he was arguing against the employment of the only means of treatment left after electricity had failed, or the case had advanced to a point beyond the time which limited its utility as a means of treatment. Mr. Tait lays particular stress on the fact that, even in his large experience, he has seen *but one case prior to rupture of the sac*, and that it ruptured so soon after his examination that the diagnosis must otherwise have been made only by the abdominal section he had decided to make for the removal of pyosalpinx, which he had diagnosticated in the absence of all symptoms of pregnancy. There is no question of preference between electricity and

secondary laparotomy; and why, then, bring up the mortality and difficulties of the latter operation as arguments against the performance or justifiability of primary laparotomy? As well argue that no parovarian cyst should be removed by laparotomy because of the difficulties and great mortality of Freund's operation!

The truth is that authorities, in discussing the rival merits and comparative utility of electricity, on theoretical grounds, with those of primary laparotomy, employing the first but never the latter, have lost sight of the fact that but one method has been employed, and have unconsciously saddled the untried method with the sins of an entirely different operation; and have also added all the bad results of every abdominal section for any condition whatever to the load borne by this abused and downtrodden innocent, never thinking that they have been contemplating the evil deeds of other "desperate and unjustifiable operations, performed when safe and simple measures are available."

Fair play is a jewel, and even the natural prejudice excited in favor of a method of treatment which has been apparently successful in one or two supposed cases of extra-uterine pregnancy in a man's own experience should not blind him to the fact that there are tubal pregnancies and tubal pregnancies; and that, though electricity may have been the proper treatment in his case, he has no right to maintain that it will be unjustifiable to use any other method in another case; nor should it lead him to cling obstinately to the memory of that insignificant experience, deaf alike to reason and the dictates of common sense, which tells him that discrimination is to be used in selecting the treatment which is to meet different indications presented by the various stages of the same disease.

Let us now examine into the validity of the assertions made in favor of electricity as the sole indicated treatment in tubal gestation prior to rupture of the sac, after the same general manner which has been assumed by its supporters in considering the merits of laparotomy. These assertions are that it is simple, safe, efficacious, and conservative, and, even when unsuccessful, does not complicate or interfere with subsequent laparotomy, if that operation is demanded by rupture of the sac.

The simplicity of the method is undeniable, though authorities differ widely as to the relative value of the galvanic and faradaic currents as a fœticide. Electro-therapeutists almost universally favor galvanism, used with or without interruptions, alleging that it is vastly superior in chemical, physical, and physiological effects, and equal in mechanical power to the faradaic current. Moreover, its force and the amount administered can be accurately gauged and measured, while the dosage of the faradaic current is only to be regulated by the sensations of the patient; in fine, that the use of the former is scientific and intelligent; that of the latter, haphazard. Now, the chemical or electrolytic and physiological effects of the faradaic current are almost *nil*—at least in the current strength used in this treatment—as has been shown by experiment on living tissues; but its use has given better results in extra-uterine pregnancy than that of galvanism. Garrigues stated, in a discussion on this subject at a recent meeting of the Section in Obstetrics of the New York Academy of Medicine, that he had noticed an *immediate* reduction in tension of the cyst-wall of a tubal pregnancy after a fifteen-minute application of the faradaic current. He admitted that no explanation of this unique effect could be made, and we are forced to conclude that, if such is the case under all circumstances in the treatment of ectopic gestation by faradism, that agent must exercise a natural selection for the amniotic fluid, causing it to disappear mysteriously, whither or how we know not, as the current can not be persuaded to produce similar results when applied to any cyst save that of tubal pregnancy. One more desirable quality of the faradaic current has been discovered—its value as a means of diagnosis of cystic tumors of the female pelvis from extra-uterine gestation sacs; for, if no effect on the tension of the cyst is observed after a short time of faradization, we can be positive that the suspected cyst is *not* an extra-uterine pregnancy.

All, with the exception of Apostoli, condemn electro-puncture of the sac; and all, with the exception of Garrigues, agree that the use of electricity should be practically limited to the first four months of gestation; for, if rupture does not occur before that time, the chances are in favor of the child reaching a viable age; or that Nature has already done all that electricity could accomplish. Rockwell urges the necessity of using great care in the employment of electricity during the period in which rupture is most prone to occur, in order that this accident may not be caused by too sudden variations in the strength of the current, or too great concentration at one point.

Thus far but one death has been reported as having occurred during the course of treatment by electricity—that of a patient of Janvrin's, the fatal result being due to rupture of an artery in the cyst-wall after the third application of the galvanic current. No cases of suppuration of the cyst have been reported except in those in which the treatment had been employed after the fourth month of gestation, although several instances of such a result of its use during the later months of fœtal development are on record. Several cases, however, have been reported in which unequivocal symptoms of rupture or serious hæmorrhage were developed during the treatment, but all finally ended in recovery—three being cases of interstitial pregnancy, the sac rupturing into the uterine cavity and resulting in almost immediate expulsion of the ovum (McBurney); in retention for three months (Trush); and in retention, with contained development to the *eighth month*, the child being *born alive* (Garrigues). But Janvrin, while examining a patient, felt the tumor he had diagnosticated as due to interstitial pregnancy diminish in size under his hand, and very soon secured the fœtus from the uterine cavity. There is, then, no strong proof that the electricity resulted in any one case as the active agent in the production of these results unless its power to cause strong contractions in the cyst-wall, and consequent rupture, is advanced as an argument in its favor. If so, its use can not be too strongly opposed, for rupture can not be made to adapt itself to that point in the sac-wall most favorably located for the subsequent arrest of the hæmorrhage or the progress of gestation.

There are those who hold that rupture of the sac is but the effect of the efforts made by the vicarious uterus to rid itself of a dead fœtus—that death of the fœtus causes rupture of the sac—and, therefore, treatment causing arrest of fœtal development is wrong in principle and practice. But this view is not at all justified by known facts, for the fœtus often continues its existence after rupture of the sac, as is conclusively proved by the conditions found in cases of ventral pregnancy. Moreover, very strong evidence is afforded by specimens and personal observation that the fœtal sac is not always dependent on the life of its tenant for continued and vigorous growth—the case reported in this paper furnishing an admirable illustration of this fact—and therefore electricity, if successful as a fœticide, gives no positive promise of preventing rupture unless it can so modify the nutrition of the sac as to cause absorption or mummification of its contents and atrophy of its walls. This is Nature's method of cure, but she seldom employs it, for many a case demanding operation for arrest of hæmorrhage has shown only a ruptured sac with placenta and membranes, but never a fœtus. What had happened to the embryo? Had it been overlooked when the clots were removed? Or had it parted with its young life long before, and when still so small as to attract no notice, while the sac had continued to develop? Why should electricity receive credit for what has frequently occurred when the case had been left to Nature?

The principal stumbling-block in the path of the investigator of this question is the uncertainty of diagnosis, which is usually made only when the alarming symptoms of rupture appear. Can any conclusive evidence as to the success or value of any plan of treatment be offered when there is no certainty in regard to the actual condition treated? Something more than personal opinion or belief, on which statistics are based, is needed to make those statistics at all admissible when arguments *pro* and *con* on a method of treatment are heard. Even granting that the diagnosis is correct, another obstacle is encountered. How can one maintain, in cases in which rupture has occurred or takes place during electrical treatment, that his use of the agent had anything to do with the result? No one has alleged the power to arrest hæmorrhage for electricity, or the ability to cause desiccation of the fœtus. That is left to Nature; and recovery after rupture of the sac is solely due to her work. But electricity often gets the credit of a cure when the only evidence of its action presented is the occurrence of rupture! Therefore, in many cases of alleged cure by electricity, there is no reason to believe that recovery was aught but a coincidence.

Brothers ("Am. Jour. of Obstet. and Dis. of Women and Children," May, 1888) has collected forty-three cases of ectopic gestation treated by electricity, at all stages from six weeks' to eight months' development, with but two deaths. To this list may be added three more—one reported by Kletzsch in the same issue of the journal, and the others by Buckmaster and Garrigues at the meeting of the Obstetrical Section of the Academy of Medicine, May 24, 1888. One of the fatal cases—that reported by Hicks, in which puncture of the sac was employed five weeks after the electrical treatment had been abandoned—and two in which suppuration and subsequent discharge of fœtal remains followed the treatment, both being ventral pregnancies of five and eight months' growth, respectively, as well as all others of the list treated after rupture or after the fourth month of gestation (for the present question only concerns the treatment prior to that period), may be properly excluded, leaving a total of thirty-nine cases with one death—a mortality of 2·56+ per cent. Of these thirty-eight successful cases, symptoms of rupture during treatment occurred in five; and of these, three were interstitial pregnancies rupturing into the uterine cavity, and just now mentioned; one (Mundé) in which collapse followed the first application of the current; and one (Kletzsch) in which collapse and septic symptoms appeared after a few applications. The fatal case (Janvrin) showed rupture of an artery in the cyst-wall after the third application, the integrity of the cyst itself not being destroyed. We now have thirty-nine cases with one death and five ruptures of the sac, three of which were ascribed to contractions in its wall *set up by the current*, leaving a total of thirty-three cases of successful employment of electricity in arresting the progress of gestation. This would constitute a most powerful argument were there no question as to erroneous diagnosis.

In these thirty-three cases there existed strong evidence in favor of the accuracy of the diagnosis; but, as no positive proof of this can be furnished in any one case, the doubting Thomases of the profession refuse to allow testimony founded solely on belief, be it ever so thoroughly justified by the facts of symptoms and physical signs. Several instances of mistaken diagnosis have been reported in which almost classical histories of misplaced gestation and enlargement of the tube have been presented; but operation has revealed salpingitis, with not even a possible trace of gestation. The reverse is also true. Extra-uterine pregnancy has been mistaken for salpingitis, as was the only case Tait ever saw prior to rupture, and which gave no definite history and simply the ordinary physical signs of perimetritis. If the electric current can arrest the growth of an extra-uterine gestation sac, why can it not cause the disappearance of a hydrosalpinx or a parovarian cyst? Does it follow an elective course, promptly attacking and conquering the tendency of an ectopic pregnancy to continue its existence, but passing by on the other side of the way a cyst of the broad ligament or a hydrosalpinx? Electricity, being a blind force, is an excellent servant; but, so far from being imbued with the inconsistency of its masters, has disgustingly regular habits of acting in the same manner when the same conditions exist; and whenever it is detected in an apparent vagary, sooner or later some reason will be discovered for its peculiar conduct other than a pathological one.

The gynæcological agnostic, then, would be prone to look upon all these recorded cases as possible mistakes in diagnosis, and to narrow down the admissible testimony to that offered by the one fatal case, which proved its true character post mortem; and, if admitting the accuracy of the diagnosis in the three cases of interstitial pregnancy with expulsion of the fœtus into the uterine cavity, would

argue that, if the electrical current had caused strong enough contractions of the cyst-wall to accomplish that result, it would be a dangerous mode of treatment to apply when the sac was less favorably located, as rupture would be caused, not prevented, by its use. Therefore, if we reason from practical, unquestionable facts, we must conclude that the evidence goes to prove that electricity is a dangerous and utterly unjustifiable means of treatment of ectopic gestation in its early stages. So much for the value of its statistics, or the decision of this question on theoretical grounds. I am fully aware that this reasoning is unjust, and do not advance its conclusions as my own belief; but it is equally as just as the logic which has been employed in the adverse conclusions in the consideration of the advisability of early abdominal section.

The last statement made for electricity—that it in no manner prevents or complicates subsequent laparotomy—needs but little comment. If the delay which allows old adhesions to become more perfectly organized and new adhesions to form; if constant danger of peritonitis, adhesive or more extensive in character, from slight hæmorrhage from ruptured arterioles in the cyst wall; if a peritoneal cavity full of blood, or containing a partially decomposed fœtus and a quantity of septic fluid, and a patient in collapse from shock and loss of blood; if the necessity of performing the operation at a moment's notice, perhaps with no time to make proper or adequate preparations, in an improper place and inconvenient time—if all these very possible conditions are not prejudicial to the success of the operation, this statement is valid. No one advises palliative treatment in strangulated hernia until general peritonitis and stercoraceous vomiting demand operation. No one advises treatment of incipient epithelioma of the cervix by astringents or caustics until the disease has invaded the broad ligaments, or the cancerous cachexia has been developed, before high amputation or hysterectomy is to be performed. Conservatism of this character has only been successful when a mistaken diagnosis has been made; and in this age of progress in medical science, treatment based on the probability that an incorrect diagnosis has been made can scarcely be said to be in accordance with existing ideas as to the treatment of disease, for these aim to become exact principles, and take no account of possible miracles, save as interesting anomalies.

The merits of primary laparotomy are perfectly valid, if the two great objections to its use by the general practitioner—special skill and experience needed, and the danger involved in opening the peritoneal cavity—are disregarded. That they should be ignored by the specialist seems plain, for they are attendant on every operation involving abdominal section; and the discussion as to the comparative merits of two modes of treatment should be on their merits, and not on the operative ability of the general practitioner.

Twelve years ago Parry * wrote, while urging an immediate resort to laparotomy at the time of rupture of the fœtal sac: "The question is not, Will the patient die after the operation? It is, Will she get well if abandoned to nature? . . . Are the dangers of opening the peritoneal cavity less than those of the rupture? The history of abdominal surgery" (this, remember, was written twelve years ago) "and that of the condition which is being discussed, teach us that they are unfortunately less." Again, in considering the propriety of laparotomy prior to rupture of the sac, he wrote: * "If the diagnosis of misplaced gestation was certain in any case, . . . the operation would be perfectly justifiable. . . . The fœtal sac might be extirpated, or, if this was not possible, the *supra-cervical portion of the uterus and its appendages could be removed with a better prospect of the woman's recovery than she would have after rupture of the sac.*"

Twenty years ago Dr. Stephen Rogers, of New York, was bold enough to advocate removal of the sac as soon as the condition was recognized. Twenty years ago abdominal surgery—a weak, puny, undersized infant—was being fed on peptonized milk, and was kept in a roll of cotton-wool, for the preservation of its feeble existence. To-day, in the full strength of a vigorous adolescence, with every promise of attaining the perfect development of full manhood, shall we clothe it in the hybrid kilt-skirts of childhood when introduced to ectopic gestation, but allow it the virile garb of trousers and a tailed coat when presented to all other visitors? This is most unfair to both the boy and the visitor, and will but cast upon us deserved ridicule.

Such were the ideas of the preceding generation in regard to the treatment of extra-uterine pregnancy, promulgated at a time when a mortality of twenty per cent. was considered a brilliant triumph for ovariotomy, and a proposition to open the abdomen in order to remove an enlarged imprisoned ovary would have been greeted with a vigorous cry of protest. But these authors knew what they proposed was the least of two dangers, and their conservatism was formed after the pattern proposed by the biblical rule to enucleate the eye or amputate at the wrist, rather than take a great risk of general septic infection from the conservation of a diseased organ, be it ever so important a member of the body. During the last two years, Janvrin, of New York has been almost, if not quite, alone in his earnest plea for early laparotomy, for he had lost a patient from hæmorrhage during treatment by electricity. Others have since profited by the lesson taught by this case, that fatal results may occur even after fœtal death, and have lifted up their voices in the cause of surgical and certain treatment, as opposed to blind guess-work as to effects produced, or conjectural ideas in regard to the condition treated.

Primary laparotomy does involve danger; but does not also electricity? Primary laparotomy requires surgical ability and a knowledge of the best method of dealing with complications; but does not electricity need special instruments and apparatus not possessed or easily used by the general practitioner in this condition? How many of the profession to-day, engaged in general practice in city or country, possess a milliampèremetre or a rheostat; or even know what is meant by the names? The surgeon of the backwoods-district always has a scalpel, artery forceps

* "Extra-uterine Pregnancy," 1876, p. 220.

* *Ibid.*, pp. 202, 203.

needles, and silk, but rarely a reliable electrical plant, or any knowledge of its practical intelligent use.

No uncertainty attends the operation. If done in pursuance of a mistaken diagnosis, it relieves the patient of a neoplasm, or is merely an exploratory incision. If the diagnosis is correct, it shows the fœtus, or the incontrovertible proof that pregnancy existed, and leaves behind no tumor of unknown nature, or cause for subsequent trouble. It is not a difficult or complicated operation if performed at an early period; it is conservative in the true sense of the term—that of anticipating, by measures fraught with slight danger, the great danger which is threatened; and, finally, it is truly surgical, and in accord with the best-known methods of dealing with analogous conditions. Its statistics are certain and its results unexceptionable.

Many of those who condemn the employment of abdominal section by gynæcologists as unjustifiable in many conditions, the influence of which they deny or are unable to appreciate, wot not of what they decry; and it is possible that the carping criticism of such men, and a desire to appear anxious to use other than operative measures when a choice is offered, is at the bottom of the curious inconsistency displayed by the opinions and practice of many specialists. The true surgeon should be above any fear of criticism when conscientiously doing what he honestly believes to be best for his patient, disregarding the jealous spirit which animates his detractors, who judge his motives by their own, and ascribe his tendency to progress as a sordid effort to advertise himself. As one has said, "Medicine is the noblest of professions, but the meanest of trades"; and that the advance of a grand science should be retarded by the unprincipled charlatanism or obstinate "old-fogyism" of some of its professors, from motives of jealousy or greed, is one of the most deplorable facts known to our civilization.

But if true conservatism is the order of the times, it has a most remarkable facility for masquerading in impenetrable disguises when sought among the general methods of the majority of gynæcologists. We hear little or nothing of electrical treatment applied to cystoma of the ovary or fibroma of the uterus except from the few who apply electricity to everything, and regard it as a near approach to the universal panacea. Were the hysterical patient, or the one with dysmenorrhœa, or the one flaunting the "pain in her side" in the faces of the various gynæcologists she consults, delivered into the hand of the neurologist, or deposited on some desert island—where hunting turtles' eggs or delving for yams would be essential to the co-existence of soul and body—our museums and private collections would contain fewer jars of ovaries, and our medical journals less extensive lists of laparotomies done during the last few years, and our women would not be the less healthy, less numerous, or less able to fulfill their destiny as mothers of the next generation. Less obloquy would be cast on the fair fame of gynæcology as a legitimate specialty were less attention paid to the practice of reducing all the ills that female flesh may inherit or imagine to ovarian and tubal disease; and that the influence of a promising past and the existence of an embryonic future should be handicapped by a hobby-riding, narrow-minded, inconsistent present, is more than unfortunate.

Away with the spectacles which, with imperfect lenses, distort the objects viewed through them, and cause the same operation to appear a panacea when done for an uncertain or benign affection, but unjustifiable when performed for the relief of a mortal disease! Out upon the practice—the balance in which human life and death are weighed—which makes no discrimination as to indications for treatment or probabilities of threatened calamity, but doggedly follows a set rule, refusing to enter the water until it has learned the art of swimming, and is content to sit on the bank of the stream which obstructs its further progress—while others boldly cross—waiting for the water to evaporate, or a bridge to be built by some one else!

It is far from my intention or desire to belittle the value of electricity as a means of treatment in this condition, when used in suitable cases, for I believe it to be most valuable and deserving of employment in very early cases. I do not believe that it should be displaced by laparotomy, nor that its conceded advantages should constitute it the only proper treatment up to the time of rupture of the sac. In my humble opinion, each of these methods has its own proper time and place, even as other conservative and radical methods are applied in other affections. And I hold that, if in the early stages of tubal gestation the electric current fails, after a reasonable number of applications, to arrest the growth of the cyst, or does not prevent the occurrence of the characteristic pains, or if the condition is not recognized until so far advanced, or presenting such symptoms as to create a fear of imminent rupture, in either of these conditions it is the surgeon's bounden duty to adopt radical and certain means of treatment, and not expose his patient to the dire results which may follow a course of misapplied and falsely so-called conservative treatment or unsurgical timidity in the face of an impending catastrophe; that the treatment should be fitted to the case, not the converse. Truly our women are in evil case if such principles are to guide the action of men to whom they come in their trouble and danger for succor.

Electricity and early abdominal section as means of dealing with tubal gestation are now on trial. Each has its undeniable advantages; to each are there insurmountable objections. It is not the tendency of this age to limit the methods of dealing with a progressive disease to a single one at every step of its advance from innocuous incipiency to full power to kill; and it seems most inexplicable that this mortal affection, pre-eminently demanding prompt and decisive action, should obstinately be made an exception to the general rule.

The two methods should not be rivals, but allies, and, so far from constituting a *casus belli*, should stand shoulder to shoulder, ready to fight, singly or in unison, the battles of the general who grasps the situation and manœuvres his forces to the best possible advantage. Such a one will not invariably reserve the same corps for use as a forlorn hope, and only bring it into the action when it must charge against overwhelming odds, after its fellow force has been flanked and broken. Nor will he argue that its limited ex-

perience under fire, or its poor showing when acting as a forlorn hope, are evidence that its fighting ability is of the least, or that its success will be equally poor when advancing against an equal force of the enemy.

It is my firm conviction that there will soon take place a strong reaction in the present tendency to overestimate the value of many operations involving the abdominal section, and that the indications for and restrictions upon their use will be more definitely formulated. And when the time shall come when dangerous methods are almost exclusively used for the relief of infinitely more dangerous conditions, and simple means of treatment are employed in disease rarely, if ever, compromising human life, primary laparotomy for early tubal pregnancy will no longer—with never a chance to bear witness in its own behalf—receive the odium of a verdict reflecting on its character as a justifiable operation, but will occupy an honored and prominent place among the brilliant and truly surgical achievements of the present age.

[Note.—Since the foregoing was written I have removed by laparotomy an unruptured tubal gestation sac containing a fœtus of about three months' development and beginning to decompose, and about two ounces of purulent and slightly fœtid fluid. The history of the symptoms dated back nearly five months; the patient had been kept under observation for two weeks, and no change had been observed in the cyst. The patient, when informed of the probable nature of the cyst, was anxious to have it removed; and its character—practically a pelvic abscess—rendered her request a very fortunate one. Exploratory incision was recommended by Dr. T. Gaillard Thomas, who saw the patient in consultation, and was performed on May 29, 1888. Thus far (June 9th) there have been no unfavorable symptoms, and the indications strongly point to a perfect and rapid recovery. The diagnosis was almost positive, but not so certain as that of the case reported in this paper. The cyst was adherent, but not so extensively as to prevent its removal with comparative ease. The sac-wall was very thin at its superior and posterior aspect, making the subsequent rupture and discharge of its putrefying contents into the peritoneal cavity an exceedingly probable result of a sudden effort or a fall.]

18 East Twenty-fourth Street.

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# THE VALUE OF ELASTIC TENSION IN THE TREATMENT OF FIBROUS ANKYLOSIS;

## ALSO A DESCRIPTION OF AN APPARATUS FOR PRODUCING EXTENSION AND, AT THE SAME TIME, ROTATION OF THE FOREARM.*

By LOUIS A. WEIGEL, M. D.,
ROCHESTER, N. Y.

Previous to the introduction of *brisement forcé*, or the forcible rupture of joint adhesions under anæsthesia, the treatment of fibrous ankylosis consisted of gradual extension or stretching by mechanical means. It has been said that the introduction of the former procedure marked a new era in surgery, and it was supposed that the slower method would be entirely abandoned. A calm and unprejudiced investigation of the results of *brisement forcé*, however, will show that it does not accomplish all that has been alleged for it, nor that it is so universally applicable as we are led to believe by the statements in some recent surgical works. It is a noticeable fact that *brisement forcé* is the only procedure spoken of for overcoming fibrous ankylosis, no reference being made to other plans of treatment. Gradual extension seems to have become, comparatively speaking, a lost art. Some distinguished surgeons, including Langenbeck, Dieffenbach, and others, pronounce gradual extension inefficient, painful, and not free from danger, and Bauer* goes so far as to assert that "the superiority of *brisement forcé* over progressive extension can no more be questioned, and its former opponents have been effectually silenced by the overwhelming results of that practice." And yet it is well known that not infrequently violent inflammation and other untoward results supervene after the forcible rupture of joint adhesions, which certainly render ultimate success quite problematical, and increase the difficulty of restoring joint function.

The mechanical means formerly employed to produce extension or traction consisted of an endless screw, a rack and pinion movement, or similar contrivances. The defects of all appliances in which these principles are utilized are apparent; the use of rubber, however, is free from the objections which may justly be urged against an unyielding power, because it more nearly represents manual force and is continuous in its action. The value of elastic tension in fibrous ankylosis and other affections has been so fully demonstrated that nothing further need be added, except to urge its more extended use for such purposes.

In order to obtain the best results from the use of elastic tension, it is advisable to adopt a plan of treatment which will prepare a joint for the application of force, and also overcome those secondary changes in the surrounding parts that usually occur in joint affections. The therapeutic measures which constitute this treatment are local warm baths, massage, electricity, and wet packs. The two former are strongly advocated by Reibmayr,† of Vienna. He recommends the use of a local warm bath of from one half to one hour's duration, and massage practiced for from ten to fifteen minutes previous to each application of the elastic tension. Massage may also be resorted to for increasing the nutrition of muscles. When employed for this purpose, more time should be devoted to the extensor than the flexor muscles, for it has been shown that in the majority of the diseases of the extremities the former become impaired to a much greater extent than the latter.

It is now an accepted fact that an electrolytic effect can be obtained by the surface application of a galvanic current. It is necessary, however, to localize the current—*i. e.*, to pass it directly through the parts to be acted upon. Many joints are accessible for an application of this kind, and the catalytic action that results therefrom hastens the dispersion or absorption of effusions and exudations, and softens fibrous adhesions. In addition to the use of galvanism, the slowly interrupted faradaic current is of great value in overcoming

* Read before the Medical Society of the State of New York, February 9, 1888.

* "Lectures on Orthopædic Surgery," by Louis Bauer, M. D., New York, 1868, p. 311.

† "Die Behandlung der Ankylosen und Kontracturen mit Massage und elastischem Zuge," von Dr. Albert Reibmayr, "Wiener med. Wochenschr.," No. 25, 1885, p. 795.

the muscular atrophy which usually accompanies joint affections. The beneficial effects of electricity depend upon the selection of a proper current, and its correct application and variation according to the requirements of each individual case; hence it should always be applied by the physician himself. The application of the galvanic current in particular should never be intrusted to a patient.

The use of a wet pack is indicated to relieve the hyperæmia or congestion which sometimes results from the application of force and causes pain or soreness in the joint. A wet pack also exerts a favorable influence on a diseased joint by its general derivative effect; hence it is a good plan to have one applied on retiring, and worn during the night. Upon removing it, the joint will be cool, less painful, and more mobile.*

After a joint has been subjected to the preliminary treatment described above, it is in the best possible condition for the application of an apparatus for gradual extension. The length of time extension or traction may be continued must be determined by the peculiarities of each case, the condition of the joint, and the amount of force exerted. From one half to two hours will suffice, as a rule, for each application, and this may be repeated several times during the day. The amount of force exerted should never be so great as to cause severe pain.

In the following case, which came under my observation a short time ago, *brisement forcé* failed absolutely to improve the condition of the joint, while the use of elastic tension proved to be of great service, the patient now being able to extend the arm actively quite beyond a right angle. The range of motion is steadily increasing.

*Case.*—Miss G., aged twenty-one, sustained a dislocation of the right radius forward, which remained unreduced for ten days. An attempt was then made to reduce it under anæsthesia with apparent success; the arm was bandaged in a flexed position and allowed to remain so for ten days or two weeks; efforts at passive motion failed completely, the arm being firmly fixed in extreme flexion. An anæsthetic was again administered, the joint adhesions broken up, the hand placed in a semi-pronated position, and the arm bandaged as before. This dressing was allowed to remain unchanged for about two weeks, for the avowed purpose of bringing about an ankylosis, all hope of restoring joint function being now abandoned. When I first saw this case, about three months after the accident, I found the arm firmly fixed in the position last described, the patient being unable either to extend or rotate the forearm. According to the statement of the patient, each forcible manipulation was followed by violent inflammation, and after this had subsided the stiffness of the joint increased steadily from week to week.

The object to be accomplished by treatment in this class of cases is, of course, the restoration of the functions of extension and rotation, and an elastic tension apparatus is best adapted for the purpose. As no appliance has hitherto been constructed that meets all requirements, I devised an apparatus, which I herewith present for your inspection, that not only produces extension of the forearm, but rotation also, at the same time.

* For a description of the physiological effects, and the mode of application of wet packs, *vide* Winternitz's "Hydrotherapeutics," in vol. v of v. Ziemssen's "Hand-book of General Therapeutics."

Fig. 1 shows a view of the complete instrument adapted for the right arm. It consists of two segments, *A* and *F*, corresponding to the arm and forearm, which are connected together by a new compound joint, *T*.

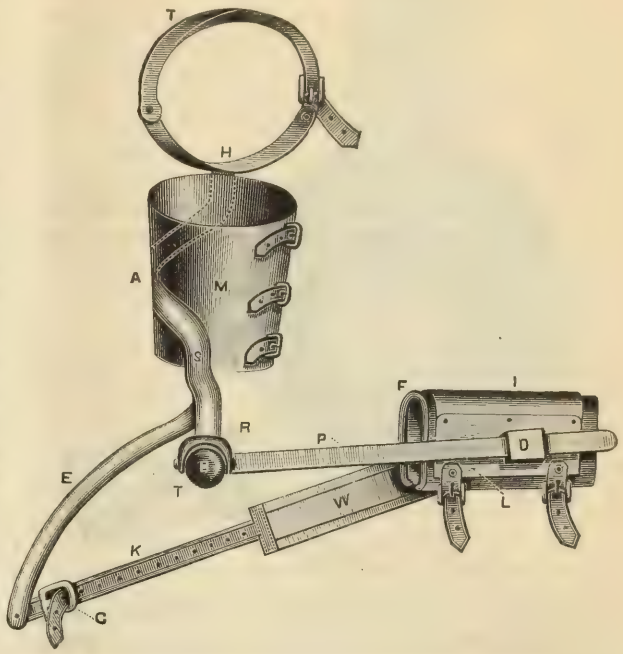



Fig. 1.

The arm segment is constructed as follows: A flat steel bar, *S* (Fig. 1), is curved so as to pass from the outer side of the elbow in a spiral direction, around the back of the arm, to the axilla, where it ends in a crutch-head, *H*. At the lower end of this bar a fork, *R*, is fixed. Just above this fork a curved metallic arm or lever, *E*,* passes backward and downward, its free end carrying a pivoted buckle, *C*. The forearm segment consists of a flat steel bar, *P*, the free extremity of which passes through a slot in a metallic block, *D*, to which a wristlet, *L*, is pivoted. This wristlet is constructed of two metal plates united by a piece of leather, *l*, and lined with thick, soft felt. The two bars, *S* and *P*, are connected together by means of a new compound joint, *T*, a view of which is shown in Fig. 2. This consists of a ball, *B*,† which turns freely on two axial bearings, *F*, passing through the prongs or arms of the fork, *R*, and is also hinged to the forearm shaft or piece, *P*, in the following manner: a deep and narrow slot or channel, *b*, is cut into the ball, *B*, at an angle of 45° from the above-mentioned axial bearings, *F*, and extends about two thirds through it. The proximal end of the forearm shaft, *P*, passes into this slot or channel, where it turns about a pin, *D*, which extends through the center of the ball and is fixed thereto.

To the inner metal plate of the wristlet a strip of stout rubber webbing, *W* (Figs. 1 and 3), is attached by means of a pivot, and ends in a strap, *K* (Fig. 1). The manner

* This lever is like that used by Dr. M. J. Roberts on several of his appliances.

† In Fig. 2 the diameter of the ball is shown about a third greater than the real size.

in which the webbing is attached to the metal plate is shown in Fig. 3.

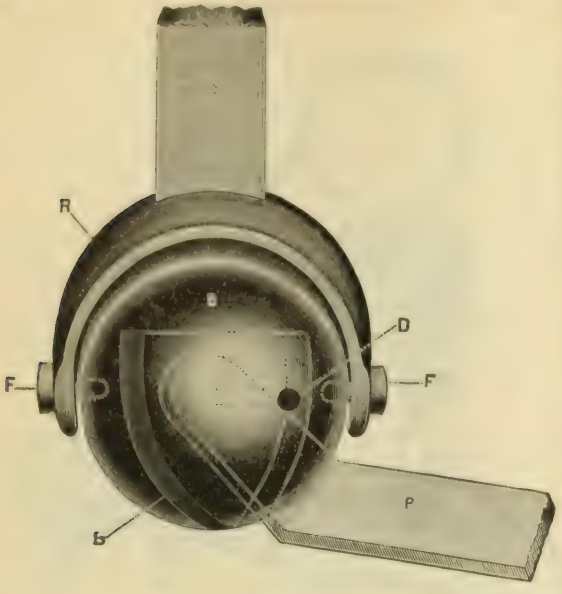



Fig. 2.

The mode of fixing the apparatus to the arm is as follows: The segment, *S*, is riveted on a strong leather armlet, *M* (Fig. 1), which is provided with straps and buckles. A strap, *t*, also passes from one end of the crutch-head, *H*, around the shoulder, to a buckle at the other end. The segment for the forearm is attached by the wristlet, *L*, which is also provided with straps and buckles for fixing it firmly in position.

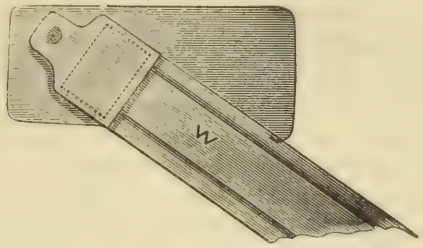



Fig. 3.

The essential and new features in the above-described apparatus are the mechanism or joint for producing extension and rotation simultaneously, the sliding forearm shaft, the peculiar construction of the wristlet, and the use of a crutch-head with shoulder-straps.

The manner in which simultaneous extension and rotation are obtained can be seen by examination of the compound joint or mechanism as shown in Fig. 2. It will be seen that the forearm shaft, *P*, is held in the oblique slot or channel, *b*, in the ball, *B*, by the pin, *D*, and must necessarily travel in it. Now, if any power is applied to the forearm segment which tends to force it downward, it not only causes the shaft to turn on the pin, *D*, and follow the direction of the slot from left to right, but also produces a rotation of the ball on its axis from right to left. When the movement permitted by the joint is completed, the forearm segment is fully extended upon the upper or arm segment and is directly continuous with it, occupying, however, a plane at right angles to it; in other words, a rotation through about 90°, as well as extension, has taken place. If the slot were cut at right angles with the axial bearings, *F*, instead of obliquely thereto, extension alone would result, as the shaft could move in one plane only; it would be simply a hinge. This is well illustrated in the joints of an ordinary folding pocket-rule.

In a mechanical appliance which is intended to produce extension and rotation of the forearm, a shaft which may change its position and direction becomes necessary for the following reasons: During extension of the forearm, a lengthening, equal to one half the diameter of the convex articular surface of the humerus, takes place. Furthermore, in pronation, the head of the radius rotates upon its own axis, while its carpal end, owing to the longitudinal curve of the shaft of the bone, describes an arc of a circle, and becomes twisted obliquely across the ulna, carrying the hand with it. In the above-described apparatus the forearm shaft, *P*, slides through the pivoted block, *D*, on the wristlet, and hence it can change its position and direction automatically.

At the anterior third of the forearm the bones are quite superficial, and hence favorably situated for the application of force. Now, inasmuch as this portion of the arm is elliptical in cross-section, it will be seen that a wristlet constructed in the manner above described conforms itself readily to this shape, and grasps the arm firmly, so that it can not change its position without carrying the arm with it. In the movements of extension and rotation the humerus is the fixed bone, while the radius and ulna are movable ones. A mechanical appliance for producing similar movements must have a fixed part from which motion proceeds, and it is apparent that the more perfect the fixation is, the greater will be the power of the movable portion of an apparatus. For this reason I have added a crutch-head with shoulder-strap, as the straps and buckles of the armlet, *M*, alone do not fix the upper segment as firmly as desirable, because the mass of muscles surrounding the humerus slides freely on the bone. Even if the plaster-of-Paris bandage, or some other form of fixed dressing, were used to attach the upper segment to the arm, the same objection and defect would exist. But, with a crutch-head in the axilla, held in place by a strap around the shoulder, absolute fixation is obtained.

It will be noticed in the description of the apparatus that both the rubber webbing, *W*, and the buckle, *C*, at the end of the lever are pivoted. By this arrangement they adapt themselves automatically to the angle of tension, which is constantly changing, as the forearm segment comes down.

The whole apparatus is much more simple than might be inferred from its description. Nothing could be more simple and uncomplicated than the mechanism which controls the movement of the apparatus. After the tension is applied it does its work automatically. The principle upon which the compound joint is constructed may be utilized in many ways for other joint appliances. Thus, with a slight modification, it may be adapted for overcoming angular flexion

of the knee, with outward rotation of the head of the tibia, or in cases of flexion of the hip combined with adduction or abduction of the thigh.

## Correspondence.

### LETTER FROM LONDON.

*The Report of the Clinical Society's Committee on Myxœdema.—The Value of the Tubercle Bacillus in Diagnosis and Prognosis.—The Financial Position of the London Hospitals.*

LONDON, *May 29, 1888.*

AFTER four years of pretty constant labor the myxœdema committee of the Clinical Society have announced the termination of their investigations by sending in a report, the chief conclusions of which were briefly enunciated at the last meeting of the society by Dr. Ord, the chairman of the committee and the leading spirit in its appointment. The report will be published as a separate volume concurrently with the next volume of the society's "Transactions," and it is said that it will be of about the same bulk; till then we shall doubtless have to content ourselves with the summary of the results which I have no doubt will appear in the next number of our medical journals. The main facts of that summary are that myxœdema is a distinct and definite disease, and that destructive change in the thyreoid gland is a constant factor. No explanation was offered of the much greater frequency of the disease among women, though allusion was made to the fact; cachexia strumipriva and sporadic and endemic cretinism were declared to be essentially the same disease as myxœdema. A very large mass of evidence relating to the effect of the removal of the thyreoid gland was sifted by the committee, leading them to announce definitely that this operation is followed by the development of myxœdema. Cases in which this has not occurred were explained on the hypothesis of the existence and development of supernumerary thyreoid glands. The committee also included an experimental inquiry as to the effects of the removal of the thyreoid in monkeys, and found that myxœdema was always produced in a most typical form. The Clinical Society has done good work before in thoroughly investigating diseases by means of a small committee—witness the reports on spina bifida and Charcot's joint disease, to quote only the most recent—but this report will completely eclipse all previous ones, both for its exhaustive character and because it establishes in an indisputable manner the identity of a disease the separate existence of which has not hitherto been always admitted. The late Dr. Mahomed, for instance, held to the belief that myxœdema was nothing more than chronic nephritis, and others shared his views.

Dr. Broadbent, the president of the society, in thanking the committee for their labors, paid a well-deserved compliment to Dr. Ord, and foretold that the disease in future would be inseparably connected with his name, in recognition of the great advance in our knowledge of it through his labors. For, though Dr. Ord was not the first to describe a case (priority belonging to Sir William Gull for his paper before the Royal Medical and Chirurgical Society, on "A Peculiar Cretinoid State supervening in Adult Women"), still Dr. Ord was the first to recognize all the essential features of the disease and to carry out the investigation in regard to the skin from whence the disease derives its name. I believe it is a fact that nothing of any importance in regard to the disease (excepting as to the results of removal of the thyreoid gland) has been made out elsewhere that had not already received notice in one of the many papers on this disease contributed to the Clinical Society.

Dr. Percy Kidd and Dr. Taylor have lately made known the results of a prolonged investigation as to the value of the tubercle bacillus in diagnosis and prognosis. In regard to the former, in many cases where the physical signs were undeveloped or were masked by emphysema or bronchitis, the discovery of the bacilli in the sputa was of great aid in diagnosis, and also in some cases of rapid wasting without any physical signs in the chest. They pointed out that it was a distinct advantage to be enabled to give a definite diagnosis early instead of waiting for physical signs to develop. In reference to prognosis, they did not lay much stress upon the bacilli; they had not found that a large number necessarily indicated a rapidly increasing disease or a small number a chronic or actually stationary condition, and in this they were supported by most of the speakers, though one gentleman was in favor of having the sputa sent up to him every week in order that he might arrive at a prognosis from the number of the bacilli, and he even thought that a prognosis might be given though the patient had never been seen.

The appeals from the hospitals for money are more numerous and more importunate than ever, and yet many of them are rebuilding or trying to, or else enlarging their already existing buildings. In face of these facts, a letter in one of the daily papers of last week is worthy of attention. The writer shows that there are now seventy-three hospitals in London, an increase of twenty-one in the last nine years. Three of these only are endowed, and only one is able to carry on its work without extraneous aid, viz., St. Bartholomew's. Guy's has lately, as is well known, made a great appeal to the public, and St. Thomas's has for some years aided its income by giving up a portion of its accommodation for a pay hospital. The others are all more or less in difficulties, some of them almost on the verge of bankruptcy, and many of them, especially the special ones, are quite unnecessary, but no one knows quite what the remedy is, how it is to be applied, or who is the proper person to apply it.

**The Vaginal and Uterine Lochiæ.**—The "Lancet" says that "Dr. Albert Döderlein, of Leipsic, has published some researches on the bacteriology of the lochial discharges of women in both normal and diseased puerperal states. He finds that the vaginal discharge must be examined separately from that which originates within the uterus, the clinical importance of micro-organisms being very different in the two cases. The vaginal lochia always contains a multitude of germs of various kinds, and, if introduced into the bodies of animals, is capable of producing abscesses. The uterine lochia, on the other hand, contains in the normal puerperal condition no germs whatever. When these appear, or at least soon after their appearance, a rise of temperature occurs, and, when this latter has fallen, the lochia is again found free from germs. Its removal appears to be due to increased secretion and separation of pus cells. Healthy uterine lochia may be introduced into the bodies of animals without causing any harm; but, when there is fever and it contains germs, septic symptoms in the animals are produced. In some cases not merely germs but streptococci have been found in the uterine discharges of patients with puerperal fever."

**Urea Center.**—"In the animal economy centralization is carried to its most extreme degree. It is certain, from Brown-Séquard's experiments, that there exists a center, irritation of which can suspend the chemistry of the body, making the blood in the veins flow red and reducing the temperature of the body. MM. Sée and Gley, experimenting on dogs with a view to producing glycosuria, caused azoturia by irritating the central end of the divided right vagus with a mixture of glycerin, water, and lycopodium injected into that part of the nerve after section."—*Lancet.*

THE

# NEW YORK MEDICAL JOURNAL,

*A Weekly Review of Medicine.*

Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, JUNE 16, 1888.

## THE UNTOWARD EFFECTS OF SACCHARIN.

The general impression seems to be that saccharin is innocuous, and this impression has doubtless been materially supported by a report made to the Medical Society of Berlin, in April, 1886, by Professor Leyden, and by a sort of certificate of his, widely distributed by the manufacturers of saccharin, Fahlberg, List, & Co., to the effect that even the prolonged use of the substance gives rise to no inconvenience. In general terms, this has been the experience of most observers, but many of them add that occasionally a case is met with in which saccharin disagrees. Dr. Stadelmann, of Heidelberg, has experimented with the product, at the request of the manufacturers, and has reported that, out of eleven persons, from fifteen to thirty-five years old, to whom he gave saccharin in daily quantities of from forty-five to seventy-five grains for two or three weeks at a time, nine experienced no unpleasant effects, while two suffered with nausea, an excessive sensation of weight in the stomach, and loss of appetite.

Dr. Worms has made a communication on the subject to the French Academy of Medicine, an extract from which is given in the "Revue générale de clinique et de thérapeutique." After citing the above-mentioned facts, he gives brief notes of the cases of four diabetics who used saccharin by his advice, all but one of whom were soon compelled to discontinue its use, on account of the occurrence of dyspeptic symptoms—nausea, a sense of weight in the epigastrium, loss of appetite amounting to absolute loathing for food, and in one instance a constant sugary taste in the mouth. Admitting that his observations are not numerous enough to justify much in the way of generalization, he nevertheless thinks it must be admitted that a certain proportion of diabetics can not bear the use of saccharin for sweetening their tea and coffee longer than eight or ten days at a time. Obscure as the problem of diabetes is, the disease comprising innumerable varieties, as regards both the symptoms and the pathogeny, there is, he remarks, one therapeutical rule that must be observed in all cases—that of maintaining the integrity of the digestive functions. It is better for a diabetic that he should excrete a little more sugar and assimilate his food than that he should pass less sugar and still lose ground. Moreover, many diabetics suffer but moderately from foregoing the use of sugar, and it may be said provisionally that they should not be permitted to use saccharin in larger amounts than from three quarters of a grain to a grain and a half daily, and then only so long as it does not give rise to any digestive disturbance. It is usually not until after the substance has been used for from ten to fifteen days that it manifests its evil influence, appearing to accumulate in the system until then.

## *MINOR PARAGRAPHS.*

### THE PRACTICE OF LICKING SORE EYES.

At the recent annual meeting of the *Société française d'ophthalmologie* a curious communication was made by Professor Costomiris, of Athens. It seems that ever since the days of Æsculapius the Greek populace have practiced licking sore eyes as a method of cure. For this important office a person is insisted upon who has a clean mouth and good teeth and is not a smoker. If it is a girl, she must not operate during her menstrual period. The lickers must commence work before eating, and they are required to wash out the mouth carefully and then chew a certain quantity of *Galega officinalis*, to take away all germs from the tongue. Dr. Costomiris has watched the practice for some seven years and found the results very satisfactory in a number of cases of opacities of the cornea, and in keratitis, parenchymatous and diffuse, also in chronic ulcers; so that he recommends it. Very often a member of the family is engaged to do the licking, as it is not easy to get outsiders. The practice may have arisen from seeing animals do the same in cases of eye troubles, and from the popular belief in the efficacy of saliva against wounds. Is it that the covering of saliva keeps out the microbes from the air?

### THE DISINFECTION OF BEDDING AND CLOTHING.

In Paris the importance of destroying micro-organisms in every shape and wherever found seems ever increasing, as shown by the effort lately made in this direction by the directors of the great government loan offices called the *Mont de piété*. A large number of the poor classes pawn their bedding, and all sorts of mattresses, pillows, and other articles are received at the loan offices and placed in the storehouses, and, when we know that one of the number may be contaminated with the germs of some disease, and transmit it to the whole lot and cause an epidemic, as has been proved, the importance of disinfection of these goods will be recognized. It is only too common in all countries to see poor people, after a long illness, compelled to pawn their goods, and our local law-makers together with those interested in hygiene may see their way to purifying these goods or insisting that the pawnshop people do it, by the means used in Paris. This is by superheated steam. A large cylinder to put the goods into is mounted on wheels, looking for all the world like a steam boiler or a fire-engine. This can be drawn by a horse wherever it is wanted, as was done lately during an epidemic of sweating sickness in the country, and the goods are placed in it for disinfection. During the few months that this plan has been working thousands of old mattresses, pillows, covers, and clothes of all sorts have been steamed, and it is beyond question that millions of the invisible and dangerous microbes have been destroyed, and that another great step has been taken toward the millennium of cleanliness, and therefore health, in modern cities.

### THE TREATMENT OF WHOOPING-COUGH.

Dr. R. S. Thomson lately read a paper before the Medico-chirurgical Society of Glasgow on the use of nitric acid, ergot, and chloral in the treatment of whooping-cough. According to an abstract published in the "Glasgow Medical Journal," he had observed benefit only from chloral, and that not in reducing the number of the paroxysms, but in mitigating their se-

verity. In the discussion, many remedies were spoken of, and belladonna seems to have acted more favorably than any of the others alluded to, although it is worthy of remark that one of the speakers reported that, while in one epidemic every patient had recovered rapidly under its use, in another it had appeared to be of no benefit at all—wherefore he had come to the conclusion that there was no specific for whooping-cough, an opinion that seems to have been shared by most of the speakers. Some of them even thought that the disease had to run its course, like an essential fever.

## THE LATE DR. AGNEW.

Seldom have more laudatory words been spoken even of the dead than those which Dr. T. Gaillard Thomas uttered in his memorial address on the life and character of the late Dr. Agnew at the last meeting of the Academy of Medicine, and rarely have such words been so well deserved. A large meeting listened with satisfaction and entire approval. It is not often that the sense of privation comes so keenly to a great body of men as has been the case with the medical profession over Dr. Agnew's death. As with the profession, so it has been, in hardly lesser degree, with the community, for few men who were not actually public officials have ever so closely identified themselves with all that was for the interest of the general public or worked so faithfully and intelligently for its advancement.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 12, 1888:

| DISEASES. | Week ending June 5. | | Week ending June 12. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 7 | 7 | 2 | 2 |
| Scarlet fever | 173 | 38 | 153 | 33 |
| Cerebro-spinal meningitis | 3 | 2 | 4 | 3 |
| Measles | 233 | 20 | 208 | 23 |
| Diphtheria | 152 | 67 | 167 | 40 |
| Small-pox | 15 | 3 | 8 | 4 |

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from May 27 to June 9, 1888:*

White, Robert H., Major and Surgeon, will report to regimental commander, 1st Infantry, to accompany headquarters, field, staff, band, and battalion of 1st Infantry to Santa Barbara, Cal., on or about June 15, 1888, to remain until about September 1, 1888. S. O. 25, Division of the Pacific, May 28, 1888.

Cowdrey, S. G., Captain and Assistant Surgeon, ordered to accompany the troops of the 16th Infantry from Fort Bliss, Texas, to Fort Douglas, Utah Territory, as medical officer, will return to his station upon the completion of said duty. S. O. 54, Department of Texas, May 19, 1888.

Appel, D. M., Captain and Assistant Surgeon, upon arrival of Captain J. V. Lauderdale, Assistant Surgeon at Fort Davis, will proceed to Camp Peña Colorada, Tex., for temporary duty at that camp; and upon return of First Lieutenant H. S. T. Harris, Assistant Surgeon, to Camp Peña Colorada, Assistant Surgeon Appel will return to Fort Davis. S. O 57, Department of Texas, May 28, 1888.

Kean, J. R., First Lieutenant and Assistant Surgeon, will accompany Troop C, 9th Cavalry, from Fort Robinson, Nebraska, to Fort Du Chesne, Utah, and return with Troop B, 9th Cavalry, to Fort Robinson. S. O. 39, Department of the Platte, May 19, 1888.

Morris, E. R., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 61, Department of Arizona, May 28, 1888.

Finley, James A., Captain and Assistant Surgeon. Granted leave of absence for six months on surgeon's certificate of disability, with permission to leave the Division of the Missouri. S. O. 129, A. G. O., June 5, 1888.

Benham, Robert B., Captain and Assistant Surgeon, is relieved from duty at Fort Du Chesne, Utah, to take effect upon completion of the duty assigned him in Par. 2, S. O. 33, c. s., Department of the Platte, and will then proceed to Fort Laramie, Wyoming, reporting to the commanding officer for duty at that post. S. O. 44, Department of the Platte, June 4, 1888.

Pilcher, James E., First Lieutenant and Assistant Surgeon. Detailed as member of board of medical officers appointed by S. O. 108, A. G. O., May 10, 1888, to meet at U. S. Military Academy, West Point, N. Y., to examine candidates for admission to the Academy, etc., vice Major Robert M. O'Reilly, Surgeon, relieved. S. O. 128, A. G. O., June 4, 1888.

Cherbonnier, A. V., Captain and Medical Storekeeper. Granted leave of absence for four months on surgeon's certificate of disability. S. O. 133, A. G. O., June 9, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending June 9, 1888:*

Mageuder, A. F., Surgeon. Detached from the Yantic and granted sick leave.

Bates, N. L., Medical Inspector. Ordered to the Richmond.

Kidder, B. F., Medical Inspector. Detached from the Richmond, and to wait orders.

Mackie, B. F., Surgeon. Detached from Naval Examining Board preparatory to sea service.

Heyl, T. C., Surgeon. Ordered to the Receiving-ship St. Louis.

Streets, T. H., Surgeon. From the St. Louis, and to Medical Examining Board as Recorder.

DuBose, W. R., Passed Assistant Surgeon. From Naval Hospital, Norfolk, and to the Jamestown.

Wells, Howard, Passed Assistant Surgeon. From the Jamestown, and to the hospital, Chelsea, Mass.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the week ending June 9, 1888:*

Bailhache, P. H., Surgeon. Detailed as chairman, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

Fessenden, C. S. D., Surgeon. Detailed as member, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

Purviance, George, Surgeon. Detailed as recorder, Board of Examiners, to meet in Washington, June 25, 1888. June 8, 1888.

**Society Meetings for the Coming Week:**

Monday, *June 18th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *June 19th:* Colorado State Medical Society (Colorado Springs); New Hampshire State Medical Society (Concord); New York Academy of Medicine (Section in Theory and Practice of Medicine); Medical Societies of the Counties of Kings, Washington (annual), and Westchester (annual), N. Y.; Ogdensburg, N. Y., Medical Association; Baltimore Academy of Medicine.

Wednesday, *June 20th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Medical Societies of the Counties of Allegheny (annual) and Tompkins (annual—Ithaca), N. Y.; New Jersey Academy of Medicine (Newark).

Thursday, *June 21st:* Dakota Medical Society (Redfield); Minnesota State Medical Society (St. Paul); New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *June 22d:* New York Society of German Physicians; Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *June 23d:* New York Medical and Surgical Society (private).

## Letters to the Editor.

### HYDROGEN GAS AS A MEANS OF DIAGNOSTICATING PENETRATING WOUNDS OF THE INTESTINES.

St. Louis, Mo., *May 22, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In the issue of your Journal for the 19th inst., under the caption "A New Means of Diagnosticating Penetrating Wounds of the Intestines," it is stated that Dr. Nicholas Senn "startled the Surgical Section of the American Medical Association with some experiments intended to show the value of hydrogen in the diagnosis of such wounds." Then follows a brief statement that the gas was given to dogs by enemata and ignited at their noses; that a stab-wound was inflicted, and the gas was ignited at the point of puncture, etc.; also that "the innocuousness of the gas itself was affirmed."

That hydrogen gas is not poisonous is, of course, well known, but, while toxicologically inert, its equally well-known *explosive* properties, when mixed with atmospheric air and some other gases, should not be forgotten. My object in this short note is to direct attention to this powerfully explosive quality of these mixed gases, to the liability of such mixture occurring within the body, and to the danger of igniting the gas issuing from a wound, as seems to have been recommended.

John Vansant, M. D.

## Proceedings of Societies.

### NEW YORK ACADEMY OF MEDICINE.

*Meeting of March 1, 1888.*

The President, Dr. A. Jacobi, in the Chair.

**Should we treat Syphilis during the Primary Stage?**—Dr. Edward B. Bronson read the paper (see page 309).

Dr. E. L. Keyes said he should have been much more interested if Dr. Bronson had given the results of the treatment which he had suggested.

Dr. Bronson said that he had suggested the method only on theoretical grounds; that his own experience offered no conclusive proof for or against its efficacy.

Dr. Keyes thought that it deserved investigation. He had not tried it, but was willing to do so should evidence be given of its practical value. His own impression had always been that the disease became general from the time that the poison was introduced, and before the appearance of the primary lesion, which occurred only after a period of incubation. Perhaps he could not prove the correctness of such a view, but he had seen no satisfactory proof that it was erroneous. He cited one case out of several in which excision of the initial lesion soon after its appearance had failed to eradicate the disease; the eruption had followed six weeks later, and had been of a most pronounced type. The inefficacy of cauterization had been well illustrated in Berkeley Hill's case. The objection to the use of mercury before positive symptoms of syphilis had developed was that it threw more or less discord into the whole subsequent life of the patient. The presence of a sore, called the initial lesion, was not sufficient to confirm the diagnosis of syphilis. He had known persons who had been supposed to have had the primary lesion of syphilis who had been placed on mercurial treatment before the diagnosis could be confirmed by secondary lesions; the patients had subsequently had some skin eruption, which had been incorrectly attributed to syphilis, and specific treatment had been continued for months and years, yet they had never had syphilis at all. The use of mercury on the appearance of a supposed primary lesion might interfere with the regular development of secondary symptoms, and if these failed to appear, the patient was likely to conclude that the diagnosis was erroneous, that he had not syphilis, and refuse to continue treatment.

Dr. R. W. Taylor thought that the history of the syphilitic sore, as pictured by Dr. Bronson, in the light of analogical evidence in such diseases as cancer and tuberculosis and what we were learning every day of the action of bacteria, showed that at first syphilis was a local affection, but, unfortunately, we did not know to what extent it was local. The hyperplasia described by the author formed the initial lesion, but he believed extended experience had shown that neither cauterization nor excision of that lesion would prevent the development of syphilis. Dr. Bronson's object was a most laudable one; if this terrible disease could be strangled at the outset we should be justified in applying every rational means to that end, but the speaker doubted whether it could be done. At any rate, he felt convinced that it could not be done by excision or cauterization. By these measures the top of the infested cells might be removed or destroyed, but others remained which would go on germinating indefinitely. He thought a mother might bear a syphilitic child and escape syphilis herself, the child having acquired the disease from the syphilitic father, but the mother would be liable to contract syphilis subsequently in the usual way; her child would not have given her immunity. As to regional treatment, it consisted chiefly in injections or inunctions of mercury, and it was capable of extended application. When mercury operated immediately, the papules disappeared rapidly. That, he thought, was a fact of importance in the treatment suggested by Dr. Bronson, but there was another fact to be borne in mind—namely, that mercury used hypodermatically in any degree of concentration in the region spoken of, on the thigh and inguinal region, would cause abscesses. He believed with Dr. Keyes that the regular treatment of syphilis should not be instituted until the appearance of secondary symptoms which would enable one to make a positive diagnosis. Treat-

ment begun during the primary stage made after-symptoms disorderly, and, unless they appeared in the regular way, patients were not likely to believe that they really had the disease and would prove intractable. All doubts were removed from their minds when the eruption of the secondary stage appeared; and the sickening smile, which he called the syphilitic countenance, indicated to him that thereafter they would follow the directions of their medical adviser.

Dr. Leonard Weber believed in the advantages of topical treatment in syphilis, but he thought, with the majority of syphilographers, that it was best not to institute treatment during the primary stage.

The President thought that some of the difficulties of the problem could be better appreciated by a comparison of syphilis with some other affections, such as diphtheria, whose mode of action was known. Diphtheria might be either a local or a constitutional disease; it remained longer local when in a situation where there were but few lymphatics, as on the tonsil; it became more rapidly constitutional when situated where there were many lymphatics; and in some cases of diphtheria in the posterior nares the virus entered the blood directly, and resulted fatally before there was perceptible enlargement of the glands.

Dr. Bronson said that he had presented this method of treatment on theoretical grounds, for, although he had practiced it, the conditions had not been such as to offer conclusive evidence either for or against its efficacy. It was hard to say positively during the primary stage whether the patient really had syphilis; it was also difficult to induce him to submit to treatment; and if after-symptoms did not develop, doubt would exist as to whether the disease had been eradicated.

**The Treatment of Flat-foot.**—A paper on this subject by Bernard Roth, F. R. C. S. E., was read by Dr. V. P. Gibney. The author said that he was glad to comply with the request of his friend Dr. Gibney to contribute to a symposium on the treatment of flat-foot, especially as some of his views had materially altered since he had written the article on this deformity in Heath's "Dictionary of Practical Surgery," more than two years ago. He defined flat-foot as a falling down of the normal arch of the foot, which might be so slight as to escape notice except from the discomfort it caused, or so severe that the whole tarsus was as convex inward as it ought to be concave, and that the foot was so everted that the internal malleolus touched the ground while the outer border of the foot was raised, with the sole directed outward, as in some cases of infantile paralysis. Pain and much deformity were not always coincident. Flat-foot was a very general term, and required some clinical classification if surgeons were to come to any agreement with regard to treatment. He thought the best classification was that which he had proposed several years ago, namely: 1, cases in which it was possible to restore the foot completely by passive manipulation without any force exerted by the surgeon, or by making the patient stand with the heel raised; 2, cases in which the tarsal bones had become more or less fixed in their displaced positions by shortened ligaments and tendons, osseous deformity, and fibrous or osseous ankylosis, which required forcible manipulation to restore the arch; 3, intermediate cases.

In order to arrive at a better understanding of the treatment of flat-foot, the author briefly discussed the causation. He quoted Le Gros Clark to show that the various muscles of the foot were so attached as to help preserve the plantar arch. All infants, Mr. Roth said, on commencing to walk were normally flat-footed, whereas after they had run about a few months, and the leg muscles had become developed, a perfect arch was formed. Anything which tended to weaken the general muscular system during the years of growth would also predispose to flat-foot. Hence its prevalence among those who had lateral curvature, and also in those suffering from knock-knee. When the muscles failed to do their work, undue strain was thrown upon the tarsal ligaments and they gradually yielded. As long as no osseous malformation had developed, more or less complete restoration to the normal condition was possible. The production of osseous deformity in the foot was brought about in the same way as in knock-knee.

In the treatment there were two indications: 1. To restore and preserve the normal plantar arch. 2. To strengthen the muscles which tended to produce and preserve the normal arch. Thus mechanical means for replacing and keeping up the arch, and therapeutic methods for strengthening the weak tibial muscles, must be discussed. In the first and third class of cases a boot or shoe should be worn broad enough across the metatarso-phalangeal articulations; the heel should be low and broad. For the last eighteen months he had discarded pads, and no longer insisted upon laced boots being worn. Instead of a pad, which tended to irritate the tender tarsus, he employed an increased thickening of the sole opposite the ball of the great toe and on the inner margin of the heel, after the method of Mr. H. O. Thomas. The increased thickness of the sole was from one fourth to one half an inch, according to the severity of the case. This wedge-shaped sole and heel could be applied to boots and shoes already made. In class two, in which *brisement forcé* was required, he would do this by Thomas's club-foot wrench, and afterward apply a suitable splint until symptoms of traumatism had disappeared, after which he would treat the case as in the classes one and three.

As to therapeutic measures for strengthening the tibial muscles, he knew of no better measure than walking on the toes with the heels raised an inch or so, but not raised too much. The author then described certain special gymnastic exercises for developing the muscles which tended to preserve the plantar arch. In all cases attention should be paid to the general health. Such severe treatment as the removal of a wedge-shaped piece of bone from the tarsal arch did not appear to him justifiable. He had not seen a case in which this treatment offered reasonable probability of permanent benefit. The effect of the treatment which he advocated began to be felt by the patient in a week or two. Seldom did he see cases in which all pain and discomfort did not disappear in three or four weeks; in some it disappeared within three or four days. For a cure, several months or a year or more were necessary.

Dr. Ridlon thought that pads and springs worn under the foot acted in a harmful rather than in a beneficial way, for, while they might relieve the patient of pain and tenderness for a time, yet they did not tend toward a cure, and when the patient once began their use he found it necessary to continue it. The treatment which some had resorted to in this country, of stretching the gastrocnemius muscle, was founded on the idea that shortening, spasmodic contraction, of that muscle had something to do with the causation of the deformity, an entirely erroneous view in his opinion. The deformity occurred before the contraction of the gastrocnemius. The patient might have electricity, massage, and flagellation applied across the arch, but he certainly ought to have the Thomas shoe and gymnastics. The gymnastics included walking on the toes.

Dr. A. M. Phelps thought that putting a pad and spring under the arch was not rational. He would put the patient under an anæsthetic, force the arch into place, put on a splint, and subsequently, if necessary, repeat the operation. He spoke of an adjustable apparatus with which the foot could be thrown into a position best adapted for preserving the plantar arch

while sustaining the weight of the body. In certain cases of valgus in which there was lack of muscular development he would employ massage, electricity, etc.

## NEW YORK ACADEMY OF MEDICINE.

### SECTION IN ORTHOPEDIC SURGERY.

*Meeting of May 18, 1888.*

Dr. Lewis A. Sayre, Chairman.

**A Club-foot Apparatus.**—Dr. Shaffer showed a new apparatus for the treatment of club-foot by means of pulling instead of pushing the foot into position, the center of motion being about an inch to the outside of the cuboid bone. He also showed a patient with double congenital talipes varo-equinus. One foot had been left untreated, and the other had been treated by means of this apparatus and had been brought into very excellent position.

The Chairman remarked that he considered the shoe an improvement on any club-foot shoe that he had yet seen.

**Partial Luxation of the Knee Joint.**—Dr. Ketch showed a patient with this condition, apparently due to rupture or congenital absence of the crucial ligaments, allowing of motion of the tibia forward on the femur, also of a rotary motion in the joint.

**The Result of Antiseptic Treatment of Abscesses connected with Disease of the Hip Joint.**—Dr. R. H. Sayre presented two patients and said that there was nothing remarkable about them, and his only object in presenting them was because, some time before, a paper had been read before the section by Dr. Judson advocating non-interference with abscesses connected with joint diseases. It had been said in that paper that the best plan was to let abscesses alone, that pus was not of any consequence, that, sooner or later, an abscess would burst spontaneously, and that after it had opened spontaneously it would keep on running for a longer or shorter period, and that the result was no better when it was opened by the surgeon. To sustain this theory twelve cases had been cited by the author of the paper in which the abscesses had finally dried up and the patients got well, some with ankylosis, some with mobility of the joint.

In these twelve cases the average number of months the abscesses continued to discharge had been fifteen. It was said the best thing to do for these abscesses was to let Nature open them, and let them "drip till they got tired of dripping."

Dr. Judson had said,* "Unless the stream is too copious it is best to leave the opening uncovered, relying on evaporation and frequent change of under-clothing," and another gentleman had advocated, in all seriousness, the use of rubber drawers tightly fastened about the knees to catch the discharge.

It had been the general opinion of the members of the section that non-interference was best, and the speaker was very glad that Dr. Stephen Smith had remarked at that time that it was not well that such ideas should go forth from that meeting as the general opinion of all the members; that he, for one, did not believe that pus was a beneficial thing in the body, as some gentlemen thought, but considered that the patient was better and healthier when the pus was evacuated and the wound healed up. In this opinion the speaker fully concurred. In many of these cases, where the abscess was large and tense, the mechanical pressure of the abscess itself produced a great deal of pain, which was relieved when it was opened. He thought it surgically correct, when there was an abscess of large size that gave rise to pain and elevation of temperature, to open it, and have it thoroughly cleaned out, drained, and closed, and if it was once thoroughly cleaned out there was no possibility of its not healing up.

Speaking of the first patient presented, he said that the little girl had had commencing hip disease when six years of age. She was now about seven years and a half old. The tenderness had increased last winter, and she had cried a great deal at night and had had all the symptoms of an acutely inflamed joint. On the 20th of March the speaker's brother had opened the abscess, scraped it out thoroughly, and irrigated it with a solution of bichloride of mercury. After the cavity had been scraped out and some diseased bone removed (it did not appear in this instance to connect with the joint) it was then washed with chloride of zinc, twenty grains to the ounce, drained, and sewed up. The wound was dressed again on the sixth day and the drainage-tubes were removed. The wound healed by first intention and had remained closed. Since then she had not had any pain at night or the slightest discomfort. She was still wearing the long hip splint. The other case was that of a little girl whom he had seen last autumn for the first time. She had been seen in July last by a surgeon of this city who had previously treated her sister for hip disease. He had seen her next in September, when the disease had made sufficient progress for him to make a positive diagnosis of hip disease, and he then advised the parents to have the joint exsected. They had objected to this and had brought the child to the speaker, who had advised instrumental treatment. The leg at that time had been flexed and everted, and there had been marked spasm of the muscles. She had been excessively tender over the joint and had cried all night with pain. These symptoms had subsided after the application of the splint. About February a swelling had appeared and she had become once more restless at night, and had lost her appetite.

The abscess continued to enlarge and he had thought it best to open it, which he had done on the 5th of April, scraping thoroughly, removing some softened bone at the lower surface of the neck of the femur, washed it with a sublimate solution, drained it with two tubes, and dressed it antiseptically. On the fourth day he had removed the drainage-tube and found the wound had healed, except where the drainage-tube had been. There was now a small granulating surface where one tube was, and a little oozing where the dressing stuck to one part of the incision. There was now a certain amount of motion in the joint. The child slept comfortably, did not cry as before, and had no pain or discomfort. The speaker thought that she was a good deal better now than she would have been if the abscess had been let alone. She still wore the long splint.

He did not present these cases as being novel or uncommon, but simply to emphasize the protest that he wished to raise against allowing abscesses to discharge for fifteen months on the average, as had been advocated as the most rapid and favorable result to be expected. Dr. Judson had found that those cases in which he had incised had run about the same course as those left to nature, and naturally, as he simply anticipated nature somewhat in the time of opening and did not clean the cavity, whereas, if the abscess was freely opened and thoroughly cleansed so that no diseased tissue remained behind, it would heal promptly and thoroughly.

Dr. Taylor said that he was very glad to hear this method of operating on abscesses advocated by Dr. Sayre. He had always made it a practice to open abscesses, but not to scrape them out. That was new in his experience. In a great many cases where they were freely evacuated and closed up at once they did not open again; in some cases, however, they did. In a

* "N. Y. Med. Journal," January 31, 1885, p. 119.

case brought to him a short time ago there was fluctuation deep down behind the trochanter, and he had advised that the abscess should be freely opened and evacuated. The father of the patient, who was a physician, did not agree with him, and he had taken the boy home and kept him under mechanical treatment. At the end of six months, however, he opened the abscess, squeezed it thoroughly, and closed up the wound, and it healed immediately. The boy had had no symptoms of suppuration since. That was only an instance of what could be done by free incision and evacuation of abscesses. It was to be presumed that scraping would increase the percentage of the cases that would heal.

In reply to a question by Dr. Ridlon, Dr. SAYRE said that when he first saw one of the patients she had seemed to have all the symptoms of intra-articular disease. There had been apparent ankylosis, remarkable spasm of the muscles, and great tenderness, and the least motion had given intense pain. In fine, she had all the symptoms that he had been accustomed to associate with intra-articular disease. It had also been said to be intra-articular by one of the leading surgeons of this city, who had wanted to exsect the joint. At present there was no spasm of the muscles. The other child had had her leg flexed in the typical position of the third stage of hip disease, and had been so sensitive that she could hardly be touched. At the present time she had no pain, but undoubtedly there was disease inside the capsule of the joint.

Dr. N. M. SHAFFER said that his experience in the treatment of chronic abscesses had been somewhat extensive. The first five years of his student and professional life had been spent with Dr. Knight, who had followed the utmost conservatism in his plan of treatment of abscesses. During the five years that he had been connected with the Hospital for Ruptured and Crippled he did not think he had opened more than one abscess a year. When he left the service of Dr. Knight he became convinced that the treatment of abscesses had been under-estimated by him, and he had immediately rushed to the opposite extreme, and had opened every abscess that could be opened with safety to the patient. He had now come to consider abscesses in joint diseases very like the condition of joint diseases themselves. He thought it required a good deal of judgment to determine what kind of abscesses should be opened and what kind should not. He considered it bad policy to open an abscess that connected with a suppurating joint, even under the best antiseptic precautions. He had had considerable experience with opening abscesses under antiseptic precautions, and, after keeping up the dressing for months, he had found that the abscess ran the same course as if no antiseptic dressing at all had been applied. When that point in diagnosis had been reached that would enable us to tell what abscesses were intra-capsular and what were extracapsular, he thought we should make a very great advance in the treatment of joint diseases. He agreed to all that Dr. Sayre had said, if the abscesses were extracapsular, but not if they were intracapsular.

Dr. MARY PUTNAM JACOBI remarked that she would like to ask the opinion of the members present in regard to the treatment of these abscesses by the trocar and cannula, and injection of the abscess cavity with a solution of iodoform in alcohol.

Dr. S. KETCH said that he had been present at the meeting of the orthopædic section to which Dr. Reginald Sayre referred, and there was one thing particularly at that meeting which he thought to be of some practical importance, and that was the fact that all the general surgeons present—and there was quite a number—were unanimous in their opinions that all abscesses, whether they were intracapsular or extracapsular, should be opened at once. On the other hand, the orthopædic surgeons were more conservative in their opinions regarding the opening of abscesses, and it had struck him that a great deal of this was due to the fact of the difference in the treatment pursued by the general and the orthopædic surgeon. The general surgeon was called in to do the operation, the orthopædic surgeon was intrusted with the care of the case for a very trying period, and it seemed to the speaker that the protection of a joint by an apparatus had a great deal to do with the modification of the course of the abscess. He thought that abscesses would run a more benign course when the parts were protected than when left to non-mechanical treatment. His personal experience with the opening of abscesses had been a very peculiar one. He had been taught by Professor Sayre that abscesses, as a rule, that presented any indications should be opened as soon as possible. When the antiseptic system became better known he had opened these abscesses under the strictest antiseptic precautions, and the results had been very satisfactory. They were undoubtedly extracapsular, and pursued the ordinary course, extending over many months, with more or less discharge. He did not now think it a good plan to open all abscesses indiscriminately.

Concerning intra-articular injections he had had no personal experience, but he thought that they had not yet received the attention from American surgeons which they deserved.

The CHAIRMAN said that it seemed to him that the whole of this subject could be settled very easily by the application of a little practical common sense. As Dr. Ketch had said, he had taught him when abscesses existed to get rid of them at once. If the abscess would disappear under proper treatment, it should be let alone, but, if it went on from bad to worse, it should be opened freely from one end to the other and cleaned out thoroughly under the best antiseptic precautions, and there would be no relapses. The reason Dr. Ketch and Dr. Shaffer had had trouble was because they did not do it completely. If an abscess was opened and a particle of dead bone or any other diseased tissue was left behind, there was no end to the trouble that was likely to follow. He was very glad that this subject had been brought up before the meeting, and he regretted very much that he had not been present when the paper referred to was read, but he rejoiced to know there was one man who put his foot on it, for it was a disgrace to the orthopædic surgery of America to allow such statements to go abroad uncontradicted. He wished here to put his emphatic disapproval upon such a course of procedure.

Dr. SHAFFER said that he did not wish it to go on record that he did not open abscesses. He had opened abscesses freely. One thing he had observed in connection with this opening of abscesses—that, though the entire disappearance of all symptoms of abscess might have followed, it did not necessarily follow that the disease was cured. He had seen a great many cases where the abscess had closed, but disease had persisted for many years.

**On the Advantages of Plaster of Paris as a Spinal Support.**—The CHAIRMAN read a paper on this subject. (See page 645.)

Dr. SHAFFER thought that surgeons were all perfectly agreed as to one point regarding the mechanical treatment of Pott's disease of the spine, and that was the desirability of removing, so far as possible, traumatism from the part affected with chronic spondylitis. The various means of accomplishing this had been subjected to more or less experience by all. He had personally used the plaster jacket in quite a large number of cases and had been somewhat disappointed in its use. He felt that if the position gained by recumbency was maintained, we were apt to do our patient more good than if we subjected him to the increased traumatism secured by suspension. In the application of the plaster jacket in bad cases of Pott's disease we inflicted a certain

amount of traumatism every time suspension was applied. If the position gained by suspension was maintained for any length of time, he felt that it would be to keep this traumatism up. If a patient was taken under the arm and lifted up, he was relieved during the time he was suspended; the very moment the force was relaxed an indescribable expression of pain passed over his countenance. Some time since he had made several experiments with the plaster jacket to determine how thick the anterior wall should be in order to support the patient, so as to prevent him from relapsing into the position of the former spinal curves. He had accordingly had the patient suspended, and as soon as the jacket hardened had cut it off and taken its outline. He had then measured the antero-posterior diameter of the jacket and had found that it had increased nearly an inch. He had then applied another jacket and had found that the antero-posterior diameter had increased an inch and a half. In other words, unless the jacket was applied very frequently, it did not maintain the position required by suspension, and the patient, so to speak, sooner or later telescoped down into the jacket.

In another respect the jacket had proved a fallacy; the deformity increased a good deal during the month or six weeks that the patient had it on, as he had found from actual measurement. He would simply say that above the eighth dorsal vertebra the Taylor support far excelled the plaster-of-Paris jacket in his experience, and that was especially true if the apparatus was surmounted by the proper head-support. His conclusion, after considerable experience with the plaster jacket, was that he would prefer to place himself under a competent surgeon who applied Taylor's antero-posterior support rather than the plaster jacket.

The Chairman said, in regard to the traumatism in applying the plaster jacket to which Dr. Shaffer had referred, that it was absolutely impossible for traumatism to occur, provided the surgeon applied the jacket properly and in strict accordance with the instructions he had so carefully given; that the plaster jacket, on the contrary, when properly applied, afforded a perfect relief to every one who had ever worn it, and there was no possibility of restricting the breathing, which was a feature to be objected to in the Taylor brace. A practical demonstration was worth all the theorizing in the world. "Here," said the chairman, "is a gentleman from Hutchison, Kansas, who came to me yesterday to be treated for a chronic inflammation of his knee joint. On examining him, I discovered that he had also suffered from Pott's disease some years before, and had been cured by a plaster-of-Paris jacket which had been applied by a country doctor, and I therefore asked him to come here this evening to illustrate the fact that the treatment could be successfully applied in the most remote sections of the country, and without the aid of any particular specialist. This man is twenty-six years old. He was injured in his back by attempting to lift a heavy weight when he was sixteen years old. In a few months he began to suffer pain in his abdomen, which increased rapidly and was accompanied with severe spasms in his legs and numbness of the same, terminating in eighteen months in complete paralysis of both lower extremities. He remained in this condition, confined on his back in bed, for more than twelve months, suffering intense pain and constant muscular spasms in his legs and the lower part of his abdomen. Blisters, liniments, and various internal remedies were employed by the different medical men who saw him, but without any benefit. After all hope of his recovery had been abandoned, a young physician came to the place, who had seen me apply the plaster-of-Paris jacket at Bellevue. He was called to see the patient, and, after properly suspending him, applied a plaster-of-Paris jacket. From the instant that the patient was properly suspended, the pain in his abdomen and the spasms in his legs ceased and have never returned. In a few days he could sit up, he recovered the use of his legs in about three weeks, and from that time he continued to improve rapidly, so that in a few months he was able to attend to considerable business on his farm. He wore the same jacket for eight months and became perfectly consolidated as you now see him, and, as he says, never suffered the slightest pain or inconvenience from the day the jacket was applied. You observe quite a prominence of the seventh and eighth dorsal vertebræ, but the father says that the 'hump' is not so large as it was before the jacket was put on. How this is, of course, I can not say from personal knowledge; but I do know that, if it had been properly applied before the deformity had appeared, he might have been cured, as I have seen many others, without any hump at all. I simply show the patient to illustrate the fact that a country doctor can cure these cases as well as any specialist."

Dr. Ridlon asked whether or not in the application of the plaster jacket fixation of the spine in the point diseased was aimed at. If that was so, he did not understand why one could not obtain more fixation from the Taylor support. If motion at the diseased area was desired, would it not be better to let the patient go without any dressing at all? If fixation was desired, why was it desired in a tubercular disease of the vertebræ and not of the hip joint?

Dr. Ketch remarked that, admitting the superior advantages of the plaster-of-Paris jacket in certain localities, he did not believe that its application was such an absolute matter of ease as had been stated this evening. He believed that the plaster-of-Paris jacket and many other braces owed their effectiveness to the person who applied them. Possibly the chairman could get a great deal more benefit out of plaster of Paris than others who applied the same material. He was quite sure that those who were in the habit of applying Taylor's apparatus could get better results from it than those who were not, but who trusted the application and care of the instrument to the instrument-maker. From his own experience, he was sure that the plaster jacket afforded an excellent and ready means of treatment for disease located in the lumbar region. He doubted very much if the plaster-of-Paris jacket, or any other brace, would stop deformity in that most formidable portion of the spine—the mid-dorsal region.

Dr. Taylor said that he had been very glad to hear from the principal advocate of the treatment of spinal deformity by the plaster-of-Paris jacket, and he supposed the furore excited by its published announcement had seldom been equaled by any medical discovery. It had emphatically drawn the attention of the public and profession to the fact that Pott's disease and lateral curvature could be treated, and if the chairman had accomplished nothing but this, he thought that we should be very much indebted to him for it. We had had patients with lateral curvature and Pott's disease settling down to the full extent of their deformity, with abscesses, paraplegia, and the various complications of the disease, with scarcely a finger raised to help them out of their condition, and there were, he believed, at the present time surgeons in out-of-the-way places who did not know that the treatment of Pott's disease was one of the most successful things in surgical practice when properly carried out. The speaker's experience with the plaster jacket had led him to think that the chairman obtained better results from it than from the Taylor brace, and that he himself would get better results from the Taylor brace. Men must use the apparatus they were most accustomed to. We must be a little cautious in accepting the indorsement of the chairman to-night in regard to the plaster jacket as compared with the verdict of other men.

In von Ziemssen's "Hand-book of General Therapeutics," vol. v, Professor Bush, speaking of the plaster jacket, had said that it was of doubtful utility and should not be employed where more perfect means could be obtained. In England Dr. Reeves also had said that the plaster jacket had proved a disappointment in the hands of English surgeons, both in the treatment of lateral curvature and in that of Pott's disease. The speaker had had no experience in putting on the jacket, but a great deal in taking it off, and from the patients who had come to him he was convinced that many patients went under treatment with very little deformity and came out with a great deal. This must make us think that it was not, as Dr. Ketch had remarked, so easy to apply it as the chairman would have us believe. The treatment of Pott's disease needed the most careful knowledge that could be given to it, and it could be acquired only by long practice. He did not believe that a country practitioner could carry a patient successfully through Pott's disease with a plaster jacket. Looking at it from a mechanical point of view, if experts in mechanics, not physicians, were consulted, they would tell us that the antero-posterior support was a more perfect mechanical device than the plaster jacket.

Dr. R. H. Sayre remarked that Dr. Shaffer had said that he had found by measurement that the jacket when applied had increased in its antero-posterior diameter from an inch to an inch and a half in two weeks. If the jackets did so they undoubtedly did not give the spine proper support, and had not been applied as they should have been. The jacket should retain its shape, and it ought to be so applied as to do so. Dr. Shaffer was mistaken in saying that suspension caused traumatism. All patients with acute Pott's disease were very apt to make self-suspension by putting their hands on a chair, and so making extension of the spine. By the suspension apparatus this was done for them, and if the jacket was properly applied, instead of sinking into the original position and receiving a traumatism, as Dr. Shaffer had said, they would be retained in the improved position, which was a source of comfort to them. If they did not have enough of traction on the head to prevent the reflex spasm, it was evident that the most favorable condition for a cure had not been secured.

Dr. Lacken, of Canada, said that he was a country practitioner, and he thought that there was nothing that had been such a boon to patients with Pott's disease as the plaster jacket. He knew of several cases of Pott's disease that had been cured by means of the plaster jacket. He had several plaster jackets in his office, and they retained the same shape they always had.

Dr. R. H. Sayre asked Dr. Shaffer what time elapsed after the jacket was applied until the patient went home?

Dr. Shaffer: About four hours.

Dr. Sayre: Did he have a jury-mast?

Dr. Shaffer: No.

Dr. Sayre said that if he were to apply a plaster jacket on a patient with much deformity he would put on a jury-mast, and if he did not have one he would make the jacket strong enough to prevent the patient's sagging forward an inch and a half. It seemed to him that the patient was allowed to bear his entire weight upon the plaster jacket before it was sufficiently hard to sustain it.

Dr. Shaffer: It was hard and of good quality.

Dr. L. H. Sayre remarked that he thought that he could give a solution to Dr. Shaffer's troubles with the plaster jacket. There was a peculiarity of plaster of Paris that in fifteen minutes it would become absolutely hard, then some time afterward it became a good deal softer. The patient had been put on his feet too soon, and the weight of the body went on to the plaster before it was hard enough to sustain it, and thus produced an antero-posterior increase of an inch and a half. A jacket would not become thoroughly hard in less than twenty-four hours. His rule was, after applying a plaster jacket, to keep the patient an hour or two in the recumbent position until the plaster set, then let him go home and keep the horizontal position, with the jacket exposed to the air until it had become thoroughly hard.

Dr. Ketch asked the chairman what had induced him to add the jury-mast in disease of the lumbar vertebræ. At the time the work on spinal diseases had been published in London (1877) nothing had been said about the application of a jury-mast below a certain dorsal vertebra, which one he would not now attempt to say.

The Chairman said that he was indebted for the suggestion to Dr. S. W. Gross, of Philadelphia. He had stated that fact in all his writings for the past five or six years. In regard to the question of Dr. Ridlon, the speaker would say that the fibrous tissue of the capsule of the hip joint, if kept quiescent, became fibro-cartilaginous and ankylosis occurred. Sir Benjamin Brodie had cited a case where complete ankylosis had occurred in a patient who lay in bed without any disease of the hip joint at all. In the back ankylosis was not a very undesirable thing to get. He had seen some patients with Pott's disease who had recovered with motion in the joint. As for the difficulty of applying the jacket, he knew of two instances where a woman in Charles Street, in this city, whose child he had treated for Pott's disease, went to Nova Scotia and treated two children with a similar ailment from the simple knowledge she had obtained by seeing it done in his office. She had sent to him for the plaster, and last summer Mr. Ward, the artist, had pictured these children as perfectly cured, and with the disease, too, in the mid-dorsal region. It was now four years since this had occurred. This position was also borne out by the remarks of Dr. Lacken (present at the meeting) that any country doctor could apply it properly, while in England McNaughton Jones, Golding-Bird, Durham, Berkely Hill, Keetley, Owens, Oxley, McLeod, Hobart, and others had strongly recommended it, and even St.-Germain of Paris, while censuring it in the first part of his book, said, later on, that he had found it invaluable *after he had learned how to apply it.** The chairman's impression was that Dr. Shaffer and the different gentlemen mentioned by Dr. Taylor would agree with Dr. St.-Germain as soon as they became conversant with the proper way of applying it.

## Book Notices.

*The Surgical Diseases of the Genito-urinary Organs, including Syphilis.* By E. L. Keyes, A. M., M. D., Professor of Genito-urinary Surgery, Syphilology, and Dermatology in Bellevue Hospital Medical College, etc. A Revision of Van Buren and Keyes's Text-book upon the same subjects. New York: D. Appleton & Co., 1888. Pp. xv–704. [Price, $5.]

When Van Buren and Keyes's book on "Genito-urinary Diseases and Syphilis" was issued, in 1874, it at once took its place as a standard text-book. From its date of issue until now there has been no material change made in it. Books, like men, grow old, only more rapidly, and it was high time that a revised edition of this particular book should appear. Dr. Keyes, the surviving author, has given us, not a revised edition only, but practically a new book. The old plates have not been cut and a patch-work book produced, but the book is printed from new plates and shows no sign of patching. The size of

* "Chirurgie orthopédique," pp. 349–374.

the volume has been increased by ninety-six pages, thirty six additional pages having been given to syphilis alone. The most radical change we find in the chapters devoted to the consideration of stone. As the author states, "Lithotrity is dead, having disappeared from surgery as its brilliant child and successor litholapaxy established its claims." So the three chapters on lithotrity of the old book are left out and a new chapter on litholapaxy takes their place.

The merits of the book are so well known that the reviewer's task is easy. We would note that it has, in this edition, been brought down to date, and contains the mature opinions, frankly stated, of the distinguished author. Throughout it is comprehensive, courteous, considerate, and conservative. Due weight is given to the opinions of others, even though in some cases they may not be in accordance with those of the author; the younger men are treated with as much consideration as the older and more celebrated; and, while the newer bacterio-aetiological teachings are fully stated, the author is not "tossed to and fro, and carried about with every wind of doctrine," but stands fast upon the ground which is already secure. We would specially commend the admirable tone of those sections relating to matters of sexual hygiene, and the wise spirit in which the subjects are treated. The excellent diagnostic tables of the old book are preserved in this. Operations are given in so full a manner that they may be readily understood and carried out. We take great pleasure in commending this work to all practitioners of medicine or surgery as a safe and thorough guide. It is in every way worthy of its author, whom we congratulate upon the successful completion of his task.

The publishers have done their part well—the paper and press-work are excellent. We have noted no typographical errors. The index takes "the snake of learning by the tail," as it is remarkably full.

## BOOKS AND PAMPHLETS RECEIVED.

The Physician's Bedside Record, for the Systematic Recording of Clinical Notes and their Permanent Filing for Future Reference. By Gideon C. Segur, M. D. Hartford: The Plimpton Manufacturing Co.

Quand et comment doit-on prescrire la digitale. Par Henri Huchard, Médecin de l'Hôpital Bichat. Paris: D. Berthier, 1888. Pp. 136. [Prix, 3 francs.]

Fourteenth Annual Report of the Secretary of the State Board of Health of the State of Michigan, for the Fiscal Year ending September 30, 1886.

The Causation of Pneumonia. By Henry B. Baker, M. D., Lansing, Mich. [Reprinted from the "Annual Report of the Michigan State Board of Health," for the Year 1886.]

Contributions to Clinical and Practical Medicine. By A. T. H. Waters, M. D., Fellow of the Royal College of Physicians, London, etc. London: J. & A. Churchill, 1887. Pp. iv–195.

Exudative Conjunctivitis. By Alvin A. Hubbell, M. D., Buffalo, N. Y. [Reprinted from "Transactions of the New York State Medical Association."]

Proceedings of the State Sanitary Convention held at Philadelphia, May 12, 13, and 14, 1886, under the Auspices of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. [Extracted from the "Second Annual Report" of the Board.]

Effects of Food Preservatives on the Action of Diastase, Pancreatic Extract, and Pepsin. By Henry Leffmann, M. D., and William Beam, M. A.

Remarks on the Vesico-urethral Erethism peculiar to Locomotive Engineers. By John Blake White, M. D., Physician to Charity Hospital, etc. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Foreign Sketches from Wiesbaden and the German Universities, being chiefly upon Ophthalmological Subjects. By Harold B. Wilson, M. D., Ann Arbor, Mich. [Reprinted from the "Medical Advance."]

The Relation of Alimentation and Disease. By J. H. Salisbury, A. M., M. D., LL. D., Member of the Philosophical Society of Great Britain; Member of the American Antiquarian Society, etc. New York: J. H. Vail & Company, 1888. Pp. xi–332.

Transactions of the Massachusetts Medico-legal Society. Volume I. Number 10, 1887.

# Reports on the Progress of Medicine.

## NEUROLOGY.

By J. LEONARD CORNING, M. D.

**The Treatment of Spina Bifida by Means of the Elastic Ligature.**—Parona ("Gazz. med. di Torino") has published three cases of spina bifida treated by the aid of the elastic ligature. In one case this mode of treatment was not marked by fever, and the course of affairs was otherwise uneventful. In the second case success was attained only after the lapse of several days of fever. The third case terminated fatally, spinal meningitis having set in. The evil effects heretofore witnessed when treatment by the ligature has been resorted to Parona ascribes in part to lack of dexterity in the application or in the after-treatment. With a more perfect technique he feels confident of better results.

**Hydrophobia in Children.**—Ollivier ("Revue mens. des mal. de l'enfance") points out that the picture of the disease in children, as exhibited clinically and post mortem, coincides in the main with the affection as seen in the adult. As somewhat exceptional phenomena, however, he mentions vesical spasm—manifesting itself in a constant desire to urinate—small cutaneous hæmorrhages accompanied by irritation, and small ventricular hæmorrhages. These symptoms are not, however, to be regarded in any sense as constant accompaniments of lyssa in children. The severity of the symptoms in children, as well as the relatively frequent occurrence of the affection in the young, is to be ascribed largely to the extensive wounds of the hands and face to which they are subjected.

**Endocranial Surgery.**—Durante ("Lancet") has successfully removed a fibrosarcoma, of about the size of an apple, from the left anterior cranial cavity. The tumor extended across the median line to the right side, and had destroyed the lamina cribrosa, besides pressing the superior orbital plate downward, but without causing perforation. The posterior aspect of the tumor reached backward almost to the sella turcica. Extensive atrophy of the left frontal lobe was present; the posterior wall of the sinus frontalis was driven in, but not broken through, while the dura mater was perforated at the same point. The technical points involved in the operation were simple. An incision was made, extending from the left internal canthus, in an upward and outward direction, until the hair was reached in the temporal region. The flaps having been turned back, the brain was exposed, and a large piece of the cranium removed by the aid of a hammer and chisel. The opening thus made extended downward as far as the superior border of the orbit. Through this aperture the posterior wall of the sinus frontalis was seen to be driven in, as already mentioned, while the dura, at the point of perforation, was firmly adherent to the neoplasm. On further investigation, it was found that the posterior and internal aspects of the tumor were not specially adherent, and it was therefore possible to remove it without much hæmorrhage. What little bleeding there was ceased promptly under simple styptic measures, and drainage was at once established by passing a tube through the opening in the lamina cribrosa to the nasal cavity. The wound was then closed, and at the same time a tampon of iodoform gauze was placed around the drainage-tube. Fourteen days after the operation the patient was discharged cured. As for the symptoms observed previous to the operation, they may be briefly summarized as follows: Slight protrusion of the left eyeball, in an outward and downward direction, of three months' duration; total anosmia of one year's standing; weakness of memory, particularly for names; a feeling of "emptiness," giving rise to a certain incertitude of movements. Finally, sensibility and motility were practically unaf-

fected; in the nasal cavity nothing of an abnormal nature could be discovered, and, in fact, the symptom which had excited the suspicions of those about the patient was an unwonted depression and tendency to silence. It is not surprising that, with such a picture before him, Durante should have diagnosticated a tumor pressing upon the left anterior lobe, and curtailing the function of the corresponding bulbus olfactorius. He also suspected that the superior orbital plate was pressed upon by the neoplasm. As to the significance of the operation, so far as restoration of function is concerned, it is interesting to note that, three months after the removal of the tumor, the depression and disturbances of memory had disappeared, while the sense of smell had returned. On a more careful investigation, however, it was found that only the right olfactorius was capable of performing its function.

**Glioma of the Cerebellum; Operation; Death.**—Suckling ("Lancet") operated some time since for cerebellar tumor in a girl, twelve years old, who presented the following symptoms: Headache of two years' duration; vomiting, particularly in the morning; weakness of the right extremities of nine months' duration; continual severe pains over the right eye for three months; motor derangements of the eyes, manifesting themselves about four weeks before; expansion of the left pupil; occasional vertigo; oscillating gait, with a tendency to fall forward; inco-ordination, characterized by trembling when voluntary movements were attempted, particularly marked on the right side. Further investigation revealed paresis of the muscles on the left side of the face, and a similar condition of the right extremities; also absence of the left corneal reflex. Movement of the eyeball in an outward direction was impossible on the right and curtailed on the left side. Closure of the left eye was impossible, and the tongue pointed toward the right. Ophthalmoscopic examination revealed marked neuro-retinitis, while nystagmus was at once evoked on attempts to move the eyeballs. The remaining special senses appeared normal. The facial muscles on the left side exhibited the reaction of degeneration. These being the principal points of interest in the case, a diagnosis of cerebral tumor was made. It was further concluded that the growth must be so located as to compress the left facialis and abducens, as well as the left side of the pons. Again, in consideration of the inco-ordination, it was further assumed that the principal seat of the neoplastic tissue must be in the cerebellum. An operation being decided upon, an opening in the occipital bone was made by the trephine in such a manner as to enter the cranial cavity below the sinus transversus. The dura being exposed, it was divided by a transverse incision, when the dark-red cerebellum at once protruded through the aperture. Careful digital exploration was then made, but failed to reveal any unusual hardness. Nevertheless, it was decided to go on, and accordingly a considerable portion of the cerebellum, which seemed to exhibit a suspicious softness, was removed. The amount of hæmorrhage incident to the extirpation was considerable; when it had in a measure ceased, however, a drainage-tube was inserted, the dura united with catgut sutures, and the cutaneous incision closed. The patient remained in a comatose condition for twelve hours, and forty-eight hours after the operation she was dead. The autopsy showed that the left anterior and lower portion of the cerebellum protruded forward in such a manner as to compress the left facialis. A careful microscopical examination revealed a gliomatous degeneration of the whole left lobe of the cerebellum, the pathological changes extending into the central portion of the organ.

[This is the third case of operation of this character that has recently been attempted in which a fatal termination is recorded. With the present technical resources at our disposal, profound operative interference where we have to do with soft neoplastic changes of the cerebral or cerebellar tissue is certainly emphatically contra-indicated.]

**Anatomical Modifications of the Optic Nerves in Alcoholism.**—Uthoff ("L'encéphale") has recently made a communication on this subject to the Berlin Medical Society. The analysis of five anatomical preparations derived from alcoholics, dead of intercurrent affections, which the author presented at the meeting of the society, presents some interesting features. In the first case there was no visual disturbance, and yet an examination of the section with the naked eye alone revealed the presence of well-marked induration. This induration was nothing more nor less than interstitial neuritis, in which most of the nerve-fibers were preserved. These changes were specially pronounced in the immediate vicinity of the globe. As to the changes observed in three other cases, it is stated that they were practically the same. In the third case, however, the subject presented alcoholic amblyopia of a characteristic type, accompanied by pallor of the external aspect of one disc, while that of the other eye presented a normal appearance. Nevertheless, the autopsy revealed manifest changes in the nerves. As the author took occasion to emphasize, the histological changes which are characteristic of interstitial neuritis consist in a sclerosis of the connective tissue, with concomitant preservation, or at least partial preservation, of the nerve-fibers. In this form of degeneration, disappearance of nerve-fibers only takes place at those points where the sclerosis is exceedingly pronounced. As concomitants of this process may be mentioned proliferation of the nuclei of the connective tissue and formation of new vessels, and finally retraction of the tissue which is the seat of the pathological changes. All these characteristics will serve to distinguish the interstitial form of degeneration from the progressive variety emanating from the visual center, in which there is simple atrophy of the nerve-fibers. As to the frequency of alcoholic amblyopia, the author believes it to be the variety of toxic amblyopia most often encountered. Next in frequency is that mixed form of intoxication in which alcohol and tobacco together figure as causes; and finally we have tobacco alone as the cause of a third variety of intoxication.

**The Lesion of the "Myeline" Fibers of the Cortex Cerebri in General Paralysis and Other Mental Affections.**—Facher (*ibid.*) has conducted a series of careful studies with a view to determining whether, as affirmed by Tuczek, the disappearance of the "myeline" fibers of the cortex is peculiar to general paralysis. The conclusions arrived at by Facher, based upon thirty-one cases, accompanied by autopsies and careful histological examinations, are as follows: 1. The disappearance of the myeline fibers of the cortex is found in all cases of general paralysis; but the lesion can not be regarded as a special attribute of this affection, for it is found in a large number of other diseases, such as senile dementia, chronic alcoholism, the dementia of epilepsy, etc. 2. In the majority of instances this disappearance of the myeline fibers is to be regarded as a primary lesion involving the parenchyma, and not as a secondary consequence of interstitial sclerosis. 3. The morbid process which lies at the root of this disappearance of the myeline fibers does not begin in the frontal region and progress backward, without, however, reaching the occipital lobe, as Tuczek has affirmed. Neither is it always limited to the superficial stratum of the cortex, nor to the gray substance. On the contrary, the pathological changes make their appearance simultaneously at different portions of the cortex, may involve the white matter as well as the gray, and may extend more or less from their original point of departure. 4. As to the clinical significance of these patho-anatomical findings, it must be confessed that, up to the present time, it has been found quite impossible to bring them into juxtaposition with any particular symptom exhibited by the patient.

**The Comparative Weight of the Two Hemispheres in the Insane.**—The following are the conclusions arrived at by Marselli ("L'encéphale") with regard to this interesting subject: 1. In contradistinction to the assertion of Luys, the right cerebral hemisphere averages in weight more than the left, in the sane as well as in those of unsound mind. 2. This discrepancy in weight is maintained in both sexes at every period of life. 3. Insanity tends to augment this difference in weight of the two hemispheres. 4. The greatest differences in weight are found in those pyschopathies of a paralytic nature which are followed in the course of regressive changes by so-called senile psychoses. Under these circumstances, however, the preponderance of one hemisphere over the other is to be ascribed to morbid atrophic processes or to cerebral involution. 5. If the disturbing influence of atrophic processes is excepted, the greatest cerebral asymmetry is encountered in persons affected by epilepsy. Under these circumstances it is apparently attributable to a deviation in morphological development of the nervous centers. 6. Finally, there is not the slightest correspondence between the difference in weight of the two cerebral hemispheres of the insane and the asymmetry of the enveloping cranium.

**The Structure of the Pineal Gland.**—Cionini ("Revista sperimentale di freniatria et di medicina legale"; "L'encéphale") has formulated

the results of his investigations as follows: 1. The cells which constitute the stroma of the pineal gland are not of a nervous character, but, on the contrary, are evidently of a purely connective nature. This is shown by the peculiar aspect of the *ensemble*, by the tunnel like expansions which unite them to the vessels, and, above all, by the total lack of nervous prolongation. 2. Nervous fibers are absent in the pineal gland, or are only found there as accidental features. 3. Finally, the pineal gland is an organ composed of connective tissue, originating without nervous elements, and quite incapable of possessing an appreciable functional importance.

**Cancer of the Right Lobe of the Cerebellum and Left Lenticular Nucleus; Marked Vertigo; No Paralysis.**—Dr. Byrom Bramwell, in the January number of "Brain," has recorded an interesting case of this kind in which, with the exception of an evanescent paralysis of the right side of the face, motility remained practically unimpaired till at length the patient fell into a semi-comatose condition and died. The salient points in this interesting case are these: Mrs. A., aged sixty-one, was seen in consultation with Dr. Murray, of Galashiels, on the 13th of July, 1886. Eight months previously Dr. Murray had excised the left mamma and some of the axillary glands, which were affected with cancer. The patient made a satisfactory recovery, the wound healed, for six months—until the end of May, 1886. She then began to suffer from severe headache and vertigo; her gait became unsteady, and like that of a person affected with drink. On June 1st she was seized with what her daughter thought was a fit. Dr. Murray, who was immediately sent for, found her sensible, but somewhat confused; the muscles of the right side of the face were paralyzed, the mouth being slightly drawn to the left. She complained of "dreadful" pains all over her head. She remained in much the same condition until June 20th, when she had another so-called fit or faint. Dr. Murray was unable to satisfy himself that there were any distinct spasmodic muscular contractions; the attack, he says, resembled rather a faint than an epileptic fit. After this attack the patient became much excited, like one suffering from delirium tremens; she insisted upon getting out of bed; wanted to dance; said she felt fine, etc. After a week's duration this excitement subsided, and was succeeded by vomiting. When Dr. Bramwell saw her she was suffering from persistent vomiting, headache, and vertigo. When her eyes were open she declared that she felt as if the ceiling were falling upon her, and that objects in the room were moving round her. Distinct, but not intense, double optic neuritis was present. There was, however, no perceptible paralysis in any part of the body, the facial paralysis, already referred to, having disappeared in a couple of days. For three months after Dr. Bramwell's first visit the condition of the patient remained practically the same. During the last month of her life, however, she lay in a semi-comatose condition. On the 25th of November death took place, and Dr. Bramwell made the autopsy, the head only being examined. Besides external deposits in the cicatrix, the left axilla, and the left side of the neck, the following interesting intracranial changes were found: The convolutions were somewhat flattened, and the arteries at the base of the brain were atheromatous. The right lobe of the cerebellum was adherent to the dura mater, and pressure revealed a hard mass in the interior. After hardening in Müller's fluid the brain was divided by transverse vertical sections, when it was found that a large nodule, of about the size of a shilling, had destroyed the lenticular nucleus, but without apparently having implicated the internal capsule in the least. A mass of cancerous growth, fully as large as a small hen's egg, was found in the right lobe of the cerebellum. Considerable compression was exercised by this tumor upon the adjacent middle peduncle. Microscopical examination verified the typical cancerous nature of the growths.

**The Pathology of Athetosis.**—This affection has recently received attention at the hands of Dr. Alfredo Rubino ("Riforma Medica"; "Lancet"). The lesion which gives rise to athetosis may, he thinks, be situated at any portion of the cerebral motor elements. As a rule, however, it is located in the psycho-motor centers of the cortex, in the inner capsule, or in the optic thalamus. Speaking generally, Dr. Rubino does not regard athetosis as constituting a pathological entity in itself, but, like hemichorea, which is only another form of post-hemiplegic spasm, to be looked upon as merely a product of a preceding affection, such as hæmorrhage, inflammation, embolism, atrophy, etc. Still, in certain cases, particularly where both sides are implicated, he is prepared to admit that we may have to do with true essential neuroses.

# New Inventions, etc.

## AN ASEPTIC HOLDER FOR HAGEDORN AND ROUND NEEDLES.

By William K. Otis, M. D.

The manifest advantages of the Hagedorn needle and its very general adoption by American surgeons, together with the fact that most of the holders adapted for its use are both cumbersome and difficult to clean, led me, a year or two since, to modify probably the most popular holder ever invented for round needles (that of Dr. Henry B. Sands) in such a manner as to render it capable of firmly holding flat needles, and also of being more easily cleansed, without eliminating any essential feature of the original instrument. This instrument is easily understood by a reference to the illustration. The end for holding round needles is unchanged, except that it is placed at the opposite end of the instrument to that which it originally occupied. The end adapted for




flat needles consists of the solid lower bar, the end of which is turned upward at a right angle; a sliding bar forced down upon this end by the powerful double lever firmly grasps a needle placed between them. Several notches have been added to the original spring catch, in order to hold needles of different sizes.

For cleaning, by simply turning the little button which holds down the sliding bar, the whole upper portion of the instrument may be raised, swung over on the axis of the joint, opening the round end, and disconnected. The last-named joint has been constructed on a novel principle, recently introduced, and is more powerful and more easily manipulated than the old French button-hole joint. This instrument, owing to its compactness, is particularly adapted for use in the pocket case, and holds a needle very firmly, and considerable practical use in the hands of competent surgeons has proved its efficiency. It is manufactured in an exceedingly satisfactory manner by Messrs. Tiemann & Co., who possess the present model.

48 West Forty-ninth Street, *June 6, 1888.*

# Miscellany.

**A Portrait of the late Dr. Agnew.**—We have been asked to publish the following:

"At the last meeting of the Ophthalmological and Otological Section of the New York Academy of Medicine the following motion was made and carried:

"'That a committee be appointed, of which the chairman of the section, Dr. David Webster, be a member, whose duty it shall be to obtain a good photograph of the late Dr. Cornelius R. Agnew, for the purpose of having engravings suitable for framing made from this. The right of issue and sale of such engravings shall be given to some first-class publisher, if practicable; if not, the committee shall offer them to the profession at cost.'

"In accordance with the foregoing, a committee has been appointed. Members of the profession who desire such an engraving, accompanied

by an autograph signature, should send their names and addresses to the Secretary of the Committee, Dr. Charles H. May, 640 Madison Avenue, New York, at once. When all such names shall have been recorded, those who have requested a copy of the engraving will be notified of the cost of the same, either by the publisher or by the committee having the matter in charge."

**The American Climatological Association** will hold its fifth annual meeting in Washington on the 18th, 19th, and 20th of September. The preliminary programme is as follows: The President's Address, by Dr. Alfred L. Loomis, of New York; "The Relation of Great Altitudes to Germ Disease," by Dr. S. A. Fisk, of Colorado; "Is Climate an Ætiological Factor in Graves's Disease?" by Dr. R. G. Curtin, of Philadelphia; "An Environment Experiment Reported," by Dr. E. L. Trudeau, of Saranac Lake, N. Y.; "Definite Results Obtained by the Climatic Treatment of Disease," by Dr. A. Y. P. Garnett, of Washington; "Invalids Suited for Treatment at Colorado Springs," by Dr. S. E. Solly, of Colorado; "The Influence of Semi-tropical Latitudes on Types of Disease," by Dr. John Guiteras, of Charleston, S. C.; a discussion on "The Relative Importance of Different Climatic Elements in the Treatment of Phthisis" (reporters, Dr. E. T. Bruen, of Philadelphia, and Dr. V. Y. Bowditch, of Boston); "Observations on the Use of Terebene," by Dr. D. M. Cammann, of New York; "Climate and Bright's Disease," by Dr. J. C. Wilson, of Philadelphia; a discussion on "The Mineral Waters of the United States" ("Their Therapeutic Value as Suggested by their Chemical Composition," by Dr. A. C. Peale, of Washington; "Their Therapeutic Value in Gastro-hepatic Diseases," by Dr. William Pepper, of Philadelphia; "Their Therapeutic Value in Urinary and Arthritic Diseases," by Dr. A. H. Smith, of New York; "Their Therapeutic Value in Malarial Diseases," by Dr. J. C. Van Bibber, of Baltimore); "Report on Mineral Springs," by Dr. C. C. Rice, chairman, of New York; "Interpleural Pathological Products; their Cause, Significance, and Special Relationship to Pulmonary Phthisis," by Dr. J. R. Leaming, of New York; "Conditions which Tend to Render the Atmosphere of a Locality Aseptic," by Dr. J. T. Whittaker, of Cincinnati; a discussion on "The Influence of Altitude on Cardiac and Pulmonary Diseases" (reporters, Dr. F. Donaldson, Sr., of Baltimore, and Dr. J. J. Levick, of Philadelphia); "Climatic Characteristics of Texas," by Dr. Morse K. Taylor, U. S. A., of San Antonio; "Therapeutic Differences of Mountain and Sea Air," by Dr. W. H. Geddings, of Aiken, S. C.; "Indications and Contra-indications for Altitude in the Treatment of Phthisis," by Dr. F. I. Knight, of Boston; a discussion on "The Nasal and Neurotic Factors in the Ætiology of Asthma" (reporters, Dr. F. H. Bosworth, of New York, and Dr. E. L. Shurly, of Detroit); "The Therapy of Climate," by Dr. I. H. Platt, of Lakewood; "The Therapy of Ocean Climate," by Dr. A. L. Gihon, U. S. N.; "The Climatic Characteristics of Roan Mountain, Eastern Tennessee," by Dr. C. J. Kenworthy, of Florida; "Notes of a Summer in Switzerland," by Dr. D. B. St. John Roosa, of New York; "An Epidemic of Cerebro-spinal Meningitis in Central New York," by Dr. W. T. Ford, of Utica, N. Y.; and "A Further Contribution to the Study of Consumption among the Indians," by Dr. W. Matthews, U. S. A.

**The American Laryngological Association** will hold its tenth annual meeting in Washington on the 18th, 19th, and 20th of September. The preliminary programme includes the following titles: "Ten Years of Laryngology," by Dr. Rufus P. Lincoln, of New York; "Congenital Bony Occlusion of the Posterior Nares," by Dr. Charles H. Knight, of New York; "The Effects of Varying Rates of Stimulation on the Action of the Recurrent Laryngeal Nerve," by Dr. Franklin H. Hooper, of Boston; "Subglottic Laryngeal Enchondroma," by Dr. E. Fletcher Ingals, of Chicago; "A Photographic Study of the Laryngeal Image during the Formation of the Registers, and Production of Variations in the Pitch of the Singing Voice," by Dr. Thomas R. French, of Brooklyn; "Lupus of the Nose, Pharynx, and Larynx," by Dr. Samuel Johnston, of Baltimore; "Imaginary Lingual Ulceration," by Dr. George M. Lefferts, of New York; "A Possible Substitute for Tracheotomy and Intubation in Certain Cases," by Dr. Edgar Holden, of Newark, N. J.; "Antiseptic Nasal Surgery," by Dr. Clarence C. Rice, of New York; "A Case of Sarcoma of the Tonsil," by Dr. Alexander W. MacCoy, of Philadelphia; "A Case of Subglottic Chronic Stenosis of the Larynx cured by Dilatation," by Dr. Frank Donaldson, of Baltimore; "Internal Œsophagotomy," by Dr. John O. Roe, of Rochester, N. Y.; "The Treatment of Atrophic Rhinitis by the Galvanic Current," by Dr. J. H. Hartman, of Baltimore; "The Anatomy of the Nasal Chambers," by Dr. Harrison Allen, of Philadelphia; "Notes on a Case of Nasal Caries complicated with Meningitis, successfully treated by means of the Surgical Drill," by Dr. William C. Jarvis, of New York; "On Fixation of one or both Vocal Bands in the Phonatory Position (so-called Abductor Paralysis)," by Dr. F. Donaldson, Jr., of Baltimore; "Residence at certain Great Altitudes as a means of Cure for Laryngeal Phthisis," by Dr. Clinton Wagner, of New York; and "Further Investigations as to the Existence of a Cortical Motor Center for the Human Larynx," by Dr. D. Bryson Delavan, of New York.

**The New York State Medical Association.**—The Fifth District Branch will hold a special meeting in Babylon, Suffolk County, on Tuesday, July 31st.

**The Health of Michigan.**—According to the State Board of Health's summary for the five weeks ending June 2d, during that period diphtheria was reported from twenty-three places, scarlet fever from fifty-four, typhoid fever from fourteen, measles from sixty-four, and small-pox from one place.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 8th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending May 19th corresponded to an annual rate of 18·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Leicester, viz., 15·3, and the highest in Blackburn, viz., 25·4 in a thousand. Small-pox caused 8 deaths in Sheffield and 1 in Bristol.

*London.*—One thousand four hundred and sixty-nine deaths were registered during the week, including measles, 18; scarlet fever, 13; diphtheria, 29; whooping-cough, 64; enteric fever, 12; diarrhœa and dysentery, 15. The deaths from all causes corresponded to an annual rate of 17·9 in a thousand. Diseases of the respiratory organs caused 296 deaths; different forms of violence, 63; and 13 suicides were registered. In greater London 1,779 deaths were registered, corresponding to an annual rate of 16·8 in a thousand of the population. In the "outer ring" 23 deaths from whooping-cough and 5 from diphtheria were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending May 19th in the sixteen principal town districts of Ireland was 22·8 in a thousand of the population. The lowest rate was recorded in Newry, viz., 7, and the highest in Lurgan, viz., 46·2 in a thousand. In Dublin 160 deaths were registered, including 7 from whooping-cough; enteric fever, 6; scarlet fever, 1; and diarrhœa, 4.

*Scotland.*—The deaths registered in eight principal towns during the week ending May 19th corresponded to an annual rate of 19·3 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Paisley, viz., 10·1, and the highest in Glasgow, viz., 22·1 in a thousand. The aggregate number of deaths registered from all causes was 488, including measles, 13; scarlet fever, 1; diphtheria, 3; whooping-cough, 14; and diarrhœa, 10.

*Netherlands.*—The deaths registered in twelve principal cities of the Netherlands, having an aggregate estimated population of 1,129,676, during the month of March, 1888, corresponded to an annual rate of 27·1 in a thousand. The lowest rate was recorded in Leyden, viz., 23 in a thousand; and the highest in Utrecht, viz., 31·8 in a thousand.

*Martinique.*—The United States consul, in his dispatch dated May 17, 1888, states that "since my last report the condition of the health of this island is greatly ameliorated in regard to small-pox. From the 1st to the 15th of May there were in the city of St. Pierre 59 cases and 12 deaths out of a population of 25,000 persons; in the village of Precheur, four miles distant, 21 cases and 21 deaths; in the village of

Carbet, three miles distant, 5 cases and 2 deaths, and at Port de France, where the epidemic commenced, there are at present no cases."

*Havana.*—Five deaths from yellow fever and 5 from small pox were reported for the week ending May 26, 1888.

*Santiago de Cuba.*—There were no contagious diseases registered during the week ending May 26, 1888.

Mortality Table, Foreign Cities.

| Cities. | Week ending. | Estimated popu-lation. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphthe-ria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | May 19. | 2,260,945 | 945 | .. | .... | 6 | .... | 12 | 3 | 44 |
| Glasgow | May 19. | 545,678 | 224 | .. | .... | .... | .... | .... | 1 | .... |
| Warsaw | May 12. | 444,814 | 217 | .. | .... | 4 | .... | .... | .... | .... |
| Calcutta | April 21. | 433,219 | 236 | 73 | .... | .. | .... | .... | .... | .... |
| Amsterdam | May 19. | 389,916 | 173 | .. | .... | .... | .... | .... | .... | 2 |
| Munich | May 5. | 275,000 | 148 | .. | .... | .... | .... | 1 | 3 | 6 |
| Munich | May 12. | 275,000 | 147 | .. | .... | .... | .... | .... | .... | 1 |
| Palermo | May 19. | 250,000 | 83 | .. | .... | .... | .... | 1 | 2 | 3 |
| Genoa | May 19. | 179,541 | 79 | .. | .... | .... | .... | .... | .... | .... |
| Toronto | May 26. | 130,000 | 27 | .. | .... | .... | .... | .... | .... | .... |
| Stuttgart | May 19. | 125,510 | 39 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | May 12. | 122,000 | 47 | .. | .... | .... | .... | .... | .... | 1 |
| Havre | May 19. | 112,074 | 70 | .. | .... | 5 | .... | 1 | 1 | .... |
| Leghorn | May 20. | 101,718 | 46 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | May 19. | 65,028 | 44 | .. | .... | .... | .... | .... | .... | .... |
| Cienfuegos | May 21. | 40,754 | 17 | .. | .... | 3 | .... | .... | .... | .... |
| Curaçoa | May 19. | 25,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Vera Cruz | May 24. | 23,800 | 28 | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | May 13. | 23,631 | 11 | .. | .... | .... | .... | .... | .... | .... |
| Sagua la Grande | May 19. | 15,605 | 7 | .. | .... | .... | .... | .... | .... | .... |
| Nassau | May 26. | 12,000 | ..... | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | May 19. | 7,428 | 4 | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

The Secretary of the Treasury has issued the following circular, under date of June 4, 1888:

In order to assist local authorities in the maintenance of quarantine against the introduction of infectious diseases, as provided in section 4792, Revised Statutes, the act of April 29, 1878, and appropriation acts authorizing the President to maintain quarantine at points of danger, the President has determined to establish, by means of the vessels of the Revenue Marine, a national patrol of the coast of the United States, so far as it may be practicable under existing law and consistent with the performance of the other duties confided to that service.

You are accordingly directed to cruise, actively, with the revenue steamer ———, under your command, upon the outer lines of your cruising grounds, and to exercise special vigilance in speaking all vessels arriving from foreign ports, or from infected ports of the United States, directing your inquiries, first, as to the port from which the vessel sailed, and, secondly, as to the health of those on board at the time of departure, during passage, and at the time of hailing; and should the information gained indicate a condition of contagion or infection in the vessel or crew, or that the vessel has left a port at which contagious or infectious diseases were prevailing, her master will be directed to proceed for examination to the outer quarantine station provided for her port of destination.

The following regulations will be observed relative to the inspection of vessels:

If a vessel be found with sickness on board, or in a foul condition, she will be directed to proceed to the quarantine station hereinbefore indicated, and the Revenue-Marine officer will immediately notify the proper quarantine officer. In such case no person will be permitted to board the vessel until the medical officers in charge of the quarantine shall have given the usual permit.

Should the pilot or master of a vessel, when hailed, report cases of recent or present sickness on board, the revenue officer will not board, but will send her immediately to quarantine.

Quarantine officers will be recognized as follows, viz.:

Medical officers or acting assistant surgeons of the Marine-Hospital Service in charge of Gulf, South Atlantic, Cape Charles, or Delaware Breakwater Quarantines, or any officer of said service on duty at any port on the interior rivers, the Great Lakes, or Pacific coast, and all quarantine officers acting under proper State or local authority.

Special regulations to aid local quarantine authorities will be promulgated hereafter should occasion require.

Dr. Jerome Cochran, of the State Board of Health of Alabama, in a recent report has stated that the late epidemic of yellow fever in Florida was not introduced into the State by the usual trade channels, but by smugglers. This confirms unofficial statements received at this bureau some weeks since. Dr. Cochran states that the last case was discharged May 11th, and the last death occurred May 8th, and that there have been active precautions taken to prevent the reappearance of the disease.

## ANSWERS TO CORRESPONDENTS.

*No. 192.*—There are several processes for making kumys from cow's milk. Wilckens's is as follows: Fill a clean champagne bottle with fresh milk; add from 300 to 450 grains of sugar and a piece of compressed yeast about twice as large as a pea; cork the bottle thoroughly, tying the cork in, and keep it in a warm room for two days, shaking it frequently; then keep it in a cellar for three days, after which it is fit for use.

*No. 193.*—We think not.

*No. 194.*—Dr. John C. Dalton, in a monograph of which we do not remember the title.

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**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# ACUTE ARTICULAR RHEUMATISM IN THE NURSING INFANT.*

BY HENRY KOPLIK, M. D.,
ATTENDING PHYSICIAN TO THE EASTERN DISPENSARY, NEW YORK.

THE rare occurrence of acute articular rheumatism in the infant at the breast and the restriction of material within certain limits must make this short paper appear simply in the light of a contribution to the literature of this subject rather than as presenting anything especially striking in the study of the disease. So infrequent is the occurrence of polyarthritis rheumatica in the nursing infant that those authors who have had, perhaps, the best opportunities to study its phenomena have completely ignored its existence. Most of the writers to whom I have had access find little reason to depart very far from the lines first laid down by Bouchut concerning the affection. The types, however, which Bouchut brings forward as characteristic have already been rejected by competent critics (Senator). They can not be included under the disease acute articular rheumatism in any sense. In presenting the histories of the following cases I have endeavored to find those characteristics of articular affection and constitutional disturbance which we in later life recognize as classical to the picture of acute rheumatic polyarthritis. The rarity of the disease in such young subjects, I reiterate, may account for the paucity of the material. In these little patients we find the presence of the disease in a number of articulations, the rapid successive involvement of these articulations by the disease, the presence of a certain amount of constitutional disturbance. I have not been so fortunate in the cases I record as to find any symptoms or signs referable to the heart. It is desirable to keep this class of cases distinctly separated in our minds from those diseases lately designated by Gerhardt as *rheumatoid* affections of the joints. The rheumatoid affections of the joints have their counterparts in those obscure joint affections of infancy the pathology of which is still more obscure than that of true rheumatic arthritis, those forms of multiple synovitis, with or without endocarditis, complicating the later stages of the exanthemata.

CASE I.—Female infant, aged six months, nursing at the breast, of good development; no previous illness. Mother states that six days previous to the time when the child was seen by the writer it had developed pain, heat, and redness in the joints of the left foot; this was followed by a similar affection of the left wrist and finger joints of the left hand. There was fever, also some profuse perspiration. When the child was seen the metatarso-phalangeal joints of the great toe and the neighboring three toes were much swollen, red, and painful; the temperature of the joints was increased to the touch. The dorsum of the foot was swollen and œdematous; the last phalangeal joint of the great toe was swollen, red, and painful. On the left hand all the metacarpo-phalangeal joints, except that of the thumb, were swollen, red, and painful; the left elbow was in the same condition. The last phalangeal joints of the left hand were in the same condition also. The temperature of all the joints was raised to the touch. The body temperature in the rectum was 105·5° F., pulse 180, respiration 48. A profuse perspiration was present, restlessness was extreme, the skin was clear, there was no eruption. Examination of the heart revealed a negative result. The lungs showed the presence of an acute broncho-pneumonia. The urine was normal, the bowels were regular. No other joints subsequently became affected. The temperature gradually began to subside three days after seeing the child. At this time the temperature was 102·5°, pulse 186. The joint affection in the hands and elbow was the same, but the foot was beginning to improve. Five days after the child was first seen by the writer, and on the eleventh day of the disease, a scarlet-fever eruption appeared on the chest and spread over the body. During the stage of desquamation some of the joints remained swollen and painful. This tenderness of the joints did not subside completely until the eighth week after the onset of the rheumatic affection. At no time were there signs of endocarditis.

CASE II.—Female infant, aged nine months, nursing at the breast, of good weight and development; no previous illness of any kind; no history of skin eruption or scarlet fever; no signs of rhachitis present. Ten days previous to consultation the infant had developed redness and swelling of all the metatarso-phalangeal joints of the toes of both feet. Also all the joints of the fingers became affected similarly after a short time. There were fever, vomiting, extreme restlessness, and cough. The patient showed signs of pain when the fingers were handled. When seen she had swelling of all the joints named on both feet. The infant was very anæmic, and there was an increased temperature over the joints. The skin of the dorsum of the feet was œdematous. The metacarpo-phalangeal joints and all the phalangeal joints of both hands were swollen, red, and painful. The fingers were held in an extended condition, the thumbs adducted, resembling the condition and position seen in athetosis. The temperature in the rectum was 102°, pulse 126. The lungs showed an acute bronchitis. The heart showed nothing abnormal.

On March 30th, nine days after the writer first saw the child, and in the third week of the disease, recovery was complete. Under the influence of treatment the pain in the joints, redness, and swelling had slowly subsided, the child became less restless, and after the time mentioned could be looked upon as completely convalescent. The joints, though stiff, were moved somewhat by the little patient; no signs of synovitis were present.

In Case I the tender age of the patient and the complete uncomplicated recovery are to be noted. I had occasion to see the little patient some time after recovery. The joints showed no stiffness or signs of the severe articular disturbance or synovitis. The heart also revealed no endocarditic affection or muscular disturbance. The marked interval between the first appearance of the joint affection and the scarlet rash (eleven days) is notable. There are no other points in Case I except the complication of broncho-pneumonia. The typical swelling, redness, and increased temperature of the numerous articulations, and the high fever from the onset of the joint affection, all give the picture of two separate affections (rheumatism and scarlet fever) rather than the complication of the scarlet fever in this case with the rheumatism.

In Case II there was no history or symptom which might

* Read before the Medical Society of the County of New York, May 28, 1888.

lead to the acceptance of the presence of scarlet fever before or after the onset of the joint affection, yet the child was said to have been ill with the joint affection for ten days previous to the consultation, and under observation and treatment the joint affections subsided completely in nine days, making a duration of nineteen days. In this case the absence of endocarditis was remarked and at no time during the height of the disease or the convalescence could that complication be discovered. In this case also the general febrile movement, the swelling, redness, and increased temperature of the affected joints, and the pain in the same, were leading symptoms, and caused the parent to seek relief for the patient in treatment. Here I wish to call attention to the peculiar position of the fingers affected in both hands —that of various degrees of extension with adduction of the thumb. This position reminds the observer of the picture met with in the forms of athetosis. I have had occasion to see this very same position of the fingers in marked acute rheumatic affection of the phalangeal joints of the fingers occurring in a boy aged ten years. I attribute this peculiar spastic-like position taken by the fingers to an involuntary contraction of the extensors of the fingers (interossei). These contractions are brought about by pain. It is also the position, it seems, which would afford relief, if such were possible, from pain.

Bouchut, in the earlier edition of his treatise on the diseases of infancy and childhood, records three cases of articular disturbance in the nursling, and with true scientific diffidence places them under the heading of polyarthritis rheumatica. These cases have long ago been discussed, and the conclusion from competent critics (Senator) has been that the cases of Bouchut at the present day would be placed under the heading of sepsis rather than that of rheumatism.

Wiederhofer, however, records a case as acute articular rheumatism which seems to be more of the color of the picture obtained in this affection. The case was that of a female child, aged twenty-three days, suffering from blennorrhœal ophthalmia. A few days after convalescence from the eye affection the little patient was attacked with an arthritic affection of the left knee, wrist, and elbow. After fifty-four days complete convalescence resulted. Here it is remarkable that the child suffered from an affection of the eyes of probable gonorrhœal origin. The joint affection therefore takes the form more of those joint troubles seen in the adult after attacks of gonorrhœa of the urethra, both in the male and in the female. A careful study must exclude the case of Wiederhofer from the simple rheumatic affections of the articulations, placing it rather under the rheumatoid affections described by Gerhardt.

Demme records a case of rheumatism and endocarditis in a child nine weeks old, of which I have not been able to find any detailed history.

Henoch mentions a case of acute articular rheumatism occurring in a child ten months old. This case was complicated with pleuritis and pneumonia. Its duration was four to five weeks. Staeger (Senator) records a case of acute articular rheumatism at the early age of four weeks. Rauchfuss has met with only two cases of polyarthritis rheumatica among 15,000 young infants. Roger records a much-cited case of rheumatism in a child aged two years.

This would seem to cover the very meager literature on this interesting subject. As to the complications of endocarditis, pleuritis, and broncho-pneumonia, they have all been recorded in isolated cases.

On the whole, Cadet de Gassicourt, after a consideration of an immense material, thinks that acute articular rheumatism is a less frequent affection in childhood than in the adult. In the *nursing infant*, however, the affection is so extremely rare that authors and writers have more or less doubted the authenticity of published cases. Wiederhofer's questionable case was in one of seventy thousand infants. My own cases were gathered from a material of seven thousand sick children. I place no weight, however, on such meager statistics. Henoch remarks that many of these cases in the literature are obscure in detail, and thinks that some are, perhaps, instances of syphilitic disease of the epiphyses, or multiple periostitis and abscess of the joints. Meigs and Pepper think that many irregular forms of rheumatism occur in the nursling, but are lost to observation. D'Espin and Picot urge the rarity of the disease below the age of two years. Langsteet and Cadet place the cases below four to five years in the doubtful category. It would not aid us to go at length into the consideration of the relations of endocarditis to rheumatism, but certain it is that well-authenticated cases of endocarditis have been recorded in the nursling (von Dusch).

There is no subject which is surrounded with more obscurity than that form of rheumatism recorded as accompanying or following the exanthemata. This is notably the case with scarlet fever. Thomas, Bohn, Cadet de Gassicourt, Gerhardt, Litten, Kohrer, and Bokai all have their peculiar views about the nature of this joint affection. As yet there are no exact data of the relation of the one disease (scarlet fever) to the affection of the articulation. Cadet finds rheumatism an epiphenomenon in about one tenth of the cases of scarlet fever. The picture presented in Case I of this paper is not that seen, as a rule, in scarlet fever. Here the joints first affected in the majority of cases are those of the hands. The affection sets in after or during desquamation. In the case here presented the articular affection preceded the eruption. There being no doubt on this point, I feel inclined with Bokai to consider such cases rather the rarer complication of true articular rheumatism by a subsequent attack of scarlet fever. Such cases have been recorded by Larcher and Hiller (Bokai). Knowing exactly so little and seeking to gain knowledge on the chief forms of articular rheumatism, we should be inclined to side with these authors.

Writers are by no means so ready to regard the form of rheumatism occurring in scarlet fever as pure articular rheumatism. A. Jacobi, and subsequently Gerhardt, have presented a most interesting view on this subject. Gerhardt excludes these joint affections from the class of true rheumatisms. He regards the possibility in scarlet fever of a mixed form of infection. It is very possible that the scarlatinous poison, as in typhus erysipelas, may manifest itself in an affection of the synovial membranes, as it does

in that of the mucous membrane of the mouth, larynx, glands, etc. Indeed, this view is certainly one of the most scientific yet advanced. In Case I this view would be difficult to apply, seeing the length of time that elapsed between the affection of the joints and the appearance of the rash. Yet, as most authors (Immermann among others) are inclined to regard rheumatism as an acute infectious disease, its occurrence with scarlet fever is no more peculiar than the occurrence of diphtheria with the same malady. Gerhardt found that joint affections were likely to appear in certain epidemics of scarlet fever, in some mounting as high as 37 per cent. of the cases, in other epidemics being entirely absent. Again, the joints of the hand are mostly affected (85 per cent.), and in most instances the affection is of slight severity (Litten, Bokai). Kohrer found that 6 per cent. of patients with scarlet fever had joint affection, and in 66 per cent. the hands were affected. Trousseau found one third of the patients affected with joint trouble. Lastly, endocarditis is less common in the form of rheumatic joint affection occurring in scarlet fever than in the pure form of the disease (Ashby, "Brit. Med. Jour.," 1886, p. 971). Finally, if the pure form of acute articular rheumatism is obscure in pathogeny, its various subforms are still more so. It is, therefore, peremptory in diagnosis not to obscure classification by recklessly applying the terms rheumatic and rheumatoid to all possible joint or muscular affections, and this is more the truth in infancy. Here a number of affections in a hasty examination may be easily confounded, and I will only glance at some of the more important joint affections which in their incipiency or outset may resemble acute rheumatism, though they can hardly be said to be difficult of diagnosis.

*Congenital Syphilis.*—There are obscure cases of inflammatory trouble at the epiphyses of the bones in the vicinity of a joint which might be incorrectly diagnosticated, especially in the absence of signs familiarly present in this disease. The mothers of these infants can not be depended upon for a very correct history. There must be many cases resembling the following, in which the previous history would aid the diagnosis: Male child, aged three months, nursing at breast; all external evidences of syphilis absent; brought back to me with redness and swelling at the epiphyseal junction, the redness and swelling spreading over the joint, the right elbow swollen and painful, redness and swelling of the ungual phalanges. No suppuration present. Immediate improvement and disappearance of symptoms under appropriate treatment. I saw this case at the eighth month; it then presented a late papular syphilide and plaques.

In *rhachitis* I have met with cases where there was some excessive enlargement of the articular ends of the bones, thus causing parents to think the joints were the seat of disease. The cases occurred in very young infants, and the various phenomena of rhachitis were exaggerated, and rapid and acute in their onset. Movements in these cases were apparently very painful to the infant; it would cry out with pain when fondled by the mother. There was marked clubbing of the articular ends of most of the long bones, with apparent joint enlargement, but the *shafts* of the bones were also broadened and thickened to a marked degree. Pressure on the *joints* and along the shafts of the bones elicitated signs of pain. There were in my cases craniotabes, lack of development, and intestinal disturbance.

Cases of circumarticular abscess may at the outset closely simulate rheumatic arthritis. In these cases there are often abscesses in other parts of the body; the infection may be from the patient's own person or from some external source. The history of a preceding attack of an acute infectious disease will aid in the diagnosis, as such abscesses are prone to follow in the course of an exanthematous fever.

*Acute osteomyelitis* may at first mislead to the more favorable diagnosis of rheumatism. The formation of abscess, the swelling along the shaft, as well as in the joint vicinity, aid the diagnosis.

*Sepsis*, in its multiple forms, may affect the joints, and we have only to refer to the literature for many of these cases. To-day the diagnosis can scarcely be said to be obscured by any difficulty.

Beyond the rheumatoid affections discussed above, I have of late noted that very young nurslings, when vaccinated, give evidences of pains in the joints, just as would be likely to be found in the adult. The mothers in several cases came to me with the remark that the child would cry out when handled, and investigation showed an actual tenderness about the knees and elbows when even slightly manipulated. These symptoms appear when the vaccine vesicle is turning pustular. These cases would be classed with the rheumatoid affections of the exanthemata.

In every infant the subject of a joint affection suspected to be rheumatic, the heart naturally receives a good share of attention. Yet I know of nothing more difficult than the determination of an adventitious sound in the heart of these little patients. The overconfident diagnosis of cardiac murmur in these infants will often account for the good prognosis given by some clinicians to cardiac disease of infancy and later childhood. I refer to the ultimate disappearance of murmurs, or so-called cardiac dilatations. Error is easily made in these infants for many reasons: The restlessness of the patient, the great rapidity of the heart's action, the difficulty of distinct localization over the limited area of a small chest, sometimes distorted by the processes of rhachitis. I have not infrequently found adventitious sounds, heard at the base of the heart and also at the apex, disappear after a cessation of fever or a diminished rapidity of cardiac action. These murmurs, heard as I have heard them in the course of exanthemata, must be regarded as dynamic. Murmurs occurring with the first sound and disappearing after a few days, as above mentioned, I have always regarded as not referable to the endocardium.

It is imperative in all cases to wait for a slower cardiac action, or to reduce the number of heart-beats with artificial means (digitalis), before entering the diagnosis of endocardial complication. The nursing infant, we conclude, is not exempt from the liability to attacks of acute rheumatism. In these little patients endocarditis may be absent. This latter fact only strengthens the belief generally entertained by authors (Gerhardt), that the prognosis of rheumatism, good as it is in the adult, is still better in infancy and childhood.

In connection with the subject of rheumatoid affections in infants who are suffering from any disease due to the influences of the gonococcus or the micro-organisms of erysipelas (blennorrhœal ophthalmia or erysipelas), I desire to add the following:

A female infant, three months and a half old, nursing at the breast, was vaccinated on the left arm. The vaccine pustule, in active suppuration, was opened by a traumatism. Necrosis of tissue to an extreme degree followed, with a very red and angry-looking areola spreading toward the elbow on the extensor side of the arm, and with fever. On the day after the first visit the pustule was still suppurating, but the ulcer was cleaner. The child had very marked swelling of the left knee; it was twice as large as its fellow, red, and very painful to the touch, and when movements of the joint were made there seemed to be some effusion. The mother had noticed the swelling during the previous night. The knee was put up in an immobilizing splint, which was removed after two days, as the knee was smaller than at first. The joint was still painful, red, and of heightened temperature; the vaccine pustule was healing kindly, and the blush around its base was subsiding. The knee symptoms improved from this time onward, together with the vaccine pustule and ulceration; but at the present time (a week afterward) the joint is still painful.

Here we have a typical case of joint trouble due in great probability to infection of the structures of the joint by the micro-organisms playing the active destructive rôle about the vaccine lesion.

## ON SOME POINTS IN THE DIFFERENTIAL DIAGNOSIS OF CERTAIN EAR AFFECTIONS BY MEANS OF THE TUNING-FORK.*

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In the following paper it will be seen that I have in the main adhered to the general beliefs held by the profession regarding bone-conduction. Many exceptions, however, have been noted and suggestions made, which the reader may regard as, if not original, at least peculiar to the author. The somewhat fragmentary character of the paper results from the mode in which individual cases have been studied.

I purposely have avoided mention of the numerous kinds of tuning-fork, regarding them as complicating things unnecessarily for our present purpose. My own tuning-fork is of large size, being eight inches in length, having thick tines or prongs, and gives a strong vibration. I use no clamps; the pitch of this fork is A of the middle tenor register, and it vibrates something over four hundred to the second.

One important point I have tried to make—that of testing any given tuning-fork with the normal hearing, finding out what it is capable of doing.

I trust I am right in making the statement that the absolute or total bone-conduction, with the tuning-fork placed on the mastoid of a closed normal ear, is as great as can be found in any case of middle-ear disease, and greater than when labyrinthine disease is present. It will follow, then, that a comparison may thus be afforded as to whether any given ear has insufficient bone-conduction. These tests, of course, are to be made with the meatus closed.

As a rule, the bone-conduction will be perceived longer, as well as louder, on a depressed portion of the mastoid at its upper part, just behind the auricle. This may readily be found by experimentation; I have, however, recently observed an exception to this rule. A man with a chronic aural catarrh, with about two inches of watch-hearing in each ear, heard the voice in proportion and also the tuning-fork; on the middle line the bone-conduction was exactly the same for each ear. On the depressed portion of the mastoid, however, the bone-conduction was decidedly weaker. At first I was somewhat perturbed by this apparent anomaly, but, on moving the tuning-fork about on the mastoid, I found an *elevated* portion below in which the bone-conduction was the same as in the fellow-ear, and therefore no anomaly was present. In another case, where one ear (the left) was nearly normal, its fellow, affected with chronic catarrh, perceived the sound of the tuning-fork with very great distinctness and for a long time. When the tuning-fork was placed on the mastoid of the better ear, it was heard *only* in the defective ear—that is, when placed on the depressed portion of the mastoid, as before mentioned. This was regarded as a case where the comparative bone and aerial conduction could not be determined in this ear, for the obvious reason that no bone-conduction could be elicited in the better ear, on account of the very strong bone-conduction of the worse ear, which completely overpowered or virtually obliterated the perception of bone-conduction in the better ear. When the tuning-fork was placed also on the middle line of the skull, the same fact was elicited—to wit, that bone-conduction was perceived only on the defective side.

In this case the tuning-fork, placed on the central incisor teeth, on the glabella, in the center of the forehead, on the top of the head near its center (always on the central line), was heard better with the defective ear, but on passing this point the vibration was only heard by the better ear, except occasionally when a point was touched where the sound seemed to proceed from the point of contact of the tuning-fork. Again, on nearing the occipital eminence, and from that to the nape of the neck, the fork was heard again in the worse ear.

Another curious fact in this case was elicited which is not easily accounted for. On moving the tuning-fork about on the left mastoid, several spots were found where it was heard *only* by the ear of the same side—that is, the good ear. These points were somewhat toward the lower portion of the mastoid and very near the auricle. The same was true when the tuning-fork was placed in front of the auricle, just above the tragus.

The following case of old middle-ear disease in the right ear, with the left ear perfect, will further illustrate other difficulties in diagnosis:

Dr. X., aged thirty, has been hard of hearing in the right ear since he can remember; no tinnitus. He hears a watch $\frac{15''}{48''}$. Left ear normal. In determining his total bone-conduction, with

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both ears closed, the following facts appeared: With the tuning-fork on the teeth and on the center of the forehead, bone-conduction was about equally long in each ear, although he thought he heard it a little longer in the right or defective ear. When the tuning-fork was placed on the point of election on the mastoid, it seemed to be heard two seconds longer on the side of the good ear, but, on searching for another portion of the mastoid, there was found hardly any difference in the duration of the tone by either ear. I have previously expressed the conclusion that we were justified in finding the point on the mastoid which gave the best conduction. This case, of course, showed better bone-conduction on the right, with the ears open, and a disturbance in the relative bone and aerial conduction.

It would seem that there are exceptional facts enough to disturb our diagnostic conclusions unless we confine ourselves to the simplest tests, and refuse to raise questions of doubtful utility.

Other difficulties beset a reliable test for bone-conduction. One is the inability of many patients to distinguish between vibrations which are *felt* and those which are *heard*. Any part of the body susceptible of vibrating in unison with a tuning-fork of a given pitch will *feel* the vibration without having *heard* it. Few people who have heard a pipe-organ will fail to remember that, when some of the lower notes are sounded, a rumbling or a jarring sensation in some part of the body is experienced, which, of course, is not a matter of acoustic irritation, but one of general sensation.

A very interesting case coming under my observation further illustrates this point.

Mrs. F., aged twenty-two, had had an attack of basilar meningitis, or cerebro-spinal meningitis, according to her history, which had left her so near to total deafness that no hearing was elicited except by the tuning-fork placed over the left mastoid. From the general conduct of her case this was believed to be impossible, and the tuning-fork was applied to either elbow, when the patient insisted that she heard it distinctly. This, by aural surgeons generally, is regarded as a drawback in making correct observations, but, if the surgeon will take into consideration all the circumstances of the case and use a little ingenuity, a correct conclusion may usually be arrived at.

In regard to Politzer's statement that in a patient with one good or perfect ear and the fellow suffering from middle-ear disease, the tuning-fork on the central incisor teeth with both ears closed will be heard better on the side of the more perfect ear, I would state that the truthfulness of this depends on how far the middle-ear disease has progressed. In a given case of three inches watch-hearing in one ear with middle-ear disease, with its fellow having a hearing of $\frac{35''}{45''}$ by the watch, there was no perceptible difference in the bone-conduction with the tuning-fork on the incisor teeth, both ears being closed with the moistened finger. It is reasonably apparent that the utmost augmentation of bone-conduction consequent on middle-ear disease can not go beyond that of the normal ear when closed. Where the affected ear shows weaker bone-conduction than its perfect fellow (both being closed during the examination), it is reasonable to infer labyrinthine involvement, although even in this instance the affected ear may show superior bone-conduction when both ears are open. Hence this may be used as a point of differential diagnosis as to the commencement of any labyrinthine disturbance.

The example just cited where the bone-conduction was the same in each ear while closed, although one had only a few inches of watch-hearing, consequent on middle-ear disease, seems to show that the middle-ear mechanism has little or nothing to do with the conveyance of sonorous undulations to the labyrinth by bone-conduction, for with the ears in a state of closure it is evident enough that the considerable impairment of the middle-ear mechanism of the defective ear did not hinder the transmissions of vibrations, as one had as good conduction as the other.

Although in a general way we can but admit that augmented bone-conduction with diminished aerial conduction is a universal characteristic of middle-ear disease, we are confronted with the question: How long does this augmented bone-conduction continue to exhibit itself? It is apparent enough that in course of time, if the hearing becomes greatly lowered, the bone-conduction is likely to become weaker than in an earlier stage of the disease. At this point I am ready to believe that labyrinthine involvement has already commenced. I believe this class of cases belongs to the "mixed" order—that is, middle-ear disease with secondary labyrinthine complication. Within the last two years I have changed my mode of teaching bone-conduction at the New York Polyclinic. Whereas formerly I gave as the characteristic feature of labyrinthine disease the weakening of bone-conduction with a similar weakening of aerial conduction, while in middle-ear disease the bone-conduction was augmented and the aerial conduction diminished, and the general proposition was evolved that in middle-ear disease the *relation* between bone and aerial conduction was disturbed—that is, the bone-conduction was relatively too long and the aerial conduction was too short, while in labyrinthine disease this disturbance in the *relative* bone and aerial conduction did not exist, or at least to no considerable degree—at present I am still adhering to the old notion about the augmented bone-conduction in middle-ear disease, but in labyrinthine disease the old proposition must to some extent be departed from, and I am now laying down the basal proposition that in middle-ear disease there is augmented bone-conduction and in labyrinthine disease weakened bone-conduction (the ears remaining open during the test). I believe it to be utterly impossible to distinguish between certain cases of middle-ear disease and disease of the labyrinth alone by the tuning-fork; witness the case of undoubted Ménière's disease and one of old middle-ear disease with labyrinthine complication about to be reported where the bone conduction was about five seconds in each, with one or two seconds of aerial conduction. Perhaps this explanation may be made: there was labyrinthine disease in each, but in one there was *only* disease of the labyrinth. This distinction was not made by the tuning-fork, but by the history of the case. These cases also point conclusively to the proposition that the faulty condition of the middle-ear mechanism does not, at least in some cases, materially diminish bone-conduction, as has

sometimes been inferred in cases of intermittent bone-conduction.

In estimating the relative length of bone and aerial conduction, it is well to remember that the bone-conduction in the normal ear is to the aerial about as one to two; in disease of the middle ear, as one to less than two, or it may be even much more than the aerial; and in labyrinthine disease it may be in the normal ratio, or be even greater, *but seldom less.* This enables us to enunciate the proposition that the bone-conduction is rarely or never less than in at least normal proportion to the aerial, unless we except a very few cases where slight aerial conduction may be elicited with absolutely no perceptible bone-conduction. Naturally no accurate relation in such cases could be determined.

I am led to these observations by a recent clinical experience. A patient was asserted to have had seventeen seconds of aerial conduction and no bone-conduction whatever. The watch was heard pressed upon the auricle, the snapping of the finger-nails could be heard nearly three feet, and the voice in proportion. The observation made with the tuning-fork was faulty, because seventeen seconds with the ear unstopped was above that of the normal, and the absence of all bone-conduction was plainly an impossibility. This statement is partly based on the proposition that no known diseased condition of the ear is competent to aid the passage of sonorous impressions to the acusticus while the ears are artificially stopped. It was admitted in this case that the nerve was active.

At the New York Polyclinic last winter I had a perfectly characteristic case of Ménière's disease in a young woman. Suddenly she was attacked with vertigo and nausea, accompanied by tinnitus and deafness in the left ear. This deafness and tinnitus have continued until the present time without any diminution whatever. By aerial conduction the tuning-fork is often not heard at all or only for three or four seconds, while the bone-conduction at the point of election on the mastoid is fully five seconds in duration. This observation was repeatedly made with great care, and each time it was confirmed. The other ear was nearly perfect.

At about the same time I had an elderly subject with chronic middle-ear catarrh of many years' duration, with few subjective symptoms pointing to labyrinthine complications. The tinnitus was far from being constant or even troublesome, hardly a single Ménière symptom was present, and nothing but the profound deafness suggested a suspicion of labyrinthine complications. In spite of this, the patient's conduct under tuning-fork observations was almost identical with that in the case just narrated—that is, the bone-conduction was much weakened, the tuning-fork being heard on the mastoid five seconds, and the aerial conduction was one or two seconds. It has been variously stated by otologists that in the normal ear the bone-conduction was to the aerial as one to two and a half or three or three and a half. In a considerable number of observations made on the persons of medical men at the New York Polyclinic, I have been surprised to find that the proportion was much greater for bone-conduction than has generally been stated. In ears so far approaching the normal as to appear from an examination of ordinary care to be absolutely perfect, the fact appeared that the tuning-fork placed on the mastoid would be heard for ten or twelve seconds, and in the ear only from eight to ten seconds longer, making the aerial conduction hardly of twice the length of the bone-conduction.

It seems to me to be a matter of great importance for every man to test his own tuning-fork on a normal ear, as I believe no two tuning-forks, even of the same size and pitch, are alike in power. Moreover, after a while a tuning-fork loses power and needs to be repeatedly tested on a normal ear to note its condition.

It seems to the writer that we have a standard test for bone-conduction in the closed or stopped-up meatus of a normal ear, the tuning-fork being placed on the mastoid bone as heretofore described. Whatever occult explanation we may give of augmented bone-conduction, consequent on middle-ear disease, it must in all probability be relegated to the same category as augmented bone-conduction resulting from closure of the meatus. This being admitted, we readily infer that a normal ear in this condition is possessed of the greatest amount of bone-conduction, and any diseased condition of the ear affecting the labyrinth is bound to lower the total or absolute bone-conduction, the moistened finger being placed in the meatus of such an ear during the test. In pure middle-ear disease it will be found that the so-called augmented bone-conduction is in reality not in a state of increment, as may readily be proved by closing the meatus during the test, when the length of time which the tuning-fork is heard will at least not be longer than that of the normal ear.

To make the test perfect, every conceivable audible sound should be offered as a test; but this would manifestly be impracticable.

The following case will illustrate the diagnostic value of the method by closing both ears:

Agnes F., aged twenty-one, had complained of deafness in the left ear for three months—since the completion of a sea-voyage from Liverpool. There was no seasickness, and no Ménière symptoms were observed; never even tinnitus. The membranes had both lost the light reflexes and had the appearance of chronic aural catarrh. The state of hearing could not be accurately determined by inspection of the drum-membranes. H. D. R. w. o., n. (snapping of finger-nails) 3″, after inflation 5″; L. so nearly normal that a more exhaustive test was deemed unnecessary. The tuning-fork on the central teeth was heard equally long by either ear. In the left with the tuning-fork at the point of election on the mastoid—that is, where most resonance could be elicited—it was heard 8 seconds, and by aerial conduction 15 seconds, which I regarded as normal. In the right ear aerial conduction was only 4 seconds, and bone-conduction 6 seconds; with both ears tightly closed the bone-conduction on the mastoids was, right, 10 seconds, and left, 15 seconds.

This seems to me a case of middle-ear disease with secondary labyrinthine changes, shown by, first, the superiority of bone-conduction over aerial, with absence of any Ménière symptoms or any constitutional condition which might cause labyrinthine disease; and, second, these evidences of labyrinthine trouble; bone-conduction the same in either ear when the tuning-fork was placed on the teeth; absolute bone-conduction (taken when the ear is closed, on

the mastoid) weaker than in the normal fellow. The history seemed to point to a somewhat sudden onset of the disease, but this I believe not to be true, as it is perfectly easy for a patient to become even totally deaf in one ear without being aware of it, at least for a time. Another point making it seem more like a labyrinthine case was the perfect fellow-ear, which is such an infrequent occurrence in middle-ear disease.

I believe that for the most part the faulty state of the middle ear has comparatively little to do in the prevention of the passage of sonorous undulations to the labyrinth. The fact that the tuning-fork is heard as well in the defective ear with tympanal disease, while closed, as in the perfect fellow, also closed, seems to prove this; also the case of Ménière's disease with no middle-ear trouble at all, contrasted with the very old case of middle-ear disease before mentioned, where the bone-conduction was the same in each. It was manifest enough that the great deafness in the one was largely due to middle-ear disease, while in the other it was not due to middle-ear disease at all.

The case of a physician, a highly intelligent man, in whom an error of observation was unlikely to take place, seems to prove that so-called intermittent bone-conduction does exist.

J. D. S., aged thirty-four, had had catarrh of the left middle ear with tinnitus for six or seven years. H. D. Rt. normal, or nearly so; H. D. L. w. 13″, after inflation 36″. Before inflation the tuning fork on the mastoid was heard, respectively, 12 seconds and 13 seconds, in two examinations. After inflation the same tuning-fork, with about the same state of vibration as before, was heard on the mastoid for 17 seconds, 20 seconds, and 22 seconds, on three successive examinations.

In cases of intermittent bone-conduction like the one already quoted there is some difficulty in explaining the phenomenon; why the bone-conduction is not always augmented by means used to relieve pressure on the labyrinth, as, for instance, pushing out a sunken drum-membrane by inflation, does not appear. If pressure is the sole cause of the deafness in such cases, it would seem that relief of pressure should place the nerve in better condition to appreciate bone-conduction, as the aerial conduction has been improved. On the other hand, if the cause of the deafness exists in the badly vibrating middle-ear mechanism due to the crowding together of the ossicles, placing the membrana tympani on the stretch, then the improved bone-conduction resulting from inflation should be constant, which is very far from being the case. In this instance we adopt the theory that bone-conduction is improved or diminished by the good or bad vibratory condition of the middle-ear mechanism. Neither of these theories seems to be tenable. It may be worthy of remark that, from a theoretical point of view, we might expect weakened bone-conduction in every case of lowered hearing from any cause whatever.

It is not in the least a matter of wonder that changes result in cases of tolerably pure middle-ear disease, which produce disturbances in the function of the acusticus, and consequently give the tuning-fork reaction of labyrinthine disease. In any case of permanent impaction of the stapes in the oval window consequent on middle-ear disease there must needs be pressure on the perilymph. Thickening of the membrane of the round window will accomplish the same thing, but in a less degree.

In syphilitic middle-ear disease we are likely to have similar conditions, only greatly exaggerated, the tendency to inflammatory proliferation, as is well known, being much stronger than in non-specific cases, and the structural changes will be proportionately greater. It may also account for the prompt improvement in hearing under a rapid course of mercury. It is by no means denied, however, that the more usual syphilitic lesions are for the most part labyrinthine. All of these conditions are likely, but are not certain, to result in weakened bone-conduction, and add the element of labyrinthine disease to the middle-ear affection.

*Summary.*—I conclude that the greatest amount of bone-conduction proceeds from a normal ear closed, and that the principal diagnostic sign of labyrinthine disease appears in weakened bone-conduction.

That the apparent increase of bone-conduction in middle-ear disease will disappear when the test is made with the ear closed, when it will be found not to exceed that of the normal ear. In those cases called "mixed" the bone-conduction will be found weakened when the test is made with the ear closed, although with both ears open the affected one may have better bone-conduction than its fellow.

That, so far, it seems that the good or bad condition of the middle-ear mechanism has little influence on bone-conduction.

That the occasional phenomenon of intermittent bone-conduction can not be satisfactorily explained.

That cases of pure labyrinthine disease can not always be distinguished from those of middle-ear affections with secondary labyrinthine changes by the tuning-fork, and that the history of the cases must materially aid us in the distinction.

That the phenomenon of secondary labyrinthine changes in middle-ear diseases is easily explainable.

That there are numerous exceptions to the rules for finding the best points on the head for eliciting bone-conduction.

That the bone-conduction is rarely or never of less than its proper ratio to aerial conduction.

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## AN EXAMINATION OF THE EYES OF FIFTY CASES OF CHOREA OF CHILDHOOD.

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The cases of chorea from which this study has been made have for the most part been those of patients in attendance at the clinics of Dr. S. Weir Mitchell, Dr. Wharton Sinkler, and Dr. William Osler in the Infirmary for Nervous Diseases. Certain results which should naturally be the outcome of the examinations which follow are not set down, because sufficient time has not yet elapsed to render this possible. The following points have received special attention: The chromatic symmetry or asymmetry of the irides, the devel-

opment of the face, the condition of the pupils, the acuity of vision, the amplitude of accommodation, the sufficiency or non-sufficiency of the external eye muscles, the state of the refraction, and the appearances of the fundus. A word in regard to the manner in which the cases were studied. Each patient was placed opposite a window and the color of the iris noted, and whether this was alike in each eye or whether differences in color, shade, or tone could be detected. In the same way the two sides of the face and the development of each orbit were noted. The diameter of the pupils was measured facing a clear sky, and the hour was always the same—between 1 and 2 P. M. For this purpose Randall's pupilometer was employed. The acuity of vision was determined under a uniform illumination at a distance of five metres with Oliver's test-types, each eye, of course, being tried separately. The accommodation was tested with D = 0·5 of Snellen's type and the nearest point of perfectly sharp vision recorded. The muscular relations were studied in the manner especially elaborated by Dr. G. T. Stevens * and the surgeons who have followed his methods. Great care was exercised to have an accurately adjusted trial-frame in which the prisms were set. The object looked at was a point of light against a dark background, placed five metres from the patient. At 30 ctm. or the reading distance the test of v. Graefe was employed, but not the usual coarse dot and line figured in the text-books, but a very fine dot and line, demanding accurate accommodation at the distance employed.

The ophthalmoscopic investigations were all made in the dark room of the infirmary, have in each case been repeated a number of times, and have all been done by the writer himself with Loring's instrument. In a certain number of the cases, twelve in all, a mydriatic correction was made, and hence the findings are accurate. In the others the refraction was measured as nearly as possible in the axis of the eyes. Retinoscopy was often employed as a control test. Fully aware that with complete paralysis of accommodation only can the true refraction of the eye be determined, I am none the less convinced that the findings are reasonably accurate. In this connection I am induced to quote a sentence, which exactly coincides with my own view and experience, from Dr. Randall's paper on "A Study of the Eyes of Medical Students" †: "The newer ophthalmoscope of Loring is probably the most perfect instrument in existence for the measurement of refraction; and more than five years' incessant use of it under all circumstances has given the writer a confidence in its readings that work with atropinized eyes and the artificial eye does not show to be overweening. Yet any concealment of its fallibility would be utterly unjust and would tend to weaken the fair claim that this method is the one which, in the absence of complete paralysis of the accommodation, will most frequently approximate accuracy." The ordinary details of the fundus and media of each eye were studied; the appearance of the discs; the absence or presence of the so-called *conus*; the state of the blood-vessels and lymph-sheaths; and the aspect of the retina and chorioid.

Of the fifty patients * examined, ten were males and forty females, or one male to four females. The youngest was a child seven years of age and the oldest twenty-eight. Twelve were under ten years of age, nineteen between ten and fifteen, fifteen between fifteen and twenty, and four twenty years and over. In twenty-five, or 50 per cent. of the cases, the irides were equal in color and shade; in the remaining twenty-five, or 50 per cent., there were differences in shade or tone. In one of these twenty-five only was there any true asymmetry of color. This is interesting in connection with the investigations of Ch. Féré.† This observer found asymmetry of color when not dependent on local conditions a very rare symptom. In over six hundred subjects only seven instances were found, and these were imbecile, hysterical, or epileptic. Asymmetry of tone or shade was not rare, especially among the neurotic. In epileptics 26·7 per cent. had this symptom, 62 out of 76 hysterical patients; in choreic patients, those with obstinate facial neuralgia and with sciatica, chromatic asymmetry was observed. When this symptom occurred in the children of the hysterical, Féré believed it was a sign of neurotic tendencies and called for prophylactic treatment. The pupils were of equal size and shape in thirty-nine, or 78 per cent. of the cases, and unequal in eleven, or 22 per cent. of them. The smallest diameter was 2 mm., the largest 6 mm., while the average size of the entire series was 3·39 mm. In twenty-five, or 50 per cent., of the patients the development of the two sides of the face, of the two orbits, and the general appearances of the eyes and their appendages, appeared symmetrical, while in the remaining twenty-five, or 50 per cent., distinct asymmetry in these respects was readily noticeable.

It is well known that the pupils, other things being equal, are larger in young people, while they become smaller and lose both in range and rapidity with advancing years. It is also stated that widely dilated pupils, which react feebly to light, are frequently a feature in cases of chorea (Dr. G. T. Stevens, *op. cit.*, p. 90). Hence it is interesting to observe that in this series the pupillary diameter ranged from 2 mm. to 6 mm., and the average size was only 3·39 mm. While it is true that marked inequality of the pupils is uncommon, except from disease or highly different refraction in the two eyes, it is also true that mere differences in the size of the pupils are in no way necessarily a sign of disease. Thus, Iwanow ("The Question of Inequality of the Pupils in Healthy People," "Wratsch," No. 7, 1887, abst. in the "Archiv. f. Ophthalmolog.," Dec., 1887, p. 463) found, in his observations on one hundred and thirty-four healthy young military recruits, equal width of pupil in only twelve. The right pupil was larger in forty-nine, and the left in seventy-

* "Functional Nervous Diseases, their Causes and their Treatment," by G. T. Stevens, M. D., 1887, p. 194 *et seq.*

† "A Study of the Eyes of Medical Students," by Alexander V. Randall, M. D. "Trans. of the State Med. Soc. Penn.," 1885.

* A considerably greater number than this has been examined, but only fifty are recorded, because in these instances the examinations were many times and carefully repeated. The results of the examinations were condensed in tables, but space is lacking to allow of their publication.

† "Chromatic Asymmetry of the Iris, a Symptom of Neurosis." "Le Progrès médical," September 25, 1885. Abst. in the "Med. News," December 11, 1886.

three. As Landolt has said ("Examination of the Eyes," trans. by S. M. Burnett, 1879), a lack of symmetry in the face, one half being flatter than the other, would lead us to suspect anisometropia, and all forms of asymmetry of the cranium can cause astigmatism. Individuals with such conformation of features are frequently astigmatic, sometimes anisometropic, the refraction being stronger on the side which is the more fully developed—this eye being myopic or emmetropic, while the other, as a rule, is hypermetropic. Distinct asymmetry existed in 50 per cent. of the cases under consideration; indeed, the proportion was probably higher, as only such cases in which this was readily visible were so classified, and no accurate measures were taken.* Again, however, mere asymmetry of the face must not be looked upon as necessarily a symptom of a diseased state, especillay a neuropathic tendency. In Iwanow's series (*loc. cit.*) the face was asymmetrical in one hundred and thirty-one of them, the left being larger in ninety-nine, and the right in thirty-two.

Full acuity of vision—*i. e.*, $\frac{5}{5}$—was present in both eyes in only ten of the cases; in four of them there was normal sharpness of sight in one eye and not the other, while in thirty-two the vision of each eye was less than normal. In four of the cases it was not possible to record this. In no single instance where it was measured was the amplitude of accommodation equal to the normal standard for the age of the patient.

The state of the refraction in these cases of chorea was the following:

Hypermetropia in twenty-three, or 46 per cent.; hypermetropia in one eye and hypermetropic astigmatism in the other in seven, or 14 per cent.; hypermetropic astigmatism in twelve, or 24 per cent.; myopia in one, or 2 per cent.; myopic astigmatism in three, or 6 per cent.; mixed astigmatism in four, or 8 per cent. In no single instance was a refraction error of less than 1 D found.

As long ago as 1876 Dr. George T. Stevens was attracted by the frequent occurrence of hypermetropia in the eyes of choreic children, and in a paper before the New York Academy of Medicine ("Chorea: its Cause and Treatment," G. T. Stevens, M. D., "Trans. of the N. Y. Academy of Medicine," sec. series, vol. ii, 1876) announced the following proposition: "Chorea is a functional disturbance of the nervous system, which may give rise to organic lesions, and which arises from irritation dependent upon anomalous refraction of the eye, and in a very large proportion of the cases to hypermetropia." In this paper thirty-three cases of chorea are discussed, in which the refraction of the eyes was as follows: Hypermetropia in twenty-four cases, hypermetropic astigmatism in four cases, myopic astigmatism in four cases, unequal myopia in one case.

In the hands of Dr. Stevens the correction of these anomalies of refraction produced excellent results in the curing of the nervous disorder.

About a year later Dr. C. S. Bull analyzed thirty-one cases of chorea with reference to this question, and arrived at very different results ("The Connection between Chorea and Errors of Refraction," C. S. Bull, M. D., "Med. Rec.," May 26, 1877). Of his patients, fifteen were emmetropic; two were emmetropic in one eye and hypermetropic in the other; eight were hypermetropic of the same degree in each eye; two were hypermetropic of unequal degrees in the two eyes; two were simple hypermetropic astigmatism of the same degree in two eyes; one was hypermetropic in one and simple hypermetropic astigmatism in the other; and one was simple hypermetropic astigmatism in one eye and compound hypermetropic astigmatism in the other. This result, emmetropia in fifteen out of thirty-one cases, is unusual, but must be accepted as correct, as Dr. Bull's patients were examined under atropine. Again, Dr. Ranney ("N. Y. Med. Journal," Jan. 14, 1888), speaking of chorea, says: "I have not found a single case where either manifest or latent hypermetropia did not exist." The writer is certainly in accord with this statement—at least in accord with a statement that anomalies of refraction, in his experience, have always existed, a single case excepted. Dr. G. T. Stevens further classifies in his work on "Functional Nervous Diseases," p. 91, 113 cases of chorea, according to the refraction, as follows: Simple hypermetropia existed in 78; hypermetropic astigmatism in 13; mixed astigmatism in 5; myopia, unequal in the two eyes, in 6; myopic astigmatism in 11.

Adding these various examinations together, we have 227 cases of chorea, of which 212 were ametropic and 15 emmetropic. Of the ametropic cases, hypermetropia or hypermetropic astigmatism was found in 177, or 77·9 per cent.; myopia, or myopic astigmatism, in 26, or 11·5 per cent., and mixed astigmatism in 9, or 3·9 per cent. The remaining 15, or 6·7 per cent., were emmetropic.* This high percentage of refraction error, especially of hypermetropia and hypermetropic astigmatism, among choreic children is certainly suggestive. It may be interesting to compare these results with the prevailing refraction in children's eyes. To do this, it is only necessary to turn to that most praiseworthy paper by Dr. Randall, "The Refraction of the Human Eye" ("Amer. Jour. of the Med. Sci.," July, 1885), where we find in conclusion No. 2 the following: "Hypermetropia is the enormously preponderating condition in infancy and early childhood, and the first years of school life witness little reduction in its proportion. . . . It was found in 91·26 per cent. of the eyes of infants examined, in 81·75 per cent. of the eyes of young children, and in *76 per cent.* of the 3,358 eyes of children in the elementary school years. So, also, in the higher schools, it constituted at least 56 per cent. of the whole number of eyes studied." Further comment on this point would seem needless, except to point out the singularly close correspondence in the percentage of hypermetropic refraction in the eyes of children in the elementary school years to the percentage of hypermetropia and hypermetropic astigmatism in the eyes of choreic children.

* The relation of this asymmetry to the state of the refraction has not been worked out.

* It is not evident whether the 113 cases classified in Dr. Stevens's book include the 33 cases in his original paper or not. If they do, then we have 194 patients in all, of which 149, or 76·7 per cent., had hypermetropia or hypermetropic astigmatism as the existing refraction error. All of the emmetropes were found in Dr. Bull's series.

An imperfect equilibrium of the eye muscles was found in every case examined. In a few instances strabismus was present, while in the remainder some form of insufficiency of the ocular muscles was always manifest. Inasmuch as the terms introduced by Dr. Stevens are convenient, they have been employed to designate the muscular defects, which were as follows: Exophoria alone in sixteen, or 32 per cent., of the cases; esophoria alone in thirteen, or 26 per cent., of the cases; hyperphoria alone in one, or 2 per cent., of the cases; exophoria with hyperphoria in six, or 12 per cent., of the cases; esophoria with hyperphoria in five, or 10 per cent., of the cases; exophoria in accommodation, with esophoria and hyperphoria for the distant point in one, or 2 per cent., of the cases; convergent strabismus in six, or 12 per cent., of the cases; divergent strabismus in two, or 4 per cent., of the cases.

It should be remembered that these were the manifest muscular errors, and have no reference to insufficiencies which may have been latent. It must equally be remembered that, inasmuch as the refraction error was corrected in only a part of these patients, the precaution to examine for muscular defects through the correcting glasses could not nearly always be exercised. What modifying tendency such correction would have had upon the results can only be surmised. In Dr. Bull's series of thirty-one cases (*loc. cit.*) insufficiency of the interni existed in twenty-three. In a considerable number of Dr. Stevens's cases (*loc. cit.*; the percentage is not given) more or less muscular disability was found, and insufficiency of the lateral recti muscles was found in five unassociated with any marked degree of refraction error. The presence of imperfect equipoise of the eye muscles in cases of functional nervous disease, and the belief in some minds that this may be the cause of the disorder, is too well known to need further repetition here. Before deciding the significance of the relation of the high percentage of insufficiency of the ocular muscles in cases of chorea, it may be well to note for a moment its percentage in the eyes of young people generally. In Risley's admirable statistical paper, "Weak Eyes in the Public Schools of Philadelphia" ("Trans. of the State Med. Soc. of Pennsylvania," vol. xiii, 1881), among 554 children of an age ranging from twelve to twenty, and of an average age of seventeen years and one third, insufficiency of the interni was found in 37·2 per cent. Touching this point, Beselin* has reached some noteworthy results by the examination of 530 cases, of which 363 were Em., 116 H., and 51 M. All having a refraction error of 1 D. or less are called Em. Equipoise in this particular was found in only 140 = 38·5 per cent. of the Em., in 32 = 27·6 per cent. of the H., and in 12 = 23·5 per cent. of the M. Insufficiency of the interni with tendency to divergence for far or for near, or for both, was met in 155 = 42·7 per cent. of the Em., in 52 = 44·8 per cent. of H., and 32 = 62·7 per cent. of M. The contrary condition, with excess of convergence for near or far, was found in Em. 34 = 9·1 per cent., H. 27 = 23·2, and M. 1 = 2 per cent. There were further 2 H. and 1 Em. with divergence for distance and excess of convergence for the near, while of the contrary condition, excessive convergence for distinct and insufficient for near was met in 33 = 9 per cent. Em., 3 = 2·5 per cent. H., and 6 = 11·4 per cent. M. The tests used were a candle-flame for distance and a white Graefe test for the near.

Further comment here is needless, except to point out the large percentage of muscular errors which occur among children who are not and have not been choreic. It is perfectly proper to note that in these school investigations the tests for hyperphoria were apparently not made, and it is to this defect that special attention has recently been drawn.

In regard to the fundus details and the condition of the media, the following points were observed:

In two instances opacities of the media (cornea and vitreous body) were observed. These, of course, bear no reference to the disease. In two, coarse changes in the chorioid were found (atrophic retino-chorioiditis and disseminated chorioiditis), bearing also probably no reference to the chorea. In one case there was slight but evident optic neuritis; suspicion, however, was not lacking that this child had also a brain tumor, although Gowers has several times observed optic neuritis associated with chorea. In one case the discs were greenish and of diminished capillarity, the eyes distinctly amblyopic without corresponding refraction error, but the vessels were unchanged in size. Atrophy of the optic nerve following chorea has been described by William G. Syme*; both sets of vessels were very small, and the trouble was probably due to a former embolus plugging the retinal artery. A similar case is on record by Förster, and Swanzy has seen embolism of the central artery of the retina at the commencement of the attack. Argyll Robertson observed atrophy of one optic disc follow a severe attack of chorea in a young woman. While in the remainder of the cases no perfectly typical, healthy fundus was found, the changes were such as were entirely compatible with systemic health. Quite universally one or another form of conus was present; the veins were frequently distended, often markedly tortuous; coarse retinal striation was quite generally to be found, and the chorioids presented changes ranging from mere woolliness or absorbing interspaces to epithelial chorioiditis. Usually both arterial and venous lymph-sheaths were distended, and many lymph-reflexes were a common feature. In other words, the changes, sometimes slight, sometimes amounting to decided accommodative retinitis and retino-chorioidal disturbances, were such as should be reasonably expected in young, often asthenopic, eyes, suffering, in most instances, with decided errors of refraction. It was, in short, not possible to observe in this series any fundus change that was in any way characteristic of the disease chorea.

The following conclusions seem justifiable:

1. The irides of choreic children quite commonly present chromatic asymmetry in shade, just as the same condition has been found in other forms of nervous disorders.

2. Slight differences in the width of the pupils may be

* "Untersuchen über Refraction und Grundlinie der Augen und über die dynamischen Verhältnisse der lateral wirkenden Augen-Muskeln an Mädchen von 5–18 Jahren," von Dr. Otto Beselin, "Archiv f. Augenheilkunde," Bd. xiv, zweiter Heft, August, 1884, p. 132.

* "Edinburgh Med. Jour.," March, 1888.

observed, but not more frequently—in fact, not as frequently—as these have been noted in perfectly healthy individuals.

3. Facial asymmetry is present in about one half of the cases, just as this is present in cases of high refractive error, and also in individuals perfectly free from nervous disorders.

4. Hypermetropia and hypermetropic astigmatism are vastly the preponderating conditions of refraction in the eyes of choreic children, being found in about 77 per cent. of the cases, exactly as hypermetropic refraction is the preponderating condition in childhood generally, being found in 76 per cent. of the eyes of children in the elementary school years.

5. Imperfect equipoise of the eye muscles is found in the great majority of the cases, but imperfect equipoise of the eye muscles is very frequently present in the eyes of school-children free from chorea or neuropathic tendencies.

6. Embolism, atrophy of the disc, and optic neuritis may occur during or after attacks of chorea, but appearances in the fundus oculi characteristic of the disease have not been found.

7. As Octavius Sturges remarks: "It seems certain that a fairly constant proportion of chorea is directly connected with what may be called injudicious schooling, . . . but such nice adjustment as shall prevent overstrain on the one hand and overindulgence on the other is practically unattainable." Certainly an endeavor to lessen the overstrain of the eyes should be made. Hence the refraction errors and muscular defects in these children should be carefully and fully corrected by glasses, by prisms when necessary, or even by judicious surgical interference, and thus a probable exciting element removed; just as we should perform the same service for eyes similarly afflicted in children who are not choreic; just as we should improve the hygiene, remove the anæmia, treat the disabled circulatory apparatus in children who are choreic. Evidence, however, seems quite as lacking that hypermetropic refraction is the basal cause of chorea as it is that the chorea is the cause of the hypermetropia.

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## SARCOMA OF THE TONGUE CURED BY OPERATION.

By GEORGE D. BLEYTHING, M. D.

C. S., aged seventeen, born in New York, of German-American and West Indian ancestry, on May 6, 1882, first called my attention to a painful "ulcer" of his tongue. Upon examination, there was found on the border and half an inch to the right of the tip of the tongue a group of granulations slightly elevated above the surrounding tissues. The diameter of the growth was that of a small pea, and there was slight induration of its base. The patient attributed its origin to the irritation produced by a broken tooth, which had since been drawn, in the hope of curing the "ulcer." Cigarette-smoking was supposed to have added to the irritation. An application of nitrate of silver was made at this time, and an astringent wash ordered to be used several times daily. Cigarette-smoking was prohibited.

*May 8th.*—The base of the ulcer was slightly increased in diameter, and the granulations showed no good effect from the cautery. The treatment was, however, continued, together with the administration of tonics.

*11th.*—The granulations were removed with scissors, and the base was thoroughly cauterized with nitrate of silver. This treatment was repeated on May 15th.

*26th.*—As repeated removal and cauterization had not retarded the progress of the growth, it was thought best to leave it for one week undisturbed, in order to obtain for microscopical examination a specimen unchanged by the topical applications. The diameter of the group of granulations had now somewhat increased and the base was more indurated. The granulations were more luxuriant and of a whitish hue, and bled profusely when cut.

About June 1st a cutting was made by Dr. W. P. Northrup, for microscopical examination, and submitted to Dr. Francis Delafield. After some hesitation between simple granulation tissue and sarcoma, the report was returned "round-celled sarcoma," Dr. Delafield adding a grave prognosis.

An operation for the removal of the cancerous growth was performed on June 29th, in which the writer was assisted by Dr. W. P. Northrup and Dr. W. T. Alexander. After etherization the patient's tongue was drawn forward by a strong loop of silk passed through the unruly member. Pressure was made by the thumb and finger in a line parallel to the proposed incisions, on one side by the operator, and on the other side by an assistant. Hæmorrhage was thus controlled during the first step of the operation. With a stout pair of scissors the tongue was now divided exactly in the line of the median rhaphe by an incision an inch and a quarter in length. This was joined at an angle of a little more than 45° by a second incision, which removed a triangular section of the tongue, the third side of which triangle was the free border of tongue with the sarcomatous growth. Very little hæmorrhage followed the operation—much less than was occasioned by the removal of the cutting for the microscope. Two or three ligatures were applied, and the cut surfaces of the tongue were drawn together by silk sutures.

*June 30th.*—The tongue was swollen, and considerable difficulty was experienced by the patient in swallowing. Fluid nourishment was supplied through a tube, and speaking strictly prohibited.

Healing progressed satisfactorily, and in a week all the sutures were removed and all the ligatures but one had separated. The wound healed by first intention, except at the inner extremity on the under surface of the tongue. This point gradually closed by granulation, covering in one ligature, whose location can still be traced.

Upon complete recovery, no change in the patient's speech could be perceived, and no deformity of the tongue was apparent.

At the present time nearly six years have elapsed since the removal of this sarcoma of the tongue. The whilom patient is a strongly developed, athletic fellow, an expert swimmer, and a champion runner and oarsman. His tongue shows no extraordinary appearance, except that the median rhaphe is, at half an inch from the tip, diverted from a straight line and toward the right side. The border of the tongue shows no irregularity of outline.

Cuttings were made of the portion of tongue removed, and were examined successively by Dr. Northrup, Dr. Delafield, and Dr. Prudden. Areas of grouped cells were found throughout, showing new areas of infection, and gorged vessels illustrating the method of the spreading of sarcoma, which is not necessarily by continuous infection.

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## THE ITCH AS A CURE FOR MELANCHOLY.

In a recent number of "Lyon médical" the well-known Lyons surgeon, Dr. Daniel Mollière, gives the substance of an account of a curious therapeutical experiment carried out in Berlin, by Dr. Mutzell, in the year 1761. A man, twenty-eight years old, of rather a melancholic temperament, being weighed down by his father's poverty and his sisters' unconventional behavior, gave himself up to a profound melancholy. His mind was incessantly troubled with disagreeable reflections, and he wholly neglected his work, became obstinately silent, and wore a ferocious look—all of which occurrences led his friends to resort to charlatans. But they were of no use, and the man went on from bad to worse; his skin grew yellowish and his whole body excessively thin. In this state he was taken to the Royal Hospital in Berlin, where he lapsed into a sort of torpor from which it was difficult to rouse him by means of threats, the lash, pricking with needles, and the like. He ate only when urgently pressed to do so, and would go for four or five days without asking for food, remaining motionless, with his eyes cast down, paying no attention to questions, and with a slow and feeble pulse.

He remained in this state for two years, during which period Dr. Mutzell vainly tried all the resources of the therapeutics of the period—bloodletting, volatile salts, camphor, essential oils, blisters, and all the most irritating measures had no effect on the man. Twenty-five grains of tartar emetic made him vomit only once; plunged into cold water and held submerged until he was nearly suffocated, he became a little agitated; drops of ice-water let fall perpendicularly on to his shaved head caused him to utter a few complaints; but, whenever they stopped tormenting him, he relapsed into a sort of lethargy. Dr. Mutzell then bethought himself of the Hippocratic saying that great evils called for heroic remedies, and it occurred to him to inoculate the patient with the itch—no trivial matter in those days, when the itch was thought to be a constitutional, hereditary disease involving a liability to numberless accidents, and not, as we now know it to be, the work of an insect capable of being destroyed in the course of a few days. Deep incisions were made into the man's arms and legs; they were then filled with matter pressed out of itch pustules, and closed tight with bandages. On the second day after this operation the patient's pulse began to be excited, on the third day fever supervened, and on the fourth day the pulse beat with prodigious rapidity, and kept on doing so for six days, the man suffering with restlessness, anxiety, frequent sighing, and embarrassed breathing. On the seventh day the fever abated, sweating followed, and red pustules presently appeared on the skin. On the ninth day the man's speech and reason returned, and he declared that he had neither seen nor heard anything during the whole of his stay in the hospital, from which he now departed completely restored.

This man's case was made the subject of an essay by Dr. Toggenburger, who thus summed up: "Sadness and sorrow relax and enfeeble the nerves and all the solids; consequently they make a less decided impression on the contained fluids. The movement of the fluids being retarded, the animal spirits are prevented from circulating with sufficient rapidity; hence the torpor, the insensibility, the sluggish pulse, the lack of appetite, the pallor, and the leanness observed in this man. To cure him, therefore, it was necessary to strengthen the solids, restore vigor to the nerves, and renew the movement of the animal spirits. The remedies at first employed could not penetrate to the seat of the disease; something more active was needed, subtle enough to insinuate itself into the smallest vessels. The scabious matter produced this effect. Introduced by inoculation, its parts developed and gained the heart; the heart, irritated and highly compressed, accelerated the circulation of the blood and excited fever; the blood, roused by the violence of the fever, flushed the obstructed parts and, circulating rapidly, freed the nervous fibers of the matter that was oppressing them; by the reaction of the vessels on the blood, and by the shock of the globules, the viscid humor engendered by the melancholy was dissolved, the sweats facilitated the movement of the fluids, the appetite returned, and the machine was restored."

This explanation is almost as lucid as if it ended with Q. E. D. At all events, the man was cured; but was it by the itch or by septicæmia? And did his pustules remain to plague him?

## THE ANÆSTHETIC OF THE ANCIENTS.

It is probably with almost complete incredulity that most of us have read of the anæsthetic virtues of the mandrake—the *Atropa mandragora* of Linnæus, the *μανδραγόρας* of the ancients—as recounted by the writers of antiquity and in Shakespeare's "Romeo and Juliet." Perhaps we have argued, not illogically, that, if it had really possessed the remarkable properties attributed to it, it would not have fallen into disuse so early as the thirteenth century. Natural as this way of viewing the matter is, there is recent testimony sustaining the ancient repute of the plant, and going to show that it would probably be worth while for the pharmacologists of the present day to subject the physiological action of mandragora to thorough investigation *de novo*. This testimony consists of Dr. Benjamin Ward Richardson's account of his own researches, published in his journal, the "Asclepiad."

It was his observation of the action of chloral hydrate in the year 1869—when chloral was a new drug, possessed of virtues now familiar, but until then generally supposed to be quite beyond the range of therapeutical properties—that first caused Dr. Richardson's memory of the old traditions about mandragora to lead him to take measures to procure the genuine root

for purposes of experiment. Having obtained a specimen of the root, he first experimented with a tincture, which he made with strong alcohol. This tincture, however, proved so destitute of any noteworthy action that he was inclined to believe either that the root with which he was working was not that of the true mandragora, or else that the ancient accounts of its virtues were indeed fabulous. But it occurred to him that the ancients might have been as wise in their methods of preparing the drug as they were firm in their conviction of its efficacy; in other words, that strong alcohol was not the proper menstruum for its active principles, and that, to do justice to the physicians of antiquity, he must substantially reproduce their *μανδραγορίτης*, which was either a vinous tincture made by prolonged digestion of the drug in weak wine, or a watery infusion with only enough wine added to preserve it. He therefore made another tincture by four weeks' maceration of the root, in fine powder, in alcohol diluted with five times its bulk of water. This product he found to possess "the most active properties—properties faithfully represented by the ancients in their observations."

We do not gather from Dr. Richardson's account that he has actually observed what we should term surgical anæsthesia from the internal administration of mandragora, unless in fatal doses; but it does appear that the plant is a powerful hypnotic with some similarity to belladonna in its action, and that it has a prompt, decided, and rather persistent action as a local anæsthetic. Applied to the tongue, in man, the tincture produced a sensation of numbness that lasted for several minutes, and caused also a singular taste and sensation of acidity and dryness, which lasted for several days. Doses insufficient to produce actual narcotism caused a "desire for sleep, a sense of fullness in the vessels of the head, a peculiarly enlarged and confused vision, an exaggeration of sounds and noises, an inaction of the bowels, with white, hard fæces when the bowels were made to act, and a singular restless and nervous excitability closely akin to hysteria." These symptoms persisted more or less for two days, and left "a lingering uneasiness and coldness" for a much longer time. In the lower animals, large doses being used, deep sleep was produced, "broken by short and peculiar paroxysms, not of waking, but of excitement, as if from a disturbed dream," and the sleep was followed by manifestations of excitement justifying the old name of *μώριον*—the maddening drug—applied to a variety of the plant. When fatal doses were used, death took place by failure of the respiration, not, apparently, from trouble with the innervation, but from a flagging and final cessation of the action of the respiratory muscles due to obstruction of the bronchial passages by an excessive accumulation of secretion. Dr. Richardson thinks that the action of mandragora depends on an alkaloid, and that the alkaloid might be used like atropine for dilating the pupil, might prove antagonistic to strychnine and to the poison of tetanus, and might, in case of necessity, be employed successfully as a general anæsthetic in cases of surgical operations, with comparatively little risk to life. Finally, it is probable, he says, that mandragora is a good local anæsthetic, "which, with all our advances, is still a desideratum." He promises to return to the subject on another occasion.

## *MINOR PARAGRAPHS.*

### THE REPORT OF THE HEALTH OFFICER OF THE DISTRICT OF COLUMBIA.

We are indebted to the Health Officer of the District, Dr. Smith Townshend, for a copy of his report for the year ending June 30, 1887. It is a creditable volume of 168 pages, containing many carefully prepared statistical tables, a number of graphic charts, and a map of Washington showing the localities in which typhoid fever, scarlet fever, malarial fever, diphtheria, and diarrhœal diseases prevailed during the year. Dr. Townshend states that there was an extensive prevalence of sickness among the poor during the winter, and he commends the physicians for the faithful performance of the hard work for which they were called upon.

### THE CHARITY ORGANIZATION SOCIETY.

It is gratifying to observe, as appears from the "Sixth Annual Report of the Central Council of the Charity Organization Society of the City of New York," that the society's work is meeting with an increasing degree of interest at the hands of public-spirited citizens. This is doubtless due to the rigor with which the organization has stuck to the objects set forth in its charter, to investigate cases of alleged indigence, to repress begging, to provide work for the poor and direct them to the proper sources of relief, and to promote harmonious cooperation among the charitable institutions of the city. As a matter of course, much of the society's work has to do with medical relief, and this fact tends to bring it frequently to the attention of individual physicians. Besides that, members of the medical profession are not likely soon to forget the instrumentality of a few of their number in organizing the society and guiding it during the first few years of its existence.

### FOREIGN APPRECIATION OF AMERICAN PHARMACY.

European recognition of the excellence of the products furnished by several of our American manufacturing pharmacists is a matter that we have often taken pride in mentioning. One of the most recent evidences of the growing appreciation of our pharmacy abroad we find in a notice of one of Messrs. Parke, Davis, & Co.'s publications, in the "Deutsche Medizinal-Zeitung," of Berlin. Not only is the publication in question well spoken of, but the various preparations made by the Detroit firm are praised, especially its "normal fluids," which are credited with an invariability of strength that is not really to be found in the fluid extracts of the pharmacopœias, their strength being proportioned not to the amount of the crude drug employed in making them, but to the richness in alkaloids or other medicinal proximate principles of that amount of the drug of standard excellence.

### OBSERVATIONS ON TETANUS IN THE WEST INDIES.

Extracts from several Spanish and West Indian newspapers, published in a recent issue of the "Revue diplomatique," show that Dr. Pasarell, of Porto Rico, has been led by independent investigations to conclusions in regard to the nature and ætiology of tetanus in many respects quite identical with those which M. Verneuil, of Paris, expressed before the French Association for the Advancement of the Sciences on the 21st of

January, 1888. Dr. Pasarell's account of his conclusions was published in the form of a pamphlet in July, 1887, and his title to priority in the matter is maintained by Dr. Bétancès, of Paris; moreover, it seems to be frankly recognized by M. Verneuil, in a letter to Dr. Bétancès, dated in March, 1888.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 19, 1888:

| DISEASES. | Week ending June 12. | | Week ending June 19. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 2 | 2 | 9 | 2 |
| Scarlet fever | 153 | 33 | 164 | 30 |
| Cerebro-spinal meningitis | 4 | 3 | 3 | 3 |
| Measles | 208 | 23 | 211 | 17 |
| Diphtheria | 167 | 40 | 141 | 41 |
| Small-pox | 8 | 4 | 3 | 4 |

**The Health of New York City.**—The following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department during the four weeks ending Tuesday, June 19, 1888: Typhoid fever, 26 cases and 16 deaths; scarlet fever, 683 cases and 125 deaths; cerebro-spinal meningitis, 13 cases and 10 deaths; measles, 840 cases and 71 deaths; diphtheria, 614 cases and 195 deaths; small-pox, 30 cases and 12 deaths.

**The New York Polyclinic.**—Dr. Egbert H. Grandin has resigned his position in the department of gynæcology.

**The Honorary Degree of Doctor of Laws** has been conferred upon Dr. William Pepper, of Philadelphia, by Princeton College.

**The Springfield Hospital.**—The board of trustees of the hospital at Springfield, Massachusetts, have concluded a contract for building the new hospital at a cost of $40,000. This includes only the outside work, and it is estimated that it will cost $10,000 more to complete the inside work. The ground on which the hospital is to be built was recently bought for $30,000.

**Small-pox in Western Massachusetts and Northern Connecticut.**—During the past month there have been four cases of small-pox in Springfield and two in Belchertown, Massachusetts, and one case in Thompsonville, Connecticut; in all, seven cases with two deaths. The prompt and efficient action of the Springfield Board of Health, represented by Dr. A. R. Rice, has undoubtedly saved that region from an extensive epidemic. Arrangements have been made for fumigating and disinfecting the emigrant cars of the Boston and Albany Railroad on their return to Springfield after having conveyed emigrants to the West.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 10 to June 16, 1888:*

Waters, William E., Major and Surgeon. Granted leave of absence for twenty days to take effect about June 15, 1888. S. O. 64, Department of the Columbia, June 8, 1888.

DeWitt, Calvin, Major and Surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Department of Dakota, June 9, 1888.

Birmingham, Henry P., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 117, Division of the Atlantic, June 11, 1888.

**Society Meetings for the Coming Week:**

Monday, *June 25th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Cambridge, Mass., Society for Medical Improvement; Baltimore, Md., Medical Association.

Tuesday, *June 26th:* Nebraska State Medical Society (Lincoln); New York Academy of Medicine (Section in Laryngology and Rhinology); Buffalo, N. Y., Obstetrical Society (private); Medical Societies of the Counties of Essex (annual—Elizabethtown) and Lewis (annual), N. Y.

Wednesday, *June 27th:* New York Academy of Medicine (Section in Pædiatrics); New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

Thursday, *June 28th:* Vermont State Medical Society (St. Albans); New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Cumberland, Me., County Medical Society (Portland).

# Proceedings of Societies.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of March 15, 1888.*

The President, Dr. A. Jacobi, in the Chair.

**On Some Questions in Connection with Syphilis Hereditaria Tarda.**—Dr. F. R. Sturgis opened a paper on this subject with the remark that it was one of interest to the general practitioner as well as to the syphilographer, for the question of syphilis entered into the diagnosis in many instances. Formerly there had been many conditions the exact nature of which was not well understood, but which had during the past twenty-five years been assigned to their true cause—namely, syphilis. Of the many questions which had arisen in the discussion of these subjects, none was more interesting than that of whether hereditary syphilis might lie dormant in the system several years, and the symptoms then first declare themselves. It had come to be the generally accepted view that when a patient presented symptoms of the advanced stage, the so-called tertiary stage, of syphilis, he must have previously had milder manifestations of the disease, notwithstanding his denials of it. Tables had been given which went to show that more than three quarters of the cases of hereditary syphilis gave symptoms of the disease before the third month. But it might be objected that the disease might first manifest itself later than the third month, and, if that were true, the question arose, How much later? Cases had been put on record by different observers in which, so far as the history could be obtained, the disease had first manifested itself at from the thirteenth to the twenty-seventh month, and in a few instances at from the twelfth to the fifteenth year. In order to show that in these cases the disease might have caused symptoms before the periods mentioned, the author briefly reviewed the cause of hereditary syphilis. In some cases, especially those in which the patients first consulted the surgeon for syphilitic lesions at the twelfth or fifteenth year of age, the probability of acquired syphilis was great and had not been excluded. In others there might be no remains of the early manifestations, and the patient's friends

might have no recollection of their existence; yet this was not positive proof that mild symptoms had not existed and been overlooked. In some cases the remains of an old keratitis, or ear affection, or other lesion was found, while the parents were unable to give any satisfactory account of its origin. In other cases, however, the early symptoms left no remains. An important point which should not be overlooked in making the diagnosis was as to whether the disease was acquired or hereditary. Many children and youths had acquired syphilis, in whom the surgeon had imagined that it was hereditary.

Dr. E. L. KEYES said he had not seen what could truly be called late hereditary syphilis, although he had seen cases in which it was alleged that the late symptoms for which the patient was under treatment had been the first to appear. In his own cases in which late symptoms had appeared he had been able, on close questioning, to draw from the parents or friends a history of early symptoms, or to find old lesions, such as cicatrices of the mucous membranes, or a keratitis, etc. He could recall three or four cases in which persons who had had early symptoms of hereditary syphilis had also maintained late lesions after the age of twenty-one, but in none of them had the symptoms appeared after the twenty-fifth year. As bearing indirectly upon the question under discussion, the speaker remarked that syphilis was a disease full of variety and irregularity. He thought this depended largely upon the soil in which it was planted. It was usually a serious disease in young people, because the soil was succulent, and it was hard to suppose that a child which was born with syphilis could go to a late period of life before showing any manifestations of the disease. In aged people, on the contrary, the disease had, in his experience, proved a light affair. He incidentally referred to the treatment of hereditary syphilis manifested in infancy. That which he recommended was with bichloride of mercury, given in doses of one fiftieth grain, every two hours at first, and perhaps every four hours after the symptoms had yielded.

Dr. P. A. MORROW thought the subject was one that had been to some extent neglected in this country. It was only in recent years that the profession had begun to appreciate how far-reaching syphilis might be in its effects upon the constitution. Many morbid conditions which had formerly been attributed to scrofula and tuberculosis were doubtless the offspring of syphilis. He doubted whether any patient who manifested late symptoms of hereditary syphilis had entirely escaped the earlier symptoms. It seemed to be the common impression that hereditary syphilis seldom manifested itself in any way after the second dentition, and Bumstead and Taylor, in the last edition of their work, had declared that evidences of hereditary syphilis after the twelfth year were so rare that they could practically be eliminated. For his own part, he thought there was nothing improbable in the view that hereditary syphilis might endure throughout life. This was true of acquired syphilis, which did not differ essentially from the hereditary form except in origin. The speaker had treated a great many cases of hereditary syphilis in persons in whom the symptoms had manifested themselves at various ages. In some he had been altogether unable to get a history of early manifestations, but that, of course, was only negative evidence on the question of late hereditary syphilis.

Dr. R. W. TAYLOR said his conviction was firm that, although hereditary syphilis was more erratic in its course than the acquired form, yet in cases in which late lesions had developed they had been preceded by some symptoms in infancy. The early manifestations might, however, be so ephemeral, light, or slightly destructive in action as not to have led to a diagnosis. When a history of early symptoms could not be elicited, it was due either to the obtuseness of the patient or of his relatives, or to the physician's not prosecuting his inquiry thoroughly enough. The speaker thought it hardly required an apology for him to state his title to having, in America, brought the subject of the bone lesions of syphilis out of the great slough of ignorance, called scrofula, as he had done in his book in 1876. He was alone responsible for what had appeared on this subject in Bumstead and Taylor's work, and he had attempted there to express his ideas clearly to the effect that, while hereditary syphilis might give rise to lesions even after the twenty-first year, yet after that period the surgeon was treading on uncertain ground, and was likely to attribute to hereditary syphilis lesions which were the result of the acquired form; he wished to caution against such an error. Undoubtedly many of the cases supposed to be tubercular syphilides or late hereditary syphilis were really cases of lupus. While the fact could not be controverted that lesions of hereditary syphilis might occur after the age of maturity, yet when that period had been reached the surgeon was on *terra incognita*. The speaker expressed surprise at Dr. Keyes's statement that syphilis in old people was a light affair. For his own part, he had found it one of the greatest scourges in this class of subjects; it complicated and aggravated nearly every bodily ailment which they might acquire.

Dr. L. B. BANGS had almost invariably been able, in cases of supposed late hereditary syphilis, to trace some history of early manifestations. He agreed with Dr. Keyes that the course of syphilis depended somewhat upon the character of the soil; that in the young, in whom the cellular changes were rapid, it was apt to run a rapid and dangerous course, but in every case it was essentially the same disease. Very often one was able to find lesions left from early syphilis even in young subjects, which enabled one to diagnosticate the later lesions from those of tuberculosis.

The PRESIDENT said it was not always possible to diagnosticate syphilis, even in cases in which it showed symptoms immediately after birth. The works of Fournier and Taylor were regarded as phenomenal here and in Europe, more particularly in respect to their consideration of the bone lesions of syphilis. There was difficulty in deciding whether changes relating to the cartilages and bones were of a rhachitic or syphilitic nature. This was particularly true in the case of children of one family, in which, as was well known, the eldest might have distinct manifestations of hereditary syphilis, while the younger showed but few symptoms, yet in after-years might have such bone lesions as were commonly attributed to rhachitis. One found only among the older writers the view that hereditary syphilis might cause no symptoms until late in life. Recent authors doubted whether there were any cases in which there had not been early symptoms. The question was obscured by the fact that thirty or fifty years ago nearly all children received at some time considerable quantities of mercury in some form, which would have had an anti-syphilitic effect, although none was intended. He had found caries of the nasal bones in a girl, aged fifteen, in whom the cause was hereditary syphilis, of which he had traced evidences of earlier manifestations.

Dr. STURGIS did not believe that hereditary syphilis ever remained latent to appear at puberty or later without causing earlier symptoms. His attention had been called more particularly to this subject by the case of a young man, aged seventeen, apparently in good health, except for a cold inflammation of the knee with swelling, which had resisted treatment for some time. He inquired about syphilis, but could at first obtain no history; finally he happened to discover the remains of an old keratitis, and then further questioning brought out the fact that the patient had had some trouble with his sight at the age of five. He advised the administration of iodide of potas-

sium, which had a good result on the knee. It was in the untreated forms of early hereditary syphilis that late lesions were most likely to occur, and the cases which were most apt to escape treatment were the light ones—those in which the early disease was overlooked. It was but natural for the surgeon, on seeing these cases for the first time after the patients had reached or passed the age of puberty, to infer that they were cases of late hereditary syphilis. Hereditary syphilis might give rise to symptoms after the twenty-fifth year, but the longer the period after the eighth or tenth year the greater the likelihood of the disease having been acquired.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of April 25, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

**The Treatment of Acute and Chronic Purulent Inflammation of the Middle Ear.**—Dr. Laurence Turnbull read a paper on this subject. The cavity of the tympanum, or middle ear, in health, he said, was filled with ever-renewed air by the Eustachian tube, and thus the waves of sound reached the labyrinthine nerve of the ear. It was deeply and securely situated in the temporal bone. It measured two lines from the membrana tympani inward, its breadth and height being about half an inch, and its shape that of a cube. The cavity of the tympanum was apparently lined with a continuation of the mucous membrane of the Eustachian tube, and yet the epithelium was distinct—that of the Eustachian tube was ciliated, while that of the middle ear was tessellated or in squares. This epithelial and subepithelial lining took the place of a periosteum by transmitting the blood-vessels which supplied the bones. This latter fact was important, as any serious affection of this membrane would ultimately react upon the nutrition of the bones forming the cavity, thus resolving a severe catarrh into an osteitis. The existence of this mucous cushion was the reason why affections of the middle ear were so common in young children. The close contact of the jugular vein with the cavity of the tympanum exposed it to the influence of pus collecting on its floor. In acute otitis media there were frequently but slight pathological changes in the ear, except swelling, deep redness, and small perforations of the membrana tympani. The discharge was either mucus, or mucus and pus. This could be shown by the pus dissolving in water, and the mucus floating on the top.

By the use of anodynes, cocaine, chloroform, morphine, etc., pain was relieved; by the use of tincture of aconite, antipyrine, frequent hot foot-baths, and local depletion, inflammation was checked. The parts should be cleansed with a mild, warm antiseptic wash, and, as a rule, all would go well. The patient would generally recover in a short time, without any permanent injury to the hearing apparatus, if not neglected. This disease was now so well known, and, as a rule, so promptly treated, that a much smaller number of cases were now permitted to pass to the second stage of inflammation of the middle ear—the purulent variety—which caused such extensive changes in the hearing apparatus. In such cases of acute otitis media Zaufal found exclusively the two forms of microbes found by Friedländer and Fränkel in pneumonia, viz., a large, short bacillus, encapsulated, and a diplococcus, also encapsulated. He had also shown that the exudation in acute otitis media, before rupture of the membrana tympani, contained pneumococci to the exclusion of all other micro-organisms, and that these introduced into the nasal fossæ might give rise to a meningitis without irruption of the cranial envelope.

In collecting a large number of cases of suppuration of the middle ear, the author had found that, out of 1,700, 454 were acute, while 1,246 were chronic; in 18 there was facial paralysis, while the remainder included polypi, caries, necrosis, cholesteatomata, and tubercles. The most important and extensive changes were found, not in the meatus or that portion of the ear covered by skin, but in the mucous membrane of the middle ear, back of the membrana tympani, extending into the mastoid cells, and through the Eustachian tube to the throat and nose. After this disease had existed for some time there was an increase of the bulk of the mucous membrane, caused by excessive infiltration with round cells, and enlargement, with new formation of vessels. The subepithelial layer, stripped of its epithelium, was replaced by round cells; a suppurating, granulating surface, traversed by many vessels, took its place. The purulent process led to destruction of the tissues, to ulceration and wasting of the mucous membrane, which was eaten away so that the bone was often laid bare. This was especially the case in tubercular otitis media purulenta, and it had been demonstrated by numerous post-mortems that they tended in a very short time (six to eight months) to extensive necrosis of those parts bordering on the diseased middle ear and extending into the labyrinth, the rapid course of the disease being due to the existing tubercular diathesis. It was also often the case in this form of disease of the ear that tinnitus and impairment of hearing preceded the perforation, which was most generally painless, but with rapid destruction of the drum-head. By the transformation of the round into spindle-shaped cells there occurred a formation of a firm connective tissue, which led to abnormal adhesions between the membrana tympani, the ossicula, and the walls of the tympanic cavity, producing permanent deafness. The membrana tympani almost always suffered a loss of its structure, and in severe and protracted cases there were large perforations.

*Treatment.*—These perforations were most ordinarily treated by a combination of alteratives, so as to modify the nutrition and prevent the destructive tendency from gaining headway. The local application was also of importance, especially such remedies or local means as changed the surface of the granulations, gently stimulated, and cleansed them. No agent in his hands had acted so promptly and well as very finely *levigated* boric acid, alone or in combination with iodol, the latter to act as a true antiseptic, using one part of iodol to ten of boric acid. Boric acid used alone should be sterilized, by heating before using on platinum foil, as it contained fungi and bacteria when kept for some time. The powder must be carried down to the perforation, and through it as much as possible, so as to reach the diseased mucous membrane and the Eustachian tube. If it was blown in, it adhered to the edges of the auditory meatus, causing irritation and sometimes small abscesses. This powder had a stimulating and an astringent effect, like alum used in the same manner. It should be packed carefully, so that the diseased membrane would be fully covered. It was not necessary to seal it; indeed, it was almost impossible to cause the retention of the pus in the cavity, as the powder absorbed it, and the former, when applied, produced a watery discharge by its stimulating effect, so that the patient would be obliged to wipe off the liquid. As to boric acid causing retention of the secretion in the treatment of necrosis of the temporal bone, or in a large perforation, it had not acted so with him. He had used boric acid since 1881, and, like its introducer, Friedrich Bezold, of Munich, had been convinced of its efficacy in these severe cases, and felt sure that the objections to its use—*i. e.*, its causing retention of the secretions—brought forward by some, were entirely without foundation. According to Bezold's and his own experience, extending over a period of seven or eight years, its use had always been followed by favorable results.

Bezold had also been confirmed in his opinion of the un-

reasonableness of these objections by a series of physiological experiments in which he tested the capacity of absorption of powdered boric acid for fluids outside of the body before, as well as after, saturation and drying out of the powder with purulent secretion, which, inclosed in a glass tube covered with a perforated membrane, was exposed to the influence of fluids from the ear. This special mode of treatment was peculiarly applicable to large perforations of the membrana tympani; when the perforations were small they were more effectually treated by a solution of boro-glyceride, carbolic acid, or peroxide of hydrogen. When the perforation was situated in the membrana flaccida or Shrapnell's membrane, with disease of the attic of the tympanic cavity, the speaker resorted to a syringe (intertympanic), or a catheter to which a soft rubber ball with a double valve was attached, to withdraw the fluid, and not let it return when diseased, either of which was inserted into the perforation, and the parts were washed with a solution of peroxide of hydrogen or an antiseptic. If carious bone was found, covered with polypi, the latter should be snared, and the dead bone removed; but if the bone was found only inflamed, it should be treated by diluted nitric or carbolic acid, to stimulate the granulations and restore it to its normal condition. All tearing and cutting operations—as these tended to malignant disease—must be avoided; everything should be done with extreme care and gentleness. When pus blocked the tympanum in disease of the middle ear the tuning-fork was heard better through the air than through the bone. But when the pus was removed, and the inflammation reduced, the bone conduction would again improve, as the pressure had been removed from the labyrinth.

It had been found that functional disturbances of hearing were produced by chronic purulent inflammation, by the cicatrices and changes in the membrana tympani, and by adhesions before referred to in the middle ear, after all discharge had ceased. First, the alterations in tension of the sound-conducting apparatus caused by the cicatrices produced irregular vibrations in the membrana tympani. Second, cicatrices which caused adhesions of the membrana tympani with the promontory and of the articulation of the incus with the stapes impeded the power of vibration of the ossicula. Third, if the adhesions were confined to the portion of the membrana tympani situated below the handle of the malleus, the acuteness of hearing had been found to be considerable, while adhesions in the upper half of the membrane produced more disturbance of the hearing, or deafness, especially when the handle of the malleus was drawn inward and ankylosed with the promontory. Fourth, it had been proved that imperfect hearing power might exist even in cases of extensive destruction of the membrana tympani, and with the loss of all the bones, except the foot-plate of the stapes—provided it was movable and the membrane of the fenestra rotunda was not thickened. The regularity of our perception of tones was due to the deadening of the sounds produced by the ossicles; the membrana tympani could only be properly considered as a sound-conductor in connection with the ossicles. Even if fair hearing of speech and music remained, the removal of the membrana tympani, or protecting membrane of the tympanic cavity, was dangerous to life, for it was deprived of a covering which was essential to its continuation in health. To retain and to restore to a healthy condition the diseased and ulcerated bones of the ear and the membrana tympani was of the utmost importance.

Extension of this chronic purulent disease of the ear by the Eustachian tube as a pus carrier produced disease of the upper part of the nasal cavity by developing polypi, enlarging the pharyngeal tonsils, adenoid growths, and hypertrophic enlargements of the turbinated bones and ozæna. He fully agreed with Politzer that combinations of ozæna with disease of the ear were much rarer than would be supposed, from the extension of the process toward the entrance of the Eustachian tube. Where the ear was implicated, the mucous membrane of the middle ear most frequently became sclerosed. In many cases of deviations of the septum there was perfect hearing, unless complicated with prior ear disease, or exostosis extending through the whole line of the meatus; these were to be removed by the dental engine. Such patients suffered from coryza, but were promptly relieved by a four-per-cent. solution of cocaine. There were also many cases of anterior nasal polypus which did not produce deafness. One of the chief causes of deafness was the extension of the pharyngeal tonsil into the tuberosity of the Eustachian tube, and even into its ostium. In the so-called ethmoiditis of Woakes there was not necessarily any causal connection between the ear and these affections; in many cases the nasal trouble had long existed without involving the ear. If the ethmoid cells became diseased or necrosed near the Eustachian tube, there might be paresis of the palate attended with a distressing form of tinnitus, as in one case under his care, in which there had been perforation of the membrana tympani from extension of the irritation through the Eustachian tube. In this case the patient had recovered under local and constitutional treatment. The removal of the diseased spicula of bone, or hypertrophied tumors from the posterior portions of the turbinated bones, improved the deafness in cases of long standing, when attended with retraction of the membrana tympani, the result of naso-pharyngeal disease. There was an absolute necessity that the pressure of the air should be equal on both sides of the membrana tympani, and all obstructions to this must be removed to attain perfect hearing. It was of importance that patients convalescent from chronic purulent ear disease should breathe through the nose and be able to shut the mouth, especially when sleeping, to prevent the drying effects on the throat and Eustachian tube. This was accomplished by a mouth-band tied behind the ear, as recommended by Delstanche, in the case of children, after the removal of the cause. The proper treatment of the naso-pharyngeal disease should always precede this, in order to see that nothing obstructed the respiration, and to watch the controverting effects of all operations by the use of nasal tents of laminaria, or those of platinum, or glass covered with soft rubber, and thus keep up nasal intubation.

Dr. Randall had been surprised to hear absolutely no mention in the paper of inflation through the Eustachian tube, so extremely valuable an aid to cleansing, blowing out discharges from the tympanic cavity, and aiding greatly in preventing hurtful adhesions which might interfere with the function of the organ. Inflation by the method of Politzer, or with the catheter, or even that of Valsalva, would often be followed by immediate and marked improvement, and would advance the restoration of function. The author had seemed to think that where naso-pharyngeal trouble co-existed with ear disease, it was secondary, and due to the escape of pus from the middle ear into the throat. Most pathologists were inclined to take an opposite view; and, so far as the speaker's experience went, the trouble in the respiratory passages had been generally of older date. Its nature, in most cases (*e. g.*, deviation of the septum), as well as the history, excluded the possibility of its being secondary to ear disease, or of the latter having had any causal influence; and he had seen cases where long-continued discharge of fœtid pus through the Eustachian tube, though very nauseating to the patient, had had little effect on the naso-pharynx. Further, as pointing to a causation in the opposite direction, was the fact that where there was unilateral aural trouble, the side affected was that of the more obstructed nasal chamber.

To the general plan of treatment advanced by the author everybody could agree. He would, however, once more lay more stress on inflation, so often neglected by the general practitioner, and yet so valuable a measure. Cleanliness was all-important. The general practitioner would use the syringe, which is good; but not so good, perhaps, as the dry treatment. It permitted of the thorough cleansing required, with less danger of damage in unskilled hands, than if absorbent cotton alone were used; it could be repeated as often during the day as the quantity of the discharge might demand; and if the ear was thoroughly dried after it, inflation being practiced to remove all fluid from the tympanum, and the boric powder blown in, the treatment left little to be desired. He preferred insufflation, in using the boric powder, to the method described by Dr. Turnbull. It was so much more easily done, and could be practiced by the patient himself after cleansing by means of a quill or other little tube connected with a mouth-piece. He fully concurred with Dr. Turnbull that there was not much danger of obstruction if the packing was properly done; but he must protest against the "ramming home" sometimes done. He had never seen any trouble at the external orifice of the meatus from the insufflation; on the contrary, the powder tended to allay any inflammation of the meatus; nor had he had the experience referred to, of all the powder being blown back into his face. Inflation, of course, was a measure to be practiced with care; he would not often intrust a Politzer bag to a patient; but insufflation was a very simple procedure, and might be left to the patient with entire safety.

Dr. Seiss said that, as a rule, children who breathed through the mouth did so because the nose was so much obstructed that they could not get sufficient air through it. The forcible occlusion of the mouth by this pad or any other device might, under some circumstances, be very disastrous.

Dr. Turnbull said that Dr. Randall was perfectly right in assigning a high value to inflation as a means of treatment in suitable cases, principally of dry catarrh. It often proved very dangerous in unskilled hands, not only on account of its effects on the circulation, or the local effect of an excessive pressure, but also the blowing back of purulent secretions from the nose into the pharynx might do much mischief. Before practicing inflation, one should cleanse the nose thoroughly. Patients, especially children, should be taught to keep the nose clean. Many children did not know how to blow the nose. The discharge of purulent matter from the ear into the pharynx, setting up secondary troubles, was not a matter of theory, but the result of experience. A very distressing case of bilateral perforation had come under his notice in which hæmoptysis and gastric hæmorrhage had been diagnosticated from the vomiting of bloody discharges which had been swallowed. At the post-mortem examination the stomach contained a pint of putrid and bloody matter. He did not approve of syringing, as a rule, and it should never be done except by the physician. In the first place, a syringe was a rarity, and an expensive rarity. Even if the instrument was good, in improper hands it might tear the membrane. He had seen such accidents.

*Meeting of May 9, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

**Some Cases of Habit Chorea, and their Treatment.**—Dr. G. E. de Schweinitz read a paper with this title.

As was well known, he said, there were certain local choreas for which no definite cause could be assigned, and in which, as Dr. Wood put it, the movements closely simulated purposive acts. A child suffering with this malady—for it usually occurred in children, especially girls—was brought for treatment because it had adopted some trick of gesture. An eye might be rapidly winked, or the eyeball rolled upward, or the brow wrinkled, or the facial muscles contorted, or, perhaps, the shoulder was shrugged, or a forward movement of the head or jaw indulged in. At first these movements were under the control of the will, but gradually became more and more obstinate and more and more aggravated, especially when attention was drawn to them, and sometimes the variety of the performances in a single day was truly remarkable. This affection had been admirably described by Dr. S. Weir Mitchell, and from him had received the name habit chorea. A number of these cases had occurred to the author during the past few years, in which the examination and treatment of the eyes had proved of distinct advantage to the patient; and these might prove interesting.

Case I.—A. B., a girl, aged ten, had been referred to him by Dr. Wharton Sinkler on February 2, 1885. This child had been brought to Dr. Sinkler about a year before, and then the following facts had been elicited: No history of rheumatism; scarlatina when six years old. General health good, appetite and digestion normal. The movements noted were confined to the orbicularis, the right side of the face and neck, and the tongue. In spite of the most judicious antichoreic treatment, these remained unchanged. The following results were obtained by an eye examination:

O. D. $\frac{15}{XL}$. Amplitude of accommodation 8 D. O. S. $\frac{15}{XXX}$. Amplitude of accommodation 8·5 D. Conjunctivæ injected, slight blepharitis in each eye and a history of successive crops of styes. O. D. Small oval disc; chorioid ring all around, absorbing at the outer side. Retina markedly striated, veiling all edges of the disc except the temporal. Many lymph reflexes. O. S. Oval disc, less retinal striation, but the inner side of the disc veiled. Atropine solution to full ciliary paralysis was ordered, and the error of refraction determined. This proved to be as follows:

O. D. + 2 s ⌒ + 1 c, axis 90. O. S. + 2·25 s ⌒ + 0·60 c, axis 90. The full correction was ordered, the constitutional remedies were continued, and the result was an entire cure of the spasmodic movements.

Case II.—J. H. B., a lad aged seventeen, was referred to him by Dr. S. Weir Mitchell on November 5, 1886. This boy had consulted Dr. Mitchell because he had "got a trick" of twitching his eyes and rolling the balls upward. Before he saw Dr. Mitchell he had been treated with a long course of arsenic and a number of antichoreic and antispasmodic remedies without avail. An eye examination revealed the following points:

O. D. $\frac{15}{XX}$? Amplitude of accommodation 7 D. O. S. $\frac{15}{XX}$. Amplitude of accommodation 6 D. Conjunctivæ watery and posterior conjunctival vessels injected and tortuous. O. D. Small nerve, a white patch over the central vessels. Retina much striated and general chorioidal disturbance, with a halo-like band at the lower and outer side of the disc. O. S. Small nerve. Central lymph-sheath full, and nerve surrounded by a broad halo-like band. Sulphate of hyoscyamine to full ciliary paralysis was ordered, and the correction of the refraction error determined as follows:

O. D. + 0 60 c, axis 60. O. S. + 0·25 s ⌒ + 0·60 c, axis 90. This glass was ordered, and after several months of rest the boy was allowed to resume his studies. Ten months later he returned, and the movements had almost absolutely disappeared. His vision then, through the correcting glass, was with each eye, $\frac{15}{XV}$, and the amplitude of accommodation was 10 D. Through these glasses there was at 30 centimetres an exophoria (insufficiency of the interni) of 4 degrees; no disturbance of equipoise at 20 feet. The abducting power was 7 degrees.

Case III.—M. E., a girl, aged eighteen, was referred to him by Dr. Wharton Sinkler on May 20, 1887. The patient's mother had had chorea when a child. The patient herself had been perfectly healthy until she was ten years of age. She was then attacked with general chorea, which, however, chiefly affected the face, arms, and the shoulders. At twelve years of age menstruation was established, and the

chorea ceased, except for the movements of a spasmodic character which continued in the face, eyelids, and eyebrows. For a time these grew better, but afterward, for a space of two years, grew worse, and the habit became more fixed. In April of 1887 the patient was in fair general health, with occasional dyspeptic attacks and dysmenorrhœa. The movements were now confined to the upper part of the face, and consisted in sudden tight closing of the eyes, rapid raising of the eyebrows and wrinkling of the forehead, with to-and-fro movements of the occipito-frontalis, and an occasional jerk of the head and shrug of the shoulder. The movements were not constant, but were increased when attention was drawn to the trouble. The eye examination yielded the following results:

O. D. $\frac{15}{xx}$. Amplitude of accommodation 8 D. O. S. $\frac{15}{xx}$. Amplitude of accommodation 8 D. Conjunctivæ slightly suffused, distinct dread of light, and the retrotarsal folds studded with numerous phlyctenules. In each eye round disc, slight crescents at the outer sides, and marked retinal striation. Refraction doubtful, fundus best studied with a concave glass, probably spasm. Atropine in full strength was used for four days, and complete ciliary paralysis secured. The vision steadily rose, and on the fourth day was easily $\frac{15}{xii}$ and unimproved by any glass; in short, the eyes were absolutely emmetropic. The mydriatic was continued until all traces of the phlyctenular conjunctivitis had disappeared, and the retinal congestion had subsided. During this treatment the movements markedly decreased, although formerly under the best of internal medication they had stubbornly resisted. About a year later, when last seen, the head movements had entirely ceased; there was an occasional shrug of the shoulder; the eyes were comfortable, the vision and accommodation normal; esophoria 2 degrees at five metres.

Case IV.—D. G., a boy, aged ten, was referred to him by Dr. James C. Wilson, under whose care the patient was for catarrhal jaundice. For some time the boy had adopted the habit of "making faces." This peculiarity had well-nigh ceased during a period when he was laid up in bed with an injury. One movement, however, persisted—viz., a remarkable spasmodic contraction of the right orbicularis palpebrarum almost as complete and decided as if a current had been applied to the motor point. The eyes were as follows:

O. D. $\frac{15}{xv}$. Amplitude of accommodation 9 D. O. S. $\frac{15}{xv}$. Amplitude of accommodation 10 D. Exophoria in accommodation 7 degrees. Eyelids heavy; caruncles swollen. The conjunctiva, especially of the fornix, reddened and velvety, and the lymph-follicles swollen; slight muco-purulent discharge in the mornings. Reading was an effort, and sometimes occasioned headache. O. D. Round nerve, central venous lymph-sheath full; retina striated. O. S. Oval disc, slightly hazy retina, and full venous lymph-sheaths. Cumulative instillations of homatropine were ordered, and the refraction was tested and found to be O. D. + 0·65 s. O. S. + 0·50 s. This glass was ordered for all near work, and the local condition in the conjunctiva treated with boric acid, insufflation of calomel, and subsequently painting with a weak solution of nitrate of silver. Internally, Dr. Wilson ordered Fowler's solution in increasing doses. A month later a letter stated that the eyes were more comfortable, and the twitching was seldom noticed.

Case V.—S. B., a girl, aged sixteen, was referred to him by Dr. S. Weir Mitchell on January 9, 1888. This patient was a finely developed girl, perfectly healthy, with no history of rheumatism, scarlatina, or fright. She had formed the habit of rapidly winking, or spasmodically closing the eyes, especially the right one. The movement, at first under the control of the will, gradually became fixed, and was a source of much annoyance and embarrassment. She also suffered from severe brow-ache. An examination of her eyes yielded the following results:

O. D. $\frac{15}{xv}$. Amplitude of accommodation 10 D. O. S. $\frac{15}{xv}$. Amplitude of accommodation 10 D. Exophoria in accommodation 7°. The external appearances of the eyes were normal; the conjunctivæ smooth, the vessels free from congestion. Full atropine mydriasis was secured, and the refraction error determined O. D. + 2·25 s. O. S. + 2·25 s. A full correction was ordered; Fowler's solution was given internally, and one month after the treatment was begun the headaches had disappeared and the spasmodic movements well-nigh subsided.

Case VI.—A. B., a boy, aged eleven, was brought to him for an eye examination. This lad was of fine physical development, with no family or personal nervous taint, except that he had for some time been noticed to squint his eyes inward, as children often did "for fun," and rapidly close and open his eyes, making at the same time a curious grimace. The boy was very fond of books, and this habit was most marked when he was poring over some work which was especially interesting to him. The eye examination was as follows: O. D. $\frac{15}{xv}$. Amplitude of accommodation 8 D. O. S. $\frac{15}{xv}$. Amplitude of accommodation 8 D. No insufficiency. Conjunctivæ suffused, and posterior vessels injected. In each eye irregularly oval dics; conus; full central lymph-sheaths, and general retinal chorioidal disturbance. H. = 1·5 D. V. V. higher. Atropine and correction of the refraction error were advised, but the advice was declined. The boy was, however, forbidden to use his eyes for near work as much as possible and given the usual remedies. When last heard from he was reported as better, but the habit spasm still continued.

Case VII.—W. F. C., a young man, aged eighteen, applied for treatment on January 17, 1888. His general health was good. No history of rheumatism. Worked hard in a factory. A few years before, when about twelve years of age, had had attacks of "chorea," confined to the muscles of the face, chiefly the orbicularis. This had passed away under general treatment. For some months past he had acquired the habit of rapidly closing and shutting his eyes with a quick, snapping movement. No other muscles affected. This was partially under the control of the will, but was made worse under examination. The eyes were examined and found as follows: O. D. $\frac{15}{xv}$. Amplitude of accommodation 8·5 D. L. Hyperphoria 1°. O. S. $\frac{15}{xii}$. Amplitude of accommodation 8·5 D. Exophoria 2°. Conjunctivæ injected, but not catarrhal, no phlyctenules or swollen lymph-follicles. Small oval optic discs; nasal edges veiled, and coarse retinal striation above and below; veins and central sheaths full. Distinct dread of light. Atropine was ordered and continued for several days. Under this the refraction was found to be O. D. + 0·60 s. O. S. + 0·50 s. These glasses were ordered for constant wear. No constitutional treatment was given. Some months later he was reported as comfortable, so far as the eyes were concerned, and that the nervousness had departed.

These seven cases sufficed to give an idea of what service the correction of the errors of refraction did in the treatment of this disorder. In three of them the habit spasm, as Gowers would say, had existed for a long time, and judicious internal medication and proper hygiene had failed to achieve the desired result, which result, however, was attained after the eyes had been thoroughly treated and corrected. In two others the constitutional and the eye treatment were begun simultaneously, and the rapid improvement showed the value of this combination. In one instance the eye examination and the correction of the anomalies of refraction were declined, and the habit still continued. In another, the wearing of the glasses was the only course pursued, and the result was most favorable. In all the cases where errors of refraction existed these were either hypermetropia or hypermetropic astigmatism; in two the errors were 2 D. and more; in three they were less than 1 D., and in one the eyes were emmetropic. It was not amiss to call attention to the fact that so low an error as 0·50 D. might prove an exciting cause, the removal of which would aid in restoring the patient to a normal tone. Case III was especially interesting, because a general chorea had disappeared, and in its place had come a habit chorea—for there was no doubt that the disorder in this patient was correctly so classified—exactly as Dr. Mitchell had observed; in a few instances these cases lapsed

into well pronounced chorea of the ordinary type. It was further useful to observe that the eyes in this case were emmetropic, but that when the existing spasm of accommodation and phlyctenular conjunctivitis had disappeared under the use of the atropine, the patient made rapid strides along the road to recovery. This led him to speak of the value of closely observing the condition of the conjunctiva, especially of the retrotarsal folds, in this malady. Years ago the late Professor Horner had called attention to the fact that children, when first they attended school, were sometimes observed to be given to undue winking of the eyes, and that without the presence of strong light. As an accompaniment, there were often movements of the muscles of the face, arm, or leg. In these cases the local cause was most often found to be some disorder of the conjunctiva, especially follicular catarrh, blepharitis, or an anomaly of refraction, usually hypermetropia. Indeed, in a few instances, the local condition was manifestly the exciting cause of a chorea minor. Treatment of the conjunctival catarrh and correction of the hypermetropia removed the difficulty. Not only might the local conjunctival disturbance and the refraction errors exist, but there might be also imperfect equipoise of the eye-muscles. It was scarcely necessary to refer to this as a possible important factor. In recent times much graver nervous disorders had been attributed to such insufficiencies of the ocular muscles, and for their correction by surgical and other means most brilliant results had been alleged.

It was very far from the author's intention to give an undue importance to these errors of refraction and inflammation of the conjunctiva as exciting agents in the causation of habit chorea. He was not unmindful of the large number of instances that might be traced directly to nasal disorders or to diseases of the pharynx; nor did he forget that other large class for which no adequate cause could be assigned. He only wished to recall to memory the value of searching for these among the other causes, and to emphasize the facts that, if the habit spasm especially affected the muscles of the face, particularly those around the eye, the following points deserved attention: 1. The condition of the refraction and the muscular balance should be carefully examined, and, if found abnormal, corrected. 2. The anomaly of refraction should be determined under complete ciliary paralysis, and the full, not a partial, correction ordered. 3. This correction should be employed in conjunction with proper internal medication and general hygiene, and not to the exclusion of these measures.

Dr. S. Solis-Cohen had met, more especially in dispensary practice, with a number of cases similar to those reported. Professor DaCosta had for many years called the attention of his classes at the Jefferson Hospital clinics to this group of choreic disorders associated with eye strain, and during the speaker's service as chief of the medical clinic there had been from three to six such cases presented during the term. In nearly every instance the defect was hypermetropic astigmatism; in most of the few remaining, simple hypermetropia; in one or two, if his recollection served, simple astigmatism. In order to note the effect of correction of the refractive error, the medication was confined to peppermint-water. Some of the patients were affected with facial spasm only, but a few had spasm of the limbs as well. In one or two cases the spasms were unilateral, though he could not say now whether the error was also unilateral. His impression was that it was not. In every case that remained under observation, cure was effected by the correction without medication. Some of the patients disappeared after correction, and in these, presumably, recovery was immediate. In a case now under his care in private practice, a girl complained of frequently falling in the street, from sudden failure, as she expressed it, "of the knees." The eyes were prominent, and the heart's action was rapid, so that a suspicion of Graves's disease was entertained. About a week ago Dr. Jackson corrected the hypermetropia which he discovered, and to-day the girl had reported to the speaker that she had been perfectly well since. The apparent protrusion of the eyes being due to muscular effort, had disappeared, and the cardiac rapidity had abated. He presumed that the reason this association of nervous spasm was found with hypermetropia rather than myopia was that the former caused greater and more constant strain upon the muscles of accommodation.

**Reflex Cough from Pregnancy.** — Dr. George Erety Shoemaker read a paper on this subject. Everybody present had, he said, seen cases where, in the early months of pregnancy, the stretching or pinching of nerve-fibers in the uterus had been interpreted, through the medulla, in the muscles correlated in vomiting. Everybody knew of the reflex sensations, of the vaso-motor and trophic changes, of the mental phenomena, and of the occasional bowel complications of early pregnancy. Instead of these, in the case which was to be related, the sensory impulse had traveled from the uterine plexus through other sympathetic paths to the cord, to the medullary center of the pneumogastric, and out along that and other nerves to the apparatus involved in a cough. The case was as follows:

Mrs. X., aged thirty, very muscular, almost an Amazon in physique. General health apparently perfect. She had had two children and three miscarriages, and was now in the seventh month of her sixth pregnancy. It was in 1885 that she was first seen, while bleeding from a miscarriage at two months. She then stated that for several days before the uterus emptied itself she had been troubled by a cough, without expectoration, coming on whenever she lay on her back. It ceased with the loss of the uterine contents.

*Second Attack.*—Six months later, having been well in the interval, she was again pregnant at two months. No symptoms causing distress now appeared, except a cough, which for two weeks had troubled her as soon as she lay down at night, continuing at intervals until she arose, when it ceased almost entirely for the day. No pain, expectoration, or signs of respiratory irritation. A small dose of bromide and chloral, with hyoscyamus, taken in the evening, at once relieved the condition, which, however, returned immediately if the medicine was omitted. The tendency to cough subsided as pregnancy advanced, and the subsequent labor was normal.

A *third attack*, exactly similar, occurred when she again became two months pregnant, in January, 1888. The cough continued for two weeks before she applied for relief, and then was at once removed by the same treatment as before—a sedative given in the evening.

The patient had never had vomiting of pregnancy. Examination showed no malposition or flexion of the uterus, and no laceration or erosion. The organ was freely movable, with no lateral tenderness; the ovaries were normal. The diagnosis then, in the three successive pregnancies under observation in this patient, had been of reflex cough from gestation, without other symptoms.

That large numbers of the symptoms daily seen were reflex was easy to say, but it was by no means so easy to determine the paths of these reflexes, or to see why in one case one path should be taken, and in another case another. With the same stimulus to the same group of nerve filaments, the result would be interpreted in vastly different effects. So intricate, too, were the relations of different parts of the nervous system, and so diverse the influences which served to switch off, as it were, the ongoing nerve impulse in this direction or in that, that in many instances one was obliged simply to record facts, and leave unexplained, because yet unknown, the steps which led to their development. It would be remembered that the pneumogastric nerve had an extremely wide distribution and connection; that, besides going to the heart, and besides influencing the vaso-motor system through the medullary vaso-motor cen-

ter, it went to the lungs and larynx, to the pharynx, and to the œsophagus; that it was connected with the external auditory canal and with the meninges of the brain; that it went to the stomach and intestines, to the liver and spleen, and, in short, to most of the abdominal viscera. Its connection with fibers of the sympathetic in the abdomen enabled it to receive impulses from organs, such as the uterus, with which direct connection had not yet been fully traced. While most cough was well known to be reflex from stimulus to pneumogastric fibers in the lungs or larynx, the same result might follow a stimulus applied almost anywhere in the distribution of this nerve. The members of the society need only be reminded of the cough which occasionally came from putting a speculum into the external auditory canal, and of that which sometimes followed a disordered stomach; while the writer had now in mind a case of persistent cough which had resisted treatment for years by the best specialists, and which was, in his judgment, probably due to irritation of the meningeal branch of the pneumogastric in the posterior cranial fossa. Why the connection with the vomiting apparatus offered the easiest outgoing motor path from the medulla for the reflex impulses from the pregnant uterus we did not know. The reflex sensory, trophic, and vaso-motor paths in pregnancy seldom, if ever, led to the stomach. In the case which had been narrated, the easiest path from the medulla led to the respiratory system, probably as the result of idiosyncrasy alone.

## OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Meeting of May 3, 1888.*

The President, Dr. Thomas M. Drysdale, in the Chair; Dr. J. M. Baldy, Secretary.

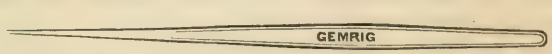
**Typhoid Fever following Removal of the Uterine Appendages.**—Dr. Joseph Price reported the case of a woman, thirty-seven years old, from whom the right uterine appendages were removed at the Gynecean Hospital on the 11th of February. Two years before, the left appendages had been removed. Her recovery from the first operation had been speedy, and for a year she had seemed in perfect health; then the pelvic symptoms had returned and been referred to the right side. She reacted perfectly from the second operation, and for nine days her temperature varied between 98·6° and 100·1° F. During that time she complained of a good deal of headache, weakness, and mental depression; on the evening of the ninth day her temperature rose to 102°, and she had a slight chill. From that time forward her case presented the typical features of typhoid fever. The nervous symptoms were not particularly marked. The temperature varied from 99·8° to 104·8° for four weeks. She made a good recovery, and was now in better health than before the operation. The fever had probably been contracted before the patient's entrance into the hospital. The operation had not seemed to influence the course of the fever, nor the fever the result of the operation. The rise of temperature and the early constipation and meteorism had naturally been attributed to the operation, and treated accordingly, until the diagnosis of typhoid fever was made, after which the usual treatment for that disease was pursued.

**Hæmato-salpinx.**—Dr. William Goodell showed a specimen from a case of removal of the uterine appendages. The right tube was enlarged to the size of a fist and filled with broken-down blood-clots. It had burst either just before or during the operation, for the woman had not complained of abdominal pain, and when the abdominal incision was completed a quantity of bloody serum had escaped from the wound. At the first examination the speaker had thought that the case was one of tubal pregnancy. Both ovaries and tubes were adherent and were removed with difficulty. The abdominal cavity was flushed with plain warm water and a drainage-tube inserted. The patient had recovered promptly.

Dr. Howard A. Kelly wished to call attention to a defect of nomenclature. If a laminated clot was found in the ampulla of the tube, the condition was termed hæmato-salpinx; again, if a large amount of watery but distinctly bloody fluid was found, unquestionably of a different origin—what its origin was it was impossible at present to say—the same term was applied. He had found that in this second class of cases the fluid was intensely poisonous and would produce violent septic peritonitis in a short time if every trace of it was not removed. The fluid quickly became diffused, and even the washing seemed to cause its more complete diffusion. It would be well if the distinction between the two sorts of material were borne in mind when cases were reported.

**Fibro-cystic Tumor of the Uterus.**—Dr. Goodell showed a specimen from a woman, forty-six years old, who had had regular but profuse menstruation for several years. Three years before a tumor had been discovered, which had gone on increasing. Fluctuation was so marked and the cyst was so flaccid that the speaker had thought that it was a parovarian cyst. The patient would not permit a vaginal examination, but that would not have thrown much light on the diagnosis. The cyst was multilocular, and weighed thirty-three and a half pounds. It sprang from the right cornu of the uterus, and was densely adherent. The pedicle was transfixed and tied, its end was scooped out, and the peritoneal edges were sewed together by a continuous gut suture. The ovaries, being healthy, were not removed. The recovery had been prompt, although the drainage-tube had had to be kept in for eleven days.

**Local Depletion in the Treatment of Uterine Disease.**—Dr. Kelly showed a knife-blade tenaculum for scarification




of the cervix uteri. While he had rarely found that local depletion alone was very valuable in the treatment of any form of uterine disease, he had frequently found it a powerful adjunct. Chronic or recurring pelvic congestions, accompanied by great pain and discomfort, could often be relieved by free depletion of the cervix, and the patient's condition temporarily much improved. Many of the neurotic symptoms associated with a congested, puffy, blue, plethoric cervix also underwent marked improvement under this plan of treatment judiciously carried out, together with the use of glycerin packs and tamponing. He knew of no other measure equally serviceable and speedy for the treatment of laceration of the cervix with eversion and infiltration of the lips. Many patients on whom he would formerly have operated now recovered perfectly and remained well if the uterus was prevented from sagging by giving proper support to a torn or relaxed outlet. Except in this latter condition, when associated with laceration, depletion was not often called for in spare or anæmic patients. But to secure any advantage by this practice it must be carried out thoroughly. The speaker was in the habit of drawing from six drachms to an ounce or an ounce and a half of blood every five days or once a week, following the depletion immediately with a glycerole or boric-acid pack, which was often retained until the next depletion. To deplete the congested pelvic organs, he had scarified the cervix, both the vaginal and the uterine surfaces, and the vault of the vagina. He had done the latter experimentally, and was not sure that it had any special advantage over simple scarification of the cervix. Serious difficulties had

occasionally arisen in the hands of others from too deep a penetration of the scarifier, which might wound an artery of large caliber and give rise to alarming hæmorrhage. Difficulties had also arisen in the use of the spear-pointed instrument, which often occasioned great pain, obliging the operator to desist or to make but few punctures. A serious objection to the straight instrument was that the depletion could only be practiced with safety and satisfaction on the prominent rounded extremity of the cervix. To obviate these objections he had devised the knife-blade tenaculum, and had used it extensively for many months. It was made like an ordinary tenaculum, with a blade instead of the hook. The blade was placed at an angle slightly obtuse to the handle and about as long as the terminal portion of an ordinary rectangular uterine tenaculum. In using it, the cervix should be fixed with a tenaculum in the cervical canal, when the short blade of the instrument could be plunged rapidly in a number of places into the vaginal aspect of the cervix anteriorly and laterally and even within the cervical canal, being sometimes used to open a very small external os. The shortness of the blade and the fact that it was placed at an angle to the shaft prevented a deep and dangerous penetration, and, if the cutting edge was kept sharp and the instrument was used with rapidity, it generally occasioned but little pain. The instrument was made entirely of metal, and a very satisfactory model had been made by Mr. Gemrig, of Philadelphia, as shown in the cut.

Dr. J. C. Da Costa had been glad to hear Dr. Kelly speak so highly of depletion in certain diseases of the uterus. He was in the habit of exemplifying it every winter by showing suitable cases to the class at the Jefferson Hospital. He thought that if from one ounce to four ounces or more of blood were removed, instead of six drachms, the effect would be better. The instrument shown was a very pretty one, but an ordinary straight bistoury enabled him to puncture the cervix in all its parts, including the canal. Even if an artery was cut, it was of little consequence; the trouble usually was that the bleeding stopped too soon.

Dr. Goodell remarked that in most cases simple exposure of the cervix to the air with the speculum would cause it to become pale, although, he granted, the effect was doubled by the loss of blood. He had formerly bled very frequently, and occasionally did so still, but not so often, because he believed that the importance of uterine congestion was overrated. With reference to the hæmorrhage, while he agreed in a measure with the last speaker that it was not usually to be feared, yet he had had a patient bleed so profusely after reaching home that she had had to send for a physician to check it. He had once, while using a Buttles's spear, wounded a vessel so large that it threw out a stream of blood beyond the speculum. But ordinarily the difficulty was to abstract enough blood. When the punctures bled too much, he touched each one with a pointed stick of lunar caustic, which never failed to stop the hæmorrhage.

Dr. Parish could indorse all that Dr. Kelly had said. For a number of years he had practiced this method of depleting the uterus, whether there was laceration or not, when the organ was in a condition of congestion. He also emphasized what had been said with reference to the relief and cure of symptoms in cases of laceration of the cervix. In many such cases he had seen a perfect union of the flaps result, but with a continuation of the pain and distress and frequently an increase of dysmenorrhœa. Where the laceration was not deep, he substituted depletion, conjoined with other treatment, for the operation. He added that depletion of the cervix, and particularly of the canal, was one of the best means of treating many cases of endometritis. He had seen sterility of eight and ten years' standing practically cured by this method of depletion.

Dr. Kelly thought that the removal of an ounce and a half of blood every few days was quite sufficient. During the procedure the patient lay on her back with either Goodell's or Nelson's speculum in place, which conducted the blood into a wide-mouthed graduated bottle.

**A Self-retaining Speculum** was shown by Dr. Kelly, who said that he thought it contained the elements of what would be a sufficient self-retaining speculum for the knee-chest posture. A number of specula for this purpose had been invented—some supported by the buttock, others by a belt around the waist, and others at a still higher point. It seemed to him that such a speculum should take its purchase from the pubic rami, for there there was a firm resistance; and such an instrument was the one shown—for the knee-chest posture, not for Sims's. It consisted simply of a dilator of the vaginal outlet. It obviated the necessity of a nurse, whose presence was often a serious objection.

(*To be concluded.*)

## Book Notices.

*On the History, Nature, and Treatment of Syphilis.* By J. L. Milton, Senior Surgeon to St. John's Hospital for Diseases of the Skin. London: Henry Renshaw, 1887. Pp. x–377.

This book is a second edition of a work on the treatment of syphilis published by the same author in 1875, which has been entirely rewritten, and to which much new matter has been added, so that the present book is more than twice as large as its predecessor. Chapter I is devoted to the study of the history of the disease, discussing the different theories advanced for and against its antiquity, and the various diseases, such as sibbens, yaws, and parangi, that have sometimes been considered as forms of syphilis and sometimes as independent diseases. Chapter II takes up the question of the unity or duality of syphilis, deciding in favor of its being a disease *sui generis* quite apart from the chancroidal disease and from gonorrhœa. It seems to us unfortunate in this view of the case that the author should speak of two forms of syphilis, one of which he calls "simple" syphilis and the other "true" syphilis. The former is supposed to arise from a soft sore, the chancroid, and to manifest itself by very slight constitutional symptoms. Chapter III is a polemical one upon the nature of syphilis. In it the author discusses the various theories of the nature of the poison of syphilis, how it gains access to the body, and how it acts afterward. We must confess our inability to get a clear idea of what our author believes in regard to these important questions, negation rather than affirmation being seemingly the rôle he has chosen to play. It is refreshing to find, on page 182, the following sentence: "With respect to the bacteria and micrococcus found by Barduzzi, and the bacillus demonstrated previously by M. Martineau in conjunction with M. Hamonie, I can offer no remarks, as I don't understand such matters." In fact, our author does not hold the microscope in such great reverence as many do, and hence this part of his book will not be received with favor by the bacteriologists and their followers. The remainder of the book is devoted to treatment, and is substantially the same as in the first edition. We will only note that the author has great faith in mercurial vapor baths combined with the use of iodide of potassium and a modified Zittmann's decoction.

Like all the author's writings, this book is vigorous in its style and full of humorous side remarks. It is not a complete

treatise on syphilis, as the systematic description of the lesions and a consideration of the diagnosis of the disease are wanting. But it is a helpful book, full of practical good sense, which should be read by all who are interested in syphilis.

## GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—E. Delorme, "Traité de chirurgie de guerre." Vol. i. (16*fr.*) —— C. Féré, "Dégénérescence et criminalité." (2*fr.* 50.) —— Hérard, Cornil, and Hanot, "La phthisie pulmonaire." (20*fr.*)

Asselin & Houzeau, Paris.—A. Blum, "Chirurgie du pied." (8*fr.*)

J. B. Baillière & fils, Paris—L. Bouveret, "Traité de l'empyème." (12*fr.*) —— J. Cyr, "Scènes de la vie médicale." (3*fr.* 50.) —— X. Galezowski, "Traité des maladies des yeux." 3d ed. (20*fr.*) —— Moreau, "La folie chez les enfants." (3*fr.* 50.) —— E. Duval, "Traité pratique et clinique d'hydrothérapie." (10*fr.*)

O. Berthier, Paris.—F. Bosselut, "De la méningite tuberculeuse chez les jeunes enfants âgés de moins de deux ans." (4*fr.*)

Bureaux du "Progrès médical," Paris.—E. Bouchut, "Tubage de larynx ou intubation."

G. Carré, Paris.—A. Malécat, "Les vénériens et le droit commun."

A. Delahaye & E. Lecrosnier, Paris.—L. Baumel, "Maladies de l'appareil digestif." (9*fr.*) —— Bataille, "Traumatisme et névropathie." (4*fr.*) —— Rendon, "Fièvres de surmenage." (3*fr.* 50.) —— J. Moricourt, "Manuel de métallothérapie et de métailoscopie." (3*fr.* 50.)

O. Doin, Paris.—H. Dubief, "Manuel pratique de microbiologie." (3*fr.*) —— A. Berlioz, "Recherches cliniques et expérimentales sur le passage des bactéries dans l'urine." (3*fr.*) —— Bérenger-Feraud, "Leçons cliniques sur les tænias de l'homme." (8*fr.*) —— C. Debierre, "Les maladies infectieuses." (3*fr.* 50.) —— L. Monange, "Les drogues chimiques." (3*fr.*) —— V. Parant, "La raison dans la folie." (7*fr.*) —— G. Treille, "De l'acclimatation des européens dans les pays chauds." (2*fr.*) —— H. Verneuil, "Les grandes fièvres à travers les découvertes." (2 *fr.* 50.) —— R. Blondel, "Les strophantus du commerce." (2 *fr.*) H. Vincent, "Recherches expérimentales sur l'hyperthermie et les causes de la mort dans celle-ci." (3*fr.*)

G. Masson, Paris.—Verneuil, "Mémoires de chirurgie." Vol. v. (15*fr.*).

G. Steinheil, Paris.—P. Legendre, Barette, and Lepage, "Traité pratique d'antisepsie appliquée à la thérapeutique et à l'hygiène. Vol. i. (10*fr.*)

F. Vallardi, Milan.—D. Barduzzi, "Dermatologia propedeutica." (4*l.*) —— G. Bizzozero, "Di un nuovo elemento morfologico del sangue e della sua importanza nella trombosi e nella coagulazione." (2*l.* 50.) —— C. Forlanini, "La tecnica delle inalazioni medicamentose." (1*l.* 25.) —— A. Biondi, "Trattato di semiotica medica." (15*l.*) —— V. Cozzolino, "La safilide acquisita ed ereditaria dell' apparato auditivo." (1*l.* 25.) —— A. Cuzzi, "Manuale di ostetricia ad uso delle levatrici." (7*l.*) —— G. Chiarleoni, "Malaria e funzioni della riproduzione nella donna." (1*l.* 25.) —— P. Albertoni and A. Stefani, "Manuale di fisiologia umana." (20*l.*)

## BOOKS AND PAMPHLETS RECEIVED.

Annual of the Universal Medical Sciences. A Yearly Report of the Progress of the General Sanitary Sciences throughout the World. Edited by Charles E. Sajous, M. D., Lecturer on Laryngology and Rhinology in Jefferson Medical College, Philadelphia, etc., and Seventy Associate Editors, assisted by over Two Hundred Corresponding Editors, Collaborators, and Correspondents. Illustrated with Chromo-lithographs, Engravings, and Maps. Philadelphia and London: F. A. Davis, 1888. Vol. I, pp. xv–541. Vol. II, pp. 550. Vol. III, pp. 563. Vol. IV, pp. 548. Vol. V, pp. 566.

A System of Obstetrics. By American Authors. Edited by Barton Cooke Hirst, M. D., Associate Professor of Obstetrics in the University of Pennsylvania, etc. Volume I. Illustrated with a Colored Plate and Three Hundred and Nine Engravings on Wood. Philadelphia: Lea Brothers & Co., 1888. Pp. xiv–17 to 808.

Practical Electro-Therapeutics. By William F. Hutchinson, M. D. Philadelphia: Records, McMullin, & Co., 1888. Pp. 9 to 247.

Contribuzione all' etiologia della pleurite acuta primaria. Pel Dott. A. Serafini. [Estratto dal "Progresso Medico."]

Transactions of the New York State Medical Association, for the Year 1887. Volume IV. Edited for the Association by Alfred Ludlow Carroll, M. D., of Richmond County. Pp. viii–554.

Disorders of Menstruation. By Edward W. Jenks, M. D., LL. D., Professor of Gynæcology in the Michigan College of Medicine and Surgery, etc. Detroit: George S. Davis, 1888. Pp. 120. [The Physician's Leisure Library.]

Tre casi di paralisi pseudo-ipertrofica in tre fratelli. Tesi di laurea del Dott. Carlo Borsari, Proassistente. [Estratto dal "Giornale di Neuropatologia."]

# Reports on the Progress of Medicine.

## GYNÆCOLOGY.

By ANDREW F. CURRIER, M. D.

**The Comparative Therapeutics of Uterine Myomata.**—Villa ("Nouv. arch. d'obst. et de gyn.," Jan., 1888). The treatment by curetting in those cases in which there is hæmorrhage and in which the hæmorrhage proceeds from the diseased mucous membrane can not be expected to have more than a temporary value. Especially is this the case if the tumor is developing toward the mucous membrane of the uterine canal, the mechanical conditions being such that frequent recurrences of hæmorrhage are favored. The treatment by intra-uterine injections is based upon the idea or the suspicion of a chronic inflammatory condition of the mucous membrane to which the hæmorrhages or the decomposition of the secretions are attributed. It is believed that this is not a very efficient method of treatment, and it is also accompanied with certain elements of danger. Treatment by means of dilating tents and medicated tampons, after the method of Vulliet, is considered a feeble palliative means and not likely to produce any permanent benefit. Treatment by electricity has recently excited great enthusiasm, but it is not believed that it is likely to result in the radical cure of the neoplasms to which it is applied. The various methods of treatment by the galvanic, the faradaic, and the mixed currents are reviewed in detail, and, as to results, it is found that by some a diminution or a suppression of hæmorrhage, a relief from pain, and a diminution in the volume of the growths have been obtained; by others the tumors have been caused to disappear in some cases, to diminish in size in others, and the hæmorrhage to cease, while others have obtained no satisfactory result. The only positive effect which the author has seen has been in almost all cases a very favorable stimulating effect to the general nutrition and a recuperation of the strength. The method of Doléris has been followed by the author, a galvanic current to the extent of 250 milliampères being used. In some cases the action upon the uterine muscles has been such that it favored the subsequent removal of interstitial tumors of moderate size, but the large tumors were not so favorably influenced. In all varieties of uterine myomata it is believed that electrotherapy is only an unreliable palliative method, and many patients who have been submitted to it have eventually required the radical operation. Not a few accidents have accompanied this method of treatment. Septicæmia is almost inevitable after a large number of punctures have been made, in consequence of necrotic tissue which must result in the womb or in the center of the tumor. There have also been cases in which the rectum and the bladder have been perforated with consequent fistulæ, the abdominal cavity has been entered, and pyosalpinx and peritonitis have followed. The treatment by ergot is still practiced to a certain extent, but this is considered a method of doubtful efficiency. When pediculation occurs during its use it must not of necessity be assumed that it is due to the ergot. In short, the author leads one to infer that no ideal method of treatment has yet been proposed.

**Functional Neuroses in Women, and their Relation to Disease of the Sexual Apparatus.**—Uherek ("Ctrlbl. f. Gyn.," Jan. 28, 1888)

considers the so-called functional neuroses in the female sex as based upon general disease of the entire nervous system, the anatomical changes in which have not yet been demonstrated. Upon this assumption he believes that nervous diseases in women, in so far as they are not complicated with diseases of individual organs, are not curable, though they are susceptible of improvement, and may have periods of latency. The failure to cure the disease is not attributed to its incurability, but to the fact that when they are partly cured patients invariably expose themselves to those conditions which favor a recurrence of their trouble. It is admitted that there is a co-ordinate relation between diseases of the nervous and the sexual apparatus, and that relief to the latter sometimes relieves or appears to relieve the former. With regard to the symptoms in neuroses in women the author has observed that there are three groups of them occurring at intervals, and interchangeable—namely, the cerebral, the spinal, and those which pertain to digestion. The first group is sometimes absent, but the others are almost always present. The treatment of these cases should be entirely symptomatic, but narcotics should be avoided; the bromides will be found very useful, however, and should be given to the limit of tolerance. The author thinks that entirely too much attention has been paid to the genital organs in connection with these neuroses. Even if there are lesions which have resulted from parturition, the general condition should receive a large share of attention. If subinvolution of the uterus is present, the internal use of hydrastis for several months is recommended. It is believed that it is of special value in the profuse and long-continued metrorrhagia which sometimes accompanies the establishment of the menstrual function. In regard to the propriety of submitting virgins to a gynæcological examination, this should be governed by circumstances and should be left to the tact of the physician, but one should err in making too few rather than too many examinations and applications. In many cases examination *per rectum* or *under ether* will be the proper course. In general the author recommends treatment away from home, hydrotherapy, electricity, massage, and regulation of the diet.

**The Operative Treatment of Retroversio-flexio Uteri.**—Sänger ("Ctrlbl. f. Gyn.," Jan. 14, 21, 1888). The number of cases of retroversion of the uterus in which treatment by means of pessaries is unsuccessful is so great that other means of treatment are imperatively called for. The elements for successful treatment by operative means are safety, certainty, and restoration of the organ to its physiological condition, and it is admitted that no such ideal method has as yet been devised. The methods of treatment which have thus far been proposed the author divides into two classes—the indirect and the direct. The former consist in remedial measures upon the defects in the perinæum and prolapses of the vagina and uterus; the closure of deep fissures of the cervix; amputation of the whole or a portion of the *portio vaginalis;* removal by laparotomy of tumors which cause retroflexion of the uterus; removal of the ovaries; and separation of adhesions by Schultze's method. The direct consist in the method of Rabenau—that is, the resection of the anterior vaginal wall, the Alquié-Alexander operation, or shortening of the round ligaments, and ventral fixation of the uterus after laparotomy. The history of the latter operation is divided into the following stages or periods:

1. Kœberlé's operation, performed in 1877, for retroflexion, and consisting in removal of both ovaries and securing the stumps of both ovarian ligaments in the abdominal wound; and Hennig's, which consisted in securing the right ovarian ligament and the left *ala vespertilionis* in the lower angle of the abdominal wound. 2. Oophorectomy and suturing of one ligament in the abdominal wound, after the method of Olshausen, Sänger, and others. 3. Oophorectomy and suturing of the *fundus uteri* to the abdominal wall by one suture, after Tait's method; by suturing with chromic catgut sutures, after Czerny's method. 4. Oophorectomy and suturing of the stump of one ligament to the abdominal wall, after Kelly's method. 5. Oophorectomy and suturing of the stumps of both ligaments to the abdominal wall, according to the method of Olshausen and Sänger. 6. Suturing of the *cornua uteri*, including the round and broad ligaments, to the anterior abdominal wall, without oophorectomy—Sänger's *ventrofixatio uteri retroflexi.*

Sänger's experience includes two cases of variety No. 2, three of variety No. 5, and two of variety No. 6, the latter being the first recorded instances of a deliberate attempt to secure fixation of the uterus to the abdominal wall to cure retroflexion. In these two operations three worm-gut sutures were secured at one end in each uterine horn, the other end being carried through the abdominal tissues and secured externally. The first suture was passed through the round ligament at its junction with the uterus, the second and third at short intervals below the first through the anterior lamella of the broad ligament. The propriety of doing this operation after removal of the ovaries has been recognized by Hegar and Fritsch, and Sänger considers that it is indicated in all cases in which there is or is not fixation of the retroflexed organ, if there is reason for believing that it will be a source of future trouble. An element of danger must be recognized in the possible lodgment of intestines between the two lines of sutures by which the uterus is secured to the abdominal wall. This danger is small, however, and can usually be avoided by suitable precautions when the sutures are passed. The recommendation of Caneva to attach the fundus uteri to the abdominal wall without opening the peritoneal cavity carries with it the risk of wounding the intestines, and is therefore believed to be impracticable. Among other possible means of operative treatment for backward displacements Sänger suggests transverse incision through the posterior vaginal wall close to the cervix, and perhaps with the Paquelin cautery, and shortening of the posterior suspensory ligaments, or the opening of Douglas's pouch and insertion of a tampon of iodoform gauze to excite an aseptic adhesive inflammatory process with subsequent retraction of the cervix, in imitation of the spontaneous cure of retroversion which has been observed after an intermediate attack of parametritis posterior and pelvic peritonitis in Douglas's pouch. Curative inflammations may also possibly be excited by injections of alcohol into the retrocervical tissue and into the folds of Douglas's pouch. The suggestion of Schultze may also be practicable for some cases of retroflexion with adhesions—namely, to cut transversely through the posterior vaginal wall, draw down and open the peritonæum, introduce the finger into the abdominal cavity, release and replace the adherent uterus and ovaries, and then, by means of sutures connecting the peritonæum with the posterior vaginal wall, to so shorten the latter that the cervix will be drawn far back in the pelvis. Theories are also advanced for operative treatment by means of an incision in the anterior vaginal wall, but the author admits that he has not yet had opportunity to put them to a practical test.

**The Operative Treatment of Retroperitoneal Cysts with Reference to Mikulicz's Method of Drainage.**—Fenger ("Ctrlbl. f. Gyn.," Jan. 14, 1888). By retroperitoneal cysts the author refers exclusively to monocystic tumors of the parovaria. They always have thin walls, which are easily ruptured, but rupture seldom gives rise to general peritonitis, the clear non-infectious fluid being readily absorbed. Simple puncture and aspiration of these tumors may be followed by complete cure. If a radical operation seems to be indicated it will often be found very difficult, on account of the very firm adhesions which may have been contracted with surrounding viscera. In some cases they can not be removed without the exercise of unjustifiable violence to the intestine. Mikulicz's plan is to stuff the cavity of the sac with iodoform gauze, and this secures complete drainage of the secretions which may result, by capillary attraction. The author's experience with this plan of treatment has been very satisfactory.

**The Most Recent Standpoint in regard to the Treatment of Carcinoma Uteri.**—Schauta ("Ctrlbl. f. Gyn.," Feb. 4, 1888). The relative value of partial and complete extirpation of the uterus is discussed in this paper, and a conclusion reached in favor of the latter The author analyzes the statistics of Hofmeier, who advocates, with Schröder, the partial operation, and alludes to the statement that the total extirpation is advised by them only in cases in which the disease has extended beyond the os internum. In such cases, however, the disease is well advanced, and it is easy to understand that the comparative results must be unfavorable to the radical operation. A more satisfactory opinion can be reached by comparison of the statistics of operators who do both the partial and complete operations with those of the ones who do only the complete. Thus, by comparison of the statistics of Hofmeier with those of Martin, it is seen that in the former there has been 45 per cent. of permanent recoveries, and in the latter 70 per cent. As to the charge that there is much greater immediate danger from the com-

plete operation, the statistics of Martin and Fritsch for the past two years furnish a sufficient denial. The assertion that removal of the entire uterus removes the possibility of conception and child-bearing is counterbalanced by the fact that those who have become pregnant after the partial operation have always aborted. As an illustration that it is impossible to distinguish clinically the limits of carcinoma of the cervix, the author cites three cases which came under his observation. In a woman who had reached the sixth month of pregnancy, carcinoma of the anterior lip of the cervix was diagnosticated, and the lip was excised. Normal labor occurred at term. Three years and a quarter later, carcinoma appeared in the posterior lip. The uterus was extirpated, and there has been no recurrence. In a woman, forty-seven years of age, a tumor of the cervix as large as an apple, and apparently well defined, was observed. After total extirpation, it was found that the disease had gone beyond the os internum. In a third case, in which extirpation was performed on account of a very small superficial carcinomatous growth of the cervix, a small carcinomatous nodule was also found at the fundus. Clinical facts teach us that the greatest care and attention should be paid to cases in which there are catarrh and erosion of the uterus. If a nodule is at any time discovered, it should be at once excised, and examined microscopically for carcinomatous elements. By this method the disease may be discovered, in many cases, in its early and curable stage.

**The Treatment of Mammary Tumors.**—Fagan ("Dublin Jour. of Med. Sci.," January, 1888). The author considers his subject under three heads, according as are concerned: 1. Tumors potentially malignant, but usually classed as non-malignant. 2. Well-defined malignant tumors that are usually subjected to operation. 3. Tumors in a very advanced stage, ulcerating, or accompanied by great cachexia, that are usually considered unfit for operation. Beginning with the third variety, the indications are to relieve pain, to neutralize the offensive odor, and prevent and restrain hæmorrhage. For the first indication preparations of opium, belladonna, and stramonium, either locally or internally, or both, and ice-bags to affected parts, are recommended. For the second, Esmarch's powder is suggested, containing one part each of arsenic and muriate of morphine, eight of calomel, and forty-eight of powdered gum arabic, of which half a teaspoonful may be sprinkled upon the wound daily. To arrest hæmorrhage, any of the approved styptics may be used, and even if the case is well advanced it is advised to remove the growth, in most cases, for its palliative effect. For the second variety the author recognizes but one course as suitable—the complete removal of the disease by a cutting operation at as early a period as possible. The subsequent recurrence of the disease is not necessarily a contra-indication to subsequent operations. It is admitted that certain cases are not suitable for the knife, and may be attacked by caustics or cautery. In the third variety the treatment should be influenced by the age of the patient and the progress of the growth. In very young girls it is thought that the growth is invariably fibromatous, and will disappear by suitable general and local treatment. Compression has been found a very efficient method of treatment, and is recommended with great confidence by Paget. The conclusions are as follows: 1. In many of the very worst forms of advanced, painful, ulcerating scirrhus, where there is no immediate danger of death from marasmus or visceral complications, the breast may be removed with great benefit and relief to the patient. 2. All cases of malignant growths of the breast should be operated upon as soon as diagnosticated, the removal being made as thorough as possible. 3. All doubtful cases should be similarly treated. 4. All recurrent growths should be removed at their earliest manifestation. 5. All non-malignant neoplasms should be removed as soon as they show a tendency to enlarge, especially in women between twenty-five and forty years of age.

**The Treatment of Fibroid Tumors of the Uterus by Electricity.**—Skene Keith ("Edinburgh Med. Jour.," Feb., 1888). The author observed that there now seemed to be a possibility that operations for the removal of fibroid tumors of the uterus or for checking their growth might have to be abandoned for safer means of treatment, which seemed to be provided by the suitable use of the electric current. The method which is advocated is that of Apostoli, which the author believes should be closely followed, at least until one has acquired a very thorough knowledge of the results which are to be obtained by it. Six cases are narrated in which tumors giving rise to a great deal of trouble in the shape of pain, hæmorrhage, or inconvenience from size, were treated after Apostoli's method, the current not exceeding 200 milliampères and the sitting continuing five minutes. There was no bad result in any case, and no suspension of the ordinary duties. In all cases the bad symptoms disappeared and the patients, to that extent at least, were cured.

**The Significance and Localization of Pain in Pelvic Disease.**—Coe ("Gaillard's Med. Jour.," Feb., 1888). This important subject, which involves so much that is obscure, is treated in a very suggestive and thoughtful manner in this paper, the deductions of which are: 1. That pelvic pain has its origin more often in the perimetric tissues than in any particular organ, being due to irritation of nerve-trunks rather than nerve-endings. 2. That the reflex or transferred pains, commonly referred to certain lesions in the pelvic organs, may radiate from inflammatory foci in the peritonæum or connective tissues surrounding those organs. 3. That operations upon, or complete removal of, such diseased organs may fail to remove the pain for the reason stated. 4. That this pain, like other nerve-pains, may be sensibly relieved by the proper application of electricity.

**The Use of the Curette for the Relief of Hæmorrhage due to Uterine Fibroids.**—Coe's conclusions ("Medical Record," Jan. 28, 1888) are as follows: 1. The hæmorrhage in cases of fibroid tumor of the uterus has its source, not in the tumor itself, but in the hypertrophied endometrium. 2. The hæmorrhage is not directly proportionate to the size of the tumor, but to the extent of the mucous surface. Venous obstruction and the menstrual congestion in the mucosa are the chief active causes. 3. In certain cases the hæmorrhage can be diminished for a considerable period by thoroughly scraping away the hypertrophied endometrium, and repeating the operation as often as may be necessary to keep the menorrhagia under control. 4. Curetting is merely a palliative measure, but it may enable the patient to survive until she is relieved at the menopause, whereas radical operations too often result fatally. 5. Curetting in these cases should be regarded as an experiment which, however, is so harmless and so frequently successful that we are justified in giving it a fair trial before advising oophorectomy, myomotomy, or supravaginal amputation. 6. The use of the curette requires no special skill. It is an operation for the general practitioner, and is much more rational than to allow the patient to become exhausted by repeated hæmorrhages which medication and other palliative measures are powerless to control.

**Latent and Chronic Gonorrhœa in the Female Sex.**—Noeggerath ("Deutsche med. Wochen.," 1887, No. 49). This continuation of a subject which was opened to the medical profession by the author in 1872 was read before the Section in Dermatology and Syphilidology at the sixtieth meeting of the Association of German Naturalists and Physicians. The conclusions refer to the signs or symptoms by which chronic gonorrhœa in the female may be recognized, and are the following: 1. The disease manifests itself shortly after marriage in women who have previously been healthy, by disorder of the sexual apparatus, with which is usually associated a disturbance of the general condition which is entirely out of proportion with the apparently slight changes in the sexual organs. 2. There is a purulent discharge with absence of deep ulcerations, granulations, sarcoma, or carcinoma, or there is a glairy, scanty secretion, with a deep-red erosion around the os uteri. 3. Catarrh of the ducts of the vulvo-vaginal glands. 4. Small, pointed condylomata at different sites upon the entrance to the vagina. 5. A circle of small, pointed condylomata around and in close proximity to the anus. 6. The presence of granular colpitis. 7. Evidence of salpingo-perimetritis; or, 8. Glandular ovaritis. A single one of these symptoms has no decisive value, but if several of them are combined the question can be decided.

[We think we appreciated the value of Dr. Noeggerath's contribution to the subject of gonorrhœa in the female in 1872, and again in 1877, and took occasion several years ago to call attention to some of his statements concerning which the skepticism of earlier days has passed away. We must confess that we do not feel that he has made out a clear case in this paper for chronic gonorrhœa. What clinical means can there be of distinguishing glandular from interstitial oophoritis? Indeed, it is not hazarding much to affirm that in the vast

majority of cases of so-called oophoritis in which there is no decided enlargement or displacement of the organs the diagnosis is a hypothetical one. That chronic gonorrhœa may persist for a very long period without involvement of the uterus, its appendages, or its coverings, that it may subside under proper treatment and recur repeatedly, we are certain from clearly marked cases, and in this respect Dr. Noeggerath's definitions and conclusions are lacking in comprehensiveness. As to signs 2 to 6, inclusive, they can not be called distinctive of chronic gonorrhœa; with the exception of the fifth (which we have never seen), they describe symptoms which are extremely common in acute gonorrhœa. We are glad to see that the author admits that in a very large number of cases the diagnosis must be made exclusively of the demonstration of gonococci—in other words, he agrees with the statement made by Sänger and others that it must usually rest upon a clinical basis. He has also receded from what he properly calls his *pessimistic standpoint* in believing that 90 per cent. of all husbands who have once had gonorrhœa communicate it to their wives. This proposition was the least tenable of any in his original essay, and coincided with the experience of few, if any.]

**Treatment of Endometritis by Curetting of the Uterus.**—Delefosse ("Jour. de médecine de Paris," Nov. 20, 1887). Among recent gynæcological writers there is a difference of opinion concerning the value of this operation. Schröder was an earnest advocate of its usefulness; Doléris, Playfair, and Tilt are also mentioned as approving and frequently practicing it for endometritis, either alone or in conjunction with intra-uterine applications. Emmet is positive as to its limited usefulness, and in his extensive experience has found other more satisfactory means of treating this condition. The author admits that in some cases it is of service, but denies that it is the best means of treatment, or that it should be used for all forms and degrees of endometritis. That endometritis is the initial lesion in all cases of metritis, as maintained by some writers, is not considered proved, and the same may be said in regard to the bacterial origin of the disease, with the exception of the gonorrhœal form. Even if the disease is local, the tissues involved may be destroyed as well by local applications as by the use of a cutting or bruising instrument. An operation analogous to curetting would not be thought of for the analogous disease of the urethra or the conjunctiva. De Sinéty and Ruge describe endometritis as glandular or interstitial. In the former the glands are increased in number or in volume; in the latter there is an increase of connective tissue. The two varieties may be combined, and the mucous membrane may be atrophied to such an extent that the uterine cavity is lined only by a layer of connective tissue. With such conditions what advantage would be gained by curetting? Hence the operation should be performed only after careful discrimination. Even in the hyperplastic variety of the disease it is thought that the superabundant tissues will be more effectually met by the penetrating action of a suitable liquid application. The disease is not believed to be so frequent as is commonly supposed, especially the chronic form of endometritis of the body. The frequency of septic and inflammatory accidents as a result of the operation should also serve as a warning against its injudicious performance.

## Miscellany.

**The New York State Medical Association.**—The fourth annual meeting of the Third District Branch was held in Norwich on Thursday, the 21st inst., under the presidency of Dr. Charles W. Brown, of Elmira. The programme included the following titles:

"A Memorial Sketch of Frederick Hyde, M. D.," by Dr. Caleb Greene, of Homer; "A Memorial Sketch of H. C. Hall, M. D., of Lisle," by Dr. S. P. Allen, of Whitney's Point; "The Prophylaxis of Nasal Affections," by Dr. Reuben Jeffery, of Brooklyn; "Electrolysis in Surgery and in Gynæcology," by Dr. Robert Newman, of New York; "The Ætiological Treatment of Convulsions," by Dr. H. D. Didama, of Syracuse; "Shall Surgical Instruments be Patented?" by Dr. T. H. Squire, of Elmira; "Tracheotomy in Croup," by Dr. Nathan Jacobson, of Syracuse; "Marasmus," by Dr. William B. Morrow, of Walton; "Special Notes of a Case, with Comments on Pelvic Cellulitis," by Dr. C. L. Squire, of Elmira; "The Use of the Dilator and Intra-uterine Stem in the Treatment of Dysmenorrhœa and Sterility," by Dr. A. H. Goelet, of New York; "Fistulo in Ano dependent on Tuberculosis of the Ischio-rectal Fossæ," by Dr. Henry L. Elsner, of Syracuse; "Mountain-Climbing as a Cure for Consumption," by Dr. Theron A. Wales, of Elmira; "Arm Presentations," by Dr. Florence O. Donohue, of Syracuse; "Cerebro-spinal Meningitis (Epidemic of thirty years ago)," by Dr. E. S. Lyman, of Sherburne; "Cerebro-spinal Meningitis (Epidemic of 1888)," by Dr. L. J. Brooks, of Norwich; "The Treatment of Cerebro-spinal Meningitis," by Dr. B. J. Ormsby, of Norwich; "Inhalations of Steam in Capillary Bronchitis," by Dr. J. H. Martin, of Otego; "Exophthalmic Goitre," by Dr. L. P. Blair, of McDonough; "Chronic Bright's Disease, its Causation, Course, and Treatment," by Dr. B. A. Church, of Oneonta; and "A Case of Puerperal Pulmonary Embolism," by Dr. Thurston G. Packer, of Smyrna.

**The American Association of Obstetricians and Gynæcologists** will hold its annual meeting in Washington, on the 18th, 19th, and 20th of September. The preliminary programme includes: The president's annual address, by Dr. William H. Taylor, of Cincinnati; a discussion on extra-uterine pregnancy; "The Relations of the Abdominal Surgeon to the Obstetrician and Gynæcologist," by Dr. Albert Vanderveer, of Albany; "An Operation for an Unusual Case of Subserous Uterine Fibroid," by Dr. Hampton Eugene Hill, of Saco, Me.; "Drainage in Abdominal and Pelvic Surgery," by Dr. Joseph Price, of Philadelphia; "Double Ovariotomy during Pregnancy, a Successful Case going on to Full Term," by Dr. William Warren Potter, of Buffalo; "The Indications for Artificial Aid in Labor," by Dr. Thomas Opie, of Baltimore; "The Technique of Vaginal Hysterectomy," by Dr. James H. Etheridge, of Chicago; "The Surgical Treatment of the Perinæum," by Dr. William H. Wathen, of Louisville; "Laparotomy in Peritonitis," by Dr. E. E. Montgomery, of Philadelphia; "Tumors of the Abdominal Wall," by Dr. Charles A. L. Reed, of Cincinnati; "Uterine Fibroids; their Diagnosis and Treatment," by Dr. Thomas J. Maxwell, of Keokuk; "Desmoid (Fibroid) Tumors of the Abdominal Walls," by Dr. Edward J. Ill, of Newark; "Ruptured Perinæum," by Dr. J. Henry Carstens, of Detroit; "A Contribution to the Study of Pelvic Abscess," by Dr. Clinton Cushing, of San Francisco; "The Female Perinæum; its Anatomy, Physiological Function, and Methods of Restoration after Injury," by Dr. Henry O. Marcy, of Boston; "Heart Failure in the Puerperium," by Dr. Thomas Lothrop, of Buffalo; "The Treatment of Suppurative Peritonitis," by Dr. William H. Myers, of Fort Wayne; "Operative Treatment in Uterine Carcinoma," by Dr. George R. Shepard, of Hartford; "The Reflexes Reflected, or Some Things that Retard Progress in Gynecic Surgery," by Dr. Joseph Eastman, of Indianapolis; "Some Points in relation to the Diagnosis of Pregnancy in the Early Months," by Dr. James P. Boyd, of Albany; "Vaginal Tamponnement in the Treatment of Prolapsed Ovaries," by Dr. W. P. Manton, of Detroit; and "The Methods of Success in Abdominal Surgery," by Mr. Lawson Tait, F. R. C. S. E., of Birmingham, England.

**The New York Academy of Medicine.**—The Section in Pædiatrics will meet on Wednesday evening, the 27th inst. The programme is as follows: "Remarks on Summer Complaint," by Dr. A. Jacobi; "The Dietetic Management of the Summer Diarrhœa of Infants," by Dr. A. V. Meigs, of Philadelphia; "A Clinical Study of the Ætiology and Treatment of the Summer Diarrhœa of Infants," by Dr. S. Baruch; and "The Relative Digestive Power of the Pepsins in Common Use, and the Action of the Drugs employed in the Treatment of the Summer Diarrhœa upon Digestion," by Dr. George B. Fowler.

**The Yale Medical Society, of New Haven.**—On Tuesday, the 26th inst., at noon, Professor William H. Welch, of the Johns Hopkins University, Baltimore, will deliver an address in medicine before the society, in Battell Chapel. In the evening a reception to Dr. Welch will be given by Dr. William H. Carmalt.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality," for the month of May, the

whole number of deaths during the month was 504, including 6 from cholera infantum, 21 from croup and diphtheria, 5 from cerebro-spinal meningitis, 2 from erysipelas, 1 from typhus, 12 from typhoid fever, 1 from malarial fever, 1 from measles, 2 from pyæmia, 1 from whooping-cough, 3 from syphilis, 4 from septicæmia, 5 from scarlet fever, and 2 from small-pox.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 15th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending May 26th corresponded to an annual rate of 17·8 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 10·9, and the highest in Preston, viz., 27·8 in a thousand. Small-pox caused 3 deaths in Sheffield, 1 in Bristol, 2 in Preston, 1 in Oldham, and 1 in Hull.

*London.*—One thousand three hundred and sixty-one deaths were registered during the week, including measles, 23; scarlet fever, 17; diphtheria, 19; whooping-cough, 64; enteric fever, 10; diarrhœa and dysentery, 9; and choleraic diarrhœa, 2. The deaths from all causes corresponded to an annual rate of 16·6 in a thousand. Diseases of the respiratory organs caused 228 deaths; different forms of violence, 65; and 9 suicides were registered. In greater London 1,689 deaths were registered, corresponding to an annual rate of 15·9 in a thousand of the population. In the "outer ring" 19 deaths from whooping-cough were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending May 26th in the sixteen principal town districts of Ireland was 23·3 in a thousand of the population. The lowest rate was recorded in Galway, viz., 3·4, and the highest in Drogheda, viz., 42·3 in a thousand. In Dublin 165 deaths were registered, including measles, 2; whooping-cough, 7; enteric fever, 1; scarlet fever, 5; and diarrhœa, 2.

*Scotland.*—The deaths registered in eight principal towns during the week ending May 26th corresponded to an annual rate of 20·9 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Leith, viz., 11·2, and the highest in Perth, viz., 25·6 in a thousand. The aggregate number of deaths registered from all causes was 529, including measles, 13; scarlet fever, 10; diphtheria, 1; whooping-cough, 11; fever, 6; and diarrhœa, 10.

*Tokio, Japan.*—The United States minister, in his dispatch dated May 9, 1888, transmitted copies of a printed pamphlet entitled "A Brief Review of the Operations of the Home Department in Connection with the Cholera Epidemic of the 19th year of the Meiji (1886)." The following is an extract from the introduction to the pamphlet:

"The cholera epidemic of the 19th year of Meiji (1886) was the most violent and malignant since that of the 12th year of Meiji (1879), there being 155,574 cases, among which 110,086 were fatal. Indeed, there were only 17 days in the whole year when there were no cases.

"The epidemic spread over the whole country, an area of 3 fu 41 ken, and even Hokkaido suffered from its invasion; but it was most violent in Osaka, Ishikawa, Toyama, Tokyo, Fukui, and Niigata. The kens of Kagoshima and Miyazaki and the northern part of Hokkaido were the only localities which escaped its ravages.

"As to the cause of its outbreak and propagation, accurate evidence is wanting; it is an undeniable fact, however, that it sprang and was propagated from the widely spread germs of the disease which had lain dormant in Osaka the preceding year, there being no trace of a fresh introduction. Osaka, in the autumn of the preceding year, had been invaded by the disease from Nagasaki; but after some thirty days of prevalence the epidemic gradually declined with the approach of the colder season, though it did not then entirely disappear. One or two cases kept occurring continually over into the next year, until on the 2d of January there were five cases reported in the western and southern districts of the city and in the ku of Sakai. On the 3d, five more cases were reported in the three ku of the West, South, and North and the ku of Sakai. From this time forward the number of cases gradually increased until the approach of the warmer season, toward the end of April, when it had spread all over the city, where it raged up to the end of October. During the epidemic there were ninety-nine days in which the daily number of cases reported was over one hundred, and four days when there were two hundred. Indeed, it was the most severe epidemic ever known in Osaka.

"The situation of Osaka is such that it undoubtedly favors the propagation of an epidemic, for the water of the Yodo River, being conducted through the city by canals in various directions, besides furnishing a convenient roadway for transportation and water traffic, also receives the contents of the drains of the city, while at the same time it supplies the city with drinking-water.

"The wells, keeping the same level with the canals, freely communicate with each other, and thus the drinking-water of the city is more or less mingled with the water of the drains. Such, then, being the situation of Osaka, when an epidemic appears the same convenience for the transportation of goods furnishes an easy medium for the propagation of disease. It is not strange, then, that since the tenth year of Meiji (1877) whenever an epidemic prevails the city has been a center of the epidemic. Moreover, in the preceding year there was much rain after the spring until finally, in June, the Yodo River overflowed its banks, inundating the streets and houses. Hence the city was rendered very filthy, in consequence of which the concealed germs found a favorable nidus from which the disease appeared with the return of the warm weather, and finally ravaged the whole city. It is also to be borne in mind that, as Osaka is the commercial center of Japan and has free communication in every direction, it is likely to become the cradle of epidemics, and, therefore, whatever has made its appearance in various other localities has had its origin directly or indirectly in Osaka."

*Callao.*—The United States consul, in his dispatch dated May 3, 1888, transmits a copy of a translation of a decree issued on the 2d instant by the government. The following is a copy of the translation:

Lima, *May 1, 1888.*—Having examined the resolution adopted by the supreme board of health, the same is hereby approved and it is declared—

1. Vessels arriving from Atlantic, with clean bills of health and in voyage for Peru, will be received in all the sea-ports without undergo, ing quarantine, if they may not have touched in those ports of Chili where the cholera made its appearance.

2. These vessels, (although) when they may have touched in ports where the epidemic has disappeared, shall be admitted after a quarantine of observation and disinfection, in the event that during the voyage no case of cholera may have occurred on board.

3. Vessels proceeding from Chilian ports which may have escaped the cholera, and which, before commencing their voyage, had not traded at infected ports, shall be received as those mentioned in the first article of this decree.

4. Vessels arriving from Chilian ports where the epidemic has disappeared, but where it existed for some period of time, will only be admitted to Peruvian ports if they have been disinfected before commencing their voyage, which must appear from a certificate of the medical man on board, and on arrival shall be subjected to a quarantine of at least five days, and be again disinfected before being placed in free pratique.

5. Passengers and European merchandise arriving from Arica and uninfected Chilian ports shall be received without detention.

6. Passengers and merchandise arriving from Chilian ports where only recently the cholera has disappeared shall be received in Peruvian ports under the conditions stipulated in Article 4.

7. Vessels arriving from infected Chilian ports shall not be received at present in the Peruvian ports, and under this are comprehended the vessels proceeding from the district to the north of Valparaiso up the Antofagasta, excepting these two ports.

8. The terms for the reception of these ships shall be fixed by the board of health, according to Article 42, paragraph 8 of the regulations.

This ordinance goes into effect from the date hereof.

*Ceara, Brazil.*—One hundred and sixty-five deaths were registered during the month of April, including 11 from yellow fever.

*Catania, Italy.*—Two hundred and ninety-six deaths were registered during the month of March, including small-pox, 6, and enteric fever, 8.

*Havana.*—Four hundred and fifty-one deaths were registered during the month of May, including yellow fever, 27; enteric fever, 4; so-called pernicious fever, 14; small-pox, 29; diphtheria, 1; croup, 5; and measles, 1. Over 75 per cent. of the deaths from yellow fever occurred at the military hospital. The sanitary inspector states that "up to the present time yellow fever shows little or no tendency to spread, and the cases which occur are confined to old, well-known insanitary places, infected fortifications, and the immediate vicinity of wharves on the Havana side of the harbor. Small-pox continues to diminish in Havana and suburbs."

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | May 26. | 2,260,945 | 939 | .. | .... | 6 | .... | 11 | 4 | 38 |
| Glasgow | May 26. | 545,678 | 257 | .. | .... | .... | .... | 3 | 9 | .... |
| Warsaw | May 19. | 444,814 | 303 | .. | .... | 1 | .... | .... | 6 | 11 |
| Calcutta | April 28. | 433,219 | 240 | 69 | .... | .. | .... | .... | .... | .... |
| Amsterdam | May 26. | 389,916 | 142 | .. | .... | .... | .... | 1 | .... | 2 |
| Rome | April 7. | 388,300 | 166 | .. | .... | .... | .... | 2 | .... | .... |
| Rome | April 14. | 388,300 | 180 | .. | .... | 5 | .... | 3 | .... | 2 |
| Copenhagen | May 22. | 300,000 | 168 | .. | .... | .... | .... | 1 | 1 | 6 |
| Munich | May 19. | 275,000 | 183 | .. | .... | .... | .... | 1 | 1 | 3 |
| Edinburgh | May 19. | 262,733 | 104 | .. | .... | .... | .... | 1 | .... | 2 |
| Palermo | May 26. | 250,000 | .... | .. | .... | .... | .... | 1 | 2 | 2 |
| Genoa | May 26. | 179,504 | 107 | .. | .... | .... | .... | .... | .... | .... |
| Leipsic | May 26. | 170,000 | 55 | .. | .... | .... | .... | .... | 2 | 3 |
| Stuttgart | May 26. | 125,510 | 43 | .. | .... | .... | .... | .... | .... | 1 |
| Toronto | June 2. | 130,000 | 40 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | May 24. | 122,000 | 60 | .. | .... | .... | .... | .... | .... | .... |
| Havre | May 26. | 112,074 | 55 | .. | .... | 3 | .... | 2 | 1 | .... |
| Pernambuco | May 8. | 110,000 | 114 | .. | 1 | .... | 1 | 5 | .... | .... |
| Pernambuco | May 15. | 110,000 | 66 | .. | 1 | .... | 2 | 4 | .... | .... |
| Leghorn | May 27. | 101,718 | 45 | .. | .... | .... | .... | .... | .... | .... |
| Mayence | May 19. | 65,802 | 52 | .. | .... | .... | .... | .... | .... | .... |
| Merida | May 27. | 48,800 | 39 | .. | ... | .... | .... | .... | .... | .... |
| Cienfuegos | May 28. | 40,753 | 21 | .. | .... | 11 | .... | .... | .... | .... |
| Guayaquil | April 22. | 35,000 | 62 | .. | 4 | 4 | .... | 30 | .... | .... |
| Guayaquil | April 29. | 35,000 | 52 | .. | 6 | 4 | .... | 21 | .... | .... |
| Vera Cruz | May 31. | 23,800 | 18 | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | May 20. | 23,031 | 11 | .. | .... | .... | .... | .... | .... | .... |
| St. Thomas | May 18. | 15,000 | 4 | .. | .... | .... | .... | .. | .... | .... |
| Cape Haytien | June 2. | 15,000 | 6 | .. | .... | .... | .... | .... | .... | .... |
| Cartagena, Col'a. | May 19. | 13,000 | 7 | .. | .... | .... | .... | .... | .... | .... |
| Turk's Island | May 23. | 4,732 | 4 | .. | .... | .... | .... | .... | .... | .... |
| Paita | May 12. | 4,000 | .... | .. | .... | .... | .... | .... | .... | .... |
| Livingston | May 26. | 2,500 | 2 | .. | .... | .... | .... | .... | .... | .... |
| S'n Juan d'l N'rte | May 7. | 500 | 1 | .. | ... | .... | .... | ... | .... | .... |

UNITED STATES.

*San Francisco.*—Eight cases and 2 deaths from small-pox are reported for the month of May, 1888.

Notice.—After July 1, 1888, a mortality table of American cities will be inserted in the abstract. Registrars and health officers are respectfully requested to furnish weekly statements in exchange.

## THERAPEUTICAL NOTES.

**Squibb's May-Apple Pills.**—In the June number of the "Ephemeris of Materia Medica," etc., Dr. E. R. Squibb gives the following formula for the pills commonly known as may-apple pills, or podophyllum pills:

Resin of podophyllum..... ¼ grain;
Alcoholic extract of hyoscyamus..... 1 grain;
(or alcoholic extract of belladonna..... ⅛ grain);
Powdered capsicum, } each..... 1 grain;
Powdered sugar of milk, }
Powdered acacia..... ¼ "

About a third of a grain of glycerin is added to keep the pills soft, and syrup is used in making up the mass. Nowhere, says Dr. Squibb, are the pharmacist's knowledge and skill so necessary as in making such pills. They should never be coated. They are used as an aperient where the upper part of the intestinal tract is at fault, perhaps from sluggishness of the liver, and are given at bedtime—seldom more than one at a time. "No effect need be expected on the day following," says Dr. Squibb, "but the second or third pill at bedtime will pretty surely give some effect on the third or fourth day. Then usually one dose at bedtime is to be omitted, and . . . two doses a week will be sufficient during the next week, one dose a week for the third week, and finally none."

**Common Salt in the Treatment of Sick Headache.**—Dr. Batour ("Jour. des sci. méd. de Lille"; "Lyon méd.") states that he has accidentally discovered the virtues of common salt in the treatment of migraine. As soon as the first symptoms of an attack are perceived, half a spoonful or a spoonful [whether a teaspoonful or a tablespoonful, is not stated] should be swallowed dry, and then a mouthful of water. Generally the threatened attack is aborted or much shortened. Six cases are reported, all successful. The author attributes the effect to reflex action.

## ANSWERS TO CORRESPONDENTS.

*No. 195.*—Early in September.

*No. 196.*—Evaporate the balsam to a dry, brittle mass over a water-bath, and then dissolve it in benzene.

*No. 197.*—We think you did right.

*No. 198.*—Our impression is that such a book was published by Messrs. J. H. Vail & Co., of Astor Place, New York.

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**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### ELECTROLYSIS IN UTERINE FLEXIONS.

BY EGBERT H. GRANDIN, M. D.

THE use of electricity in the routine treatment of the diseases of women, although slowly gaining ground, has by no means as yet received the recognition to which it is justly entitled. For some reason or other, possibly the impression that the application requires deep study and the expenditure of much time, the specialist and the practitioner are very slow to accept as facts the favorable data which are daily accumulating in evidence of the marked relief which very frequently follows the intelligent resort to this most valuable therapeutic agent. I have elsewhere stated the deductions which my experience has taught me are warrantable in connection with certain of the inflammatory affections to which woman is liable, and my sole purpose in this brief article is to add further testimony to that which already exists in regard to the results obtainable in cases of uterine flexions.

As to the pathological factor which is at the basis of the symptoms that in some women accompany the presence of a flexion it is useless to theorize. Whether or not the dysmenorrhœa—the most marked symptom—is the result of stenosis somewhere in the cervical canal, or of an hyperæsthesia at the level of the internal os, due to morbid structural change, or is the accompaniment of changes in the tissues surrounding the uterus, matters not for my present purpose. Sufficient the statement that in many women with a uterine flexion labor cures the dysmenorrhœa, and the corollary must stand that this is possibly partially in consequence of the dilatation to which the cervical canal has been subjected during childbirth. When, therefore, a woman presents herself for treatment for dysmenorrhœa, we find a flexion of greater or less degree, and the symptom does not yield to the general measures which suggest themselves, we not unnaturally resort to dilatation. This step rarely fails, in well-selected cases, to cure the symptom. Of the dilating means at our disposal, the one chiefly favored to-day is divulsion by steel-branched dilators, followed or not, according to individual preference, by the insertion and the more or less prolonged wearing of a stem-pessary. This method offers certain disadvantages, such as the necessity of anæsthesia, rest in bed for a number of days thereafter, and the fact—very exceptional, true enough, where the requisite precautions are taken—that it may be followed by perimetritis or parametritis. Further still, where a stem-pessary is inserted, the latter complication may at any time develop, in particular if the uterus happens to be of the kind we now and then meet with which is intolerant of the presence of a foreign body within its cavity. Such being the objections which I doubt not even the most pronounced advocates of divulsion will grant, it remains to advance the merits of a method which a somewhat prolonged experience satisfies me is safe and effective.

The value of electrolysis in causing the absorption of plastic deposit, and the incontestable ability of this property of the electric current to overcome stenosis in case of stricture of the male urethra, very naturally suggest its utility in similar conditions in the female. The statements which have been advanced in its favor by a number of workers in the fruitful and by no means thoroughly tilled field of gynecic electrotherapy I have been enabled to amply satisfy myself are warranted, with the result that, given to-day an instance of uterine flexion accompanied by symptoms fairly attributable to the distortion, and my choice in treatment would be electricity. The technique of the method is simple, painless, and applicable in one's office without the expenditure of overmuch time. Furthermore, it hardly rises to the dignity of being called an operation, something from which many a patient will shrink. The risk the patient runs of the development of any inflammatory sequela may with justice, I think, be stated as *nil*. The insertion of a stem-pessary is not called for. The canal once opened, the hyperæsthesia once abated, the endocervical catarrh, which is not infrequently a complicating factor, once cured—and all this is possible through electrolysis—the patient's symptom, dysmenorrhœa, disappears, and, so far as it is dependent on the flexion, not to return. These statements which I advance any one is in a position to verify for himself if he possesses a galvanic battery and the requisite electrodes. A convenient internal electrode, in that it has the requisite degree of flexibility, is the steel-bulb sound used in the exploration of the male urethra. The shaft may be effectively and cheaply insulated by rubber tubing. In the nullipara, having previously determined the degree of flexion by the sound in order to give the electrode the proper curve, I am in the habit of electrolyzing with the patient in the dorsal position and without the insertion of a speculum. Where the external os is very small and the cervical canal tortuous, the ordinary Simpson sound, insulated within an inch and a half of its tip by rubber tubing, has answered very well in my hands as the smallest electrode. The size of this sound corresponds to about a No. 9 French scale bougie, and the largest electrode I have thus far found it essential to use has been the No. 22 French scale bulb. The external electrode is placed over the fundus of the uterus and may consist of the ordinary sponge, or else, and this is more cleanly, of an oval or circular tin disc covered with cotton or rough toweling. This electrode is connected with the positive pole of the battery and the internal electrode with the negative. As regards the current strength necessary for effective action, opinion varies. Personally, I have not found it requisite to bring more than eight to ten cells * into the circuit, where the battery is freshly filled. The main rule for guidance is to proceed slowly and to use only that current strength which is found sufficient to cause the bulb to work its way along the canal. The séance need not be prolonged beyond ten minutes, and the average number sufficient to dilate to the requisite degree may be stated as about ten. Thereafter, if the patient

* I am aware that this expression is open to criticism on the score of scientific inaccuracy, but I use it advisedly since but few of my readers possess a milliampèremeter.

is seen once or twice before each menstrual period for two to three months, she may be dismissed as cured.

While I would not be understood as lauding this method above all others, it is my desire to maintain for it a high rank in uterine therapy. Especially is it of value in case of those sufferers from dysmenorrhœa associated with flexion, whom, being unmarried, one is naturally loath to subject to the specular distension of the vulva which divulsion entails. In such instances, constitutional measures having failed in giving relief, instead of writing a prescription for morphine or antipyrine to be taken at the menstrual period, let the practitioner cocainize the introitus and hymen, pass the smallest bulb, guided by his finger, to the internal os, and use the proper current strength, and he will be amazed at the ease and freedom from pain with which, successively, he will be enabled to dilate the cervical canal to the degree requisite for giving the patient immunity from pain during menstruation.

My object in this paper having been simply to record my individual impression in regard to the value of this method of treatment, I have deemed it unnecessary to insert illustrative cases or to refer by name to the workers in the same direction whose results are in accord with mine.

109 East Fifty-fourth Street.

## OBSTETRIC METHODS IN PRAGUE.

By HENRY H. MORTON, M. D.,
BROOKLYN.

During the winter of 1885–'86 it was my privilege to live in Professor Breisky's clinic at the Maternity Hospital in Prague, Austria. This institution ranks second in size to the one at Vienna, three thousand births occurring in it annually, one third of this material being under Professor Breisky's charge at the time of my residence there. Some account of the antiseptic and other methods followed in the hospital may be of general interest.

The first essential in carrying out antisepsis is, of course, the thorough cleansing and disinfection of the hands of physicians and nurses. Before examining a woman in labor, the nails are cut and cleaned and the hands and arms scrubbed with soap and water and a brush. This is followed by irrigation with corrosive-sublimate solution (1 to 1,000), and the hands are held in a basin of sublimate solution (1 to 1,000) for a minute or so. Instruments are allowed to remain half an hour in carbolic-acid water after being used. Catheters are boiled half an hour in a 5-per-cent. carbolic-acid solution and cleaned internally with a brush. The catheters are specially made, the eye being double and going directly through the catheter, and the portion above the eye being filled in with lead, allowing no crevice for the collection of dirt. The external genitals are carefully washed with carbolic-acid solution, before the catheter is passed, to remove mucus which might be carried into the bladder before it. Cystitis seldom occurs, and then only when the catheter is not clean. Hypodermic needles are heated in the flame of the gas, and before giving an injection the skin is washed. Small instruments, such as dressing forceps, are also held in the gas flame.

The following antiseptic precautions are adopted with regard to the patients: Upon their entering the hospital and before the first examination is made the vagina is irrigated with corrosive-sublimate solution (1 to 2,000). Patients are not irrigated daily unless they have some abnormal secretion, such as leucorrhœa. Upon the beginning of labor the vagina is irrigated before the first examination. The irrigation is not repeated during the course of the labor unless a number of students have examined, the patient has fever or hæmorrhage, or there is an indication for the use of instruments.

After the birth of the child the external genitals alone are washed, and the vagina is not irrigated in normal cases. When, however, any considerable laceration of its structure has taken place or instruments have been used, irrigation is employed. The uterus is never washed unless it has been operated upon, as in applying the forceps with the child high up, or in perforation or craniotomy.

The uterus is never washed with bichloride, carbolic-acid solution being always used in the strength of 3 per cent. for prophylaxis, or, when infection is present, 4 to 5 per cent.

After every uterine irrigation two iodoform suppositories are introduced into the uterus. All wounds of the genital passages are sewed up and dressed with iodoform.

After the birth of the child and before the placenta has come away the vulva is covered with a sheet of cotton soaked in chlorine water, which is left till soiled, and then replaced by a fresh one. This is changed every two hours at first, and afterward three times a day. Before the birth the genitals are washed with soap and sublimate solution. During the puerperal state the external genitals are washed with sublimate, but the vagina is not irrigated while the patient is doing well.

Foul-smelling lochia, a discharge too profuse in quantity, and the continuance of blood in the flow for a longer time than normal, are considered indications for irrigating the vagina either with carbolic-acid or corrosive-sublimate solution. The sublimate is never used when the patient is excessively anæmic or is suffering from kidney disease or diarrhœa. When the discharge is normal in character but profuse in quantity, an astringent—either alum or acetate of lead—is used as an injection. The uterus is never washed out without an indication, as, for example, if the patient has fever or endometritis, or the membranes or placenta are retained. Carbolic-acid solution from 3 to 4 per cent. is made use of in such cases.

In examining a patient with septicæmia, if, upon the introduction of the speculum, any portions of the vagina are found covered with diphtheritic deposit, the vagina is first irrigated, and then the patches of exudate are touched with tincture of iodine. When everything has been made clean, so that nothing septic can be introduced into the uterus, that organ is examined.

The rooms for puerperal cases, each one containing six beds, are washed once in ten days with soap and water and hypochlorite-of-lime solution. Woven-wire springs are used

on the beds, and the mattresses are taken out of doors, beaten, and aired. In the lying-in room the beds are changed daily. In septic cases the rooms are washed as usual, and, in addition, a spray of carbolic acid is used with the atomizer. The bedsteads are put into a room and exposed to a high temperature, the mattresses are beaten and aired, and, if discharges have soaked through the rubber cloth with which each bed is protected, the mattress is burned.

A good deal of weight is laid upon the treatment of the breasts. Upon entering the hospital, each patient has the breasts washed daily with borax-water, 4 per cent. in strength. When a considerable amount of sebaceous secretion is present, upon which the dirt has collected, they are rubbed with a 4-per-cent. borated vaseline to soften the deposit, and then treated as above mentioned.

As soon as the child is born, each of its eyes is treated with a drop of 2-per-cent. nitrate-of-silver solution. The children's mouths are no longer washed, since Professor Epstein, of the Foundling Asylum in Prague, has found that the delicate mucous membrane is apt to be abraded in the washing, and aphthæ form much more readily than upon an unbroken surface. The navels are packed in salicylated cotton, which is changed daily when the child is bathed. Diarrhœa and indigestion in newly born children are treated after a plan suggested and used by Professor Epstein. He supposes that the mother's milk, taken into the stomach by the child and not being digested, undergoes decomposition. Bacteria are produced and act as irritants, exciting a catarrhal inflammation, and keeping it up by their presence. The plan of treatment which he has used for some years past is to wash out the child's stomach, using a small Jaque's catheter, to which are attached a rubber tube and a funnel. The catheter is passed through the mouth and œsophagus into the stomach; the funnel is elevated, and two ounces of plain warm water are poured into the stomach through the funnel, which is then lowered and the water siphoned off. This is repeated several times until the water from the stomach comes away clear. Milk or food is forbidden for twenty-four hours, and the child is given albuminated water, made by mixing water and the white of egg, every two hours, the child taking about sixteen ounces in twenty-four hours. This is given on account of the thirst. The stomach washing is not repeated. When the diarrhœa is very severe, small doses of acetate of lead are given alternately with the albuminated water. Since the adoption of this plan of treatment in this disease the deaths have been much fewer than formerly.

I may here mention incidentally that the administration of ergot, as a routine treatment to favor firm contractions of the uterus, was abandoned in 1882. The patients do as well without it as during its employment, hæmorrhage being no more frequent.

In conclusion, I would say that the utility of the antiseptic precautions is proved by a comparison of the results before and after their adoption. In the old Maternity Hospital, before antisepsis was used, the mortality was from eight to fifteen in a hundred! In the present institution the entire mortality ranges from four to six deaths in a thousand, and the septic mortality is from two to two and a half in a thousand per annum. I should remark here that this hospital is used for teaching purposes, and each patient is examined by from three to six students in addition to the regular staff. Since the present method of treating breasts was begun, eight hundred and forty women had been confined in the hospital at the time of writing, and only two cases of mastitis had occurred, both of which were in patients who had no preparatory treatment, having entered the hospital in labor. Cystitis seldom occurs, and it is then usually traced to an improper cleansing of the parts or of the catheter. The frequency of ophthalmia neonatorum has been greatly diminished under the use of nitrate of silver.

I take this opportunity of expressing my thanks to Professor Breisky and his assistant, Dr. Carl Fleischmann, for the many favors extended to me during my sojourn in Prague.

266 Clinton Street, Brooklyn.

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## CLINICAL REMARKS ON PROGRESSIVE PERNICIOUS ANÆMIA.

By JOHN A. WESSINGER, M. D.,
HOWELL, MICHIGAN.

Pernicious anæmia is a disease of rather infrequent occurrence, and its ætiology and pathology are at present only partially understood. I therefore feel warranted in reporting the following case:

On October 14, 1887, I was called to see a lady, about fifty-two years old, whose family history was good, and whose health had been excellent during early life. She was married twenty-two years ago, and twenty years ago she was delivered of a healthy boy, the only child she has had. The delivery was followed by extreme post-partum hæmorrhage. She slowly recovered from the immediate effects of this, but did not regain her previous weight and vigor. She attended to the ordinary duties of a housewife, however, until five years ago, when she was suddenly attacked with severe uterine hæmorrhage. An examination by the attending physician revealed nothing abnormal, save a flabby, relaxed condition of the uterine tissues. Under ordinary treatment she recovered from the hæmorrhage, but remained weak and anæmic. The hæmorrhage subsequently recurred at intervals of from nine to twelve months, and she became decidedly anæmic and debilitated. I found her with an extreme waxy hue of the entire integument; the lips and the ocular conjunctiva of a pearly white; the tongue large, clean, moist, and colorless; with slight bleeding from the alveoli and the nasal, pharyngeal, and rectal mucous membranes; unable to walk; her lower limbs œdematous; her bowels constipated; her urine slightly albuminous, but containing no blood; her appetite defective; her respiration 24; her pulse 100; and her temperature 100°. During all the time that she was under my observation her temperature was never below 99·5°. She was very restless at night. Microscopical examination of the blood showed the red blood-corpuscles greatly diminished in number and of various sizes.

She remained in about this condition until January 18, 1888, when the late Professor Edward S. Dunster, of the University of Michigan, was called to see her with me.

After a very careful examination, Dr. Dunster gave me his opinion as follows:

My dear Doctor: The number of red blood-corpuscles was wonderful, the smallest I have ever found. I fully verify your diagnosis of pernicious anæmia. I have no expectation of recovery in Mrs. J.'s case.

Yours very truly, E. S. Dunster.

I would say in explanation of the foregoing letter that specimens of blood from this patient were sent to the laboratory of the University of Michigan for microscopical examination. The following report from this department, through Professor C. H. Stowell, is appended on account of its bearing on the diagnosis of this form of disease:

My dear Doctor: Computations give 1,500,000 red corpuscles to the cubic millimetre. You know 5,000,000 is the standard. This is extremely low. The white corpuscles were not so very much in excess as we should expect. I did not compute them. Yours, C. H. Stowell.

Suffice it to say that this patient went from bad to worse until the fatal issue, which took place on the 17th of February. There was no autopsy.

In regard to the ætiology of pernicious anæmia, leaving out hæmorrhage previous to and during the climacteric period as a causative factor, the disease is more prevalent among men than among women, since such predisposing causes as gastric and intestinal dyspepsia and mental and physical over-work are commoner in men than in women. However, hæmorrhage is a very important ætiological factor in this disease, and hence the fact that more women than men die of pernicious anæmia. In the diagnosis the use and value of the microscope should never be lost sight of. The diagnosis lies mainly between the disease under consideration and leucæmia. The microscope, however, makes the way clear, for in pernicious anæmia there is great destruction of the red corpuscles, with little or no increase of the white corpuscles, while in leucæmia there are both destruction of red corpuscles and an enormous increase of leucocytes.

In regard to the symptomatology and pathology of this disease, I can do no better than invite the reader to a consideration of Addison's classical description of the malady. The treatment of this form of anæmia is merely palliative; nothing within the present range of the therapeutist is curative. Probably the most benefit is to be derived from iron, arsenic, mercury bichloride, and hæmocardicin.

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## A CASE OF WOUND OF THE LIVER AND LUNG.

By A. H. PERFECT, M. B.,
BRIDGEWATER, N. S.

On May 18th, as Captain S., aged forty-five, of Dublin Shore, was crossing a field near his home, with an axe in his right hand, he tripped and fell. The sharp blade of the axe penetrated his right side somewhat anteriorly and at an angle of 30° or thereabouts to the axillary line, severing the eighth rib, wounding the lung slightly, and making a gash in the liver three inches and a half long and three quarters of an inch deep. The bleeding from the liver was very profuse, but it ceased after three very fine sutures had been introduced. A portion of the omentum and the hepatic flexure of the colon protruded from the external opening, and, after the clotted blood had been removed and the protruding viscera thoroughly cleansed, they were with difficulty kept within the abdominal wall while the wound in it was being stitched. The wound of the peritonæum was not closed separately, but by the silk that held the cut edges of the abdominal wall together. The temperature on the third and fourth days was 100°, but it never exceeded that point afterward. Capillary drainage was used, with gauze and carbolic-acid dressings. The stitches were removed on the eighth day. The only difficulty is that sneezing produces a "stitch in the side" at the lower border of the lung. There is weakness from loss of blood, as he was fourteen miles distant when I was telephoned for. The kindly services of a clergyman who was present, and under direction kept up the anæsthesia, were fully appreciated.

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## ON THE USES OF DEXIA-KEFIR AS A DIETETIC IN DISEASE.

By EDWARD N. LIELL, M. D.

Modern chemistry has, especially of late years, increased our knowledge of food products, their application as dietetics in various diseases, and the physiology of digestion.

In this article I shall consider in a concise form the dietetic application of a preparation but recently introduced into this country, any communication upon which I have failed to find in any of our medical journals.

It is a fact well known to many that ordinary cow's milk when given by the stomach forms a more or less dense curd, rendered all the more insoluble by the fat which forms the greater part of its bulk. It is a mistake to suppose, therefore, that ordinary milk is easy and free of digestion. It is not an ideal form of food for digestion by a delicate stomach, in other words where the digestive powers are impaired or held in abeyance in disease. This being the case, one can readily see the value of such a form of nutriment in most if not every phase of disease where nourishment of a light character, pre-digested, is indicated.

A peculiar fungus ferment, called kefir, a plant indigenous to the Caucasus, is the means by which the character of cow's milk is completely changed, in that both a lacteous and an alcoholic fermentation are set up; added to this is the peculiar action this fungus ferment has upon the casein of the milk, partially digesting it, and thus causing its formation into a peptone. The special advantages of this preparation of fermented milk lie in the fact of a minute subdivision of the casein, entirely free from coagula when shaken, the fact of its being pre-digested, and its agreeable, slightly acid taste.

In the lactic acid we have an additional factor, adding to the activity of the gastric juice, and in this the more complete digestion of this milk. As to the whey, it contains all the lacteal albumin, is a mildly nutritive fluid, and is easy of digestion in itself. The presence of a small percentage of alcohol is just sufficient to give it a mild stimulant and tonic property; and as to the carbonic-acid gas, it is an undoubted

fact that its existence in any liquid aids digestion in causing not only an increased secretion of the gastric juice, but favoring peristaltic action as well.

In that ordinary milk has a wide field for action as a dietetic, one can appreciate the advantage of dexia-kefir over the latter, being applicable to a much greater range of cases.

It is immaterial as to what the disease may be; if it is of great severity or more or less prolonged, we are tempted to press nourishment, especially in the form of cow's milk, quite too freely upon the patient, introducing into the stomach a quantity much greater than can be readily digested, the excess curdling in the stomach and acting as a foreign body.

Assuming that the digestive powers are not in entire abeyance at any time in disease, food, whether solid or liquid, given by the mouth or in enemata, requires to be at least partially pre-digested—converted into peptone.

As a dietetic or therapeutical agent, therefore, in cases of enfeebled digestive powers through inability of the gastric forces to perform their proper functions, or with the view of stimulating the latter into action, aside from the fact of nourishment being intended, this preparation has been of signal service to me.

Because of its being partially digested and thus its assimilation hastened, it is especially indicated in the irritable and the adynamic types of wasting diseases, and especially adapted for invalids, for debilitated people, and after serious surgical operations where the digestive forces are naturally very much weakened, being retained when other foods have been rejected.

In peritonitis, with constipation as a prominent symptom—and so constantly is this the case, due to either mechanical obstruction or the obstruction wrought by paralyzed peristalsis, the latter especially if opium in any form has to any extent been employed for the relief of pain—this preparation has most happily met my anticipations. Given in small portions at a time by the stomach, no tendency to obstruction or increase of the existing tympanites has been noticeable apparently, as is not unusually the case when ordinary cow's milk in any form is administered. This may be explained, perhaps, in great measure, by the carbonic-acid gas acting as a sedative to the alimentary canal and the freer digestion through the action of the lactic acid.

In the convalescent stage of the continued fevers, with consequent exhaustion, or in elderly persons, when food can not be taken in sufficient quantity, it has proved of the utmost value. This would lead me to recommend it in the summer diarrhœas connected with a lack of the digestive powers.

In the treatment following upon serious surgical operations, abdominal section in particular, where the indications for a light form of liquid nourishment are obvious, I have found it answer exceedingly well—far better than kumyss or peptonized milk. The quantity to be given in any particular case must vary with the condition of the patient.

In disorders accompanied with incessant attacks of vomiting, with the discomfort and distress incident thereto, and where all forms of nourishment and even stimulants are apparently rejected, so trying to the skill and patience of the physician, to suggest a line of treatment is not in the nature of this paper. I wish merely to call attention to two of the more prominent sources of vomiting in which dexia-kefir has proved of great service.

Especially has this been the case in the vomiting of pregnancy, so obstinate at times, for not only does it afford relief, but it is the means of the patient obtaining nourishment, if it is given in small quantities, an ounce or two at a time, and repeated at short intervals.

In vomiting as the result of ulcer of the stomach, the object being alike to give the stomach as much rest as possible and yet furnish the means of affording nutrition, it may be attained by administering it either by the stomach as above stated, or, if the vomiting is very urgent, by means of enemata in larger quantities.

Tarnier having but recently recommended as of great advantage a strict milk diet in the albuminuria existing during pregnancy, the advisability has occurred to me of giving this preparation of fermented milk in place of cow's milk, but no case has occurred in my practice to warrant me in giving it the trial.

Finally, it is obvious from these observations that, in the practical application of this preparation of fermented milk, one finds it to contain all the nutritive properties of ordinary cream milk, the alimentary functions being in part spared the time and labor of digestion and assimilation, in that the mechanical and chemical labor of digestion has been partially performed.

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**Borofuchsin as a Stain for Tubercle Bacilli.**—Professor Lubimoff describes in the "Meditsinskoe Obozrênie" a new stain for tubercle bacilli, which he calls borofuchsin. It consists of—fuchsin, 0·5 gramme; boric acid, 0·5 gramme; absolute alcohol, 15 grammes; distilled water, 20 grammes. Prepared thus, it has a slightly acid reaction; it is quite clear and not liable to spoil by being kept, consequently it is always ready for use. The sputum is dried on a cover glass, and stained by being heated in contact with the borofuchsin for one or two minutes. The stain is then washed out by treatment with dilute sulphuric acid. The specimen is then washed with alcohol, and subsequently immersed for half a minute in a saturated alcoholic solution of methylene blue. After being washed in distilled water and dried, the examination of the specimen is made in oil of cedar or in a solution of Canada balsam. In exactly the same way sections of tuberculous organs may be stained after hardening in spirit, only in such cases the steps of the operation must be somewhat more prolonged. The main difference between this and other staining processes for Koch's bacilli is that, when borofuchsin is used, the process of washing it out with sulphuric acid is an almost instantaneous one. All other bacilli are, as when other stains are used, rendered colorless and invisible, the tubercle bacilli being alone seen.—*Lancet.*

**Iodoform and Tubercle.**—"Iodoform, though an excellent antiseptic and bactericide for some purposes, is," says the "Lancet," "according to Rovsing, of Copenhagen, useless as a destructive agent of tubercle bacilli. He has found that the growth of tubercle is in no way retarded by the presence of a very considerable quantity of iodoform. He has more than once inoculated the two eyes of a rabbit with pure and iodoformed tubercle respectively, and has invariably found that the morbid process was communicated to the eye containing the iodoformed tubercle some time before the other was affected, the irritation produced by the iodoform in the tissues appearing to cause them to form a more suitable soil for the development of tubercle than those of the other eye, which were not similarly exposed to irritation."

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## THE PHILADELPHIA DISCUSSION ON DIPHTHERIA AND LARYNGEAL INTUBATION.

Of late it has come to be somewhat common for medical societies of purely local membership to invite residents of other localities to read papers at their meetings or to speak upon particular aspects of a subject appointed for discussion. It has often been done in New York, and almost always it has met with the entire approval of the meeting—more than that, we think there has generally been a feeling of indebtedness to the visitors for their having consented to appear and perform the part assigned them. The recognition of excellence that is implied by an invitation to address a body of men of which one is not a member is undoubtedly pleasing even to persons of the greatest eminence, and, so far as the reading of a paper goes, it is probably a pleasant task under such circumstances. On the other hand, in the discussion which is to follow its reading, a stranger is apt to find himself somewhat at a disadvantage from the fact that he does not quite know how to interpret what is said by men whose personal characteristics he is necessarily almost wholly unacquainted with. On the whole, however, this is but a trifling drawback, perhaps not to be taken into account in estimating the general value of the plan.

One of the most successful of the occasions on which the course has been followed seems to have been that of the meeting of the Philadelphia County Medical Society, held on the 23d of May, at which Dr. Jacobi read a paper on "The Therapeutics of Diphtheria," and Dr. O'Dwyer spoke on the subject of "Intubation Tubes." Intimately connected as Dr. Jacobi's name is with the literature of diphtheria, it must be said, we think, that he has seldom if ever produced a more satisfactory contribution to our knowledge of that disease than is constituted by his Philadelphia paper. Having wisely cut loose at the outset from the trammels that would have been imposed upon him if he had attempted to cover too broad a field, he was enabled to bring out with great clearness the logical grounds on which he rested his practical conclusions. Consequently, the paper embodied, in our opinion, one of the most valuable expositions of the course to be pursued in the every-day management of the disease that are to be found in literature. Moreover, the remarks made by our Philadelphia brethren in the discussion seem to us to have been unusually apposite and instructive.

What Dr. O'Dwyer said was brief, and yet it amounted to an indisputable demonstration. It is not to be wondered at, therefore, that in the discussion some of the speakers strayed from the point, for, pithy as his exposition was, Dr. O'Dwyer had left nothing essential unsaid on the proper subject of his remarks. The whole proceedings were so exceptionally interesting to all general practitioners of medicine that we have not hesitated to devote to them an unusually large share of our space.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending June 26, 1888:

| DISEASES. | Week ending June 19. | | Week ending June 26. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 9 | 2 | 8 | 4 |
| Scarlet fever | 164 | 30 | 162 | 37 |
| Cerebro-spinal meningitis | 3 | 3 | 5 | 5 |
| Measles | 211 | 17 | 223 | 26 |
| Diphtheria | 141 | 41 | 139 | 42 |
| Small-pox | 3 | 4 | 6 | 0 |

**Society Meetings for the Coming Week:**

Monday, *July 2d:* Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association.

Tuesday, *July 3d:* Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Society of the County of Broome, N. Y. (quarterly); Union, N. J., County Medical Society (quarterly); Chittenden, Vt., County Medical Society; Androscoggin, Me., County Medical Association (Lewiston).

Thursday, *July 5th:* Society of Physicians of the Village of Canandaigua, N. Y.; Washington, Vt., County Medical Society.

Saturday, *July 7th:* Clinical Society of the New York Postgraduate Medical School and Hospital; Miller's River, Mass., Medical Society.

## OBITUARY NOTES.

**John B. McIntyre, M. D.,** a graduate of the College of Physicians and Surgeons, of the class of 1877, died in New York on the 6th inst., in the forty-fourth year of his age, of peritonitis resulting from perforation of the vermiform appendix. The deceased was a native of New York, and studied medicine under Dr. Henry B. Sands. At the time of his death he had attained to a lucrative practice, and was much esteemed by the profession and by those who knew him for his ability and integrity.

**Evander Willard Ranney, M. D.,** a graduate of the Berkshire Medical Institution, of the class of 1833, who had for many years been a practitioner in New York, died on Friday, the 22d inst., at the age of seventy-six years.

# Proceedings of Societies.

## NEW YORK NEUROLOGICAL SOCIETY.

*Meeting of June 5, 1888.*

The President, Dr. George W. Jacoby, in the Chair.

**Notes on the Principles of Craniometry.**—Dr. Frederick Petersen read a paper thus entitled. After a review of cranio-

metric nomenclature, the reader stated that, while individual convolutions exerted no specific influence upon the bones of the head, the shape of the skull was modified in correspondence with the gross divisions of the brain beneath it. The left temporal bone was said to be depressed in congenital aphasia. In infantile spastic hemiplegia there was flattening of the side of the skull opposite the paralyzed part. Cerebral localization had been concerned mainly with motor and sensory functions. Ideational localization had yet to be developed. In his own opinion, the temporo-sphenoidal lobes, and perhaps the occipital, contained cortical centers for depressing emotions. Musical ideas and auditory memories had their origin in the temporo-sphenoidal lobes. Benedikt had reduced craniometry to a science, showing that the skull was built upon crystallographic principles. The measurements taken should be sufficient to reconstruct the skull. Triangulation of the skull should be required in asylums in the case of every patient, and in prisons in the case of every criminal. We were behind European countries in this matter. Even in Italy, fourteen measurements were required for asylum records. The reader thought that eleven measurements at least should be made: 1. The circumference of the skull. 2. The naso-occipital arc. 3. The naso-bregmatic arc. 4. The bregmatic-lambdoid. 5. The binauricular. 6. The antero-posterior diameter, taken from the glabella to the maximal occipital point. 7. The greatest transverse diameter. 8. The binauricular diameter. 9. The two auricular-bregmatic radii. 10. The facial length. 11. The greatest height of the skull. Only a pair of calipers, a tape-measure, and a strip of lead two feet long were required. For more detailed measurements other instruments were necessary. Benedikt's calipers were recommended. The pathological and forensic importance of such measurements was shown by the fact that minimal and maximal dimensions were more common among the insane and criminal classes than among other people. The bregmatic-lambdoid arc was said to be shortened in epilepsy. The reader referred to a hundred cases of his own observed at the Hudson River State Hospital, at Poughkeepsie, in which asymmetry had been observed.

**Progressive Muscular Atrophy with Anæsthesia.**—Dr. J. A. Booth reported the case of a man, forty-two years of age, a shoemaker by trade, who was still under observation. There was no family history of nervous disorders, nor any history of alcoholism or syphilis in the case. The patient had been married eighteen years, and had had two children; one, a girl of five years, had never walked. The affection had commenced in October, 1878, with general weakness and weakness in the arms and hands. In January, 1879, the patient's voice had commenced to be husky. Six months later he complained of a feeling of cold and numbness in the left shoulder and side of the neck, with subsequent decrease in size. The atrophy, commencing in the deltoid, had spread to other muscles of the trunk and upper extremities. At the present time the patient weighed 155 pounds. There was marked sinking in of both shoulders, also weakness of the upper extremities, with marked atrophy of the interossei. There were scars and abrasions about the hands and a scar on the neck. The patient stated that he did not know when these injuries had been received, that he had not felt them. There was no ataxia of the gait or upon standing. The voice was harsh, and the left side of the palate was paretic, the uvula being drawn to the right. The larynx had been examined by Dr. A. H. Smith. The left superior constrictor, the left palato-pharyngeus, and the adductors of the left vocal band were paralyzed. There was slight deviation of the tongue to the right. There were marked fibrillary contractions in the atrophied muscles. The patellar reflexes were exaggerated. There was sluggishness of the accommodation, but no change in the visual field and no diplopia. Taste, smell, and hearing were not impaired. It was apparently a case of progressive muscular atrophy with bulbar symptoms. The reader called attention to the sensory impairment as an unusual complication, and suggested, to account for the anæsthesia and analgesia, a lesion in the peduncle or pons on the right side.

Dr. Starr remarked that the anomaly mentioned had been recorded by Ross and by Gowers in their text-books. In cases of this character post-mortem examinations had shown abnormal cavities in the cord, due chiefly to the degeneration of gliomatous tumors. Schultze had described cases, Bäumler also in her article upon syringomyelia. The case reported by Dr. Booth was, in the speaker's opinion, a case of this kind. The fact that the senses of touch, pain, and temperature were all abolished would support this view. The sense of touch sometimes escaped in syringomyelia, but not always. The three tracts were found in the formatio reticularis of the medulla and pons, and extended through at least one fourth of its extent. A lesion affecting them all would involve also the cranial nerves passing through this part. The symptoms reported could be more satisfactorily explained by a lesion in the cord and by considering the case as one of syringomyelia.

**Degeneration of the Peripheral Nerves in Locomotor Ataxia.**—Dr. J. C. Shaw reported the case of a man, forty-seven years old, who had typical locomotor ataxia. Following an attack of hæmaturia, he had had two epileptic seizures, and had died the following day. At the post-mortem examination the hæmorrhage was found to have come from the right kidney. Pieces of the sciatic, plantar, and popliteal nerves had been removed for examination, part of the specimens being stained with osmic acid and part with the bichromate-of-potassium solution. Changes were found which the reader considered distinct from the Wallerian degeneration. These changes consisted in granular degeneration, liquefaction, and even absorption of the myeline sheath, with persistence of the axis-cylinder and in some places a collapsed sheath of Schwann.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of May 23, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

**The Therapeutics of Diphtheria.**—By invitation, Dr. A. Jacobi, of New York, read a paper on this subject. After having expressed his gratification at having been invited to introduce the discussion, he proceeded as follows:

When I considered the subject which is to be the topic of your deliberations this evening, and remembered the vastness of its literature, it became clear to my mind that a digest, ever so small, of what had been written would fill more than many evenings, and still fall short of accomplishing the object in view. I was aware that I must not come here with literature. You will excuse me, therefore, for only detailing in plain language some of the facts gathered in my contact with diphtheria these thirty years and the therapeutical measures which I have learned to appreciate and to practice. Thus, I shall not touch upon the large number of panaceas which have ascended like rockets and never been seen again.

Diphtheria is a contagious disease. Severe forms may beget severe or mild forms. Mild cases may beget mild or severe cases. There is probably no spontaneous origin of diphtheria any more than there is a spontaneous origin of cholera or scarlatina. What has been called follicular amygdalitis (or "tonsilitis") is diphtheria in many, perhaps most, instances.

It is seldom dangerous to the patient, because the tonsils have but very little lymph communication with the rest of the body. But the diphtheritic variety of follicular amygdalitis also is contagious. This mild variety is that from which adults are apt to suffer. It made me proclaim the warning that there was as much diphtheria out of doors as there was in doors; as much out of bed as in bed. With this variety the adult is in the street, in business, in the school-room, in the railroad car, in the kitchen and nursery. With this variety, parents, while complaining of a slightly sore throat, kiss their children. Wherever it is suspected it ought to be looked after. Where it is seen it ought to be isolated and treated, less perhaps for the sake of those who are sick than of those who are in serious danger of being infected. This is the more necessary as this form is apt to last long and give rise to repeated attacks. But it is not only the mild variety which is apt to last long. Serious, undoubted cases are also apt to last for weeks, and some of them months. As long as they persist they are contagious.

These reminiscences and quotations from former writings must justify the pre-eminent place I claim for preventive treatment. Those sick with diphtheria, severe or mild, must be isolated. If barely possible, the other children ought to be removed from the house. This can but rarely be done in the homes of the poor, in the densely populated districts. A great charity is still waiting for its consummation—viz., that of erecting buildings, dormitories, and play-rooms for those who ought to be temporarily exiled from their infected homes. A suggestion of mine, before the New York State Medical Society at its meeting of 1882, resulted in the erection of the Willard Parker Hospital, of New York, for the benefit of those suffering from scarlatina and diphtheria. The erection of a sufficient number of temporary homes would be a still greater blessing to the poor, and a greater protection to the public at large. If it is impossible to send the well children away, let them remain outside the house, in the air, as long as feasible, and with open bedroom-windows during the night, in the most distant part of the house; during the winter on a lower floor. Their throats must be examined every day, and their rectal temperatures taken by the mother, so that the physician may be called on the occurrence of but slight changes. The few minutes spent in this way are amply repaid by the safety they may accomplish. The attendants upon patients with diphtheria must have no intercourse with the well children; though a brief visit of the physician may not render him sick, or dangerous to others, a long exposure affects him or a nurse to a greater or less degree. The well children of a family in which there is diphtheria must not go to school or church. Schools must be closed when a number of pupils have been attacked; or, better still, when there is an epidemic, though it may not yet have affected the school-children to a great extent; the teachers ought to be taught how to examine throats, and directed to do so every morning, and send home those children who are suspected.

When an attack of diphtheria has made its appearance, it is well enough to examine the hygienic condition of the house with its deteriorating influences on the general health of the inmates, and to look after the source of the case in the persons of friends, attendants, and help. A family with children ought to insist upon the occasional inspection of the throats of their servants; those with chronic pharyngeal catarrh should not be hired. A seamstress or laundress coming for an occasional day's work, sick-nurses, children's nurses, and cooks ought to be examined from time to time, the more so the more such people are inclined to conceal slight troubles, for obvious reasons. The opportunities for infection are so numerous that it is impossible to sail absolutely free from it. It is easy to imagine how many cases of diphtheria are liable to be disseminated by teachers, shop-keepers, restaurants, barbers, and hairdressers.

In times of an epidemic every public place, theatre, ball-room, dining hall, and tavern ought to be treated like a hospital. Where there is a large conflux of people there are certainly many who carry the disease. Disinfection ought to be enforced at regular intervals. In this respect I can but repeat what I said in my treatise (p. 172) and Pepper's "System of Medicine" (i, p. 697). Public vehicles must be treated in the same manner after a suspicious person has been carried; that it should be so when one with small-pox has happened to be conveyed in them appears quite natural. Livery-stable keepers who would be anxious to destroy the germ of small-pox in their coaches must learn that diphtheria is as dangerous a passenger as variola; and what is correct in the case of a poor hack is more so in a railroad car, whether emigrant or Pullman. I have seen many patients coming to and leaving the city in them. They ought to be thoroughly disinfected in times of an epidemic at regular intervals, for the high-roads of travel have always been those of epidemic diseases. Still, can that be accomplished? Will not railroad companies resist a plan of regular disinfections because of their expensiveness? Will there not be an outcry against this despotic violation of the rights of the citizen, the independence of the money-bag? Certainly there will be, exactly as there was when municipal authority commenced to compel parents to keep their children from school when they had contagious diseases in their families, and when small-pox patients were arrested because of their endangering the passengers in a public vehicle, or taken to a fever hospital for the protection of their neighbors. In such cases it is not society or the State that tyrannizes over the individual; it is the individual that endangers society.

To what extent the infecting substance may cling to surroundings is best shown by the cases of diphtheria springing up in premises which had not seen diphtheria for a long time, but had not been interfered with; and best, perhaps, by a series of observations of self-infection. When a diphtheritic patient has been in a room for some time, the room, bedding, curtains, and carpets are infected. The child is getting better, has a new attack, may again improve, and is again stricken down. Thus I have seen them die; but also improve immediately after being removed from that room or house. If barely possible, a child with diphtheria ought to change its room and bed every few days.

To other rules of protection and disinfection, both private and public, including the prohibition of public funerals, I allude only for the purpose of referring to the admirable rules published in its "Bulletin" No. 10, of September 6, 1879, by the National Board of Health, and copied in my treatise on diphtheria, New York, 1880, and my article on diphtheria in Pepper's "System of Medicine," vol. i, p. 698.

Prevention can accomplish a great deal for the individual. Diphtheria will, as a rule, not attack a healthy integument, be this cutis or mucous membrane. The best preventive is, therefore, to keep the mucous membrane in a healthy condition. Catarrh of the mouth, pharynx, and nose must be treated in time. Many a chronic nasal catarrh, with big glands round the neck, requires but two or three regular salt-water injections (1 to 130) into the nose, and gargling if the children are large enough to do it. The addition of one per cent. of alum will often be found useful. This treatment, however, must be continued for many months, and may require years. Still there is no hardship in it, and no excuse for its omission. The nasal spray of a solution of nitrate of silver (1 to 500 or 1,000) will accelerate the cure, and not infrequently has a treatment which

was considered obsolete when I was young been of great service to me. It consists in the internal administration of the tincture of *Pimpinella saxifraga*. It is certainly an efficient remedy in subacute and chronic pharyngitis and laryngitis. I generally give it to adults, diluted with equal parts of glycerin and water, a teaspoonful of the mixture every two or three hours, with the proviso that no water must be taken soon after.

Large tonsils must be resected in times when there is no diphtheria. During an epidemic every wound in the mouth is liable to become diphtheritic within a day, and such operations ought to be postponed if feasible. The scooping of the tonsils, for whatever cause, I have given up since I became better acquainted with the use, under cocaine, of the galvano-cautery. From one to four applications to each side, or to the post-nasal space, are usually sufficient for every case of enlarged tonsils or lacunar amygdalitis. It is advisable to cauterize but one side at a time, to avoid inconvenience in swallowing afterward, and to burn from the surface inward. Cauterization of the center of the tonsils may result in swelling, pain, and suppuration, unless the cautery is carried entirely to the surface; in other words, the eschar must be on, or extend to, the surface. Another precaution is to apply the burner cold and heat it *in situ*.

Nasal catarrh and proliferation of the mucous and submucous tissue may require the same treatment, but in my experience the cases which require it are less frequent than in those in which the tonsils need correction.

The presence of glandular swellings round the neck must not be tolerated. They and the oral and mucous membranes affect each other. Most of them could be avoided if every eczema of the head and face, every stomatitis and rhinitis resulting from uncleanliness, combustion, injury, or whatever cause, were relieved at once. A careful supervision of that kind would prevent many a case of diphtheria, glandular suppuration, deformity, or phthisis.

For its salutary effect on the mucous membrane of the mouth, chlorate of potassium or of sodium, which is still maintained by some to be a specific, or almost one, is counted by me among the preventive remedies. If it is anything more, it is in a case of diphtheria an adjuvant. It exhibits its best effects in the catarrhal and ulcerous condition of the oral cavity. In diphtheria it keeps the mucous membrane in a healthy condition or restores it to health. Thus it prevents the diphtheritic process from spreading.

Diphtheria is seldom observed on healthy, or apparently healthy, tissue. The false membrane is mostly surrounded by a sore, hyperæmic, œdematous mucous membrane. Indeed, this hyperæmia precedes the appearance of the diphtheritic exudation in almost every case. The exceptions to this rule consist of those cases in which the virus may take root in the interstices between the normal tonsilar epithelia, pointed out by Stoehr but a few years ago. Indeed, many cases of throat disease occurring during the prevalence of an epidemic of diphtheria are but those of pharyngitis which under favorable circumstances may develop into diphtheria. These throat diseases are so very frequent during the reign of an epidemic that in my first paper on diphtheria ("Am. Med. Times," Aug. 11 and 18, 1860) I based my reasoning on 200 cases of genuine diphtheria and 185 of pharyngitis without a visible membrane.

These cases of pharyngitis, and those of stomatitis and pharyngitis accompanying the presence of membranes, are benefited by the local and general effect of chlorate of potassium. The surrounding parts being healthy or returning to health, the membrane remains circumscribed. The generally benign character of purely tonsilar diphtheria, which is apt to run its full course in from four to six days, has in this manner contributed to secure to chlorate of potassium the reputation of being a ready remedy, *the remedy*, in diphtheria. The dose of the salt must not be larger than 15 grains (1 gramme) for an infant a year old, not over 20 or 30 (1·5–2) for a child from three to five years, in the twenty-four hours. An adult must not take more than 1½ drachm (6 grammes) daily. These amounts must not be given in a few large doses, but in repeated doses at short intervals. A solution of one part in sixty will allow a teaspoonful every hour, or half a teaspoonful every half-hour, in the case of a baby one or two years old.

It is not too late yet to raise a warning voice against the use of larger doses. Simple truths in practical medicine do more than simply bear repetition—they require it. For, though the cases of actual chlorate-of-potassium poisoning are no longer isolated, and ought to be generally known, fatal accidents will still occur even in the practice of physicians. When I experimented on myself with half-ounce doses thirty years ago the results were some gastric and intense renal irritation. The same were experienced by Fountain, of Davenport, Iowa, whose death from an ounce of the salt has been impressively described in Alfred Stillé's "Materia Medica," from which I have quoted it in my treatise on diphtheria. His death from chlorate of potassium induced me to prohibit large doses as early as 1860. In my contribution to Gerhardt's "Handbuch der Kinderkrankheiten," vol. ii, 1877, I could speak of a series of cases known to me personally. In a paper read before the Medical Society of the State of New York in 1879 ("Med. Record," March 15th) I treated of the subject monographically, and alluded to the dangers attending the promiscuous use of the drug, which has descended into the ranks of domestic remedies; and, finally, in my treatise (New York, 1880) I collected all my cases and the few then recorded by others. Since that time the recorded cases have become quite numerous, and but a few days ago a few new ones were related before the Practitioners' Society of New York. The facts are undoubted, though the explanations may differ. The probability is that death occurs from methæmoglobinuria produced by the presence of the poison in the blood, though Stockvis, of Amsterdam, has tried, by a long series of experiments, to fortify my original assumption that the fatal issue was due to acute nephritis.

The attempts at forming indications for the treatment of patients with diphtheria—I refuse to say treatment *of* diphtheria—based upon a preconceived or acquired idea as to the nature and causes of diphtheria, are all futile. We know that many cases are undoubtedly of local origin; but there are those in which we require no other proof of its original infectious character than the fact that there is a period of incubation. But all that is indifferent, in view of the fact that the cases we are called upon to treat are, as a rule, or have become, both local and constitutional. It is these we have mostly to deal with.

There is no better proof of the non-existence of a specific in diphtheria than the fact that the pharmacopœia has been exhausted to find one, and new remedies, legitimate and illegitimate, are being recommended all the time as panaceas. While there are certain indications resulting from the characteristics common to all, every case must be treated on general principles, which must be applied to the prominent individual features. When there is a high temperature in the beginning, it requires all the tact of a good physician to judge of the advisability of reducing it by antipyretics, such as sponging, warm bathing, cold bathing, antipyrine, acetanilide, or the subcutaneous use of the carbamide of quinine. Convulsions may demand active treatment, such as with chloroform inhalations or the use of chloral hydrate internally or by the rectum. Vomiting or other cerebral symptoms may call for liquids or smaller or larger doses of opiates. A very quick and feeble

pulse may require a few doses of a heart stimulant—digitalis, strophanthus, or sparteine—in the very beginning.

Renal complications are frequent and occur at an early time. The majority of cases terminate favorably; in some a large amount of albumin will be eliminated in the course of a few days and disappear shortly. But whether your individual case will be of that nature you do not know, and in time of danger nothing must be taken for granted. Milk or farinaceous diet, plenty of water, or, better, Poland, Bethesda, Seltzer, Apollinaris, or Vichy, warm bathing, warm feet, a few good doses of calomel, a number of hourly or two-hourly small doses of opium, which are better than those of digitalis, and nitroglycerin, will often prove beneficial. If a diffuse nephritis, such as is more frequently met with in scarlatina, is the result, it impairs the prognosis and requires further treatment conducted on general principles.

To what extent local treatment, if it is possible to employ it, is effective, can best be seen on external diphtheritic surfaces, such as the cutis denuded by vesicatories, the inguinal regions sore with intertrigo, the vagina, circumcision wounds, or tracheal incisions. I have tried almost everything which has been recommended for these conditions, but am most pleased with the effect of iodol or iodoform powdered, or one part with eight or ten of vaseline. Powders of subnitrate of bismuth, boric acid, or salicylic acid with fifteen or twenty-five times its quantity of starch have not given me the same satisfaction.

The treatment of diphtheritic conjunctivitis also requires nothing but local treatment. It consists in the application of small ice-bags or iced cloths, which must be changed every few minutes, and the frequent instillation of a saturated solution of boric acid, with or without atropine.

The local treatment of the false membranes of the fauces is a subject of great importance. To look upon them as an excretion, which needs no interference, is incorrect. If it were possible to remove or destroy them, it would be a great comfort; but they can be reached only in certain places, and just in those in which they do least harm. False membranes on the tonsils are the least dangerous, for their lymph communication with the rest of the body is very scanty. Thus almost all forms of tonsilar diphtheria are among the most benign, at least so long as the process does not extend. Most cases of the kind run their mild course in from five to seven days, and it is just these which have given rise to the many proposals of tearing, scratching, cauterizing, swabbing, brushing, and burning. There are cases which do not show the harm done. The fact is that neither the galvano-cautery, nor carbolic acid, nor tannin and glycerin, nor perchloride or subsulphate of iron, can be applied with leisure and accuracy to the very membrane alone, except in the cases of very docile and very patient children. In almost every case the surrounding epithelium is scratched off or changed, and thus the diphtheritic deposit will spread. Besides, the membrane of the tonsil is changed surface tissue, as it always is wherever the epithelium is pavement, and not deposited upon the mucous membranes, from which it might easily be detached. Whatever is done must be accomplished without violence of any kind. If nasal injections are found advisable, they can be made to wash the posterior pharynx and the tonsils sufficiently, so as to render the special treatment directed to the throat absolutely useless. Besides, it is easier, and meets with less objection, and gives rise to less exhaustion than the forcible opening of the mouth. This is of very great importance, as I shall show in connection with the local treatment of the nasal cavity. Where it is possible to make local applications without difficulty, the membrane may be brushed with tincture of iodine several times daily, or a drop of rather concentrated carbolic acid. Of powders I know of only one the application of which is not contra-indicated, viz., calomel. Even this may irritate by its very form. Everything dry irritates and gives rise to cough or discomfort. Whatever has, besides, a bad taste or odor, such as sulphur, iodoform, or quinine, is to be abhorred.

For the purpose of dissolving membranes, papayotin, or papain, has been employed. It is soluble in twenty parts of water, and may be injected, sprayed, or brushed on. I have used it in greater concentration, in two or four parts of water and glycerin, in the nose, in the throat, and, through the tracheotomy-tube, in the trachea. One of the irrepressible drug manufacturers and advertisers pushes the merits of some modification of the drug, which he calls papoid. For the same purpose trypsin is preferred by others. The mode of its application appears to be the reverse of indifferent. But lately I have seen, in the practice of one of our best-known practitioners, papayotin applied in powder, which resulted in constant irritation of the throat while the patient otherwise was convalescent. The pharyngeal hyperæmia and slight exudation disappeared when mild alum washes were substituted.

*Steam.*—Its inhalation is useful in catarrh of the mucous membranes, and in many inflammatory and diphtheritic affections. On mucous membranes it will increase the secretion and liquefy it, and thus aid in the throwing off of the false membranes. Its action is the more pronounced the greater the number of muciparous follicles under or alongside a cylindrical or fimbriated epithelium. Thus it is that tracheo-bronchial diphtheria, so-called fibrinous bronchitis, is greatly mitigated by it. Children affected with it I have kept in small bath-rooms for days, turning on the hot water, and obliging the patient constantly to breathe the hot clouds. Several such patients I have seen recover with that treatment. Atomized *cold* water will never yield the same result. Nor have I seen the patent inhalers do much good.

Still, where the surface epithelium is pavement rather than cylindrical, and but few muciparous follicles are present, and the false membrane is rather immerged in and firmly coherent with the surface—for instance, on the tonsils and the vocal bands—the steam treatment is less appropriate. On the contrary, moist heat is apt in such cases to favor the extension of the process by softening the previously healthy mucous membrane. Thus it takes all the tact of the practitioner to select the proper cases for the administration of steam, not to speak of the judgment which is required to determine to what extent the expulsion of air from the steam-moistened room or tent is permissible.

Steam can be properly mixed with medicinal vapors. In the patient's room water is kept boiling constantly, over the fireplace, provided the steam is prevented from escaping directly into the chimney, on a stove (the modern self-feeders are insufficient for that purpose and abominations for every reason), over an alcohol lamp if we can not do better, not on gas if avoidable, because of the large amount of oxygen which it consumes. Every hour a tablespoonful of oleum terebinthinæ, and perhaps also a teaspoonful of carbolic acid, is poured on the water and evaporated. The air of the room is filled with steam and vapors, and the contact with the sore surfaces and the respiratory tract is obtained with absolute certainty.

The secretion of the mucous membranes is sometimes quite abundant under the influence of steam, but still, like that of the external integuments, increased by the introduction of water into the circulation. Therefore, drinking of large quantities of water, or water mixed with an alcoholic stimulant, must be encouraged. Over a thoroughly moistened mucous membrane the false membrane is more easily made to float and macerate.

It was for this purpose that pilocarpine or jaborandi was

highly recommended. Guttmann recommended it as a panacea in all forms of diphtheria. There is no doubt that the secretion of the mucous membrane is vastly increased by its internal application, and by repeated subcutaneous injections of the hydrochloride or nitrate of the alkaloid, but the heart is enfeebled by its use. I have seen but few cases in which I could continue the treatment for a sufficient time. In many I have had to stop it because after some days of persistent administration I feared for the safety of the patients. Thus, as early as at the meeting of the American Medical Association at Richmond, eight years ago, I pointed out the exaggerations in the statements of Guttmann. There will be but exceptional cases in which pilocarpine will be tolerated long enough to do good. It is one of the remedies by which we may cure the disease and will kill our patient.

Diphtheria of the nose is apt to terminate fatally unless energetic treatment is commenced at once. This consists in persevering disinfection of the mucous surface. The disinfecting procedure must not be omitted long, because of the general sepsis resulting from rapid absorption from the surface, which is supplied with lymph-ducts and small superficial blood-vessels to an unusual extent. Disinfectant injections must be continued every hour for one or more days. If they are well made, the consecutive adenitis, particularly that about the angles of the lower jaw, is soon relieved and the general condition improved. But there are cases in which not the lymph bodies are the main gates through which constitutional poisoning takes place, but the blood-vessels only. In the incipient stage of such cases the discharge from the nostrils is more or less sanguineous; in them the blood-vessels, thin and fragile, carry the poison inward with great rapidity.

In a few cases injections are unsuccessful. They are those in which the whole nasal cavity is filled with membranous deposits to such an extent as to require forcible treatment. Sometimes it is difficult to push a silver probe through it. That procedure may be repeated, the probe dipped in carbolic acid, or wrapped in absorbent cotton moistened with carbolic acid of 50 or 90 per cent. After a while injections alone will suffice. But now and then the development of false membranes is very rapid; a few hours suffice to block the nostrils again, and the difficulty is the same.

The liquids which are to be injected must be warm and fairly mild. Solutions of chloride of sodium, two thirds of one per cent., saturated solutions of boric acid, one part of bichloride of mercury, 35 of chloride of sodium, and 5,000 of water, more or less, or lime-water, or solutions of papayotin, will be found satisfactory. From the selection of these remedies it is at once apparent that the object in view is partly that of washing out and partly that of disinfecting. I have not mentioned carbolic acid, which may be used in solutions of one per cent. or less. Its employment requires care, for much of the injected fluid is swallowed, and proves a danger to children of any age, but mostly to the young.

Most of the syringes I find in my rounds are abominations. The nozzle must be large, blunt, and soft. After having recommended for many years the common hard-rubber ear-syringe, the sharp end of which was cut off, I now use always a short, stout glass syringe with soft-rubber mounting in front. When the children can not or must not be raised, I employ the same solutions from a spoon or a plain Davidson atomizer. These applications can thus be made while the children are lying down, every hour or very much oftener, without any or much annoyance. The nozzle must be large so as to fit the nostril. A single spray on each side will generally suffice. I am in the habit of covering the common nozzle with a short piece of India-rubber tubing. For a day or two these injections of fluids or spray must be made hourly. It is not cruel to wake the children out of their septic drowsiness; it is certain death not to do it.

Injections of the nose are oftener ordered than judiciously made. Hundreds of times have I been assured that they had been made regularly, hourly, for days in succession. Still there was a steady increase of glandular swelling and sepsis. I never believe a nurse to have made them regularly unless I have seen her doing it. They *will* run up their syringe vertically and not horizontally, the fluid *will* return through the same nostril. On the successful injecting or spraying of the nares hangs every life in cases of nasal diphtheria. I have long learned to look upon a neglect to tell at every visit how to make an injection as a dereliction of duty. This may appear a trifling way, but it is a safe one. The nurse must be made to tell you that at every injection the fluid returns through the other nostril, or through the mouth, or is swallowed.

The procedure is simple enough, and need not take more than half a minute for both nostrils. A towel is thrown over the child's chest up to the chin, and the child gently raised in bed by the person who is to make the injection. This person, sitting on the bed, steadies the patient's head against her chest while somebody else holds the patient's hands. The syringe is introduced horizontally by the person sitting behind the patient, and gently emptied. No time must be lost in refilling and attending to the other side. When pain is complained of in the ears, more gentleness is required, or the spray, or pouring in from a spoon or minim-dropper even, has to take the place of the injection.

Many sins are committed in even doing this simple thing. The unfortunate little one is made to see all the preparations and is worried and excited, and the necessary gentleness in the proceedings is neglected. The cases reported by me in a discussion on the local treatment of diphtheria, before the Section in Theory and Practice of the New York Academy of Medicine, read as follows: *

"There were two trained nurses, and two children of six and four years. When I saw the little four-year-old the other was dead. Where did he die? His head between the knees of the trained nurse. They had been told Dr. Jacobi ordered nasal injections to be made every hour in such cases. Every hour the unfortunate boy was lugged out of bed, protesting and fighting, and wearing out his little strength in his battle against two trained brutes; had his head rammed between the knees of one of them, who was herself comfortably seated on a chair while the other did the rest; and thus the boy was murdered. When I heard that fearful story from the smiling lips of that person I begged and pleaded, and showed her how to do it gently. A week afterward the doctor told me that the little girl died between the knees of one of the smiling creatures, and neither of them is in the State prison."

Which is the concentration in which antiseptic injections should be used? For twenty-five years and more, while employing irrigations and injections frequently, I had used quite weak solutions and felt assured of their efficacy. All at once (when the gospel of the bacteria was being preached) it was maintained that weak solutions were useless and a snare, because antiseptics, and particularly carbolic acid, would not destroy bacteria and bacteria poisons except in such doses and concentrations as would necessarily destroy blood and tissues first. I felt dismayed, but still continued in my heretical ways, hoping that improved knowledge would finally harmonize theory and practice. So it happened. In the "American Journal of the Medical Sciences" for January, 1881, T. Mitchell Prudden proved that a solution of one sixteenth of one per cent. of carbolic acid prevented the emigration of white blood-corpuscles under circumstances otherwise favorable to inflammation,

* N. Y. "Medical Record," 1887, p. 403.

and Koch found that, though bacteria were not easily killed, their growth was stopped by a solution of one part of carbolic acid in 850, and their activity by one in 1,200. These effects are all that is required for practical purposes; thus the frequency of applications is justified by both necessity and safety.

Diphtheritic adenitis, the swelling of the cervical glands near the angles of the lower jaw, to which I have alluded as an ominous symptom, points to nasal and naso-pharyngeal infection. The treatment consists in disinfection of the absorbing surfaces.

Direct local treatment of the glands, if not entirely useless, is, at all events, of minor importance and efficiency. Applications of one part of carbolic acid to ten of alcohol irritate both surface and patient more than they can do good. Inunctions may do some good by friction (massage); inunctions with some absorbable material in them may do a little better. The common iodide-of-potassium ointment is useless; iodide of potassium in three or five parts of glycerin is more readily absorbed; the same in equal parts of water, with a little animal fat, and six or eight times its quantity of lanolin, gives an ointment which is readily absorbed. Iodine is found in the urine within a few hours. Iodoform may be utilized in the same way. Injections of iodoform in ether, which I suggested some time ago, are too painful. Mercurial inunctions, those of blue ointment, require too much time for any effect to take place. Oleates are too irritating locally; a lanolin ointment would prove more satisfactory. After all, however, the readiest method of reducing the swelling of the glands, and improving the prognosis accordingly, is that of cleansing and disinfecting the field of absorption. The rare cases of suppuration in these glands require incision and disinfection. They are as ominous as rare, however. There is but little pus, as a rule, but one or many local deposits of disintegrated gland cells and gangrenous connective tissue. The incisions must be extensive, and the scoop and concentrated carbolic acid must be freely used. In these cases hæmorrhages may occur, some of them very difficult to manage. I have seen some of them terminate fatally. In these carbolic acid must be avoided. Compression, actual cautery, and acupressure have rendered good service. Solutions of iron must be avoided, for the eschar formed is a shield behind which deleterious absorption is going on constantly in such wounds, as it does in the uterus.

Besides sepsis, the great dangers in diphtheria are heart failure and strangulation. The latter has its own indication, to which I shall not allude to-day. Heart failure exhibits itself sometimes quite suddenly, but as a rule it is foreshadowed by a gradually increasing frequency and weakness of the heart-beats and pulse, and the equal length of the intervals between the feeble systole and diastole and diastole and systole. This equality is always a dangerous symptom. Heart failure is due, besides the influences common to every disease and every fever, to myocardial changes. These may depend on the influence of the septic decomposition of the blood, and the ill nutrition of the heart-muscle depending thereon, or the direct diphtheritic changes of the tissue, or both. These changes and dangers set in sometimes at a very early period. Thus whatever enfeebles must be avoided. Patients must be spared every unnecessary activity. They must remain in bed, without excitement of any kind, and take their meals and evacuate their bowels in a recumbent or semi-recumbent posture; crying and worrying must be avoided, and the room kept airy and rather dark, so as to encourage sleep if the patient is restless. In no disease, except, perhaps, in pneumonia, have I seen more fatal results from sudden changes of posture or from exertion. Unless absolute rest is enforced, neither physician nor nurse has done his or her duty.

The threatening feebleness of the heart yields a positive therapeutical indication. In no disease is the danger greater from the side of the heart, in no disease is the indication for sustaining and strengthening the heart more positive from the very beginning. The use of digitalis, strophanthus, sparteine, besides camphor, alcohol, and musk, must not be postponed until feebleness and collapse have set in. It is possible or probable that they will appear; and it is certain that a cardiac stimulant will do no harm. It is safe and advisable to use one at an early date—that is particularly necessary when antipyrine or acetanilide is given. A few grains of digitalis, in a palatable and digestible form, may, or must, be given daily. When a speedy effect is required, one or two doses of from two to four grains are not too large, and must be followed by smaller ones. When it is justly feared that the effect of digitalis may be too slow, I give, with or without the former, sulphate of sparteine. An infant a year old will take one tenth of a grain four times a day, as a matter of precaution, and every hour or every two hours in an emergency.

Of at least the same importance as cardiac tonics are alcoholic stimulants. The advice to wait for positive symptoms of heart failure and collapse before the life-saving apparatus is employed is bad. There are cases which end in recovery without treatment, but we do not know beforehand which they will be. In no alleged mild case is the patient safe until he has recovered. When heart failure sets in—and often it will occur in apparently mild cases—our efforts are too often in vain. Thus alcoholic stimulants ought to be given early, and in large quantities, though amply diluted. There is no such thing as intoxication or danger from it in septic diseases. A few ounces daily may suffice, but I have seen ten ounces daily of brandy or whisky save children who had done badly with three and four.

Coffee is a good stimulant for the heart. Camphor may be employed to great advantage for the same purpose. From five to twenty-five grains may be given daily, as camphor-water or in a mucilaginous emulsion, which is easily taken. It does not upset the stomach as ammonium carbonate is apt to do. It may be employed subcutaneously when a rapid effect is aimed at, in five parts of oil, which is milder and more convenient than ether.

But the best internal stimulant, in urgent cases, is Siberian musk, in powders or with mucilage. When required at all it ought to be given in sufficient doses and at short intervals. When ten or fifteen grains, administered to a child one or two years old, will not accomplish, within three or four hours, a return of a more satisfactory heart's action, the prognosis is very bad.

Besides exhaustion at the height of the disease, we have paralysis during convalescence, or intense anæmia long after apparent recovery. This anæmia may be general or it is local, and then mostly cerebral.

Diphtheritic paralysis, though of different anatomical and histological origin, yields in all cases a certain number of identical therapeutical indications. These are: The sustaining of the strength of the heart by digitalis and other cardiac tonics. A child of three years may take daily, for a month, three grains or its equivalent; for instance, one grain of the extract. This is an indication on which I can not dwell too much. Many of the acute and most of the chronic diseases of all ages do very much better by adding to other medications a regular dose of a cardiac tonic. It is true that it is a good practice to follow the golden rule to prescribe simply and, if possible, a single remedy only, but a better one to prescribe efficiently. A prescription-paper with a single line on it looks well, but a readily convalescent or well man looks better.

Besides, there are some more indications: Mild preparations of iron, provided the digestive organs are not interfered with. Strychnine or other preparations of nux at all events. In ordinary cases a child of three years will take an eightieth of a grain three or four times a day. Local friction, massage of the throat, of the extremities, and trunk, dry, or with hot water, or oil, or water and alcohol, and the use of both the interrupted and continuous currents, according to the known rules and the locality of the suffering parts, find their ready indications. The paralysis of the respiratory muscles is quite dangerous; the apnœa resulting from it may prove fatal in a short time. In such cases the electrical current used for very short periods, but very frequently, and hypodermatic injections of sulphate of strychnine in more than text-book doses, and frequently repeated, will render good service. I remember a case in which these and the occasional use of an interrupted current, and occasional artificial respiration by Silvester's method, persevered in for the better part of three days, proved effective.

*Chloride of Iron.*—I am still, as I was in my first paper on diphtheria in 1860, an advocate of the internal use of chloride of iron. Its mode of administration I have not changed much these twenty years. In a public lecture delivered before a New York audience by a European authority, whose name has lately appeared a little more prominently in the newspapers than an American physician would wish, I was highly praised for giving a few drops of tincture of chloride of iron a few times a day. This eulogy I have always tried not to deserve, for the efficient method of its administration is not that. The chloride of iron is an astringent and antiseptic. Its contact with the diseased surface is as important as its general effect; therefore it must be given frequently, in hourly or half-hourly doses, even every twenty or fifteen minutes. An infant of a year may take three or four grammes a day, a child of three or five years eight or twelve. It must be mixed with water to such an extent that the dose is half a teaspoonful or a teaspoonful; a drachm in four ounces allows half a teaspoonful every twenty minutes. No water must be drank after the medicine. As a rule it is well tolerated. There are some, however, who will not bear it well. Vomiting or diarrhœa is a contra-indication to persevering in its use, for nothing must be allowed to occur which reduces strength and vigor. A good adjuvant is glycerin; better than syrups. From ten to fifteen per cent. of the mixture may consist of it. Now and then, but rarely, it is not well tolerated, either. When diarrhœa sets in, glycerin must be discontinued. Still these cases are rare; indeed, the stomach bears glycerin very much better than the rectum. In the latter, the presence of a small dose of glycerin is known sometimes to produce large evacuations, a result appropriated and utilized by an advertising nostrum-monger.

In connection with this remedy, I wish to make a remark of decidedly practical importance. I know quite well that recovery does not always prove the efficacy of the remedy or remedies administered. But I have seen so many bad cases end in recovery with chloride of iron, when treated after the method detailed above, that I can not rescind former expressions of my belief in its value. Still, I have often been so situated that I had to give it up in peculiar cases. These are cases in which the main symptoms are those of intense sepsis; I should say cases in which the iron and other rational treatment were not powerful enough to prevent the rapid progress of the disease. Children with naso-pharyngeal diphtheria, large glandular swellings, feeble heart and frequent pulse, thorough sepsis, and irritable stomach besides—those in which large doses only of stimulants, general and cardiac, can possibly promise any relief—are better off without the iron. When the circumstances are such as to leave the choice between iron and alcohol, it is best to omit the iron and rely on stimulants mostly. The quantities required are so great that the absorbent powers of the stomach are no longer sufficient for both. Nor is iron sufficient or safe in those cases which are pre-eminently laryngeal. To rely on iron in membranous croup means waste and danger.

*Mercury.*—The first volume of "A System of Practical Medicine by American Authors," which appeared in 1885, contains in an article on diphtheria, written in 1884, the following remarks, on page 705:

"Not all cases of diphtheria are septic or gangrenous, nor are all the cases occurring during an epidemic of the same type. Some have the well-pronounced character of a local disease, either on the tonsils or in the larynx. The cases of sporadic croup, met with in the intervals between epidemics, present few constitutional symptoms, and assume more the nature of an active inflammatory disease, very much like the sporadic cases of fibrinous tracheo-bronchitis. These are the cases in which mercury deserves to have friends, apologists, and even eulogists. Calomel, 0·5–0·75 gramme (grs. viij–xij), divided into thirty or forty doses, one of which is taken every half-hour, is apt to produce a constitutional effect very soon. Such, with minute doses of one milligramme (gr. $\frac{1}{60}$) or more of tartar emetic, or ten or twenty times that amount of oxysulphuret of antimony, have served me well in acute fibrinous tracheo-bronchitis. But the mucous membrane of the trachea and bronchi is more liable to submit to such liquefying and macerating treatment than the vocal cords. The latter have no muciparous glands like the former, in which they are very copious. And while the tracheal pseudo-membrane, though recent, is apt to be expelled through a tracheal incision at once, that of the vocal cords takes from six days to sixteen or more for complete removal. Still, a certain effect may even here be accomplished, for maceration does not depend only on the local secretion of the muciparous glands, but on the total secretion of the whole surface, which is in constant contact with the whole respiratory tract. Thus, either on theoretical principles or on the ground of actual experience, men of learning and judgment have used mercury, in such cases as I detailed above, with a certain confidence. If ever mercury is expected to do any good in cases of suffocation by membrane, it must be made to act promptly. This is what the blue ointment does not. In its place I recommend the oleate, ten or twelve minims of which may be rubbed into the skin along the inside of the forearms or thighs, or anywhere else when those surfaces become irritated, every hour or two hours. Or repeated doses will be useful, such as mentioned before, or hypodermic injections of corrosive sublimate, in one-half or one-per-cent. solution in distilled water, four or five drops from four to six times a day or more, either by itself or in combination with the extensive use of the oleate, or with calomel internally. Lately the cyanide of mercury has been recommended very strongly. I hardly believe that it will work more satisfactorily than any other equally soluble preparation. Within the past few years the internal administration of bichloride of mercury has been resorted to more frequently and with greater success than ever before. My own recent experience with it has been encouraging, and so has that of some of my friends. William Pepper gave one thirty-second of a grain of corrosive sublimate every two hours in a bad form of diphtheritic croup, with a favorable result. But in this very bad case, desperate though it was—child of five years, respiration 70, pulse 160—large membrane, 'evidently from the larynx,' had been expelled before the treatment was commenced on the seventh day of the disease. The solution ought to be given in solution of 1 to 5,000 and in good doses. A baby a year old may take a half-grain every day many days in succession with very little, if any, intestinal disorder, and with no stomatitis. A solution of the corrosive sublimate in water is frequently employed of late as a disinfectant. It acts as such in a dilution of 1 in 20,000. As healthy mucous membrane bears quite well a proportion of 1 to 2,000 or 3,000, any strength between these extremes may be utilized. A grain of the sublimate in a pint or more of water, with a drachm of table salt, will be found both mild and efficient. As a gargle and nasal injection it will be found equally good. But it has appeared to me that frequent applications give rise to a copious mucous discharge; hourly injections into a diphtheritic vagina become quite obnoxious by such

over-secretion, which ceases at once when the injections are discontinued. Thus, when it is desirable not only to disinfect, but also to heal the diseased surface, the injections with corrosive sublimate appear to yield a result inferior to less irritating applications."

These remarks of 1884 constitute what I consider a great progress over the statements of my treatise on diphtheria, 1880, which are more cautious and negative. Extensive experience with the remedy increased my favorable opinion of its efficiency to such an extent as to induce me to publish a number of cases and conclusions in the "Medical Record" of May 24, 1884. They have been amply justified by the observations of the last four years, so that I am fully prepared to commit myself to the following statements: My conviction of the utter uselessness of internal medication in laryngeal diphtheria, membranous croup, is strongly shaken. The mortality of 90 or 95 per cent. of the patients not operated upon has no longer existed these five or six years, in my observation. The above-mentioned figures were by no means taken from small numbers, for since 1860 I have tracheotomized more than 500, perhaps 600, times, have assisted in as many more operations, and seen at least a thousand patients with membranous croup who were not operated upon at all. During the last six years I have seen no fewer than 200 cases, perhaps many more. Among them recoveries have not been rare. In the practice of no less a man than O'Dwyer I have seen two cases of general and laryngeal diphtheria in the same family which ended in recovery without any operative procedure. Such recoveries have taken place in patients of all ages, from four months upward. The uniform internal medication consisted in the administration of the bichloride of mercury. The smallest daily dose was a quarter of a grain (15 milligrammes). Half a grain daily, continued through five or six, sometimes eight, ten, or even twelve days, has not been rare among children of from three to six years. The doses varied from one sixtieth to one fortieth of a grain, and sometimes more. They are given every hour. They require the dilution in a tablespoonful of water, or other compatible fluid—for instance, milk—in order to be quite innocuous. They are not apt to produce gastric or intestinal irritation. When the latter occurred it was generally found that by some mistake the solution was as strong as 1 to 2,000 or 1 to 3,000. In the few cases in which it did exist, or was believed to result from the remedy, a few minims of camphorated tincture of opium administered with every dose, for a short period, proved sufficient to check it. The beneficial effect of the remedy depends greatly on the time of its administration. As a rule, such complete stenosis as necessitates surgical interference develops after days only. This necessity is often obviated by the remedy when given as detailed. When an operation is required after all, the treatment must be continued. I have never since 1863 seen so many cases of tracheotomy end in recovery as between 1882 and 1886, when the bichloride was constantly used as mentioned. Nor am I alone with these observations. I can name a dozen New York physicians, some of whom have often performed tracheotomy, who can confirm these statements from their own observations. Nor does the opinion of those differ who constantly perform intubation. I know that O'Dwyer, Dillon Brown, and Huber have come to the same conclusions, the latter having been a successful tracheotomist before he earned his laurels with intubation.

My experience in regard to the efficacy of the bichloride of mercury is mainly gathered in cases of laryngeal diphtheria and a limited number of fibrinous bronchitis. It is there where it has been particularly effective. Still, I must not say that they were localized affections. These, with us, are but very scarce. Our cases of diphtheritic laryngitis are mostly decreasing, and complicated with either diphtheritic pharyngitis, or rhinitis, or both. Not a few, mainly of the latter kind, exhibit constitutional symptoms, sepsis. But cases of that kind also I have seen end in recovery. One of the most interesting was that of a girl of seven years whom I saw a single time in consultation with Dr. J. Anderson. There was nasal and pharyngeal diphtheria, with cervical adenitis and some laryngeal stenosis. I recommended an hourly dose of one fortieth of a grain of bichloride, which she took for ten days, also nasal injections of the same, one grain to a pint. They were made hourly for many days, and altogether continued for more than a fortnight, for the patient lived so long and is still alive. She swallowed almost all the nasal injections, and great was my surprise when after some weeks I received the report of the case and learned that about twenty grains of the bichloride had found their way into the stomach of the little girl. She lived, and had but little stomatitis and hardly any intestinal irritation. If the case does not prove anything else, it proves this: that even desperate cases will end in recovery. This patient got well with the bichloride of mercury, and the case resembles all the other cases in this: that, after the rational and careful administration of solutions of hydrogyrum bichloride, local mercurial symptoms about gums, mouth, pharynx, and intestines are extraordinarily rare in infancy and childhood.

**Intubation Tubes.**—By invitation, Dr. Joseph O'Dwyer, of New York, read the following paper:

[Before reading his paper Dr. O'Dwyer exhibited tubes with a metallic attachment to replace the epiglottis in swallowing, one of them being so arranged with a spring that the finger might be introduced behind it as an extractor. In order to illustrate through how small a space breathing could occur, he exhibited a specimen from a case in which there had been no choking of voice or other sign of laryngeal involvement. Many feared, he said, that the tube would slip through into the trachea. A tube was exhibited *in situ* in a three-year-old larynx, showing that this accident could not occur if the proper size of tube for the age was employed.]

The testimony of tracheotomists from the time of Bretonneau has been uniformly in favor of cannulas of large caliber. I have failed to find a single dissenting opinion on this question, yet very few have given any reason in support of their conviction, or entered into any arguments whatever on the subject, probably because they considered that none was necessary, as it appears so very reasonable that the artificial channel should approximate as nearly as possible to the normal lumen of the air-passages.

I will refer to a few of the authorities on this subject before giving the reasons that led to the adoption of laryngeal tubes of so much smaller caliber than those generally used in the trachea. If a large opening is preferable in one situation it certainly is in the other, the same arguments applying to both. Bretonneau, for some reason which I have not been able to find, came to the conclusion that the cannulas which he first devised were not large enough, and laid down the rule that the artificial conduit should always have at least the normal diameter of the glottis of the subject. Trousseau indorsed this as an excellent precept, which should never be forgotten. Steiner says that as large a cannula as possible should be used. The first point of importance insisted on by West as influencing the result of tracheotomy in croup is the use of a large cannula. The author of the article on croup in Holmes's "System of Surgery" says that, as a general rule, both openings in the cannula should be sufficiently large to admit as much air as would pass through the rima glottidis in health. The following is from Reynolds's "System of Medicine": "No tube of less than a quarter of an inch in diameter is sufficient to carry on respiration. At a year old such a tube can not be introduced into the trachea; it would

not be tolerated at two years old, so that at these ages some other means must be looked for to secure a passage for the air." This author then discusses the question as to whether the want of success with tracheotomy in very young children is not due to the inability to secure a large enough opening.

In answer to such assertions as the foregoing, it is only necessary to state that the diameter of the lumen of the trachea at a year old is scarcely a quarter of an inch, and, furthermore, an adult can breathe comfortably while at rest through an opening of this size. I have at present a man under my care who has been wearing a cannula in the trachea for the last seven months, the bore of the inner tube being exactly one fourth of an inch in diameter. During part of this time he was obliged to breathe exclusively through the artificial opening, but then the least exertion, such as walking across the room, was sufficient to induce dyspnœa. Nature supplied this patient, who is of large stature, with a breathing-tube at least seven eighths of an inch in diameter, and the surgeon substituted one having a breathing capacity of something less than one twelfth of this. In other words, the area of a cylinder seven eighths of an inch in diameter is a little more than twelve times that of one a quarter of an inch in diameter. Had the surgeon who operated in this case placed himself on record, he must have taken extreme grounds in favor of small cannulas.

Trousseau advocated larger cannulas than were first used, on the ground that in some cases the improvement that at first succeeded the operation of tracheotomy soon gave place to a return of the dyspnœa, and attributed this result to the inadequate size of the cannula employed, which did not provide for the permanent admission of a sufficient quantity of air. In illustration of this fact he says: "Place a quill in the mouth, and, closing the nostrils, endeavor to breathe entirely through it; at first you breathe easily enough, but soon your respiration becomes laborious, and at length you are fain to throw away the quill, and with open mouth once more to fill the lungs completely." I have tried this experiment with the quill, the diameter of which was three sixteenths of an inch, and could breathe through it for over five minutes without much discomfort, yet it represents in round numbers only the twenty-second part of the area or capacity of my trachea, estimating the diameter of the latter at seven eighths of an inch. If we now construct a cannula in the same ratio for a child of five years, the diameter of whose trachea is one third of an inch, it gives a caliber of three thirty-fourths of an inch in diameter, an opening about as large as the head of an ordinary-sized pin. Trousseau's illustration, therefore, fails to sustain his argument in favor of larger tubes, as it is certain that cannulas as small as this were never used. A more reasonable explanation of the return of the dyspnœa before the lapse of sufficient time for the extension of the disease would be the entrance of blood or the accumulation of secretions, because it occurred in only some cases, while, if due to the inadequate size of the cannula, it should have occurred in all.

In my early experiments with intubation the tubes had about the same caliber as those generally used for the trachea, but, in order to avoid injury to the vocal bands, which I feared more than anything else, it was necessary to give them the oval or elliptical, instead of the cylindrical, form. A few of these early forms I here show you. There was ample room, both in the glottis and in the trachea, for tubes of this size and shape, but I was not then aware of the hour-glass constriction that exists just below the vocal bands until it was demonstrated by the presence of ulceration through the whole thickness of the mucous membrane, corresponding to the long diameter, in every case in which the tube was retained for any considerable time. This defect could be remedied in only one of two ways—viz., either by diminishing the long diameter at the expense of the lumen of the tube, or by giving it the cylindrical form. The latter, by increasing the pressure on the vocal bands, would endanger their integrity, and I therefore adopted the former, and, as a result, the caliber of the tubes as at present constructed is probably less than half the original dimensions. The small caliber, consequently, was a matter of necessity, and not of choice, and, if the larynx would tolerate no larger without injury, any further argument, so far as intubation is concerned, would be useless. But, from the fact that I have failed to find any ulceration at the points above indicated from the tubes as now made, I am satisfied that the cutting-down process was carried further than necessary, and, if it is demonstrated that a larger opening would give better results, this could be obtained without danger to the vocal bands by an increase of the transverse as well as the antero-posterior diameter. The bore of the smallest tube while still in the cylindrical form, which is intended for infants of one year and under, is exactly one eighth of an inch in diameter. When we consider the size of the trachea at the same age, the disparity is not very great, and still less when compared with the subglottic division of the larynx, which is the narrowest portion of the breathing-tube. This part of the larynx, being completely surrounded by cartilage, is not subject to any variations in the normal condition, while the chink of the glottis may be greater or less, according to the position of the vocal bands.

I have found that in the adult the diameter of the lower division of the larynx is from one eighth to three sixteenths of an inch less than that of the trachea, which reduces the breathing capacity about one third. I have not made any similar measurements in children, but by comparing a section from the cricoid cartilage placed beside one from the trachea it does not appear that the area of the former is more than one half that of the latter; in other words, the disparity is greater in children than in adults.

In the preceding calculations I estimated on the size of the trachea, simply because it was more convenient, but it is evident that, in order to arrive at correct conclusions, we must compare the lumen of the cannula with that of the infraglottic division of the larynx, because the trachea would conduct air to and from the lungs just as well were it no larger than its mouth. But, as I have already stated, it was not from any such comparisons with the normal caliber of the larynx that the tubes have reached their present dimensions, but from noting the results of pressure on the intensely inflamed and infiltrated tissues as found post mortem. After an experience with tubes of various sizes in over two hundred cases of croup, besides other forms of stenosis in children, I am fully convinced that, as at present constructed, they afford ample room for carrying on the respiratory function in the most perfect manner.

When the disease is confined to the larynx and upper portion of the trachea, it is not an uncommon experience, after the paroxysm of coughing that immediately succeeds intubation has subsided, to find the little patient breathing so quietly and imperceptibly that it is sometimes difficult to convince the mother, who has returned to the room after an absence of fifteen or twenty minutes, that her child is still living. Such complete freedom of respiration would be impossible were the opening too small.

When the struggle for breath has continued long enough to produce extreme exhaustion, together with more or less atelectasis and congestion of the lungs, this perfect relief does not occur. The same is true after the partial asphyxia induced by prolonged or repeated attempts to insert the tube. In such cases the patients sometimes never rally, although air enter the lungs in the freest possible manner. If any dyspnœa whatever

remains for any considerable time after intubation, or if the respiration is much above the normal in frequency, it indicates the presence of some complication or extension of the disease below the tube. The fact that several times, on removing a tube from the larynx, I have found its caliber considerably reduced by firmly adherent secretions when there had been no dyspnœa to indicate it, is good evidence that there is more room than is actually required for the free entrance and exit of air.

Physiology teaches us that the muscular system is the great consumer of oxygen, and that when this system is at rest the consumption of oxygen is reduced to a minimum. It has been estimated that as much oxygen is consumed during one hour of active exercise as would suffice for four hours in a state of repose with food, and for six hours without food. On purely physiological grounds, therefore, if only one fourth or one sixth of the amount of air is required in a state of rest, a cannula bearing this proportion to the normal lumen of the air-passages should afford ample room for the perfect performance of the respiratory function without the least effort whatever.

There would be no point in trying to determine through just how small a fraction of the normal lumen of the air-passages it was possible to carry on respiration effectually if the only object to be accomplished by the artificial channel were to allow the free passage of air to and from the lungs. There would then be no room for argument, as there could be no objection to having the cannula many times larger than necessary for this purpose, for such exists in the normal condition. I will add further that, were there no abnormal secretions to be got rid of, there would still be no reason for difference of opinion on this question.

The only ground left for argument, therefore, is the manner in which the machinery concerned in the removal of secretions is modified or injured by a cannula in the larynx or trachea. The mechanism of coughing, as I understand it, is simply getting as much air into the lungs as possible, condensing it, and allowing it to escape suddenly, on the same principle as the air-gun. To accomplish this, the glottis is firmly closed, coincidently with spasmodic contraction of the expiratory muscles, until the imprisoned air is sufficiently compressed, not only to give it power to project any offending substance before it like the ball from an air-gun, but also to increase the friction between it and the lining membrane of the air-passages to such a degree as to scrape off, so to speak, secretions that may be adherent. Considerable condensation, with great velocity of the expired air, is, therefore, necessary to give the maximum expulsive power. The latter without the former would accomplish nothing, because the same volume of air can be driven through the open or half-open glottis just as rapidly as in the act of coughing without the least power to remove a particle of mucus even from the larynx, much less from the bronchial tubes. This can be demonstrated by trying to cough while retaining the vocal bands in the expiratory position—the lack of power resulting solely from inability to compress the air to any appreciable extent. Coughing through a cannula is identical with this act when performed with a partially open glottis, and the only means left of subjecting the air to any condensation whatever is the much shorter time occupied in expelling it through the same space by which it more slowly entered.

An excellent and forcible illustration of this argument, and one the mechanism of which is identical with that of coughing, is the familiar act of blowing the nose. There is little or no ability to remove secretions from this organ without first reducing the nostrils to a small fraction of their normal caliber, or by momentarily producing complete occlusion, as in closing the glottis, until the air is sufficiently condensed to force the secretions out with it. Very little power can be developed even by closing one nostril and forcing all the air through the other, if normally patulous. If secretions can be removed more effectually from the air-passages through a cannula of the dimensions advocated by the authorities already quoted, for the same reason it should be easier to remove accumulations from the nose without compressing the nostrils. I maintain, therefore, that, while the artificial opening must be large enough for the perfect performance of the respiratory function, the power to expectorate is still further diminished, and in exact proportion to its increase beyond this limit.

Dr. William Pepper said that the evening had been so well occupied in listening to the two important and unusual papers —to him most instructive—that there remained little to say in the way of discussion, save as courteous appreciation of the kindness of the visitors and of the debt to them demanded. He rose, then, simply to express appreciation of the great wisdom of the advice to which the meeting had listened. In regard to the last paper, he wished to add his mite of evidence to the value of the operation introduced by Dr. O'Dwyer. It was destined to fill an important place for these reasons, if for no others: that one could induce parents to assent to intubation when it was impossible to secure their assent to tracheotomy; that in very young children, in whom, as was known, tracheotomy was so difficult an operation, intubation could be performed with great facility; and, finally, in septic cases, here was an operation for the restoration of the breathing-space by means of an artificial air-tube, which did not involve an abrasion of the surface to tempt extension of the infectious process.

From the masterly address of Dr. Jacobi, he was sure that every person present had derived much instruction and much pleasure—stamped as it had been, from beginning to end, with the accents of earnest truth, with the richness of practical experience. It was precisely these details to which Dr. Jacobi had called attention that were of the highest importance in the issue of cases. If he had done nothing more than give warning of the danger of relying too implicitly upon trained nurses, he would have done a service. As with every new instrument of precision, after its value had been demonstrated came a period in which there was a dangerous tendency to rely upon it too exclusively; so with trained nurses, if one trusted too implicitly to their unsupervised discretion, he was consigning his patient to more vigorous and, therefore, more dangerous ministrations —because equally unskilled—than the untrained solicitude of parents and friends. And this must continue to be the case until a longer and more thorough course of study was insisted upon. So, too, with the high importance of a radical treatment of antecedent and neglected—because apparently trifling—lesions, which the lecturer had emphasized. It was well to bear in mind the warning that tonsilar hypertrophies, nasal catarrhs, and the like might tempt the localization of diphtheria and, he might add, of scarlatina and of measles in time of epidemic. The extreme value of iodoform in the local treatment he could confirm. Soluble in ether, miscible with glycerin and with oils, capable of use as a powder, it was the best of all local applications, and might be applied in all cases and conditions. He would, however, interpose a mild protest against the too sweeping condemnation of the steam atomizer. Used with that gentleness so wisely insisted upon, and the confidence of the child obtained, the relief to oppression was so soon recognized that one could secure intelligent co-operation in its frequent and regular use. The problem of internal treatment was the most difficult one—a problem which largely and continually occupied our thoughts. He had been glad to hear Dr. Jacobi's clear and outspoken adherence to the mercurial treatment, although he had limited it to a certain group of cases. The speaker's longer experience had but abundantly confirmed his early impressions of its

value—pre-eminently in laryngeal diphtheria, whether primary or descending—and he was constantly impressed with the tolerance of children to the bichloride, and equally to the mild chloride. But he would go further than the lecturer. If in a form conspicuous as a dangerous one, which was usually not primary but associated with rhinitis and faucitis, this treatment proved efficacious, why was it not equally good where the nasal or faucial disease had not extended into the larynx? He had found cases of nasal diphtheria which were a source of great anxiety yield in a most remarkable way, and it had seemed to prevent the local spread as well as septic infection. He agreed with Dr. Jacobi that it was well to begin treatment with the chloride of iron, the association of chloride of potassium being a matter of comparative indifference, and that large doses should be given at short intervals. But he had not been so fortunate in seeing it usually well borne by the stomach. When gastric or intestinal irritation manifested itself, it was well to stop the use of iron abruptly, and to substitute that of mercurials. Or when, in the beginning of a case, the glandular involvement, the faucial tumefaction, the constitutional symptoms, gave evidence of rapid sepsis, we could not depend upon iron, and must give the corrosive or the mild mercurial chloride at once. In an address covering so wide a field there was much room for difference of individual experience. In threatened heart failure he would appeal for the early administration of strychnine, which he placed above digitalis or sparteine or ammonia, above everything but alcohol. These were but slight observations on a subject opened with a breadth and discussed with a richness for which sufficient admiration could not be expressed.

Dr. Carl Seiler said that in his experience the addition of chlorate of potassium to the chloride of iron had been of great use, although he agreed with Dr. Jacobi that chlorate of potassium alone was of little use. From laboratory experiments he attributed this to the disengagement of chlorine gas when the two solutions were mixed. In the same way, at the suggestion of Dr. L. Wolff, he had found Labarraque's solution an efficient disinfectant in the proportion of 1 to 5. He used this as a spray to the nasal cavities or fauces, and had had excellent results. He might also say that we should have the carbolic-acid solution not only saline but alkaline, and therefore, instead of chloride of sodium, he added borate and bicarbonate. The soothing effect of an alkaline solution was well known, and he thought it freed the surface better from secretions. The solution should be of such a strength that neither exosmosis nor endosmosis would take place. He saw that Dr. O'Dwyer had added an artificial epiglottis to the tube. It had been the experience of all laryngologists to meet with cases of complete or almost complete destruction of the epiglottis by syphilitic or other ulceration, in which there had been no difficulty of deglutition at all. Therefore he had long ago come to the conclusion that it was not the epiglottis which protected the larynx, but the apposition of the ventricular bands. And he would suggest that he had had no experience with such a device; that, if the tubes were so made that the head could slip into the ventricles of Morgagni without interfering with the ventricular bands, there would be no difficulty in deglutition experienced. It was not only in New York, but also in Philadelphia, that the only operation for opening up the air-passages that parents would consent to was intubation. He recalled a very distressing case in an asylum, in which the matron would not consent to tracheotomy until the mother of the child had been communicated with, and while they were hunting for the mother the child choked to death. This was before we knew of intubation. That we might have performed at once.

Dr. H. R. Wharton said that, the hour being so late, he must postpone what he had intended to say concerning some of the complications of intubation. As to the caliber of the tubes, the fact that children did breathe well with such tubes as were now made was sufficient evidence of the correctness of Dr. O'Dwyer's position. Since his experience of this he had not been so anxious as formerly to get in the largest tracheotomy-tubes.

Dr. E. E. Montgomery said that since August, 1886, he had performed some thirty or forty intubations, having previously done some twenty-eight tracheotomies. Fifty per cent. of the children intubated had recovered. His experience was that this operation largely reduced the necessity for tracheotomy, and he believed that, if intubation were done early in every case, tracheotomy would rarely be necessary. He felt that, in devising and perfecting his operation, Dr. O'Dwyer had been a benefactor to the medical profession and to the human race.

Dr. M. Price said that, in the evolution of steam from lime, he had for the last fifteen years depended upon the same method as country people used in the scalding of hogs—to put a few pieces of lime into a bucket with hot water, place a blanket over the bed, and let steam pass over the child's head. Soon the child acquired confidence and asked for relief, and would even bend his head down over the bucket trying to get the vapor into his throat. Now, if every half-hour a hot stone or brick or piece of metal was added to the water, it would keep up the heat without any stove or fire being needed in the room. It kept the room clean and the atmosphere sweet, and he had not found so much danger of contagion when lime was used. He showed a specimen of tincture of chloride of iron in syrup, which is well made and of the proper color. There were very few drug-stores where one could get it properly made, and, if the right thing was not obtained, it was of no use whatever. Its greatest good was in its local effect.

Dr. Shimwell had performed intubation sixteen times, with seven recoveries. In all, there had been immediate relief to respiration. In one case he had had to remove the tube twice, and introduce it three times, and perform artificial respiration. In removing the tube post mortem, he had found it impossible to drag it down through the trachea, so there was no danger of its slipping. Was not the occurrence of substernal respiration-depression rather too late an indication to wait for?

Dr. Ewin Rosenthal said that, in the mercurial treatment of diphtheria, he had resorted in two cases recently to the sublimation of mercurous chloride from platinum foil. One patient had died and one had recovered. In the fatal case the patient had been almost *in extremis* when the treatment was instituted.

The President had listened with pleasure and with profit to both these papers, and, with all the study that he had given to this subject, he had gained information to-night on many points. The advice to give early attention to the heart, that when danger already threatened it might be too late to effect anything with remedies, was advice that we should all take to heart. We had been distinctly taught that the prevention of this complication must be from the beginning an integral part of the treatment. In regard to local treatment, his experience had differed from that of Dr. Jacobi. Where it could be properly applied to the extreme margins of the false membrane, he had found the topical use of chloride of iron, by firm and gentle pressure with a brush or, preferably, a cotton wad, the most serviceable agent he had used. The drug had an astringent and a disinfectant action, and he was satisfied that he had time and again seen it assist the detachment of false membrane, and apparently prevent the extension of the infection. Concerning the value of chloride of iron internally, the importance of large and frequent doses, and the advantage of mixture with glycerin to assist its local effect, he could only confirm what had been said. So, too, as to the bichloride of mercury; he had been

glad to hear its great usefulness emphasized, and, with Dr. Pepper, he would include all forms of the disease in the field of that usefulness. Empirical observation had long taught the pre-eminent value of the chlorine compounds in general in the treatment of diphtheria; and the mercury chlorides (more particularly calomel, however) had always enjoyed a high reputation in the internal treatment of membranous laryngitis. It had pleased him, in these discussions, to hear reasons at least plausibly advanced in explanation of facts which our forefathers had learned and used empirically; that was the true direction of medical progress. The topical action of steam was very important. It had always seemed to him that in the natural course of the disease the membrane was thrown off by an accumulation of fluid beneath it, which softened it and secured its detachment. We aimed, then, by furnishing artificial moisture, to imitate the natural process of recovery. And this led him to speak of the value of the vapors from lime in the process of slaking. Using a large wash-tub or wash-boiler, and keeping up a supply of large pieces of lime, we secured an abundant disengagement of the hot vapor of water, carrying up with it particles of lime, which mechanically assisted by prying up the edges of the false membrane, and thus favoring the access of the vapor of water beneath it.

There was another method of local treatment which he had employed with great satisfaction, more especially in former years, when he saw more of the disease—that was, inhalation of carbolic acid in the spray of a steam atomizer in very large doses. Twenty to twenty-five grains should be added to the ounce of water, and from half an ounce to an ounce sprayed into the throat every hour, or even half-hour, until commencing discoloration of the urine gave evidence of saturation, when the use of the remedy was to be stopped until the urine again became clear. Under this method he would advise the attending physician to see the child four or five times a day, always having the urine last voided saved for him, and, when the olive discoloration was noticed, to intermit the use of the carbolic acid. This seemed to him to disinfect the system and thereby improve the local condition, and, at the same time, to prevent or diminish the danger of systemic sepsis. He had not been aware before to-night that such small doses of carbolic acid as Dr. Jacobi had mentioned could be of service.

He must express sincere appreciation of Dr. Jacobi's masterly paper. He was also glad to thank Dr. O'Dwyer for his lucid exposition, founded on fact and proved by actual exhibition of specimens, that the small caliber of his intubation-tube was amply sufficient for due respiration. The speaker's own experience with tracheotomy had led him to favor large tubes—the largest that could be introduced without touching the walls of the trachea. He still believed that he had seen life saved by taking out small tubes and substituting larger ones. And he confessed that the small caliber of the tube used was one of the theoretical considerations which he had enumerated among the drawbacks to intubation. But facts were stronger than theories, and, as the small-caliber intubation-tube did seem to give air enough, and as enough was all that was wanted, he was ready to profess his satisfaction with its present caliber. He must ask Dr. O'Dwyer to make clear the question as to the impaction of membrane. This was not a mere theoretical objection, but was borne out by experience. Perhaps he had been led to attach an undue importance to the matter by an accident which had occurred to him a year or so before. Dr. O'Dwyer read his now historical paper before the International Medical Congress at London in 1881. He had been called to a case of membranous laryngitis, and had proposed tracheotomy, which had been declined. As he turned to leave the room the mother called piteously, "Oh, Doctor, don't leave my child without trying to do something for it." He said to his assistant: "We will try to save this child," and, taking a catheter, he cut off the end and passed the instrument into the larynx. The child instantly became black in the face, and there was nothing for it but, without asking any questions, to plunge his knife into the trachea as the child lay on its mother's lap. He inserted the same catheter through the orifice deep into the trachea, and then was performed artificial respiration, the assistant inflating the child's lungs through the tube with his own breath, and the speaker's hands exercising compression of the thorax in respiratory rhythm, and after a while they had the satisfaction of leaving the rescued child sleeping peacefully with unobstructed respiration. But he confessed that this experience had cost him some of the most anxious moments of his life, and had left a fear of the danger of crowding down membrane in front of a tube introduced into the larynx which might, perhaps, make him over-anxious.

Dr. Jacobi said that the slaking of lime had the further advantage that it was the only way to utilize lime. A lime-water spray was useless, but in slaking a large amount was carried up into the air and air-passages. The suggestion of the president that carbolic acid should be used in spray until discoloration of the urine was noticed he did not feel inclined to adopt. Diphtheria was the very disease in which no complication should be allowed to exist, and we must not tempt them. A single case in which we should have to blame ourselves for a possible nephritis would, in his judgment, condemn the treatment. Besides, young infants were sometimes poisoned by very small quantities.

Dr. O'Dwyer said that pushing down of membrane did occur, though rarely. The difference between the liability to the accident in catheterization and in intubation was that the catheter had an open, comparatively broad end, while the intubation-tubes were comparatively probe-pointed. One pushed and caught the membrane, the other slid past it. He had crowded membrane down sufficiently to produce asphyxia in only two cases out of two hundred. In those two, on removal of the tube, the cast was coughed out. If we took away the tube because the child was breathing badly and the trachea was full of membrane, the child not having the strength to cough it out, the child choked from the absence of the tube, not from its previous presence. His attention was now being directed to devising a means of getting rid of the membrane. He hoped to present something practicable before long. Blocking with membrane while the tube was in might occur. Formerly, when the swell of the tube was not so great, it would be coughed out, but now it was not coughed out and suffocation might take place. The original tube was better in this regard. The earlier tubes had been made to fit into the ventricles with the idea of permitting the approximation of the ventricular bands, but the device did not work. It was true that the epiglottis was merely an accessory, but in an intubation case, the ventricular bands being held open, we had to depend upon it; and that was the reason, the dependence being a poor one, that solids and semi-solids, which could go down in mass, were better than liquids.

## NEW YORK SURGICAL SOCIETY.

*Meeting of May 23, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**The Gradual Correction of False Ankylosis at the Knee.**—Dr. V. P. Gibney presented two patients illustrating the method of correcting false ankylosis by means of jointed splints, such as are used in Billroth's clinic in Vienna. They had been used with great success; in old cases of deformity, in which the

limb had been straightened under ether and in which relapse had occurred, the patients had invariably done well. In treating the knee joint, a stocking was first applied, with padding over the patella; then the limb was covered with a plaster-of-Paris bandage, extending from the lower third of the leg to the upper fourth of the thigh, the ligamentum patellæ being left uncovered. The splint was next adjusted and covered with a plaster bandage. While the plaster was setting, a transverse cut was made across the popliteal space down to the stocking, and an elliptical space was also made over the ligamentum patellæ. On the following day the leg was extended as much as possible, and a wedge of cork was inserted between the edges of the opening in the popliteal region. If there was much pain, the manipulation was not repeated until the third day after, when the limb was extended more and a larger wedge was inserted. In the course of a few weeks, with a single dressing, from 15° to 50° of motion could be gained. In the cases of children the limb could be straightened in two or three weeks; in older patients a longer period was required. In reply to a question by the president, Dr. Gibney said that he had not applied this method in cases of subluxation.

Dr. R. J. Hall thought that it was difficult to avoid recurrence of the deformity. He had succeeded in straightening the limb by applying an anterior splint, even in cases of subluxation, but the deformity had recurred, even after the splint had been worn for a year. It seemed to him that it was better to resect the bones and nail them together.

Dr. Gibney said that after the limb was straightened he was accustomed to use a Thomas splint, gradually leaving off the plaster and securing the joint by parallel bars. In the cases of children the usual infiltration about the knee disappeared to a great extent, so that a Thomas splint could be applied, which kept the limb straight. He recalled the case of a patient, an adult, who had come to him after having been treated by Thomas, and had worn a splint for four or five years. The cicatrix stamped the case as genuine. He had a range of motion of 35° or 40°; at the end of a year it was twice as great. When seen last June he had not worn the splint for five or six months, and flexion was nearly perfect.

**Subastragaloid Amputation.**—The President presented a patient on whom he had done a subastragaloid amputation because of frost-bite of the toes. The stump was noticeable because of the thickness of the sole-pad and the preservation of active movements of the ankle joint. The operation, he thought, was to be preferred to Syme's whenever it was practicable, because of the greater length of the limb and the fact that the face of the stump was composed of those tissues of the sole which normally received the weight of the body in walking, and not of the back of the heel, as after Syme's amputation. The advantage over Chopart's amputation was that this did not need so long a flap from the sole, and that in Chopart's the tendency to elevation of the heel was apt to interfere with the usefulness of the stump.

**Œsophagotomy for the Removal of a Tooth-brush.**—The President presented a bone-handled tooth-brush, six inches and three quarters long, which he had removed by œsophagotomy. The patient was a spare man, forty-eight years old, who had been under restraint for a few weeks because of mental depression, and who in a moment of suicidal aberration had swallowed the tooth-brush, bristle-end first. The swallowing had been done so quietly and had caused so little inconvenience that the attendant had not been aware of it until informed by the patient two hours later. The reporter saw him ten hours later, and could touch the upper end of the brush with a sound at a point about seven inches beyond the incisor teeth, say one inch below the cricoid cartilage. The patient had entirely recovered from the suicidal impulse, was anxious to be relieved, and bore the explorations with much fortitude and calmness. Palpation of the neck gave a little pain, but the presence of the brush could not be thus detected. After a few cautious, unsuccessful attempts to catch the handle with œsophageal forceps, ether was given and œsophagotomy done upon the left side, the œsophagus being reached below the thyreoid gland. A longitudinal incision large enough to admit the finger was made in the œsophagus, and through it the handle of the brush could be felt lying with its breadth in the mesial plane; it was easily caught with an artery forceps and drawn out. The only vessels that required to be tied were two that had been divided in incising the skin. The opening in the œsophagus was closed with a short, continuous catgut suture and a single additional stitch at the upper end, where it was noticed that air escaped in coughing. These sutures included the mucous and muscular coats; a second row of interrupted sutures was placed in the fibrous outer sheath, with the hope of thereby permanently shutting off the deep ones from the rest of the wound. The external wound was closed with catgut and silkworm-gut sutures about a large split drainage-tube, which reached to the immediate neighborhood of the incision in the œsophagus. The patient was fed with milk in small quantities at a time, about three pints daily, with an occasional milk-punch. He complained only of a sore throat for a few days, and at no time did he have any fever. The dressing was changed on the fourth day; there was a slight discharge, decidedly offensive in odor, and the wound was gently syringed with a bichloride solution. On the sixth day the discharge was still scanty and almost free from odor. On the night of the seventh day, during a fit of coughing, the patient felt air pass out through the wound, and on the following day the dressing became quite wet with the milk which he swallowed. He was then fed twice a day through an œsophageal tube, but was allowed to drink a little water when he wished it. Occasionally he would feel the milk regurgitate from the stomach and escape in very small quantities through the wound. This happened for the last time on the eleventh day, and air escaped for the last time on the morning of the twelfth day. On that day he drank a glass of water in the speaker's presence without feeling it in the wound, and, as cool water syringed into the wound could not be felt in the œsophagus, it was thought that the opening was sufficiently closed to justify shortening of the drainage-tube. On the fourteenth day it was again shortened, and on the sixteenth day it was entirely removed. On the day of the meeting, the seventeenth day, there remained only a shallow opening in the skin.

**Septic Peritonitis following Perforation of the Vermiform Appendix.**—Dr. C. McBurney reported the case of a young physician, aged twenty-six, who had been taken ill on the Friday previous. He had complained of slight pain in the right iliac fossa, but had slept well that night, and had had no particular symptoms on the following day, excepting general malaise and slight pain. He had slept Saturday night, but had had renewed pain on Sunday morning, and looked much more ill than his general symptoms indicated. He lay in bed reading during the morning, his temperature not rising above 100·5° F. By noon he had become very sick, the pain in the right iliac fossa having somewhat increased, while the abdomen had become distended. The reporter saw him for the first time on Sunday evening, when he was also seen by Dr. W. H. Draper, Dr. H. B. Sands, and Dr. D. M. Stimson. At that time the patient's expression was bad, the eyes were somewhat sunken, and the face was very pale; temperature 101° F.; the abdomen moderately distended, no distinct tumor in the right iliac fossa, but marked tenderness on pressure in that region and slight resistance to pressure at a point about two inches to the inside of the iliac spine. An

operation was at once decided upon, and this was done by the speaker at 9 P. M. A vertical incision about four inches long was made over the caput coli. This incision lay two inches inside of the anterior iliac spine. The peritoneal cavity was then opened, when about two ounces of pus escaped. The appendix lay to the outer side of the colon and pointed upward. The appendix (specimen shown) was gangrenous, and a small perforation existed. After the pus sac had been washed out, Douglas's pouch was examined and found to contain a large quantity of pus, which had doubtless been derived from the original sac formed about the appendix. A median opening was then made to facilitate complete cleansing of the peritoneum. The intestines were noted to be markedly inflamed, but not adherent. The appendix was removed and the wounds were closed, with drainage supplied by tubes. The patient rallied well from the operation, but died about twenty-four hours later from septic peritonitis, which had doubtless begun many hours before the operation. Two old concretions with well-marked facets were found in the appendix. A point of interest was the fact that the concretions were very much larger than the opening into the colon, showing that their growth must have been gradual. The speaker thought that in the larger proportion of these cases the process was entirely intraperitoneal. He had that day operated in a case in which perforation had been imminent, but had not yet taken place. The appendix, which was very tense and full of thick pus, was separated from its adhesions and removed uninjured, so that no sepsis could occur. Rupture into the peritoneal cavity would no doubt have occurred within a very few hours. If the operation in the first case had been performed earlier, septic infection would have been avoided, but the trouble was very insidious in its development, the pain being so slight as not to arouse suspicion of its serious import.

[Note (nine days later).—In the second case reported by Dr. McBurney the patient has made an uninterrupted recovery. No untoward symptom of any kind has occurred, and the wound is now almost entirely healed.]

Dr. A. G. Gerster said that the extension of pus into Douglas's pouch was not rare, and it should always be looked for. Moreover, it was always advisable to examine *per rectum* all patients with pain in the right iliac fossa, since in this way a clew to the true condition might be obtained. He had not long ago had two cases of perforative peritonitis at the German Hospital. In one there had been several purulent foci, in the shape of saccated abscesses, one in the sacral fossa being felt through the rectum and subsequently incised. A post-mortem examination had shown perforation of the appendix. In the second case the patient had developed symptoms of perityphlitis, and a fluctuating swelling had been felt and incised through the rectum, the patient making a good recovery. The patients had both been boys, between fourteen and sixteen years of age. The cases reported by Dr. McBurney, especially the second one, were very instructive, since they threw new light upon the subject of such abscesses. Dr. McBurney had recently performed laparotomy for suppurative peritonitis supposed to be due to perforation, and had removed the distended appendix just before rupture. Had the operation been delayed until after rupture of the sac, the absence of a tumor, together with the resulting general peritonitis, would have rendered the operation difficult and recovery very doubtful. The practical deduction from this case was to operate early, and not to search for pus with the exploring needle when there might be none; the use of the needle might be fatal to the patient, as puncture of the distended sac might permit the escape of intensely septic matter into the peritoneal cavity; on the other hand, free exposure would permit ocular examination and a safe removal of the sac and its contents. Undoubtedly the chances would be the best if the operation was done before the formation of pus—that was, at a time when the process was still limited to the vermiform appendix. Such facts as Dr. McBurney's operation had revealed would probably tend to give our operative endeavors an entirely new direction. It was certainly very desirable to have the darkness and uncertainty still enveloping this subject cleared up by new observations.

Dr. R. Abbe cited the case of a boy upon whom he had operated the previous week. The patient had had nausea for a few days, with tenderness in the right iliac fossa. When he entered the hospital there was a tumor in the right iliac region, extending over to the median line; above the pubes there was an enlargement which felt like the distended bladder. A hypodermic needle was introduced, but no pus was withdrawn. There was marked tympanites, and the temperature was 101° F. Median laparotomy was performed. The omentum and intestines were found matted together; on separating the adhesions, a quantity of fœtid pus escaped. The finger entered a cavity within the pelvis, extending over to the right side between the sacrum and the rectum. The original incision was extended, the peritoneal cavity was washed out, and a tampon of iodoform gauze was introduced into it. The boy made a good recovery, his temperature rising but little above normal. The case was interesting as showing how pus frequently gravitated into the pelvis. The abscess might have been drained through the rectum, but the speaker had found that a fistulous opening often remained.

Dr. F. Lange said that he had opened such an abscess through the rectum five times, four patients recovering. There was no difficulty in draining the cavity in this way, and contamination was avoided, as the pus was evacuated through the tube without coming in contact with the gut. In every instance the perityphlitic abscess had been felt through the rectum. The speaker had made it his rule to examine through the rectum in cases of perityphlitis, and had found that in a good percentage of cases the inflammatory product could be felt in Douglas's space.

In reply to a question by Dr. McBurney, Dr. Lange said that in nearly all the cases cited by him the abscess had developed in the course of what was supposed to be acute perityphlitis. It was, of course, important to make a distinction between the two varieties. In his cases of perityphlitis in which recovery had taken place there had been no diffuse peritonitis, the pus being separated from the general cavity by adhesions. When diffuse peritonitis existed, he would not attempt to drain through the rectum.

Dr. Gerster recalled the case of a young lady who had had four attacks of perityphlitis within three years, the first being very acute and attended with the classical symptoms. There had been no appreciable abscess, but the tumor which had been present had increased in size after each attack. Her general health had declined, she had become anæmic, and suffered from profuse night-sweats. The speaker had advised operation, which he had subsequently performed. On dividing the abdominal walls, a dense mass of connective tissue had been found occupying the right iliac fossa, which was punctured with a large needle, but no pus was withdrawn. On freely incising the mass, a central cavity, of the size of an English walnut, was opened, lined with unhealthy granulating tissue, and containing inspissated pus. The external walls of this cavity were so thick that it could only have perforated into the general peritoneal sac. The patient had made a good recovery.

Dr. Lange said that he had observed a similar case. A boy had had repeated attacks of perityphlitis. On opening the abdomen, a small abscess cavity was found containing broken-down material. It was scraped out and there had been no

recurrence of the peritonitis. Such cases might end in spontaneous recovery.

Dr. J. A. Wyeth thought that the general impression was that these processes were originally intraperitoneal. Exploratory laparotomy was justifiable even in cases of doubt, since it was attended with slight danger.

Dr. Conrad cited the case of a patient who had had repeated attacks of perityphlitis, one of which had terminated with a discharge of pus through the rectum. Finally a tumor had developed in the iliac region. On opening the abdomen, a pus cavity was found, after a long search, containing only about a drachm of pus. The patient had recovered and had had no further trouble.

In reply to a question by Dr. McBurney, the speaker said that the peritoneal cavity was opened, the incision being made in the iliac region.

**Gastro-enterostomy for Carcinomatous Stricture of the Pylorus.**—Dr. Lange showed a specimen and read the following report of the case: Mrs. E. F., aged fifty-two, was admitted into the German Hospital on January 21, 1888. She had suffered for two months with indigestion, vomiting, and pain in the stomach. For ten days before her admission the pain had been quite severe. She presented a decidedly cachectic appearance, and was very anæmic and emaciated. Her stomach was much dilated and was dislocated downward to such a degree that the greater curvature was at a point considerably below the navel. The contents of the organ were so viscid and undigested that it was impossible to empty it in the ordinary manner by means of a tube. As in a former case, it was necessary to introduce a thick rubber tube, raising the patient's pelvis so that the head would hang down almost perpendicularly and the fluid would run out by its own weight. Nearly half a pailful of thick material escaped. A large tumor could then be felt in the pyloric region; it was hard and nodular, and was undoubtedly of a carcinomatous character. Gastro-enterostomy was performed on the 14th of February, as a palliative measure, a median incision being made between the navel and the ensiform cartilage. In order to ascertain what part of the jejunum might be the proximal and what the distal end, Nothnagel's test with chloride of sodium was employed, but without result. The search for a portion of the jejunum as near as possible to the duodenum was abandoned, and a loop of intestine was chosen corresponding approximately to that region and of sufficient mobility to allow of its easy adaptation to the anterior wall of the stomach. The latter was opened about an inch above the omental insertion and two inches from the left border of the tumor. The openings into the gut and stomach, which were about 4 ctm. long, were carefully united by separate sutures, one set including the mucous membrane, and two additional rows the serous coat. To prevent an acute bend in the intestine at the point of union, a few sutures were passed through the stomach and gut about an inch from the openings. The patient rallied well from the operation, after having been under the influence of ether two hours, and had little reaction subsequently. The new opening did not fulfill satisfactorily the purpose for which it was made, as stercoraceous vomiting sometimes occurred; it was not relieved by washing out the stomach. The bowels moved quite regularly and freely, considering the amount of nourishment taken. The general condition of the patient was improved for a short time, but she died on the thirty-first day, after vomiting had ceased for three or four days. Death was due to perforation of the posterior wall of the stomach at the site of the carcinomatous ulcer. An examination of the specimen showed perfect union at the point of suture, the communication between the gut and the stomach being large enough to admit the thumb. Unfortunately, the autopsy was not made with sufficient thoroughness to furnish a clear idea of the relative position of the intestine. Perhaps one reason for the regurgitation of the contents of the gut was the resistance offered by the rigid hypertrophied wall of the stomach, which prevented the opening from closing or the mucosa from forming a valve.

The reporter thought that it was advisable to resort to this operation as soon as the first symptoms of pyloric obstruction appeared. One disadvantage possessed by the operation was the length of time required for its performance. In a future case Dr. Lange proposed to adopt Maisonneuve's method, recently recommended by Dr. Senn, of Milwaukee, in which the viscera were united by means of perforated plates of decalcified bone.

**Unusual Fracture of the Lower End of the Humerus.**—The President presented a specimen of unusual fracture of the lower end of the humerus, one in which the lower fragment consisted almost exclusively of the trochlea and capitellum; he believed that only one similar specimen had been recorded. The patient was a man about fifty years of age, who, while unloading flag-stones, fell to the ground, striking upon his elbow and receiving the weight of one of the stones upon the front of the arm in a manner that was not entirely clear. Two small openings in the skin behind the internal condyle communicated with the fracture, and through them fragments of the epitrochlea were removed. The patient died of delirium tremens a few days after the accident. The lower end of the humerus, the speaker explained, was separated from the shaft by a line of fracture almost parallel with the long axis and frontal plane of the bone, which began on the front of the shaft half an inch above the coronoid fossa and ran downward and very slightly backward to the back of the epicondyles, entering the olecranon fossa close beneath the junction of its upper and anterior surfaces. The external epicondyle was broken off, but was adherent in front to the back and side of the capitellum; the internal epicondyle was not entirely separated from the trochlea, but its pointed end was broken off. The lower fragment comprised the uninjured trochlea and capitellum, a triangular portion of the front of the shaft about an inch high, and the broken epicondyles. The lower end of the upper fragment was shaped like an inverted Y, the two branches of which were formed by the supracondylar ridges, and the interval between them corresponded to the olecranon fossa. The displacement was slight, the lower fragment having moved a quarter of an inch upward and forward. The cavity of the joint contained no blood. The head of the radius was bruised at two points on its edge; the ulna was uninjured.

## OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Meeting of May 3, 1888.*

The President, Dr. Thomas M. Drysdale, in the Chair; Dr. J. M. Baldy, Secretary.

(*Concluded from page 694.*)

**Supravaginal Amputation of a Fibroid Uterus, followed in Four Months by Ovariotomy, and again in Six Weeks by Abdominal Section for Purulent Peritonitis.**—Dr. Baldy reported the case of a colored woman, forty-three years old, who had come under his care on the 7th of November, 1887. For years she had suffered more or less discomfort from an enlarged abdomen, but until within a year she had managed to get along very comfortably. About a year previous to the speaker's first seeing her, while she was lifting a wash-tub, something "slipped back into the belly," and at the same time the abdomen became somewhat smaller. In all probability this was caused by the large fibroid uterus, which had been resting on the pubic bones,

becoming suddenly dislodged, and she now began to suffer acutely from pressure symptoms. The bladder and rectum became prolapsed, and hung between the thighs most of the time; she had difficult and scanty micturition, the urine finally becoming loaded with pus; constipation was constant; the abdomen became enormously distended with ascites; and she suffered constant pain, besides losing large quantities of blood. When the speaker took charge of her she could be out of bed only about two hours a day, on account of the great swelling of her legs and feet. She had been attended by a number of physicians, and had been tapped repeatedly, the last tapping having been done only a few days before. After each tapping she had been confined to bed for several days with acute pain in the lower part of the abdomen, and she was now suffering with one of these attacks of peritonitis, so that it was only with great difficulty that the abdomen could be manipulated. On the following Saturday, a week after the last tapping, the speaker opened the abdomen and removed a fibroid uterus weighing five or six pounds. The belly was so distended with fluid at the time that her breathing was badly interfered with, and over three gallons of fluid were removed. The stump was treated by the extraperitoneal method. The speaker supposed at the time that he was placing the serre-nœud below both ovaries, thus obviating their separate removal; in this, however, it finally proved that he had been mistaken. In cutting away the tumor it became necessary to leave part of the right ovary on the stump, in order that the "button" might be large enough to prevent the serre-nœud from slipping. The peritonæum was half as thick as one's finger. The patient made a slow but uncomplicated recovery. For the first ten days over a quart of straw-colored, syrupy liquid was removed daily by the drainage-tube, and the speaker feared at one time that the peritonæum would never stop secreting it. On the eighth day the stitches, fourteen in number, were removed, and union was found to be perfect, with no stitch-hole abscesses. On the eleventh day the discharge from the drainage-tube stopped abruptly after a dose of salines, and never reappeared. The tube was removed four days later. On the tenth day, while the speaker was tightening the serre-nœud, it broke, and could never be tightened afterward. In consequence of this accident, the strangulated portion of the stump was slow in coming away, and finally, after waiting a full month, during which time slight septic symptoms had set in, the speaker removed the pins, cut away as much of the decaying tissue as he could, and allowed the rest to retract. Within a few days more he succeeded in getting away in small pieces the little tissue that was left. At the end of six weeks the patient was out of bed and at work again, in better health than for years before. The urine gradually cleared up and became normal, and the prolapse of the bladder and rectum disappeared. The depression left by the retracted stump never closed entirely, but continued to discharge about a drop of pus daily from a pin-hole point. In the course of a few weeks a ventral hernia began to show itself at the site of the drainage-tube, and gradually extended downward toward the pedicle until finally it became as large as an orange. The hernia grew more and more troublesome, and she complained of a dull pain in its lower part. As she was obliged to work, and had no time to take the best care of herself, she was advised to go to bed again and have the ventral opening closed. This she did on the 17th of February, when the speaker opened the abdomen at the upper border of the hernia and slit up the tissues to the full extent of the rupture. About a pint of clear, straw-colored liquid gushed out. Passing his finger into the pelvis, the speaker was surprised to find it filled with a cyst attached to the uterine pedicle, which was itself thin and elongated. The pedicle of the cyst was very short and broad. After it had been secured with a double ligature it was removed, and found to be a multilocular ovarian cyst about as large as a base-ball. The omentum had been slightly wounded when the cavity was opened, and, as it bled freely, a ligature was thrown around it and a small piece removed. A large flat sponge was placed over the intestines, and the speaker proceeded to close the incision. The muscles and fascia were dissected out on both sides, and united with a continuous silk suture; the wound was then closed with seven sutures passing through the entire thickness of the abdominal wall. No drainage-tube was used, which was extremely unfortunate, for it would have saved the patient's life. On the second day she complained of pain in the left side of the chest, which increased for the next few days. It was apparently pleuritic, although no physical signs could be discovered. She had a slight hacking cough, and about the fourth day she began to expectorate a good deal of dark-colored sputa. For the first week she was extremely restless, and said she did not feel nearly so well as after the first operation. The temperature remained slightly over 100°, and the pulse about 90. On the seventh day the stitches were removed, and a drop of pus followed each of two of them; there was no discharge from these points afterward. This pus apparently explained her discomfort, lack of appetite, etc., but, instead of improving, she grew slightly worse. For several weeks her temperature and pulse varied; on two occasions the temperature was found as high as 102·5°, but never afterward higher than 101·5°. She complained, however, that her hottest time was toward morning, and that she sweat freely and could not sleep. Her tongue was of a dirty-red, irregularly covered with a thick white coat, and pitted. Repeated examinations failed to disclose anything wrong, and yet her whole condition seemed extremely suggestive of sepsis. On the 7th of April the speaker asked a friend to see the patient with him with reference to the advisability of opening her abdomen again. It was decided to wait and observe, and thus once more the force of the old adage, "He who hesitates is lost," was exemplified. From this time on the speaker was led hither and thither by the symptoms; sometimes she was apparently much better, the pulse and temperature would improve, and at one time the tongue was almost clean and the mouth not so sore. About this time a distension of the abdomen was noticed, more marked on the left side, with a region of dullness extending irregularly from the spleen to the pubes. Change of posture caused no change in the line of dullness; this led him to think that there had been an acute attack of peritonitis with effusion, and that all would soon be well. On the 8th of April about an ounce of pus was discharged from the site of the old pedicle, and, a small rubber drainage-tube having been inserted, the cavity was kept well washed out. With this cue to the probable trouble, the opportunity of operating was again lost; the symptoms all improved so much, and she progressed so well for a few days, that the speaker was again seduced into the miserable policy of waiting. The pulse reached 100 and the temperature 100·5°, and then things came to a standstill. The speaker now went out of town for two or three days, determined to operate on his return if there was no improvement. On coming back, he found that there had been another discharge of pus, and that she was very much better; this led him into still more waiting, but no further improvement took place. Looking back over the previous month, he could see a decided and alarming loss, which had been pretty constant in spite of the repeated changes for the better. On the 18th of April, about a month after the second operation, he undertook a third one. The incision was made through the old wound. Here the tissues were an inch thick, hard, and gristly. The hernia had been most effectually closed in, and the ends of the old sutures could be seen plainly.

The hæmorrhage could be controlled only by sponge pressure. On opening the peritoneal cavity, the trouble was at once apparent; a quart of fœtid pus was removed. The abscess cavity extended from the pelvis to the spleen; the intestines were crowded backward and to the right, and everywhere adherent, shutting off the abscess from the rest of the peritoneal cavity. Everything was covered with an apparent pyogenic membrane. The cavities were all thoroughly washed out, and four rubber drainage-tubes were put in, one extending to the spleen, one into the pelvis, and the two others laterally into deep pockets. The incision was then closed with four sutures. Recovery from the anæsthesia was prompt; the pulse was 130 and the temperature 103°. But the next morning the pulse was 100 and the temperature 100°, and the patient was very comfortable. The tubes were washed out twice a day. For the first time for weeks she was able to retain much food. In the course of every twenty-four hours she was given twenty grains of quinine, eight ounces of whisky, a pint of beef-tea, a pint and a half of milk, and two eggs, partly by the mouth and partly by the rectum, and retained most of it. In spite of all that could be done, however, the pulse slowly rose to 120 and the temperature to 103°. She sank slowly, and died on the evening of the sixth day after the last operation. An autopsy was not allowed, but, in removing the drainage-tubes, the speaker enlarged the incision and introduced his hand into the peritoneal cavity. Breaking up the adhesions surrounding the abscess cavity, he found that there had been a slight general adhesion of all the intestines to everything in contact with them. The liver and spleen were surprisingly firm. No more abscess cavities were found. The general appearance of the abscess-wall was that of returning health; the pyogenic membrane had disappeared and the peritonæum was beginning to look normal. There was fair union of the incision, but it broke down readily under pressure.

Looking back over the management of the case, the speaker recognized a number of fatal mistakes and had learned some valuable lessons, which he hoped he might never have to learn again at the same cost. In the first place, all ovarian tissue should have been removed at the time of the first operation. However much he regretted not having done this, there had been at the time sufficient reason to justify leaving what little was left, especially as he thought the serre-nœud was below it and that it would all come away with the stump. He did not yet quite see why it had not done so. The great error had been in not being more careful in disinfecting the site of the old pedicle, which had never ceased to weep, before opening the peritoneal cavity a second time. The peritonæum had undoubtedly become infected from this point during the necessary manipulations incident to the operation, and the trouble had gone on to a purulent peritonitis. Nature had made a grand effort even then to save the patient by throwing out adhesions as the inflammatory process advanced, and had finally succeeded in saving half the cavity from involvement. After doing this she had given all the indication in her power as to what the trouble was, and by thrice discharging pus had apparently called loudly for assistance, which she failed to receive until it was too late.

Dr. H. A. Kelly said he was sorry to say that it had required many lessons to teach him what Dr. Baldy hoped to have learned from this one experience. If anything went wrong which he could not attribute directly to the formation of stitch-hole abscesses—and these did not cause any profound disturbance beyond a sudden rise of temperature—he did not hesitate to open the peritonæum with great care. On several occasions he had opened the peritoneal cavity five, six, or seven days after an operation, and in a recent case two weeks after the original operation. He usually did this without an anæsthetic, or at most with a few whiffs of chloroform or the local application of cocaine. In cases requiring this there had generally been a drainage-tube used, and the wound could readily be reopened in the track of the tube. In a case of pyosalpinx in which the patient had done well for ten days, and then the temperature and pulse had begun to rise, after giving a whiff of chloroform he introduced his little finger into the opening and penetrated to the floor of the pelvis, when a collection of blood mingled with pus made its escape. This did not seem sufficient to account for the symptoms, and by further bimanual examination he detected fluctuation on the right side, and with his finger broke through a thin wall and let out a teacupful of very fœtid pus. The cavity was then washed out with his two-way catheter and a rubber drainage-tube was inserted. Since then he had had his finger through that opening a number of times, for it had a great tendency to close. The case of Dr. Baldy's was instructive from the fact that it showed that there was a certain number of cases in which there was *dry peritonitis*, and the patients would sometimes die in spite of all treatment.

Dr. William Goodell congratulated Dr. Baldy on the courage he had shown in the treatment of his patient, and thought he had nothing to regret. He always felt a good deal of reluctance in reopening the peritoneal cavity, but he had had to resort to it occasionally. He did not think that the best method of curing the hernia had been employed. In his opinion the most satisfactory plan was, after dissecting out the sac and thinned tissues, to close the opening with three series of sutures. The first united the peritonæum alone with a continuous gut suture. The second, also of gut, brought together the divided edges of the tendon. The third, of silk and interrupted, penetrated all the tissues but that of the peritonæum, and brought the edges of the skin and muscles together. The reason that hernia occurred was failure of the tendon to unite. To avoid the occurrence of hernia he had often thought it would be a better plan to cut through one of the recti muscles, instead of the linea alba, for that would give a broad raw surface. He occasionally resorted to this plan in oophorectomy, but it had the disadvantage of being accompanied with more hæmorrhage. In large ovarian tumors the recti muscles were so widely separated that he was perforce compelled to cut through their tendon; at the same time he admitted that he did not ordinarily unite these edges by a separate suture, as was the custom of some excellent operators in this country. His reason was that this took a good deal of time, and it was always desirable to close the wound as soon as possible. But occasionally, in cases of large ovarian tumors, he cut away a long strip of the thinned tendon on either side of the wound, so as to bring the muscles close together. In a certain number of cases, however, hernia would occur, and this was one grave objection to the use of the drainage-tube.

Dr. Parish asked if Dr. Baldy thought that the hernia had been caused by the extraperitoneal method of treating the stump.

Dr. Baldy said that the hernia had not been due to the method of treating the stump. It had begun several inches above the stump and gradually extended toward it. He had, however, seen cases where it had occurred at the site of the stump, and he thought that this could not always be avoided, on account of the large size of the pedicle and the subsequent contraction. He was glad to be able to criticise such a case in his own practice, as he could do so with more freedom than if it had happened to another. He thought it had been his own fault that he had lost the patient. There had certainly been enough symptoms to indicate the necessity for reopening the

abdomen even a third or fourth time. The symptoms continuing after the first discharge of pus should have settled the question of reopening without any more delay. After the second discharge of pus he could not see why he had been so blind to his duty. The patient would undoubtedly have recovered had the belly been opened early enough. Even as it was, after the long delay, she had struggled along for almost a week, but she was so thoroughly saturated with septic poison that she had not sufficient vitality left for the fight. He would not approve of such a policy of waiting in another, and could only excuse himself on the ground of lack of experience in such cases.

**Extra-uterine Pregnancy.**—Dr. J. B. Deaver reported that, on the evening of February 26th, he had been called to see Mrs. S. He found her in bed complaining of bearing-down pains in the lower part of the abdomen, which were very severe, with a pulse of 80, the temperature 99°, and the skin moist. He had delivered her with the forceps three years previously. Three years prior to that he had operated on her for bilateral laceration of the cervix, and she had made a rapid recovery. From the character of the pain of which she complained at his present visit, he thought she was threatened with a miscarriage. She had gone two weeks over her time for menstruation, and the pain had come on suddenly that afternoon. She admitted that she had been using abortifacients, but said there had been no vaginal discharge following the pains. Vaginal examination revealed nothing. He prescribed one-grain suppositories of opium, one to be used every three, four, or five hours, according to the amount of relief. He saw her the next day at 10.30 A. M., and found her suffering quite as much pain as the day before, when he administered half a grain of morphine hypodermically, and increased the strength of the suppositories to two grains each, one to be given every four or six hours, as required. The pulse was now 96 and the temperature 99°. On making an examination of the abdomen, he found it slightly prominent. The tongue was moist, and the general condition not at all indicative of any serious trouble. As yet there had been no vaginal discharge. Vaginal examination again revealed nothing. After this he did not see the patient until Tuesday evening, when he was summoned to come forthwith. He found the patient much depressed, the abdomen more distended, the pulse 96, the temperature 99°, the tongue moist, with some nausea. The pain was now referred more particularly to the umbilicus, and described as being more continuous than at the last visit. He now determined to make a more thorough examination. Deep vaginal pressure revealed a mass, apparently of the size of an English walnut, situated to the left and posteriorly. This, to his mind, was one of two things—either an extra-uterine cyst or a knuckle of intestine which was the seat of obstruction. At this visit the patient was sick at the stomach and considerably depressed. Again he made a thorough examination of the abdomen, which revealed nothing more than the general distension. Up to this time the patient had had no action of the bowels; this, associated with her general condition and the symptoms referable to the abdomen, and his belief that her trouble was either a rupture of the extra-uterine cyst or an acute intestinal obstruction, led him to ask for a consultation with the view of performing abdominal section. He asked Dr. Joseph Price to see the patient with him, and they both agreed that the operation was urgently demanded. The next morning the abdomen was considerably distended and sensitive to the touch, and still there were no physical signs of a tumor. The vomit was becoming stercoraceous, and the patient was showing more evidence of depression; yet her temperature was 99° and her pulse 96, considerable in volume, but having a wiry character, indicating a peritonitis. At 12 M., with the assistance of Dr. J. Price, Dr. J. W. White, Dr. M. Price, and Dr. H. C. Deaver, the abdomen was opened in the median line between the umbilicus and the pubes. As soon as the peritonæum was reached it was very evident that there had been internal hæmorrhage. Opening the peritonæum as rapidly as possible, the speaker introduced his index finger into the lower part of the abdominal cavity, breaking his way through a mass of clotted blood, and brought the right tube and ovary into the incision. Finding these to be normal, he turned his attention to the left side, when he found at the junction of the tube and uterus a ruptured extra-uterine cyst with the placenta *in situ*. In attempting to ligate this off, the placenta was dislodged, occasioning for a few moments a frightful hæmorrhage. He quickly transfixed the broad ligament below the cyst, and in ligating found it necessary to include the cornu of the uterus before the bleeding could be controlled. The pregnancy was tubo-interstitial. Having secured the ligatures, he cut the cyst away. The fœtus could not be found. An ordinary-sized basinful of clotted blood was removed from the peritoneal cavity. After the removal of this, the sigmoid flexure, distended to the size of an ordinary wrist, presented itself at the bottom of the wound; it was considered judicious to examine this portion of the intestinal tract, owing to its great distension, when it was found that at the junction of the terminal portion of the descending colon with the sigmoid flexure there was a marked kink of the bowel, due to an inflammatory band. This was relieved, which resulted in the intestine contracting and expelling a large amount of flatus *per anum*. He now learned that the patient had been given by her husband, two or three days previously, an enema of soap-suds, and that the night before, when the husband was administering the enema again, he lost the rectal nozzle and had not since been able to find it. Having completed the operation, with the exception of making the final toilet of the peritonæum, the speaker examined the lower part of the sigmoid flexure as well as the upper part of the rectum, when he discovered a foreign body, evidently the rectal tube, in the sigmoid flexure. This was pushed along the bowel into the rectum, from which it was removed after some little difficulty with a sponge forceps. The abdominal cavity was irrigated with hot distilled water, and a glass drainage-tube was introduced into the left side of the pelvis. The wound was closed with six interrupted silk sutures. The wound was dressed with a dry aseptic dressing. The patient showed very little depression from the operation, and progressed very well for three days, when the drainage-tube was removed. For two days more she did well; then the abdomen became very much distended, the vomiting recurred, and the temperature went up to 101°. The speaker thought that in all probability a small collection of purulent matter in the pelvis might be the cause of these symptoms, and therefore he opened the lower part of the wound and explored the pelvis, but could find nothing more than what proved to be healthy deposit. To be on the safe side, he introduced a small drainage-tube, but with little or no effect. The patient died at the end of twenty-four hours. Unfortunately, he had been unable to secure an autopsy, but he thought the immediate cause of death was most probably obstruction of the bowels. The case was interesting, in the first place, from the character of the pregnancy, tubo-interstitial; secondly, from the early rupture, but six weeks of gestation having elapsed; thirdly, because there was no evidence of collapse, which would naturally be looked for in a case of internal hæmorrhage; fourthly, from the cause of the rupture, which he thought had been the use of abortifacients; and, finally, from the signs of acute intestinal obstruction.

Dr. Baldy thought that the diagnosis in cases of extra-uterine pregnancy was a matter of extreme difficulty, and, as a rule, that it was impossible to make a positive diagnosis. Some

time ago he had seen a patient at the Philadelphia Dispensary who had just been examined by Dr. Price. He was asked to examine the patient and make a diagnosis. The symptoms presented, he thought, every point to which attention had been called as bearing upon the diagnosis of extra-uterine pregnancy. The menses had stopped for one or two periods and the woman presented all the signs one would expect to find at about the second month of pregnancy, including morning sickness and milk in the breasts. There was irritation of the bladder and rectum. Examination by the vagina disclosed a small mass to the left of the uterus. She was having characteristic colicky pains, and had been passing from the vagina decidual *débris*, or at least what was mistaken for such from her description. They both made a diagnosis in accordance with these facts, and several other gentlemen present concurred. At the operation the case was found to be one of small ovarian cyst. He thought that we heard a great deal of cases in which the diagnosis had been made and verified, but not enough of such cases as this one, which went to show how easily one could be mistaken. If the diagnosis was made, the question of treatment arose, and one of the burning questions of the day was whether extra-uterine pregnancy should be treated by electricity or by abdominal section where the diagnosis was supposed to have been made before rupture had taken place. The majority of American surgeons, he was sorry to say, at present favored the treatment by electricity. Of course, after rupture had taken place, there was but one treatment—that of abdominal section. The treatment by electricity presented some advantages. It would undoubtedly kill the fœtus, and it did away with the objection of the so-called mutilation of the woman, as it also did away with the worry and excitement of an operation. There were, however, disadvantages which could not be overlooked. There were cases on record in which the fœtus had ulcerated its way out. Dr. Mann had stated that there were only two such cases on record, and that, as the number was so small, they were of no great importance to them; but, if these two cases were compared with the total number of cases of extra-uterine pregnancy treated in this way and reported within the last few years, the proportion was decidedly large. There had been four cases reported of rupture of a vessel without rupture of the cyst. In one case, Dr. Janvrin's, the vessel had ruptured some days after the fœtus had been killed by electricity, and the patient lost her life. Here, again, was a very positive danger, and one which could not be ignored, as Dr. Mann seemed to think. So far as the speaker knew, there had never been a death which could be attributed to the knife. A number of patients had died after the operation, but they had died in consequence of the rupture, and not from the operation. The fact that the fœtus had been killed did not make the tube pervious, but left the woman as sterile on that side as if it had been removed by the knife and ligature. Dr. Lusk had reported two cases, in one of which, after six years, there was a mass still remaining as large as a pigeon's egg, and in the other, after four years, the tumor was as large as a hazel-nut. This was the usual history of these cases. The speaker was in favor of removing any pathological growth whatever from any portion of the body at any time if it could be done without risk to life. These masses which were allowed to remain were as likely to set up subsequent trouble as some of the tubal and ovarian troubles for which operations were performed every day. It seemed to him that the gentlemen who accepted the knife for the least dangerous and refused it for the more dangerous trouble were extremely inconsistent, to say the least. By operation the cyst was removed, the fear of subsequent danger was done away with, and the risk of the continued growth of the placenta, however small that risk might be, was avoided. By "fooling" with electricity, we put ourselves very much in the position of the child playing with fire and our fingers were in just as much danger of being burned.

Dr. Kelly said that it made a great difference whether we saw the case in its incipiency, say from the end of the sixth to the eighth week, when we must be more or less puzzled, or in the third or fourth month, when there was a large tumor, or, again, in an advanced stage, where the dangers and difficulties were of a different character. Each of these classes demanded separate consideration and different treatment. Dr. Baldy had referred to a case in which he said that all the signs of extra-uterine pregnancy were present. The speaker would criticise the statement in two particulars. In the first place, the decidua should be seen by the physician. This was a characteristic sign. If we depended upon the statements of patients, we were apt to be deceived. In the second place, there was another characteristic sign, and that was the diminution of the size of the tumor while under observation, due to the absorption of amniotic fluid. This had been observed in his own case. Very serious trouble had followed faradaic fœticide in a large number of cases. Both of Dr. Allen's historical patients had had serious inflammatory trouble for a long time after being invalided. In the discussion following the speaker's paper on the removal of an unruptured extra-uterine gestation cyst, Dr. Harris had brought to light the subsequent history of many cases in which grave trouble had followed faradaic fœticide.

Dr. O'Hara thought that the occurrence of symptoms indicating the presence of internal hæmorrhage would throw light upon the diagnosis. He had had a case in which the patient had internal hæmorrhage, and the only thing to explain it was that she had passed her time for menstruation.

Dr. Goodell asked how Dr. Deaver explained the presence of the nozzle of the syringe so high in the bowel.

Dr. Deaver said that in his case there had been no indications of internal hæmorrhage. The only thing which had attracted the patient's attention was the occurrence of pain, which had appeared four hours before his first visit. The only way in which he could account for the nozzle of the syringe being so high was that, after it had become detached, it had been forced upward by the stream of water. There could have been no suction, on account of the obstruction of the bowels.

## Book Notices.

*Dissolution and Evolution and the Science of Medicine:* An Attempt to Co-ordinate the Necessary Facts of Pathology and to Establish the First Principles of Treatment. By C. Pitfield Mitchell, Member of the Royal College of Surgeons, England, etc. London: Longmans, Green, & Co., 1888. Pp. xvi–246.

Ambition is a quality which always excites a certain meed of admiration, even when it leads to overtemerous exploits; and no more ambitious attempt has come within our ken than this effort to apply the arguments of Herbert Spencer's synthetic philosophy to the uncertainties of pathology and ætiology, since it involves not only an ingenious sophistry in reconciling known facts to a preconceived hypothesis, but an almost creative genius in inventing pathogenic doctrines to support theoretical postulates. The author's fundamental assumption is that disease is "a disintegration of matter caused by an absorption of surrounding energy," and, if all observed phenomena do not at first sight harmonize with this assumption, *tant pis pour les faits.* Thus, although the phenomena of inflammation and sup-

puration confessedly do not appear to conform to the writer's definition, it is explained that what we really see is an increase in the number of "the more simple and less specialized units, the white corpuscles," and that, since these do not play in their extravasated state the special rôle of blood leucocytes, their negative "attributes are understood to signify degenerative changes." In consistency with this exegesis, the secretions of the mammary and other glands are classed among products of dissolution, while, on the other hand, fat-infiltration in pseudo-hypertrophic paralysis is regarded as an evolutional or integrative process. The diphtheritic exudation is disposed of as an example of coagulation-necrosis, and we are told that all retrograde metamorphorses "imply an absorption of external energy," as do likewise scarlet fever, anthrax, tinea, tænia, pediculi, itch, etc.

No existing theory concerning neoplasmata suits the author's views, and, not having to swear in the words of either Virchow or Waldeyer, he launches the startlingly original hypothesis that the formation of tumors is an example of "asexual genesis" from the natural plastids of the body, in all probability a reversion to the primal type of reproduction of the *Protozoa*, affirming that "the tumor-developing period of life is the reproductive period," and in support of this proposition citing "cancer of the breast and uterus." He furthermore "strongly suspects" an important relation between tumor-formation and high nutrition and excess of food. This latter condition seems to play a large and varied part in his ætiological philosophy, for he says that "both pneumonia and phthisis are initially dependent on the action of pulmonary arterial blood made irritant by the ingestion of superabundant, improper, or impure food."

Our readers would hardly thank us for following the chain of suppositions through the mazes of neurology, alienism, and other special fields of pathology over which the author roams in a desultory way, seasoning his *obiter dicta* with rather too frequent repetitions of "perhaps," "presumably," "not improbably," "in all likelihood," "it appears safe to infer," etc. The specimens already given may suffice to justify the opinion that the work is an ingenious but somewhat sophomorical essay, based more upon insufficient closet study than upon practical experience or thorough conversance with scientific literature.

### BOOKS AND PAMPHLETS RECEIVED.

Proceedings of the New York Pathological Society. For the Year 1887. Pp. 212.

The Goulstonian Lectures (substance of) on Insanity in Relation to Cardiac and Aortic Disease and Phthisis. Delivered before the Royal College of Physicians of London, March, 1888. By W. Julius Mickle, M. D., F. R. C. P. Lond., etc. [Reprinted from the "British Medical Journal."] London: H. K. Lewis, 1888. Pp. 5 to 93.

New and Rare Drugs: Being a Concise Reference to the Uses, Doses, and Preparations of some 250 of the Latest Introductions. Fifth Edition. London: Christy & Co., May, 1888.

Memorial Address, delivered before the Faculty and Students of the College of Physicians and Surgeons on the First Anniversary of the Death of Professor A. F. Erich. By George H. Rohé, M. D., Baltimore.

Report of Four Cases of Trephining the Skull. By H. O. Walker, M. D., etc., Detroit. [Reprinted from the "Medical and Surgical Reporter."]

Sulfonal, a New Hypnotic. By Edmund C. Wendt, M. D., etc. [Reprinted from the "Medical Record."]

A Case of Unilateral Spasm of the Tongue. By Edmund C. Wendt, M. D. [Reprinted from the "American Journal of the Medical Sciences."]

Recent Views regarding the Pathology and Treatment of Pertussis. By Edmund C. Wendt, M. D., etc. [Reprinted from the "Medical News."]

Congenital Hæmophilia, with the History of a Remarkable Case. By Edmund C. Wendt, M. D., etc. [Reprinted from the "Medical Record."]

De quelques phénomènes névropathiques réflexes d'origine amygdalienne. Par le Docteur Albert Ruault, etc. [Extrait des "Archives de Laryngologie."]

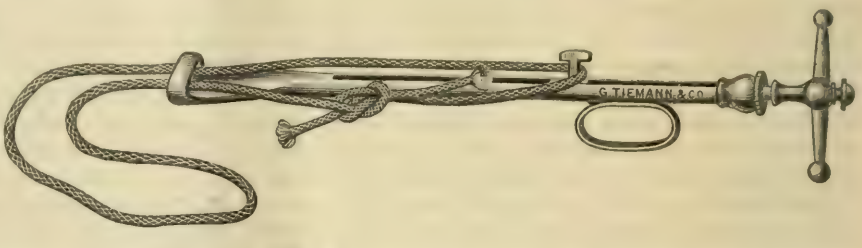
## New Inventions, etc.

### A ROPE ÉCRASEUR FOR HYSTERECTOMY.

By Charles N. Dixon Jones, M. D.,
BROOKLYN.

The accompanying cut illustrates a temporary rope écraseur which I exhibited at the December meeting of the Section in Surgery of the New York Academy of Medicine. Those who are accustomed to use the elastic ligature in hysterectomy or supra-vaginal amputation of the uterus for myoma will find the operation greatly facilitated by the use of this instrument.

Some form of instrument for temporary compression of the pedicle during manipulation and enucleation before the stump is permanently secured is a necessity in order to prevent hæmorrhage.




The elastic tourniquet is not so rapid nor so powerful in its action, and, furthermore, it is open to the more serious objection that it is apt to slip over the stump after the tumor is removed.

The rope écraseur is a modification of Mr. Lawson Tait's well-known clamp. It is made stronger and longer, being about fourteen inches in length, so as to give a wide range of compression in the rope.

The rope is thoroughly boiled before use, so that it is not likely to slip. The instrument may be easily tightened during any stage of the operation. After it has accomplished its purpose the rope is cut, and the instrument is quickly removed and laid aside.

163 De Kalb Avenue.

## Miscellany.

**The American Gynæcological Society** will hold its thirteenth annual meeting in Washington on the 18th, 19th, and 20th of September. The preliminary programme includes the following: "On the New Cæsarean Section," by Dr. William T. Lusk, of New York; "The Cause and Treatment of Urethrocele," by Dr. Thomas Addis Emmet, of New York; "Ureteritis—its Diagnosis and Symptomatology," by Dr. Howard A. Kelly, of Philadelphia; "High Amputation of the Uterus for Cancer," by Dr. Thaddeus A. Reamy, of Cincinnati; "The Technique of Vaginal Hysterectomy," by Dr. E. C. Dudley, of Chicago; "A Case of Rupture of the Uterus in Labor at Term—the Child born alive, the Mother subsequently having a full-term Child in Normal Labor," by Dr. C. M. Green, of Boston; the President's Address, by Dr. Robert Battey, of Rome, Ga.; "The Ætiology, Pathology, and Treatment of

Anteflexion of the Uterus," by Dr. T. Gaillard Thomas, of New York; "Some Cases of Nerve Prostration in which the Remote Effects of Anæsthesia by Ether were bad," by Dr. William Goodell, of Philadelphia; "Cystocolpocele complicating Labor and Pregnancy—a supplemental contribution," by Dr. Samuel C. Busey, of Washington; "Adenoma of the Fundus Uteri," by Dr. James R. Chadwick, of Boston; "A Case of Extra-uterine Pregnancy," by Dr. B. F. Baer, of Philadelphia; "On the Treatment of Extra-uterine Pregnancy," by Dr. Joseph E. Janvrin, of New York; "On the Treatment of Pelvic Abscess," by Dr. R. Stansbury Sutton, of Pittsburgh; "A Case of Subinvolution cured by the Removal of the Appendages," by Dr. Howard A. Kelly, of Philadelphia; and "Some Points learned from an Experience of Thirty-four Ovarian Operations with but one Death," by Dr. Joseph Taber Johnson, of Washington.

**The American Rhinological Association.**—The sixth annual meeting will be held at Cincinnati on Wednesday, Thursday, and Friday, September 12, 13, and 14, 1888.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 22d:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 2d corresponded to an annual rate of 17·6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 13, and the highest in Wolverhampton, viz., 24·9 in a thousand. Small-pox caused 4 deaths in Sheffield, 1 in Bristol, 1 in Preston, 1 in Oldham, 1 in Hull, 1 in Derby, and 1 in Nottingham.

*London.*—One thousand three hundred and twenty-three deaths were registered during the week, including measles, 24; scarlet fever, 19; diphtheria, 26; whooping-cough, 37; enteric fever, 9; diarrhœa and dysentery, 19; and choleraic diarrhœa, 1. The deaths from all causes corresponded to an annual rate of 16·1 in a thousand. Diseases of the respiratory organs caused 237 deaths; different forms of violence, 73; and 11 suicides were registered. In greater London 1,607 deaths were registered, corresponding to an annual rate of 15·2 in a thousand of the population. In the "outer ring" 7 deaths from whooping-cough and 9 from diphtheria were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending June 2d in the sixteen principal town districts of Ireland was 21·5 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 5·2, and the highest in Wexford, viz., 47 in a thousand. In Dublin 159 deaths were registered, including measles, 1; whooping-cough, 9; enteric fever, 3; scarlet fever, 5; and diarrhœa, 2.

*Scotland.*—The deaths registered in eight principal towns during the week ending June 2d corresponded to an annual rate of 19·3 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Greenock, viz., 12·2, and the highest in Paisley, viz., 22·8 in a thousand. The aggregate number of deaths registered from all causes was 489, including measles, 11; scarlet fever, 9; diphtheria, 4; whooping-cough, 14; fever, 7; and diarrhœa, 7.

*Calcutta.*—The report of vital statistics for the quarter ending March 31st shows that 541 deaths from cholera were registered during that period. "The water supply in the worst localities is of the scantiest. In the riparian districts the inhabitants have to resort to the river and to the polluted wells in their own houses. The occupants of large bustees have to resort to the nearest filthy tank. 'Give us water' is the almost universal cry of the inhabitants in the native quarters of the town. That cry has been kept up constantly, to my own knowledge, for nearly two years, without the slightest relief. In 1884, four years ago, during the unprecedented outbreak of cholera in Calcutta, the scarcity of water then formed a subject of complaint by some of the commissioners, but apparently without any effect."

*Christiania, Norway.*—The Norwegian Government, under date of May 24th, issued an order that the following-named countries and ports, until further notice, will be considered cholera-infected:

China, Japan, Cochin China, East Indian Islands, East India, Syria, ports in the Red Sea, ports in Uruguay, and ports in Chili.

*Marseilles.*—Nine hundred and five deaths were registered during the month of May, 1888, including small-pox, 14; enteric fever, 33; scarlet fever, 3; diphtheria and croup, 50; and measles, 47.

*Buenos Ayres.*—One thousand and sixty-nine deaths were registered during the month of March, 1888, including small-pox, 78; enteric fever, 65; and diphtheria, 76.

*Montevideo.*—Three hundred and seventy-five deaths were registered during the month of March, 1888, including small-pox, 39; enteric and typhus fevers, 15.

*Havana.*—Eight deaths from yellow fever and 5 from small-pox were registered during the week ending June 16, 1888.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | June 2. | 2,260,945 | 955 | .. | .... | 6 | .... | 10 | 6 | 37 |
| Glasgow | June 2. | 545,678 | 225 | .. | .... | .... | .... | .... | 6 | 2 |
| Warsaw | May 26. | 444,814 | 176 | .. | .... | 4 | .... | .... | 2 | 8 |
| Calcutta | May 5. | 433,219 | 216 | 61 | .... | .. | .... | .... | .... | .... |
| Amsterdam | June 2. | 389,916 | 158 | .. | .... | .... | .... | .... | 1 | 6 |
| Rome | April 21. | 388,300 | 181 | .. | .... | 3 | .... | 1 | 2 | 1 |
| Copenhagen | May 29. | 300,000 | 124 | .. | .... | .... | .... | 1 | 2 | 6 |
| Munich | May 26. | 275,000 | 165 | .. | .... | .... | .... | 1 | 3 | 4 |
| Palermo | June 2. | 250,000 | 82 | .. | .... | .... | .... | 1 | 4 | 3 |
| Genoa | June 2. | 179,401 | 93 | .. | .... | .... | 1 | .... | .... | .... |
| Leipsic | June 2. | 170,000 | 53 | .. | .... | .... | .... | 1 | .... | .... |
| Trieste | May 12. | 154,500 | 91 | .. | .... | 1 | .... | 4 | .... | 2 |
| Stuttgart | June 2. | 125,500 | 44 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | May 26. | 122,000 | 25 | .. | .... | .... | .... | .... | .... | 1 |
| Havre | June 2. | 112,074 | 67 | .. | .... | 5 | .... | 1 | .... | .... |
| Barmen | May 26. | 109,000 | 45 | .. | .... | .... | .... | .... | 1 | .... |
| Leghorn | June 3. | 101,718 | 27 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | May 26. | 65,028 | 54 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | June 2. | 65,028 | 51 | .. | .... | .... | .... | .... | .... | .... |
| Curaçoa | June 2. | 25,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Vera Cruz | June 7. | 23,800 | 19 | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | May 27. | 23,634 | 4 | .. | .... | .... | .... | .... | .... | 1 |
| Sagua la Grande | May 26. | 15,605 | 8 | .. | .... | 1 | .... | .... | .... | .... |
| Sagua la Grande | June 2. | 15,605 | 10 | .. | .... | .... | .... | .... | .... | .... |
| Bermuda | June 12. | 15,260 | ..... | .. | .... | .... | .... | .. | .... | .... |
| Matamoras | May 26. | 12,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | June 2. | 12,000 | 10 | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | May 26. | 7,428 | 6 | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | June 2. | 7,428 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Livingston | June 9. | 2,500 | 1 | .. | .... | .... | .... | .... | .... | .... |
| S'n Juan d'l N'rte | May 21. | 500 | ..... | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

*Washington, D. C.*—The following regulations, approved by the President and promulgated by the Secretary of State, have been issued to United States consular officers by the State Department. They are republished here for the information of United States quarantine officers and municipal health officers:

*The Quarantine Service.*

Section 2 of an act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April 29, 1878, provides—

"That whenever any infectious or contagious disease shall appear in any foreign port or country, and whenever any vessel shall leave any infected foreign port, or, having on board goods or passengers coming from any place or district infected with cholera or yellow fever, shall leave any foreign port bound for any port in the United States, the consular officer, or other representative of the United States at or nearest such foreign port, shall immediately give information thereof to the Supervising Surgeon-General of the Marine-Hospital Service, and shall report to him the name, the date of departure, and the port of destination in the United States, and the consular officers of the United States shall make weekly reports to him of the sanitary condition of the ports at which they are respectively stationed."

The object of the foregoing section of the law is to secure timely advice of the outbreaks of cholera and yellow fever, and of the probable transportation of the poisons of these preventable diseases in vessels bound for the United States; and consular officers for the United States are directed to put themselves into communication with the health authorities of their respective stations, and from the information obtained from such authorities, or from other reliable sources

where no regularly constituted health authorities exist, to prepare and transmit by the mails to the Department of State, for the information of the Surgeon General of the Marine Hospital Service, on forms prescribed by the Department, weekly reports of the appearance, progress, or termination of cholera, yellow fever, small pox, plague, or typhus occurring in their respective localities, and are further instructed to include in said reports information in relation to the prevalence of other preventable diseases, as diphtheria, enteric and scarlet fevers, etc., the prevailing disease or diseases in port, if any, and, when practicable, the annual death-rate per one thousand of the population as shown by the official record of deaths for the week reported. Special interest should be taken in the healthiness of vessels, reporting those arriving from or departing to the United States in a bad sanitary condition; also reporting the facts of any serious sickness or unhealthiness of seamen in port, or of crews arriving from or departing to the United States.

In the event of the outbreak of Asiatic cholera, yellow fever, or Asiatic plague, or other contagious disease in epidemic form, the Department must immediately be advised by cable or telegraph of such outbreak, using such abbreviation as the Department may from time to time direct.

The following cipher and abbreviations should be used:

"Cholera"—meaning cholera has appeared.

"Yellow"—meaning yellow fever has appeared.

The name of a country—meaning that the disease has made its appearance at several places in the country named.

The name of a vessel—meaning that the vessel named has departed from the place whence the dispatch is sent, bound for a port in the United States.

"Poison"—meaning that the vessel referred to, though leaving a then healthy port, has on board passengers or goods (baggage) coming from a district infected with cholera or yellow fever.

When cholera or yellow fever has appeared at several places in a country, name the country only after the word "cholera" or "yellow," as the case may be; if it has appeared at the place only from which the dispatch is sent, do not repeat the name of that place in the body of the dispatch, but if at any other particular place, name it.

In a dispatch announcing the departure of a vessel to a port in the United States, the port of departure will be understood to be the place from which the dispatch is sent; hence the name of the port of departure need not be repeated. In the body of a dispatch the name of the vessel should be given first; second, the name of the country, when applicable; third, the day of departure, omitting the day of the month and of the year, as they will be understood without saying; fourth, the name of the port of destination (the importance of observing this order will appear obvious when it is understood that many vessels bear the names of ports in the United States); fifth, the name of the disease, "cholera" or "yellow," as the case may be, should be given, provided the Department has not been already advised of the outbreak of the disease. When advice has once been given of the appearance of cholera or yellow fever at a certain port, the name of the disease need not be repeated in dispatches announcing the subsequent departure of vessels from that port.

When the name of a vessel is given without stating whether it is a steamer or sailing-vessel, it will be understood to be a steamer; if the vessel is a sailing-vessel, its proper designation should be prefixed. The sender of the dispatch should sign his last name only.

The consul will give to every master of a vessel bound to a port in the United States a bill of health, on the form prescribed by the Department, giving full information of the number of persons on board such vessel at the time of sailing, and the sanitary condition of the vessel so far as known, and also the sanitary condition of the port of departure at the time. At such ports as may from time to time be designated by the Department, a physician will be employed or detailed to make the necessary inspection of the vessel, her passengers, crew, cargo, and ballast. In case the master of any vessel shall refuse to receive a bill of health, the fact shall be immediately reported to the Department by cable, if necessary.

When a vessel having received a bill of health touches at any other port while *en route* to the United States, the consul at such port shall *visa* the bill of health, and note thereon such changes as may have taken place since its original issue.

Monthly reports of the bills of health issued must be made to the Department on the regular forms.

*Memphis, Tenn.*—Thirteen cases of small-pox were reported up to the 18th inst. in the Memphis taxing district.

## ANSWERS TO CORRESPONDENTS.

*No. 199.*—1. We do not think a conclusion could always be reached with certainty, but marks of free hæmorrhage having taken place at the scene of the supposed accident would go far to show that it had actually been the cause of death. 2. We should advise Vienna. Unless there are special reasons to the contrary, we think you had better postpone your marriage until your return.

*No. 200.*—Hypnotism is said to have been employed successfully as an anæsthetic in parturition, but we do not think that at present it deserves to be "counted among obstetrical anæsthetics." The means of inducing it vary according to the susceptibility of the subject. For an account of a case in which it was accomplished by compression of the eyeballs, see our issue for June 11, 1887, page 659.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

# INDEX TO VOLUME XLVII.


PAGE

Abdominal Section, The History of, in Albany.. 190
Abortion, The Treatment of..... 641
Abscess, Intrapelvic..... 293
Abscess, Retropharyngeal..... 529
Abscess, The Relation of Perforating Inflammation of the Vermiform Appendix to Perityphlitic..... 505
Abscess, The Treatment of Perityphlitic..... 246
Abscesses connected with Disease of the Hip Joint, The Result of Antiseptic Treatment of..... 664
Abscesses, Multiple, of the Liver..... 295
Academy of Medicine, A Bequest to the New York..... 615
Academy of Medicine, The New York.... 27, 44, 83, 110, 138, 167, 196, 252, 306, 363, 392, 437, 447, 698
Academy of Medicine, The..... 290, 530, 558
Academy of Medicine, The French..... 354
Academy of Medicine, The Laryngological Section of the..... 266
Academy of Sciences, The Turin..... 167
Accidents, Hospital..... 128
Accommodation, Overstrain of the..... 304
Acetanilide as an Analgesic..... 330
Acid, Oxynaphthoic..... 94
Acne, Resorcin in the Local Treatment of..... 274
Acne, The Treatment of..... 444
Addison's Disease in a Negro..... 48
Address, Changes of..... 552
Adenitis, Axillary..... 72
Advertisements, Quack, in the Religious Newspapers..... 166
Agnew, A Portrait of the late Dr..... 670
Agnew, Dr. D. Hayes, of Philadelphia..... 290
Agnew, The late Dr..... 501, 520, 530, 586, 614, 661
Agnew, The late Dr. Cornelius R..... 474
Alabama, The Inadequacy of the Law Regulating the Practice of Medicine in..... 334
Albuminuria among the Sick, On the Incidence of..... 277
Albuminuria and Cataract, The Connection between..... 470
Albuminuria of Pregnancy, The Induction of Premature Labor for Amaurosis and Amblyopia in the..... 328
Alcohol, The Action of, on Pepsin..... 330
Alcohol, The Use of, in Certain Forms of Fever. 156
Alcoholism, Anatomical Modifications of the Optic Nerves in..... 669
Alexander's Operation, A Discussion on..... 297
"Alexander's Operation" in Cases of Complete Procidentia of the Womb, The Value of.... 232
Alimentation of Wasting Infants, Rectal and Dermal..... 500
Alkaloid, The last of another Anæsthetic..... 154
Alleman, L. A. W. The Papillitis of Sunstroke. 489
Allen, C. W. Leprosy in the United States, and its Relation to the State..... 318, 347
Allochiria, Auditory..... 237
Alopecia Areata and Alopecia Syphilitica, The Anatomico-pathological Alterations in..... 444
Alum in Typhoid Fever..... 378
Amaurosis, Bilateral, following Hæmorrhage from an Operation on the Nose..... 473
Amaurosis, The Induction of Premature Labor for, in the Albuminuria of Pregnancy..... 328
Amblyopia from Sulphide of Carbon..... 472
Amblyopia, One of the Causes of Stationary.... 470
Amblyopia, The Induction of Premature Labor for, in the Albuminuria of Pregnancy..... 328
America, A Foreign Visitor's Farewell to..... 268
Ametropia, The Determination of the Degree of, by Retinoskiascopy..... 221
Ametropia, The Measure of, etc..... 471
Ammonium, Sulphichthyolate of, in the Treatment of Pelvic Inflammations..... 214
Amnion, Premature Rupture of the..... 104, 239
Amputation in the Male and Female, The Relative Frequency of..... 520
Amputation, Subastragaloid..... 719
Amputation, Successful Simultaneous Triple, for Railway Injury..... 603
Amputation, Successful Triple, for Railway Injury..... 384
Amputation, Supravaginal, of a Fibroid Uterus, etc..... 721
Amylene, Hydrate of, a New Hypnotic..... 330
Anæmia, Clinical Remarks on Progressive Pernicious..... 703
Anæmia, Four Cases of Pernicious..... 491
Anæsthesia, Progressive Muscular Atrophy with..... 707
Anæsthetic, A New Obstetrical..... 154
Anæsthetic, Bichloride of Methylene as an..... 331
Anæsthetics, The Detection of Concealed Insanity by Nitrous-oxide Gas and other..... 87
Analgesic, Acetanilide as an..... 330
Anatomy, Reports on..... 611
Anatomy, The Sectional, of the Third Stage of Labor..... 20
Anderson, Dr. William H..... 54
Aneurysm, Arterio-venous, of the Left Common Carotid and Internal Jugular..... 214
Aneurysm, Case of Arterio-venous..... 555
Aneurysm, Ligature of the Right Carotid and Subclavian Arteries for Innominate..... 496
Aneurysm, Spasmodic Asthma due to..... 124
Aniline and Oleum Gaultheriæ, On the Action of..... 331
Animals, The Sense and Senses of..... 409
Ankylosis at the Knee, The Gradual Correction of False..... 718

PAGE

Ankylosis, The Value of Elastic Tension in the Treatment of Fibrous, etc..... 656
Anomalies, Nervous..... 613
Anomalies of the First Lumbrical of the Hand.. 611
Anthrax, The Cure of, by Bacteria..... 278
Antipyretic, Phenacetine, a New..... 331
Antipyrine, An Idiosyncrasy with regard to .... 195
Antipyrine as a Uterine Sedative..... 56
Antipyrine in Asthma..... 185
Antipyrine, The Monopoly in..... 353
Antipyrine, Untoward Effects of..... 329
Antisepsis, The most Important..... 516
Antiseptic Wound Treatment," "Modern Methods of..... 418
Aorta and Heart, Cases of Spontaneous Rupture of the..... 277
Aphasia and Left-handedness..... 44
Arabs, Medicine among the..... 552
Army, Changes of Medical Officers of the.
Alden, Charles H..... 438
Anderson, Charles L. G..... 495
Appel, A. H..... 76
Appel, D. M..... 578, 661
Arthur, William H..... 495
Azpell, Thomas F..... 383
Arthur, William H..... 213
Baily, J. C..... 495
Banister, William B..... 18, 76, 606
Barnett, Richards..... 76
Baxter, Jedediah H..... 17, 383, 438
Benham, Robert B..... 552, 661
Biart, Victor..... 438
Birmingham, Henry P..... 686
Black, Charles S..... 495
Borden, W. C..... 438
Brown, Harvey E..... 383, 552, 606
Brown, H. E..... 383
Burton, H. G..... 129
Bushnell, George E..... 438
Cleary, P. J. A..... 76
Clendenin, Paul..... 578
Cowdrey, S. G..... 661
Crosby, William D..... 326, 383, 495
De Loffre, A. A..... 552
DeWitt, Calvin..... 686
Ebert, R. G..... 76
Edie, Guy L..... 438, 552, 578
Ewen, Clarence..... 495
Ewing, C. B..... 76, 606
Finley, James A..... 661
Fisher, W. W. R..... 129, 155, 291
Forwood, W. H..... 383
Gardner, Edwin F..... 267, 438
Girard, Alfred C..... 155
Girard, Joseph B..... 495
Greenleaf, Charles R..... 383, 438, 552
Harris, H. S. T..... 578
Janeway, John H..... 213
Jarvis, Nathan S..... 213
Kean, Jefferson R..... 326, 661
Kimball, J. P..... 383, 606
Kneedler, William L..... 438, 606
Lauderdale, John V..... 552
Loring, Leonard Y..... 552
McCaw, William D..... 552
McCreery, George..... 606
McKee, James C..... 155, 552
Mearns, E. A..... 438
Morris, E. R..... 661
O'Reilly, R. M..... 383
Page, Charles..... 155
Pilcher, James E..... 661
Rafferty, Ogden..... 495, 552
Raymond, H. I..... 155
Robertson, R. L..... 606
Shillock, Paul..... 267, 291
Spencer, William C..... 383
Stephenson, William..... 438
Sternberg, George M..... 326, 495
Sutherland, Charles..... 606
Tesson, Louis S..... 76
Town, F. L..... 578
Vickery, R. S..... 495
Vollum, Edward P..... 267
Walker, F. V..... 578
Waters, William E..... 686
White, Robert H..... 661
Wood, Leonard..... 495, 578
Worthington J. C..... 383
Wyeth, M. C..... 383, 606
Arsenic, The Removal of Warts by the Internal Use of..... 196
Arthrotomy, Reduction of a Dislocation by. 142, 161
Articles for the Sick, Free Trade in..... 266
Associations, Meetings of. See Societies.
Association, American Medical..... 223
Association, The Alabama Medical..... 53
Association, The Alabama Surgical and Gynæcological..... 53
Association, The Alumni, of Bellevue Hospital Medical College..... 189
Association, The Alumni, of the Medico-chirurgical College of Philadelphia..... 354
Association, The Alumni, of the Woman's Hospital in the State of New York..... 55, 75
Association, The American Climatological..... 671
Association, The American Laryngological..... 671
Association, The American, of Genito-urinary Surgeons..... 466, 474
Association, The American, of Obstetricians and Gynæcologists..... 698
Association, The American Rhinological..... 727

PAGE

Association, The Kings County Medical..... 128
Association, The Medical, of the District of Columbia..... 411
Association, The Medical, of the State of Alabama..... 389
Association, The Mission of the American Medical..... 522
Association, The Missouri State Medical..... 501
Association, The New York State Medical.... 195, 558, 671, 698
Association, The, of American Institutions for Idiotic and Feeble-minded Persons..... 633
Association, The, of American Medical Editors. 332
Association, The, of the Alumni of the Long Island College Hospital..... 354
Association, The Ohio State Sanitary..... 110
Association, The Physicians' Mutual Aid..... 212
Association, The South Carolina Medical..... 447
Association, The Southern Surgical and Gynæcological..... 54
Asthma, Antipyrine in..... 185
Asthma, Asthma Crystals without..... 278
Asthma, Spasmodic, due to Aneurysm..... 124
Astigmatic Contraction, The Crescent of..... 221
Astigmatism..... 305
Astigmatism, Uniform Notation of..... 305
Astragalus, Congenital Club-foot cured by Excision of the..... 158
Astragalus, Exsection of the, for Caries..... 215
Ataxia..... 47
Ataxia, A Disease simulating Locomotor..... 607
Ataxia, Degeneration of the Peripheral Nerves in Locomotor..... 707
Athetosis, The Pathology of..... 670
Athletics, College..... 167
Atrophies, Muscular, and Hypertrophies, Our Present Knowledge regarding..... 533
Atrophy, Progressive Muscular, with Anæsthesia 707
Atropine in Poisoning with Pilocarpine..... 560
Aural Cases, Uncommon..... 98
Avulsion of the Terminal Phalanx of the Thumb, with its Tendons..... 295
Axilla, Nodulated Tumor in the..... 162
Axtell, E. R. The Removal of the Spinal Cord. 493

Bacilli, Borofuchsin as a Stain for Tubercle..... 705
Bacilli, The Loves of the..... 139
Bacilli, The, of Anæsthetic Leprosy..... 444
Bacillus, The Cancer..... 352
Bacon, G. On the Use of the Wet-Cup in place of the Leech in certain Acute Diseases of the Ear..... 12
Bacteria, The Cure of Anthrax by..... 278
Bacteriological Classification Names..... 19
Barkan, L. The Most Important Antisepsis.... 516
Basedow's Disease..... 356
Beane, F. D. Uncommon Aural Cases..... 98
Belgium, Foreign Qualifications in..... 17
Beta-naphthol in Ozæna and Purulent Rhinitis. 308
Bile in Digestion, The Part played by the..... 239
Blackwell, L. S. Letters to the Editor..... 412, 553
Bladder, Papilloma of the..... 79
Blepharitis Ciliaris, Disease of the Roots of the Hairs in..... 220
Bleything, G. D. Sarcoma of the Tongue cured by Operation..... 683
Blood, Cancer of the..... 326
Board of Health, The City..... 128
Board of Health, The New Reports of the City.. 633
Board of Health, The President of the City..... 290
Bodenhamer, W. Desultory Remarks on the Rectum as a Field for Specialists, etc..... 513
Bodenhamer, W. Letter to the Editor..... 46
Bone, A Parietal, with a Spoon-shaped Depression..... 296
Bone, The Development and Repair of..... 164
Bones, Non-union of Fractured..... 486
Book Notices:
Andrews, E. Rectal and Anal Surgery..... 303
Ball, C. B. The Rectum and Anus..... 107
Bradley, Elizabeth N. L'iodisme..... 302
Chazeaud, E. Études cliniques sur le morrhuol..... 138
Coni, E. R. Hygiène infantile..... 19
Cozzolino, V. Trattato della difteria..... 52
Edes, R. T. Text-book of Therapeutics and Materia Medica..... 194
Emminghaus, H. Gerhardt's Handbuch der Kinderkrankheiten..... 52
Gowers, W. R. Lectures on the Diagnosis of Diseases of the Brain..... 137
Gray, H. Anatomy, Descriptive and Surgical. 329
Guelpa, G. Nouvelle méthode de traitement de la diphthérie..... 468
Hartridge, G. The Refraction of the Eye.... 556
Jackson, G. T. A Practical Treatise on Diseases of the Hair and Scalp..... 275
Jacobi, A. The Intestinal Diseases of Infancy and Childhood..... 219
Jacobi, M. P. Essays on Hysteria, Brain Tumor, and other Cases of Nervous Disease... 586
Johnson, G. Medical Lectures and Essays... 639
Keyes, E. L. The Surgical Diseases of the Genito-urinary Organs, including Syphilis.. 667
Liveing, R. A Hand-book of Diseases of the Skin..... 19
Lindley, W., and Widney, J. P. California of the South..... 418
May, C. H., and Mason, C. F. An Index of Materia Medica..... 220
Mears, J. E. Transactions of the American Surgical Association..... 163

PAGE

Book Notices:
Miller, M. N. Practical Microscopy ... 108
Milton, J. L. On the History, Nature, and Treatment of Syphilis ... 691
Mitchell, C. F. Dissolution and Evolution and the Science of Medicine ... 725
Murphy, S. W. Doctor and Patient ... 360
Parkes, E. A. A Manual of Practical Hygiene ... 387
Shoemaker, J. V. A Practical Treatise on Diseases of the Skin ... 526
Spitzka, E. C. Insanity ... 279
Stevens, G. T. Functional Nervous Diseases ... 82
The Effects of Coca Erythroxylon ... 275
Transactions of the American Gynæcological Society ... 443
Valentine, F. C. Six Hundred Medical Don'ts ... 107
Walker, J. Health Lessons ... 137
Wilson, J. C. Practical Lessons in Nursing ... 360
Borodaleskin as a Stain for Tubercle Bacilli ... 705
Bosley, C. H. Report of a Case of Laryngeal Stenosis due to Compression by Goitre ... 99
Boston, The Health of ... 17, 83, 139, 194, 251, 279, 361, 419, 447, 502
Bosworth, F. H. Letter to the Editor ... 553
Bosworth, F. H. The Use of Caustics in the Nasal Cavities ... 253
Brachial Plexus, Division of the ... 215
Brain, Tumor of the ... 356
Brandy, Factitious French ... 74
Bread for Diabetics, A Substitute for Bran ... 18
Bright's Disease, Acute, in Children ... 225
Bright's Disease, Acute, in the Puerperal State ... 190
Bright's Disease, Cardiac Changes in Acute ... 190
Bright's Disease, Changes in the Eye in Acute ... 190
Bright's Disease, Discussion on Acute ... 157
Bright's Disease, Treatment of Acute ... 190
Bromidia ... 308
Bromidia, The Copyright of ... 140
Bronson, E. B. On Preventive Treatment in Primary Syphilis ... 309, 662
Brooklyn, The Health of ... 382
Brown, A. P. Letters to the Editor ... 104, 239
Browne, A. L. Letter to the Editor ... 104
Brush, E. F. Bovine Tuberculosis ... 314
Bruzelius on Multiple Neuritis ... 249
Bryant, J. D. Treatment of Penetrating Gunshot Wounds of the Cranium ... 480
Bryonia Dioica in Uterine Hæmorrhage ... 84
Buckmaster, A. H. Letter to the Editor ... 214
Bunions ... 273
Burchard, T. H. The Modern Treatment of Strangulated Hernia ... 61
Burglar, A Medical ... 266
Burial Reform ... 237

Cæsarean Section, Perforation or ... 641
Calculi, Multiple Vesical ... 79
Calculus, Primary Carcinoma of the Kidney, coincident with Renal ... 166
Calculus, Vesical ... 362, 498
Calomel Injections, Treatment of Syphilis by ... 445
Camphor and Charcoal as an Application to Ulcers ... 196
Cancer, A Deodorizing Injection for Uterine ... 308
Cancer of the Blood ... 326
Cancer of the Right Lobe of the Cerebellum, etc. ... 670
Cancer of the Stomach ... 361
Cancer, Remarks on the Ætiology of ... 273
Cancer, Savine in the Treatment of ... 84
Cancer, The Treatment of Uterine, in its Advanced Stages by Terebene ... 23
Cancer, The Use of Terebene in a Case of Uterine ... 296
Cannabis Indica, Some Uses of ... 307
Cannula, Tracheotomy without the ... 596
Carbolic Acid, The Treatment of Scarlet Fever by ... 499
Carbon, Amblyopia from Sulphide of ... 472
Carbon Dioxide as a Remedy for Dyspnœa ... 494
Carcinoma, Primary, of the Kidney coincident with Renal Calculus ... 166
Carcinoma Uteri, The Most Recent Standpoint in regard to the Treatment of ... 696
Caries, Exsection of the Astragalus for ... 215
Carpenter, The late Dr. Wesley M ... 103, 108, 128
Caruncle, Urethral ... 234, 286
Cascara Sagrada ... 250
Cascara Sagrada in Rheumatism ... 629
Castle, F. A. Letter to the Editor ... 467
Castle, F. A. Urethral Caruncle ... 286
Castration, The Notion which is implied in the Term ... 21
Cataract, Extraction of, without Iridectomy ... 157
Cataract, Fatal Meningitis consecutive to Operation for Extraction of ... 157
Cataract, Glaucoma after Linear Extraction of ... 471
Cataract, Remarks on Naphthalinic ... 472
Cataract, Spontaneous Absorption of Senile ... 304, 305
Cataract, The Connection between Albuminuria and ... 470
Catheter, An Aseptic Two-way ... 295
Catheter, Dr. H. A. Kelly's Two-way ... 332
Caustics, The Use of, in the Nasal Cavities ... 253
Cauterization in Malignant Pustule ... 338
Celloidin and Paraffin in Microscopy, The Combined Use of ... 102
Cervix Uteri, Dilatation of the ... 23
Cervix Uteri, Laceration of the ... 213
Chambers, P. F. Septic Peritonitis following Laparotomy ... 173
Chancre, A Case of Extra-genital ... 184
Chancre and Chancroid, On the Non-identity of ... 461
Chancroid, On the Non-identity of Chancre and ... 461

PAGE

Charcoal, Camphor and, as an Application to Ulcers ... 196
Child, Another Remarkable Survival of a New born ... 112
Child, The Remarkable Survival of a New born ... 332
Children, Acute Bright's Disease in ... 225
Children, Cerebral Symptoms of Pneumonia in ... 584
Children, Hydrocephalus in ... 668
Children, On Strangulated Hernia in ... 71
Children, Rubeo among ... 93
Children, Reports on Diseases of ... 109
Children, The Symptoms, Diagnosis, and Treatment of Pneumonia in ... 132
Children, The Warnings of Heart Disease in ... 266
Chloroform, The Remote Effects of ... 102
Chlorosis, The Hæmoglobin in ... 100
Cholera Infantum and the Weather ... 638
Chorea of Childhood, An Examination of the Eyes of Fifty Cases of ... 679
Chorea, Some Cases of Habit, and their Treatment ... 690
Chorea, The Treatment of, by Cerebral Rest ... 274
"Christian Science" in Midwifery ... 166
Chromic Acid, The Use of, in the Nasal Cavity ... 553
Cincinnati, Letter from ... 100
Claiborne, J. H., Jr. Hyperphoria ... 229
Claiborne, J. H., Jr. Letter to the Editor ... 291
Clavicle, Removal of Nearly the Entire ... 77
Club-foot Apparatus ... 664
Club-foot, Congenital, cured by Excision of the Astragalus, etc ... 158
Club-foot, Congenital, cured by Excision of a Wedge-shaped Piece from the Tarsus ... 158
Club, The Hospital Graduates' ... 577
Cocaine, An Ointment of ... 195
Cocaine locally in the Vomiting of Pregnancy ... 331
Cod-liver Oil, A Mode of Administering ... 84
Cod-liver Oil, Lipanin as a Substitute for ... 560
Co-excitation in the Regions of Homonymous Visual Fields ... 470
Colic, Large Doses of Olive-oil in the Treatment of Hepatic ... 56, 73
Colic, Rectal Injections of the Vapor of Ether in Lead ... 308
College, Dartmouth Medical ... 634
College, The Alumni of Bellevue Hospital Medical ... 110
College, The Bellevue Hospital Medical ... 290
College, The Gross Medical ... 447
College, The Medical, of the State of South Carolina ... 587
College, The Medico-chirurgical, of Philadelphia ... 383
College, The, of Pharmacy of the City of New York ... 354
College, The Rush Medical, of Chicago ... 383
College, The Western Pennsylvania Medical ... 388
Colleges, The Medical, of Louisville, Nashville, Atlanta, and New Orleans ... 54
Collidine, Pyridine and, in Respiratory Affections ... 331
Compensation, The Law of ... 279
Congress of American Physicians and Surgeons ... 531
Congress of Internal Medicine, The Seventh German ... 251
Congress, The Seventh Meeting of the International Ophthalmological ... 445
Congresses, The Medical and Pharmaceutical, of Barcelona ... 530
Conjunctiva, Pemphigus of the ... 473
Conners, W. F. Stramonium Poisoning ... 210
Consumption, Apex Expansion versus Pure Air in Pulmonary ... 268
Consumption, Comments on Dr. Dettweiler's Method of treating Pulmonary ... 463
Consumption, Dr Dettweiler's Method of treating Pulmonary ... 175
Consumption, The French Fund for promoting the Cure of ... 155
Consumption, The Therapeutics of Pulmonary ... 95
Contagion, Phthisis and ... 147
Convention, A Sanitary ... 333, 475
Convulsions, An Enema for Infantile ... 56
Corbin, J. Mercurial Fumigations in Laryngeal Diphtheria or Diphtheritic Croup ... 261
Cornea, Treatment of Serpiginous Ulcer of the ... 221
Corning, J. L. A Eulogy on the late T. R. Varick, M. D. ... 113
Corpusculum Articulare Mobile, A ... 611
Correspondents, Answers to ... 28, 56, 84, 112, 140, 168, 196, 224, 252, 280, 308, 336, 364, 392, 420, 448, 476, 504, 532, 560, 616, 644, 672, 700, 728
Cotton-packer, A Vaginal ... 296
Cough, Reflex, from Pregnancy ... 692
Councilman, W. T. Predisposition in Tuberculosis ... 421
Cow Disease, The Hendon ... 44
Coxitis, Acetabular ... 78
Craniotomy, Notes on the Principles of ... 706
Cranium, Treatment of Penetrating Gunshot Wounds of the ... 480
Creolin ... 330
Criminals, The Execution of ... 290
Croup, Analysis of Fifty Cases of, treated by Intubation of the Larynx ... 33
Croup, Mercurial Fumigations in Diphtheritic ... 261
Curette, The Use of the, for the Relief of Hæmorrhage due to Uterine Fibroids ... 697
Curling, The Death of Mr. Thomas B ... 318
Curtis, B. F. The Dangers of Intestinal Puncture in the Treatment of Tympanites ... 628
Cushions, Rubber, for Surgical Purposes ... 104
Cutaneous Diseases, Reports on ... 443
Cyclitis Minima, Rheumatic or Gouty ... 305

PAGE

Cyst, A Multilocular Dermoid ... 242
Cyst, A Strangulated Ovarian ... 635
Cyst, Dermoid, of the Ovary ... 296
Cyst of the Liver, A Case of Hydatid ... 379
Cyst of the Pancreas, A Case of ... 575
Cyst, Ovarian, of the Right Side ... 498
Cystitis, Chronic ... 296
Cystitis, The Painful Variety of ... 23
Cystoscopy and the New Cystoscope of Nitze and Leiter ... 126
Cystotomy, Suprapubic ... 79
Cystotomy, Suprapubic, for Encysted Calculi ... 582
Cysts, Non papillary Intraligamentous ... 216
Cysts, The Operative Treatment of Retroperitoneal, etc ... 696

Davis, J. D. S. Congenital Torticollis ... 144
Dead Bodies, The Preservation of ... 191
Deformity, Congenital, due to Malposition of the Scapula ... 582
De Garmo, W. B. An Analysis of One Thousand Cases of Hernia, etc ... 236
De Garmo, W. B. The Conservative Treatment of Irreducible and Incarcerated Hernia ... 68
Depletion, Local, in the Treatment of Uterine Disease ... 693
Derby, R. H. Letter to the Editor ... 208
De Schweinitz, G. E. An Examination of the Eyes of Fifty Cases of Chorea of Childhood ... 679
Dexia-kefir as a Dietetic in Disease, On the Uses of ... 704
Diabetics, A Substitute for Bran Bread for ... 18
Diabetes Mellitus, Visual Disturbances in ... 222
Diarrhœa, Salol in ... 376
Digestion, The Part played by the Bile in ... 239
Dilatation, A Case of Hypertrophic Cardiac, etc. ... 183
Diphtheria, A Method of Preventing ... 327
Diphtheria, Mercurial Fumigations in Laryngeal ... 261
Diphtheria, Multiple Neuritis following ... 47
Diphtheria, The Therapeutics of ... 707
Disinfection, The, of Bedding and Clothing ... 660
Dislocation of the Hip, Everted Dorsal ... 82, 160
Dislocation of the Hip, Spontaneous Everted Dorsal ... 497
Dislocation of the Radius and Ulna inward ... 529
Dislocation of the Thumb forward ... 529
Dislocation, Old Unreduced, of the Hip ... 292
Dislocation, Outward, of the Knee ... 215
Dislocation, Spontaneous, of the Hip-joint ... 293
Dislocations, Interphalangeal ... 529
Dislocations, The Reduction of Old ... 142, 161
Distichiasis, A New Operation for ... 221
District of Columbia, The Report of the Health Officer of the ... 685
Dix, T. L. Comments on Dr. Dettweiler's Method of treating Pulmonary Consumption ... 463
Doctor of Laws, The Honorary Degree of ... 686
Dodge, J. L. Antipyrine in Asthma ... 185
Dogs in the Lying-in Room ... 605
Donaldson, F., Jr. Note on the Physiology of the Recurrent Laryngeal Nerves ... 287
Douglas, R. Laparotomy Practically Considered, with Report of Five Cases ... 630
Dunster, The late Dr ... 605
Dysmenorrhœa and Sterility, The Use of the Dilator and Intra-uterine Stem in the Treatment of ... 508
Dyspnœa, Carbon Dioxide as a Remedy for ... 464

Ear Affections, On Some Points in the Differential Diagnosis of Certain, etc ... 676
Ear Instruments ... 185
Ear, On the Use of the Wet-cup in Place of the Leech in certain Acute Diseases of the ... 12
Echinococcus in the Orbital Cavity ... 471
Écraseur for Hysterectomy, A Rope ... 726
Ectopia Lentis ... 415
Eczema and Psoriasis, The Treatment of ... 443
Eczema, Chronic, of the Nostrils ... 443
Eczema, Furuncles following ... 443
Education, Medical, in the United States and Canada ... 109
Education, The Question of a Higher Medical ... 54
Elbow Joint, Apparatus for Continuous Extension of the ... 609, 642
Elbow, Treatment for Diseases of the Knee and ... 284
Electricity in Gynæcology ... 162
Electrolysis in Uterine Flexions ... 701
Electrolysis, The Treatment of Uterine Tumors by ... 20
Elliott, G. R. The Pressure Paralysis of Pott's Disease ... 589
Emetic, A Powerful ... 495
Emmet, T. A., On the Use of the Vaginal Tampor in the Treatment of Certain Effects following Pelvic Inflammations ... 169, 218, 241
Emmet, T. A. Tracheotomy without the Cannula ... 596
Empyema ... 529
Endometritis during Pregnancy ... 21
Endometritis, Treatment of, by Curetting of the Uterus ... 698
Entropium, A New Operation for ... 221
Ephedrine, a New Mydriatic ... 331
Epilepsy, A Case of Maniacal ... 439
Epilepsy, Ocular Symptoms of ... 205
Epilepsy, Trephining in ... 107
Epileptic State, The Temperature in the ... 276
Epulis, Subperiosteal Resection of a Portion of the Superior Maxilla for ... 160
Erasion of the Knee Joint ... 528
Ergot of Oats ... 420
Erythema, Polymorphous ... 323

PAGE

Erythropsia, The Causes of ... 471
Eserine in the Treatment of Detachment of the Retina ... 471
Ether, Rectal Injections of the Vapor of, in Lead Colic ... 308
Europe, American Adulterated Lard in ... 44
Examining Board, A Naval Medical ... 552
Excision of a Wedge-shaped Piece from the Tarsus ... 158
Excision of the Astragalus ... 158
Excision of the Knee Joint ... 160
Excision of the Tongue ... 362, 529
Exsection of the Astragalus for Caries ... 215
Eye, Amyloid Tissue in the Corner of a Staphylomatous ... 470
Eye, Diabetic Affections of the ... 339
Eye, Herpes of the ... 472
Eyeballs, Self-enucleation of Both ... 220
Eye-inflammation due to Irritation of the Dental Nerve ... 405
Eyes of Fifty Cases of Chorea of Childhood, An Examination of the ... 679
Eyes, The Practice of Licking Sore ... 660
Eye-strain, The Treatment of Functional Nervous Diseases by the Relief of ... 1, 37

Fæcal Accumulation ... 361
Faith-cure and Fatal Illness ... 306
Favus and Ringworm, The Parasites of ... 444
Female, Hydrocele in the ... 362
Femur, Fractures of the Neck of the ... 401, 413
Femur, Traumatic Osteomyelitis of the ... 497
Femur, Ununited Fracture of the ... 160
Fever, Ætiology of Puerperal ... 568
Fever, The Cartwright Lectures on the General Pathology of ... 365, 393, 449
Fever, The Use of Alcohol in Certain Forms of ... 156
Fever, Treatment of ... 6
Fibula, A Case of Compound Comminuted Fracture of the Tibia and ... 146
Fibula, Fractures of the Head of the, from Muscular Contraction, etc ... 561, 582
Fiction, The Doctor in ... 446
Fish Commission, The Vacancy in the ... 74
Fistula of the Trachea ... 297
Fitz, R. H. The Relation of Perforating Inflammation of the Vermiform Appendix to Perityphlitic Abscess ... 505
Flat-foot ... 529
Flat-foot, The Treatment of ... 663
Flexions, Electrolysis in Uterine ... 701
Flint, The late Professor ... 239
Flint, The late Professor Austin ... 290
Foerster, F. Case of Hemichorea Rheumatica ... 145
Fœtus, Injuries to the, during Pregnancy ... 323
Fœtus, On the Primary Removal by Abdominal Section of the Tube and its Contained ... 458
Foot and Mouth Disease, The, as it affects Man and Animals, and its Relation to Scarlet Fever as a Prophylactic ... 49
Forceps, An Improved Obstetrical ... 296, 301
Forceps, The Ideal Obstetrical ... 411
Fracture, Extensive Compound Cranial ... 191
Fracture of the Skull with Depression ... 191
Fracture of the Sustentaculun Tali, Os Calcis, and Scaphoid ... 81
Fracture of the Tibia and Fibula, A Case of Compound Comminuted ... 146
Fracture, Ununited, of the Femur, etc ... 160
Fracture, Unusual, of the Lower End of the Humerus ... 721
Fractures of the Head of the Fibula from Muscular Contraction, etc ... 561, 582
Fractures of the Neck of the Femur, etc ... 401, 413
Fumigations, Mercurial, in Laryngeal Diphtheria or Diphtheritic Croup ... 261
Funerals of Medical Men ... 16
Furuncles following Eczema ... 443

Galvanic Current, The Cumulative Action of the ... 249
Galvanism, The Use of, in Gynæcology ... 121
Gangrene of the Hand after Fracture of the Radius ... 529
Gargle, An Antiseptic ... 420
Garmany, J. J. The Reduction of Old Dislocations, with Report of a Reduction by Arthrotomy ... 142, 161
Gastritis, Acute, of a Severe Type, in Infancy ... 500
Gastro-enterostomy for Carcinomatous Stricture of the Pylorus ... 721
Gazette," The "Dietetic ... 110
Gelatin Casts of Anatomical Specimens ... 388
Generation, The Consensus between the Organs of, in the Female and the other Organs ... 22
Genito-urinary Diseases, A New Journal of ... 74
Gerster, A. G. On Strangulated Hernia in Children ... 71
Gibney, V. P. Simple and yet very Efficient Treatment of Diseases of the Knee and Elbow ... 284
Glaucoma after Linear Extraction of Cataract ... 471
Glaucoma in Young Persons, etc ... 304
Glaucoma Simplex, Double, in a Child Eleven Years of Age ... 222
Glaucoma, The Shallow Anterior Chamber of Primary ... 305
Glioma of the Cerebellum ... 669
Glioma of the Retina ... 470
Goelet, A. H. A New Suture-fastener for Silver Wire ... 572
Goelet, A. H. The Use of the Dilator and Intra-uterine Stem in the Treatment of Dysmenorrhœa and Sterility ... 508
Goître, Exophthalmic ... 165, 524

PAGE

Goître, Report of a Case of Laryngeal Stenosis due to Compression by ... 99
Goître, The Early Recognition of Exophthalmic ... 415
Goître, The Treatment of Exophthalmic ... 276
Golgi's Method of Staining ... 240
Gonorrhœa, Latent and Chronic, in the Female Sex ... 697
Goodwillie, D. H. Nasal Intubation ... 123
Goodwin, H. T. Cascara Sagrada in Rheumatism ... 629
Gordon, S. C. A Case of Extra-uterine (Tubal) Pregnancy ... 118
Gouty Diathesis, The Dietetic Treatment of the ... 191
Grafting, Researches on the Subject of Ocular ... 470
Grandin, E. H. Electrolysis in Uterine Flexions ... 701
Gray, L. C. Our Present Knowledge regarding Muscular Atrophies and Hypertrophies ... 533
Gray, The Death of Professor Asa ... 128
Greene, J. L. Acute Leukæmia during Pregnancy ... 144
Guiacol in the Treatment of Phthisis ... 308
Gunshot Wounds of the Cranium, The Treatment of ... 191
Gynæcology, A Congress of ... 167
Gynæcology, Electricity in ... 162
Gynæcology, Reports on ... 20, 695
Gynæcology, The Use of Galvanism in ... 121

Hæmato-salpinx ... 693
Hæmoptysis, Ipecac in ... 420
Hæmorrhage ... 165
Hæmorrhage, Bryonia Dioica in Uterine ... 84
Hæmorrhage, Death from Conjunctival ... 473
Hæmorrhage due to Uterine Fibroids, The Use of the Curette for the Relief of ... 697
Hæmorrhage, Intracerebral, in the Young ... 277
Hæmorrhage, Post-partum ... 636
Hæmorrhage, Treatment of Carotid ... 529
Hæmorrhoids, The Treatment of, by Dilatation ... 46
Haggard, Dr. W. D ... 54
Hamilton, A. McL. The Detection of Concealed Insanity by Nitrous-oxide Gas and other Anæsthetics ... 87
Hammond on Diseases of the Nervous System ... 55
Harvard Medical School, Medical Publications of ... 577
Hawley, J. S. Primary Laparotomy in Early Extra-uterine Pregnancy ... 648
Head, The Pupil Symptoms met with after Injuries to the ... 221
Headache, Very Early Syphilitic ... 48
Health Officership of the Port, The New Nominee for the ... 437
Health Reports, Government ... 27, 55, 83, 111, 139, 167, 194, 223, 251, 279, 306, 333, 363, 389, 419, 447, 475, 502, 531, 559, 587, 615, 642, 671, 699, 727
Heart, Cases of Spontaneous Rupture of the Aorta and ... 277
Heart Murmurs, A New Contrivance to Aid in the Diagnosis of ... 277
Hemichorea Rheumatica, A Case of ... 145
Henry, J. N. Letter to the Editor ... 439
Heredity, A Remarkable Case of ... 475
Hernia, A Discussion on ... 76
Hernia, A Malignant Tumor in the Sac of an Umbilical ... 273
Hernia, An Analysis of One Thousand Cases of ... 236
Hernia, Case of Immediate Strangulated ... 554
Hernia in Children, On Strangulated ... 71
Hernia, Macewen's Operation for the Radical Cure of ... 272, 301
Hernia, Operation for Strangulated ... 610
Hernia, Radical Cure of ... 214
Hernia, Radical Cure of, by the Czerny-Riesel Method ... 292
Hernia, Result of an Operation for the Radical Cure of ... 554
Hernia, Results of Mechanical Treatment of ... 157
Hernia, Successful Operation for the Radical Cure of ... 496
Hernia, The Conservative Treatment of Irreducible and Incarcerated ... 68
Hernia, The Modern Treatment of Strangulated ... 61
Hernia, The Radical Cure of ... 361
Hernia, The Radical Cure of, with Special Reference to Open Treatment of the Operating Wound ... 57, 80
Herpes of the Eye ... 472
Hiccough, A Handy Cure for ... 213
Hip, Everted Dorsal Dislocation of the ... 82, 160
Hip-joint Disease ... 293
Hip-joint, Spontaneous Dislocation of the ... 293
Hip, Old Unreduced Dislocation of the ... 292
Hirst, B. C. Injuries to the Fœtus during Pregnancy ... 323
Hoffman, The late Dr. Adams C ... 75
Hog Products, French and German ... 353
Holder, An Aseptic, for Hagedorn and Round Needles ... 670
Horsemen, Muscular Rupture in ... 411
Hospital, A Good Word for a ... 326
Hospital, Address at the Inauguration of the Sloane Maternity, etc ... 29
Hospital and Dispensary, The German ... 75
Hospital for the Ruptured and Crippled, The Attempts to Burn the ... 153
Hospital, The Boston City ... 239
Hospital, The "Gynecan" ... 189
Hospital, The Long Island College ... 195, 290
Hospital, The Massachusetts General ... 552
Hospital, The New York ... 267, 306
Hospital, The New York Maternity ... 75
Hospital, The New York Orthopædic Dispensary and ... 325

PAGE

Hospital, The New York Post-graduate ... 43, 83
Hospital, The Randall's Island ... 17
Hospital, The Rochester City ... 354
Hospital, The Roosevelt ... 280
Hospital, The Skin and Cancer ... 212
Hospital, The Springfield ... 686
Humerus, Unusual Fracture of the Lower End of the ... 721
Hydramnios ... 636
Hydrocele in the Female ... 362
Hydrophobia in Children ... 668
Hydrosalpinx ... 297
Hyoscine in Convulsive Affections ... 376
Hyperphoria ... 229
Hypertrophies, Our Present Knowledge regarding Muscular Atrophies and ... 533
Hypnotic, Hydrate of Amylene, A New ... 330
Hypnotic, Methylal as a ... 330
Hypopyon-keratitis treated by frequent Irrigations with Sublimate ... 305
Hysterectomy, A Case of ... 555
Hysterectomy, A Rope Écraseur for ... 726
Hysterectomy, Vaginal ... 190

Ichthyol in Surgery ... 192
Icterus Neonatorum ... 499
Icterus, Treatment and Pathology of Catarrhal ... 276
Incision, Exploratory, for supposed Pyonephrosis ... 160
"Index Medicus," The ... 382, 467
Infant, Acute Articular Rheumatism in the Nursing ... 673
Infants, Rectal and Dermal Alimentation of wasting ... 500
Infectious Diseases in Public Institutions, Precautions against the Spread of ... 520
Infirmary, The Newark Charitable Eye and Ear ... 325
Inflammation and Suppuration, On the Causes of Subcutaneous ... 165, 277
Inflammation of the Middle Ear, The Treatment of Acute and Chronic Purulent ... 688
Inflammation of the Vermiform Appendix, The Relation of, to Perityphlitic Abscess ... 505
Inflammations in Women, The Management of Pelvic ... 190
Inflammations, On the Use of the Vaginal Tampon in the Treatment of Certain Effects following Pelvic ... 169, 218, 241
Inflammations, Sulphichthyolate of Ammonium in the Treatment of Pelvic ... 214
Inflammations, The Internal Administration of Bichloride of Mercury in Circumuterine ... 89
Inherited Disease, the Nature of ... 141
Injection, A Deodorizing, for Uterine Cancer ... 308
Injections, Rectal, of the Vapor of Ether in Lead Colic ... 308
Injuries to the Fœtus during Pregnancy ... 323
Insane, The Comparative Weight of the Two Hemispheres in the ... 669
Insane, The Medical Society of the State of New York and the Treatment of the ... 222
Insane, The Pauper ... 359
Insanity, A Simple Classification of ... 54
Insanity, The Detection of Concealed, by Nitrous-oxide Gas and other Anæsthetics ... 87
Insufficiency of the Ocular Muscles ... 268, 291, 326
Intestinal Obstruction ... 244
Intestinal Obstruction, Discussion on ... 191
Intestinal Obstruction : its Pathology and Symptoms ... 205
Intestine, The Histology of Reunited ... 165
Intestines, A New Means of Diagnosticating Penetrating Wounds of the ... 551
Intestines, Hydrogen Gas as a Means of Diagnosticating Penetrating Wounds of the ... 662
Intubation in Chronic Stenosis of the Larynx ... 255
Intubation, Nasal ... 123
Intubation of the Larynx ... 157
Intubation of the Larynx, Analysis of Fifty Cases of Croup treated by ... 33
Intubation of the Larynx of an Adult ... 190
Intubation of the Larynx, Report of Ten Cases of ... 281
Intubation Tubes ... 714
Intussusception ... 361
Investigation, Private Ventures in Collective ... 18, 104
Iodine Trichloride ... 124
Iodoform and Tubercle ... 705
Iodoform, Observations on ... 329
Iodoform, The Antibacterial Action of ... 361
Ipecac in Hæmoptysis ... 420
Irido-chorioiditis, Suppurative ... 472

Jacobi, A. Acute Bright's Disease in Children ... 225
Jacoby, G. W. The Significance of the Epiblastic Origin of the Central Nervous System ... 477
Janvrin, J. E. On the Primary Removal by Abdominal Section of the Tube and its Contained Fœtus, etc ... 458
Joints, Operations on the ... 528
Jones, C. C. Wound of the Stomach ... 516
Jones, C. N. D. The Preparation of Surgical Dressings by Sterilization with Heat. Antiseptics as used in the Woman's Hospital, Brooklyn, N. Y ... 147
"Journal of Nervous and Mental Disease," The ... 54
Journal," The "Brooklyn Medical ... 128
Journal," The "Lancet" and the "British Medical ... 74

Kállay, A. Letter to the Editor ... 268
Keith, Dr. Thomas, of Edinburgh ... 466
Kelotomy ? How should the Sac be treated in a ... 65

PAGE

Kelch, S. The Present Status of the Treatment of Rotary Lateral Curvature of the Spine ... 547
Kelsey, A Case of Large Cystic Tumor of the, removed by Abdominal Section ... 94
Kelsey, Primary Carcinoma of the, coincident with Renal Calculus ... 166
Kinnicutt, P. A Case of Spasmodic Asthma due to Aneurysm ... 124
Kipping, P. and Lord, J. W. A Case of Hydatid Cyst of the Liver ... 179
Knee and Elbow, Treatment for Diseases of the ... 284
Knee Joint, Excision of the ... 160
Knee Joint, Partial Laxation of the ... 664
Knee, Outward Dislocation of the ... 215
Kopilk, H. Acute Articular Rheumatism in the Nursing Infant ... 673
Kretzschmar, P. H. Dr. Detweiler's Method of treating Pulmonary Consumption ... 175
Kussmaul, Professor ... 289

Labor, Mitral Stenosis and the Third Stage of ... 641
Labor, The Clinical Exploration of the Lower Segment of the Uterus before and after ... 641
Labor, The Conduct of, in Occipito-posterior Positions ... 641
Labor, The Induction of Premature, for Amaurosis and Amblyopia in the Albuminuria of Pregnancy ... 328
Labor, The Sectional Anatomy of the Third Stage of ... 20
Laboratory of Hygiene, The Michigan ... 213
Laboratory, The Carnegie ... 362
Laceration of the Uterine Cervix, The Importance of ... 382
Lancet Clinic," The "Cincinnati ... 195
"Lancet," The, and the "British Medical Journal" ... 74
Laparotomy ... 118
Laparotomy, A Report of Cases of, during the Year 1887 ... 637
Laparotomy in connection with Tuberculosis of the Peritoneum ... 21
Laparotomy, Dr. Sands's Case of ... 213
Laparotomy for Septic Peritonitis due to a Perforation of the Vermiform Appendix ... 197
Laparotomy Practically Considered, etc. ... 630
Laparotomy, Primary, in Early Extra-uterine Pregnancy ... 648
Laparotomy, Septic Peritonitis following ... 173
Lard, American Adulterated, in Europe ... 44
Laryngitis, The Surgical Treatment of Pseudo-membranous ... 541, 554
Larynx, Analysis of Fifty Cases of Croup treated by Intubation of the ... 33
Larynx, Intubation in Chronic Stenosis of the ... 255
Larynx, Intubation of the ... 157
Larynx, Report of Ten Cases of Intubation of the ... 281
Latin, Apothecaries' ... 211
Law, Medicine and the ... 279
Lead, Apparent Aseptic Properties of Particles of, in the Eye ... 472
Leading Articles:
Academy of Medicine, The New York ... 381
Albuminuria and Disease of the Placenta ... 465
Alsace-Lorraine in Medicine ... 633
Ammonium Salts and Camphor as Stimulants ... 324
Anæsthetic, Erythrophlœine, another Alleged ... 188
Anæsthetic, The, of the Ancients ... 684
Animal Industry, The Bureau of ... 550
Army, The Annual Report of the Surgeon-General of the ... 43
Camphor, Ammonium Salts and, as Stimulants ... 324
Cancer and Erysipelas as Antagonists ... 518
Cancer of the Larynx ... 603
Change, A Radical, needed ... 576
Coffee-cup, Danger in the ... 187
Cold as a Cause of Disease ... 519
Constipation, The Use of Rhamnus in Habitual ... 381
Corpulence and its Attendant Evils ... 519
Credé's Method of Placental Expression ... 353
Death, The Pathogeny of Sudden ... 265
Diphtheria and Laryngeal Intubation, The Philadelphia Discussion on ... 706
Dyes, Poisonous Aniline ... 265
Electricity in the Early Diagnosis of Exophthalmic Goître ... 73
Erythrophlœine, another Alleged Anæsthetic ... 188
Evil from the Standpoint of Fact ... 42
Goître, Electricity in the Early Diagnosis of Exophthalmic ... 73
Heart Disease, Acute, in the Young ... 212
Insane in the State of New York, The Case of the ... 153
Itch, The, as a Cure for Melancholy ... 684
Jejunostomy ... 152
Laboratory, The Loomis ... 238
Larynx, Cancer of the ... 603
Leprosy Contagious? Is ... 72
Marine-Hospital Service, The, and the Proposed National Bureau of Health ... 324
Medical Men as Officers of the Court ... 497
Medicine, Alsace-Lorraine in ... 633
Melancholy, The Itch as a Cure for ... 684
Meningitis, The Ætiology of Cerebro-spinal ... 288
Mind Cure and the Nineteenth Century Club ... 410
New York, The Death-Rate of, compared with that of London ... 436
Physician, The, and Domestic Reform ... 605
Placenta, Albuminuria and Disease of the ... 465
Placental Expression, Credé's Method of ... 353
Politics, Medical Men in ... 126

PAGE

Leading Articles:
Quarantine ... 16
Rectum, The Proper Limits of the Excision of the ... 604
Retroversion of the Uterus and Tumors ... 102
Rhamnus in Habitual Constipation, The Use of ... 381
Saccharin, The Untoward Effects of ... 660
Sleeplessness, A Word about ... 575
Society, The Connecticut Medical ... 127
Spirillum, The Color Reaction of Cultivations of the Cholera ... 14
Stimulants, Ammonium Salts and Camphor as ... 324
Tribulation, A Paris Doctor's ... 436
Tumors, Retroversion of the Uterus and ... 102
University, The Johns Hopkins ... 465
Uterus, A New Operation for Retroversion of the ... 551
Uterus and Tumors, Retroversion of the ... 102
Uterus, The Swedish Gymnastic Treatment of Prolapse of the ... 410
Wet-Nurse, The Choice of a ... 518
Lectures on the General Pathology of Fever, The Cartwright ... 365, 393, 449
Lectures, The Cartwright ... 280
Lectures, The Cartwright, and the Bellevue Hospital Alumni Address ... 325
Lectures, The Lane ... 139
Lee, C. C. The Value of "Alexander's Operation" in Cases of Complete Procidentia of the Womb ... 232
Leech, On the Use of the Wet-cup in Place of the, in certain Acute Diseases of the Ear ... 12
Left-handedness, Aphasia and ... 44
Legislators and Sanitary Matters ... 325
Lepra of the Eye, Treatment of, by the Galvano-cautery ... 502
Leprosy in the United States, etc ... 318, 347
Leprosy, The Bacilli of Anæsthetic ... 444
Leszynsky, W. M. The Significance and Value of Pupillary Phenomena in Nervous Disease ... 337
Leukæmia, Acute, during Pregnancy ... 144
Libraries, The Cornell Professors' Private ... 167
Library, The Boston Medical ... 383, 437
Library, The Tokio Medical ... 110
Liell, E. N. On the Uses of Dexia-kefir as a Dietetic in Disease ... 704
Light-sense, The Nature of the Disturbance of the ... 303
Lipanin as a Substitute for Cod-liver Oil ... 560
Lipoma, Intra-muscular ... 464
Lithæmia, Neurasthenia and ... 180, 240
Little, A Portrait of the late Dr. James L ... 559
Liver, A Case of Hydatid Cyst of the ... 379
Liver and Lung, A Case of Wound of the ... 704
Liver, Bullet Wound of the ... 166
Liver, Multiple Abscesses of the ... 295
Lochia, The Vaginal and Uterine ... 659
London, Letters from ... 186, 287, 409, 549, 658
Longevity, The Modern Increase of ... 551
Loofah, The ... 498
Lord, J. W. A Case of Spasmodic Asthma due to Aneurysm ... 125
Loring, The late Dr. ... 530, 577
Loring, The late Dr. E. G ... 614
Loring, The Practice of the late Dr. E. G ... 494
Luce, L. H. Dissection of the Lower Orders of Vertebrates as a Requirement in Medical Study ... 621
Lung, A Case of Wound of the Liver and ... 704
Lupus, Note on the Treatment of ... 157
Luxation of the Head of the Radius forward ... 528
Lymphoma ... 165

Mackenzie, Sir Morell, and the London "Times" ... 466
Malt Extract, Hoff's ... 530
Marine-Hospital Service, Changes of Medical Officers of the:
Armstrong, S. T ... 411
Austin, H. W ... 103
Bailhache, P. H ... 521, 661
Bevan, A. D ... 45
Bratton, W. D ... 45, 326, 411, 521
Carmichael, D. A ... 155
Carrington, P. M ... 45, 103, 267, 634
Carter, H. R ... 103, 326, 521
Cobb, J. O ... 239
Condict, A. W ... 239
Devan, S. C ... 45, 521, 634
Fessenden, C. S. D ... 661
Gassaway, J. M ... 103
Glennan, A. H ... 45
Goldsborough, C. B ... 103
Heath, F. C ... 103
Hutton, W. H. H ... 326, 521
Irwin, Fairfax ... 103
Kalloch, P. C ... 267
Kinyoun, J. J ... 267
Long, W. H ... 521
Magruder, G. M ... 606
Mead, F. W ... 521
Murray, R. D ... 45
Norman, Seaton ... 214
Purviance, George ... 103, 661
Sawtelle, H. W ... 521
Stoner, G. W ... 103, 267, 521
Stoner, J. B ... 239
Urquhart, F. M ... 155, 267, 521
Vaughan, G. T ... 155
Wasdin, Eugene ... 214, 326
Watkins, R. B ... 155
Wheeler, W. A ... 155
White, J. H ... 155, 521

PAGE

Marine Hospital Service, Changes of Medical Officers of the:
Williams, L. L ... 155, 239, 521
Wyman, Walter ... 521, 606
Marlow, F. W. Cases illustrating the Dependence of some Forms of Eye-inflammation upon Irritative Lesions of the Dental Branches of the Fifth Nerve ... 405
March, J. P. Etiology of Puerperal Fever ... 568
March, J. P. On the Non-identity of Chancre and Chancroid ... 461
Martineau, The Death of Dr., of Paris ... 383
Maryland, The Medical and Chirurgical Faculty of ... 501
Massachusetts, The Achievements of Sanitation in ... 551
Materia Medica, Reports on ... 329
Materia Medica, The Imponderable ... 128
Maternity at Marburg, Reports of the Obstetric Service at the ... 22
Maxilla, Subperiosteal Resection of a Portion of the Superior, for Epulis ... 160
Maxson, E. R. Shoulder and other more Transverse Presentations ... 573
May-Apple Pills, Squibb's ... 700
Maylard, A. E. Successful Simultaneous Triple Amputation for Railway Injury ... 608
McBurney, C. The Radical Cure of Hernia, with Special Reference to Open Treatment of the Operating Wound ... 57, 80
McCollom, W. Extra-uterine Pregnancy, with History of a Case ... 505
McCosh, A. J. Nephro-lithotomy ... 406
McGinnis, E. L'H. The Use of Galvanism in Gynæcology ... 121
Measles, The Transmissibility of, through the Medium of the Eyes ... 472
Medical Men, Funerals of ... 16
Medical Men in General Literature ... 520
Medical Times," The "Philadelphia ... 495
Medicine among the Arabs ... 552
Medicine and the Law ... 279
Medicine, Reports on General ... 271
"Memphis Medical Monthly," The ... 251
Meningitis, Acute, following Otitis Media Purulenta ... 216
Meningitis, Fatal, consecutive to Operation for Extractions of Cataract ... 157
Mercury, The Internal Administration of Bichloride of, in Circumuterine Inflammations ... 89
Methylal as a Hypnotic ... 330
Methylene, Bichloride of, as an Anæsthetic ... 331
Meyer, W. On Cystoscopy, and the New Cystoscope of Nitze and Leiter ... 426
Michigan, The Health of ... 55, 194, 306, 419, 531, 671
Micro-organisms, The Reduction of Nitrates by ... 352
Microscopy of Thought, The ... 16
Microscopy, The Combined Use of Celloidin and Paraffin in ... 102
Midwifery, "Christian Science" in ... 466
Millard, H. B. The Therapeutics of Pulmonary Consumption by Debove's Method of Superalimentation and by Bergeon's Method ... 95
Mixture, A Dangerous ... 196
Monstrosity, A Double ... 244
Monument, The Rush ... 524
Moore, W. O. Diabetic Affections of the Eye ... 339
Morning Sickness in the Husband ... 635
Morton, H. H. Obstetric Methods in Prague ... 702
Mundé, P. F. Letters to the Editor ... 412
Murder, A British Army Surgeon convicted of ... 17
Murdoch, R. Ear Instruments ... 185
Muscles, Insufficiency of the Ocular ... 268, 291, 326
Mydriatic, Ephedrine, A New ... 331
Mydriatics and Myotics, The Influence of, on the Intra-ocular Tension, etc ... 304
Myomata, The Comparative Therapeutics of Uterine ... 695

Nasal Cavities, The Use of Caustics in the ... 253
Nasal Mucous Membrane, Action of Caustic Applications on the ... 157
Navy, Changes of Medical Officers of the:
Auzal, E. W ... 354
Bates, N. L ... 661
Biddle, Clement ... 45, 354
Bradley, George P ... 521
Bradley, M ... 45
Brush, George R ... 291, 267
Cabell, A. G ... 553
Clark, J. H ... 45
Cleborne, C. J ... 45
Cooke, G. H ... 578
Craig, F. C ... 634
Crawford, M. H ... 467, 578
Deane, C. W ... 354
Dickson, S. H ... 606
Drennan, M. C ... 267
Du Bois, F. L ... 354
Du Bose, W. R ... 661
Edgar, J. M ... 267
Field, James G ... 214
Flint, J. M ... 467
Harmon, G. E. H ... 267, 467, 578
Hennenberger, L. G ... 467
Heyl, T. C ... 213, 267, 661
Hoehling, A. A ... 267, 467
Hord, W. T ... 521
Horwitz, P. J ... 553
Jones, W. H ... 578
Keeney, James F ... 291
Keeny, James ... 354
Kershner, Edward ... 578
Kidder, B. F ... 661

PAGE

NAVY, CHANGES OF MEDICAL OFFICERS OF THE :
Kindleberger, David ... 467
Mackie, B. F. ... 661
Magruder, A. F. ... 661
Martin, H. M. ... 213
Means, Victor C. B. ... 267, 291
Nash, F. S. ... 606
Oberly, A. S. ... 354, 521
Olcott, F. W. ... 213
Perey, Henry T. ... 467
Persons, R. C. ... 467
Rhodes, A. C. ... 467
Rush, W. H ... 354
Ruth, Melancthon L. ... 606
Sayre, J. S. ... 578
Simons, M. H. ... 553
Steele, J. M. ... 354
Stone, E. P. ... 291, 467, 578
Streets, T. H. ... 267, 661
Tracy, Elmer C. ... 214
Webster, Charles F. ... 214
Wells, Howard ... 661
Wentworth, A. R. ... 634
White, C. H. ... 267
Whiting, Robert ... 214
Wieber, F. W. F. ... 578
Navy, The Medical Corps of the ... 128
Neck, A Peculiar Deformity of the ... 47
Negro, Addison's Disease in a ... 48
Nephro-lithotomy ... 77, 406
Nerve, Rupture of the Optic, at the Chiasm ... 305
Nerve, Suture of a Divided Ulnar ... 362
Nerves, Note on the Physiology of the Recurrent Laryngeal ... 287
Nerves, On the Importance of Primary Suture of Divided ... 414
Nerves, Overlapping of ... 613
Nervous and Mental Disease, The Treatment of. 129
Nervous Diseases, The Treatment of Functional, by the Relief of Eye-strain ... 1, 37
Nervous Disturbances, Reflex ... 156
Nervous System, Distinctions between Functional and Organic Disease of the ... 191
Nervous System, The Epiblastic Origin of the Central ... 477
Neurasthenia and Lithæmia ... 180, 240
Neuritis, Acute Idiopathic ... 524
Neuritis, Bruzelius on Multiple ... 249
Neuritis, Multiple, following Diphtheria ... 47
Neurology, Reports on ... 668
Neuroses, Functional, in Women, etc ... 695
Neuro-therapeutic Memoranda ... 156
Newberry, Professor ... 189
New York, An Ambulance Service for the National Guard of the State of ... 26
New York City, The Health of ... 128, 239, 354, 495, 577, 686
New York, Infectious Diseases in ... 17, 44, 74, 128, 154, 189, 213, 239, 266, 290, 326, 354, 382, 411, 437, 495, 520, 552, 577, 605, 633, 661, 686, 706
New York, the Health of the State of ... 27, 167, 419, 531
Niagara University, The Medical Department of. 447
Nichols, J. A. A Case of Cyst of the Pancreas. 575
Nitrates, The Reduction of, by Micro-organisms. 352
Nitrous-oxide Gas and other Anæsthetics, The Detection of Concealed Insanity by ... 87
Noma ... 500
North Carolina, The Board of Medical Examiners of ... 605
Nose, Disturbances of Vision after Employment of the Galvano-cautery in the ... 222
Nose, the Respiratory Function of the ... 466
Nostrils, Chronic Eczema of the ... 443
Nostrums, The Indorsement of ... 615
Nurses, The Bellevue Hospital Training School for ... 44

Oats, Ergot of ... 420
Obesity in Young Women, Influence of, upon the Menstrual and Reproductive Function ... 156
OBITUARIES :
Agnew, Cornelius Rea, M. D. ... 438
Carpenter, Wesley M. ... 45
Loring, Edward Greely, M. D. ... 467
OBITUARY NOTES :
Aulick, Hampden, M. D. ... 355
Bentley, Jetson Willard, M. D. ... 267
Browning, Albert G., M. D. ... 412
Chapman, Edwin N., M. D. ... 268
Cleveland, Warner, M. D. ... 18
Craig, James, M. D. ... 214
Crandall, Henry Newton, M. D. ... 634
Crosby, George A., M. D. ... 129
Davidson, Augustus R., M. D. ... 606
Dawson, Benjamin Frederick, M. D. ... 383
Drake, Frederick R. S., M. D. ... 291
Dunster, Edward Swift, M. D. ... 521
Farre, Arthur, M. D. ... 103
French, Willis W., M. D. ... 291
Goldsmith, William B., M. D. ... 355
McIntyre, John B., M. D. ... 521
McIntyre, John B., M. D. ... 706
Mitchell, Chauncey L., M. D. ... 521
Oakley, Lewis W., M. D. ... 267
Pinkney, Howard, M. D. ... 553
Prioleau, J. Ford, M. D. ... 467
Purdy, Samuel A., M. D. ... 76
Raborg, Samuel A., M. D. ... 46
Ranney, Evander Willard, M. D. ... 706
Schuyler, William D , M. D. ... 18
Shaffer, Edward Livingston, M. D. ... 291
Swift, Thomas Delano, M. D. ... 267
Terrill, Francis H., M. D. ... 129

PAGE

Obstetric Case, An Aseptic ... 249
Obstetric Methods in Prague ... 702
Obstetrical Operations, The Performance of, in Water ... 22
Obstetric Practice, The Use of Corrosive Sublimate in ... 24
Obstetrics, A Congress of ... 167
Obstetrics, Reports on ... 20, 641
O'Donnell, W. T. Letters to the Editor ... 18, 578
O'Dwyer, J. Analysis of Fifty Cases of Croup treated by Intubation of the Larynx ... 33
O'Dwyer, J. Intubation in Chronic Stenosis of the Larynx ... 255
Œsophagotomy for Foreign Bodies ... 360
Œsophagotomy for the Removal of a Tooth-brush ... 719
Œsophagotomy, Internal ... 292
Œsophagus, Traumatic Stricture of the, in a Child ... 292
Oleum Gaultheriæ, On the Action of Aniline and ... 331
Olive-oil, Large Doses of, in the Treatment of Hepatic Colic ... 56, 73
"Omaha Clinic," The ... 494
Ophthalmia, Bilateral Metastatic, in the Puerperal State ... 470
Ophthalmology, Reports on ... 220, 303, 469
Ophthalmoplegia Externa and Interna ... 470
Optic Papilla, The Crescent of ... 221
Osborne, O. T. Salol in Diarrhœa ... 376
Ossification, Peculiar, of the Occipital Bone ... 613
Osteomyelitis, Traumatic, of the Femur ... 497
Osteoplastic Operation, Result of Mikulicz's ... 245
Otitis Media Purulenta, Acute Meningitis following ... 216
Ovariotomy ... 721
Ovariotomy, Parotitis following ... 21
Ovary, Dermoid Cyst of the ... 296
Ovum, A Four Weeks' ... 243
Ozæna, Beta-naphthol in ... 308
Ozæna, Tracheal ... 550
Ozone-oxygen ... 624

Pædiatrics, A Congress of ... 167
Pad for General Surgical Purposes, Description of a New ... 473
Pain in Pelvic Disease, The Significance and Localization of ... 697
Pancreas, A Case of Cyst of the ... 575
Papillitis of Sunstroke, The ... 489
Papilloma, Multilocular, of the Broad Ligament ... 634
Papilloma of the Bladder ... 79
Paralysis ... 47
Paralysis Agitans ... 580
Paralysis, Ascending, as a Sequel of Whooping-cough ... 499
Paralysis, Diphtheritic, of the Pneumogastric ... 499
Paralysis of Pott's Disease, The Pressure ... 589
Paralysis, The Lesion of the "Myeline" Fibers of the Cortex Cerebri in General, etc ... 669
Paris, Letters from ... 125, 210, 379, 464, 632
Parotitis following Ovariotomy ... 21
Paraffin, The Combined Use of Celloidin and, in Microscopy ... 102
Pasteur, A Prize for M ... 411
Péan, M ... 44
Pease, H. H. Letter to the Editor ... 580
Pelvis, An Instrument for Measuring the Obliquity of the ... 244
Pemphigus, A Paste for ... 444
Pemphigus of the Conjunctiva ... 473
Pepper's "System of Medicine" ... 382
Pepsin, Fairchild's ... 388
Pepsin, The Action of Alcohol on ... 330
Perfect, A. H. A Case of Wound of the Liver and Lung ... 704
Perforation or Cæsarean Section ... 641
Perforator, A Modified Thomas's ... 500
Peritomy by Cauterization ... 221
Peritonæum, Laparotomy in connection with Tuberculosis of the ... 21
Peritonæum, Relations of the Pelvis, etc ... 612
Peritonitis, etc ... 583
Peritonitis due to a Perforation of the Vermiform Appendix, Laparotomy for Septic ... 197
Peritonitis, Purulent, Abdominal Section for ... 721
Peritonitis, Septic, following Laparotomy ... 173
Peritonitis, Septic, following Perforation of the Vermiform Appendix ... 719
Peritonitis, Septic, following Perityphlitis ... 583
Perityphlitis, Septic Peritonitis following ... 583
Perry, J. G. Urethral Caruncle, its Ætiology and Progress ... 234
Pharmacists, American ... 475
Pharmacy, Foreign Appreciation of American ... 685
Phenacetine, A New Antipyretic ... 331
Phillips, C. W. A Case of Hour-glass Contraction of the Uterus ... 317
Phillips, C. W. Letter to the Editor ... 496
Phillips, D. The Symptoms, Diagnosis, and Treatment of Pneumonia in Children ... 432
Photography, Instantaneous ... 291
Phthisis and Contagion ... 147
Phthisis, Guaicol in the Treatment of ... 308
Phthisis Pulmonalis, Pleurisy as a Predisposing Cause of ... 617
Physician, A, Fined ... 354
Physiology and Surgery of the Ancients, Some Points in the ... 578
Pilcher, L. S. Non-union of Fractured Bones ... 486
Pills, The Coating of, to Order ... 83
Pilocarpine, Atropine in Poisoning with ... 560
Pineal Glands, The Structure of the ... 669

PAGE

Pinkham, J. W. Report of Ten Cases of Intubation of the Larynx, with Remarks ... 281
Placenta, Adherent ... 636
Placenta, The, of a Uni-ovular Twin Gestation. 296
Plaster-of-Paris Dressings as a Means of Spinal Support, On the Advantages of ... 645, 665
Pleurisy as a Predisposing Cause of Phthisis Pulmonalis ... 617
Pneumonia in Children, Cerebral Symptoms of. 584
Pneumonia in Children, The Symptoms, Diagnosis, and Treatment of ... 432
Pneumonia of Prenatal Origin ... 244
Pneumothorax ... 162
Pneumothorax, Fatal, caused by an Exploratory Puncture with the Hypodermic Needle ... 49
Poisoning by Artificial Selters Water ... 380
Polyclinic, The New Orleans ... 332
Polyclinic, The New York ... 128, 326, 686
Polyclinic, The Philadelphia ... 110
Pomeroy, O. D. On Some Points in the Differential Diagnosis of Certain Ear Affections by means of the Tuning-fork ... 676
Pork and French Wines, American ... 74
Pott's Disease ... 162
Pott's Disease, The Pressure Paralysis of ... 589
Practice, A Comparison of Hospital and Out-door Obstetrical ... 636
Practitioner, Country. Letter to the Editor ... 18
Prague, Obstetric Methods in ... 702
Pregnancy, A Case of Extra-uterine ... 118
Pregnancy, Acute Leukæmia during ... 144
Pregnancy, Cocaine Locally in the Vomiting of. 331
Pregnancy, Endometritis during ... 21
Pregnancy, Extra-uterine ... 565, 724
Pregnancy, Injuries to the Fœtus during ... 323
Pregnancy, Obstinate Vomiting not connected with ... 23
Pregnancy, Pernicious Vomiting of ... 191
Pregnancy, Primary Laparotomy in Early Extra-uterine ... 64
Pregnancy, Reflex Cough from ... 692
Pregnancy, The Induction of Premature Labor for Amaurosis and Amblyopia in the Albuminuria of ... 328
Presentations, Shoulder, and other more Transverse ... 573
Press Club, The Cincinnati ... 634
Prisms, Rectangular, in a Single Frame ... 240
Prize, A, for North Carolina Physicians ... 83
Prize, The Gari, etc ... 267
Prize, The William F. Jenks Memorial ... 166
Prizes for 1888, The Lomb ... 389
Prizes, The French Academy of Medicine ... 75
Procidentia of the Womb, The Value of "Alexander's Operation" in Cases of Complete ... 232
Profession, On the Relations of the, to the Public ... 278
Profession, The Medical, of Easton, Pa., etc ... 110
Prolapse of the Rectum ... 293
Prostatectomy, Suprapubic ... 528
Psoriasis, The Treatment of Eczema and ... 442
Pterygium, Notes on ... 469
Pterygium, The Pathogenesis of ... 471
Pumiline ... 140
Pupillary Phenomena in Nervous Disease, The Significance and Value of ... 337
Purpura Hæmorrhagica after a Mental Shock ... 572
Purviance, G. A Case of Compound Comminuted Fracture of the Tibia and Fibula ... 146
Pustule, Cauterization in Malignant ... 338
Pylorus, Gastro-enterostomy for Carcinomatous Stricture of the ... 721
Pyonephrosis, Exploratory Incision for Supposed ... 160
Pyosalpinx ... 50
Pyridine and Collidine in Respiratory Affections. 331

Quack Advertisements in the Religious Newspapers ... 166
Quarantine Bill, The Senate ... 17
Quarantine Establishment, The New York ... 325
Quarantine, The Academy of Medicine's Committee's Report on the New York ... 24
Quarantine, The New York ... 382

Rabies among Children ... 93
Rabies, The Virus of ... 588
Radius, Luxation of the Head of the, Forward ... 528
Ranney, A. L. The Treatment of Functional Nervous Diseases by the Relief of Eye-strain ... 1, 37
Rectum ... 613
Rectum, Desultory Remarks on the, etc ... 513
Rectum, Prolapse of the ... 293
Rectus, Operation for the Advancement of the, with the Capsule ... 4
Reeves, Dr. James E ...
Refraction and its Errors, An Instrument for testing ... 469
Religion, Hysterical ... 264
Resection of the Wrist Joint ... 361
Resection, Subperiosteal, of a Portion of the Superior Maxilla for Epulis ... 160
Residence, Changes of ... 138, 167, 189, 494
Resorcin in the Local Treatment of Acne ... 274
Responsibilities, Moral and Criminal ... 335
Retina, Eserine in the Treatment of Detachment of the ... 471
Retina, Glioma of the ... 470
Retinoskiascopy, The Determination of the Degree of Ametropia by ... 2
Retroversio-flexio Uteri, The Operative Treatment of ... 696
Rhachitis ... 363

PAGE

Rhachitis, Fœtal . . . 244
Rheumatism, Acute Articular, in the Nursing Infant . . . 673
Rheumatism, Cases in Practice in . . . 629
Rheumatism, Mixtures for the Treatment of . . . 195
Rhinitis, Beta-naphthol in Purulent . . . 308
Rickets and Syphilis . . . 199
Ricord, The Late Dr. B. H . . . 333
Ringworm, Salicylic Acid in . . . 560
Ringworm, The Parasites of Favus and . . . 144
Ringworm, Treatment of . . . 145
Rockwell, A. D. Neurasthenia and Lithæmia: their Differential Diagnosis . . . 180, 240
Roe, J. O. An Electric Nasal Saw . . . 120
Roethels, Incubation Period of . . . 277
Rushmore, J. D. Thoughts on the Surgical Treatment of Pseudo-membranous Laryngitis . . . 541, 554

Sac, How should the, be treated in a Keliotomy? . . . 65
Salicylic Acid in Ringworm . . . 560
Salol in Diarrhœa . . . 376
Salol, The Physiological and Therapeutical Effects of . . . 320
Salpingitis, Discussion on . . . 190
Salpingotomy, An Abdominal, in the Last Century . . . 151
Salt, Common, in the Treatment of Sick Headache . . . 700
Sands, H. B. Recovery after Laparotomy for Septic Peritonitis due to a Perforation of the Vermiform Appendix . . . 197
San Francisco, The Health of . . . 111, 251, 333, 475, 587, 698
Sanitation, Rural . . . 213
Sarcoma of the Tongue cured by Operation . . . 683
Sarcoma, Periosteal, of the Tibia, etc . . . 78
Savine in the Treatment of Cancer . . . 84
Saw, An Electric Nasal . . . 120
Sayre, L. A. On the Advantages of Plaster-of-Paris Dressings as a Means of Spinal Support . . . 645, 665
Scarlatina Epidemic, The London . . . 499
Scarlet Fever, The Foot-and-Mouth Disease as it affects Man and Animals, and its Relation to, as a Prophylactic . . . 49
Scarlet Fever, The Micro-organism of . . . 633
Scarlet Fever, The Treatment of, by Carbolic Acid . . . 499
School, A Chinese Medical . . . 438
School and Hospital, The New York Post-graduate Medical . . . 110, 411, 605
School, The Harvard Medical . . . 577, 634
Schweig, H. Some of the Causes of Vocal Disturbance . . . 85
Scissors, A New Antiseptic . . . 332
Sclerosis, Combined . . . 106
Sclerosis, Report of the Examination of the Spinal Cord in a Case of Combined . . . 106
"Scotch Oats Essence" . . . 388, 447
Scotomata in Glaucomatous Diseases of the Optic Nerve . . . 304
Scudder, C. L. Apparatus for Recording Lateral Curvatures of the Spine . . . 543
Seasickness, Forced Rhythmical Breathing as a Remedy for . . . 382
Sedative, Antipyrine as a Uterine . . . 56
Self-enucleation of Both Eyeballs . . . 220
Selters Water, Poisoning by Artificial . . . 380
Sepsis, The General Treatment of Puerperal . . . 24
Self-infection . . . 22
Shell-wound of the Shoulder, Unusual Power of Motion after Extensive . . . 582
Sida Floribunda, The Vermifuge Properties of . . . 331
Small-pox in Sheffield, England . . . 75
Small-pox in Western Massachusetts and Northern Connecticut . . . 686
Sneak-thieving, A Novelty in . . . 138
Snyder, U. M. Letter to the Editor . . . 19
Societies and Associations, Meetings of:
Academy of Medicine, New York . . . 49, 76, 327, 386, 638, 662, 686
Academy of Medicine, New York, Section in Orthopædic Surgery . . . 664
Association, Alumni, of the Woman's Hospital in the State of New York . . . 162, 218, 241
Association, American Medical . . . 522
College of Physicians of Philadelphia . . . 384
Society, Medical, of the County of New York . . . 273, 274, 358, 359, 584
Society, Medical, of the State of New York . . . 155, 189
Society, New York Clinical . . . 47, 297
Society, New York Neurological . . . 105, 240, 355, 524, 580, 706
Society, New York Surgical . . . 77, 79, 158, 214, 292, 413, 496, 554, 582, 607, 718
Society, Obstetrical, of Philadelphia . . . 216, 242, 295, 634, 693, 721
Society, Philadelphia County Medical . . . 50, 104, 129, 192, 268, 301, 414, 440, 498, 558, 609, 688, 690, 707
Societies, Coming Meetings of State . . . 332
Society, A Communication from the Georgia Medical . . . 359
Society of Gynæcology, The German . . . 558
Society, The American Gynæcological . . . 466, 726
Society, The Anthropological, of Washington . . . 239
Society, The California State Medical . . . 475
Society, The Charity Organization . . . 685
Society, The Clinical, of the New York Post-graduate Medical College . . . 155, 189, 383
Society, The German Gynæcological . . . 354
Society, The German Surgical . . . 354

PAGE

Society, The Massachusetts Medical . . . 616
Society, The Medical, of the State of New York . . . 74, 103, 154
Society, The Medical, of the State of New York and the Treatment of the Insane . . . 222
Society, the Middleton Goldsmith Lecture of the New York Pathological . . . 383
Society, The New Hampshire Medical . . . 644
Society, The New York Clinical . . . 127, 251
Society, The New York Dermatological . . . 577
Society, The New York Neurological . . . 382
Society, The New York Ophthalmological . . . 75
Society, The New York Pathological . . . 558
Society, The Northwestern Medical and Surgical . . . 55
Society, The Obstetrical, of Philadelphia . . . 290
Society, The, of Medical Jurisprudence and State Medicine . . . 138
Society, The, of the Alumni of Bellevue Hospital . . . 251, 290
Society, The Orange Mountain Medical . . . 138
Society, The Philadelphia Clinical . . . 107
Society, The State Medical, of Arkansas . . . 306
Society, The Yale Medical, of New Haven . . . 698
Specialty, A New . . . 290
Speculum, A Self-retaining . . . 694
Spina Bifida, The Treatment of, by Means of the Elastic Ligature . . . 668
Spinal Cord, The Removal of the . . . 493, 580
Spine, Apparatus for recording Lateral Curvatures of the . . . 543
Spine, The Treatment of Rotary Lateral Curvature of the . . . 547
Spiritualism, A Journal of . . . 55
Splenectomy . . . 217
Springs, The Saratoga . . . 103
Spratling, W. P. A Case of Hypertrophic Cardiac Dilatation, etc . . . 183
Squint, New Method of Operation in . . . 220
Staining, Golgi's Method of . . . 240
Stenosis of the Larynx, Intubation in Chronic . . . 255
Stenosis, Report of a Case of Laryngeal, due to Compression by Goitre . . . 99
Sterility, The Use of the Dilator and Intra-uterine Stem in the Treatment of Dysmenorrhœa and . . . 508
Stevens, G. T. Letter to the Editor . . . 326
Stimson, L. A. Intestinal Obstruction; its Pathology and Symptoms . . . 205
Stimson, L. A. On Doubtful Fractures of the Neck of the Femur, and their Identity with an Alleged Form of Arthritis Deformans . . . 401, 403
Stomach, Cancer of the . . . 361
Stomach, Wound of the . . . 516
Stomatitis, A Gargle for . . . 56
Storm, The . . . 290
Stramonium Poisoning . . . 210
Strangulation, Great Reduction of Temperature by . . . 276
Stricture of the Pylorus, Gastro-enterostomy for Carcinomatous . . . 721
Stricture, Traumatic, of the Œsophagus in a Child . . . 292
Sublimate, The Use of Corrosive, in Obstetric Practice . . . 24
Sunstroke, The Papillitis of . . . 489
Suppuration, On the Causes of Subcutaneous Inflammation and . . . 165, 277
Surgery, Endocranial . . . 668
Surgery, Ichthyol in . . . 192
Surgery, Reports on . . . 164, 360, 527
Surgery, "Sayre's "Orthopædic, in German . . . 102
Surgery, Some Cases of Abdominal . . . 609
Surgical Dressings, The Preparation of, by Sterilization by Heat . . . 147
Suture-fastener for Silver Wire, A New . . . 572
Sycosis, Trichorrhexis Nodosa and . . . 444
Syphilis, Abortive Treatment of . . . 529
Syphilis, Glassblowers' . . . 186
Syphilis Hereditaria Tarda, On Some Questions in Connection with . . . 686
Syphilis, On Preventive Treatment in Primary . . . 309, 662
Syphilis, Proposed Measures for preventing the Spread of . . . 184
Syphilis, Rickets and . . . 499
Syphilis, Treatment of, by Calomel Injections . . . 445
Syphiloma of the Sella Turcica . . . 222
Syringomyelia . . . 525

Tabes Dorsalis, The Urine in . . . 72
Tampon, On the Use of the Vaginal, in the Treatment of Certain Effects following Pelvic Inflammations . . . 165, 218, 241
Tampon, the Retention of a, in the Vagina for Twenty-nine Years . . . 73
Tarsus, Congenital Club-foot cured by an Excision of a Wedge-shaped Piece from the . . . 158
Tea, The Effect of, upon the Teeth . . . 577
Teeth, The Effect of Tea upon the . . . 577
Tenotomy, Graduated, in the Treatment of Insufficiencies of the Ocular Muscles . . . 440
Terebene, The Treatment of Uterine Cancer in its Advanced Stages by . . . 23
Terebene, The Use of, in a Case of Uterine Cancer . . . 296
Testicle, Sudden Death after a Blow on the . . . 166
Testis, Rare Misplacement of the . . . 527
Tetanus in the West Indies, Observations on . . . 685
Therapeutics, Reports on . . . 329
Thomas, T. G. Address at the Inauguration of the Sloan Maternity Hospital and of the Vanderbilt Clinic . . . 29

PAGE

Thomas, W. D. Letter to the Editor . . . 607
Thomsen's Disease . . . 355
Thoracoplasty . . . 529
Thought, The Microscopy of . . . 16
Thumb, Avulsion of the Terminal Phalanx of the . . . 295
Thyroid Gland . . . 613
Tibia and Fibula, A Case of Compound Comminuted Fracture of the . . . 146
Tibia, Periosteal Sarcoma of the . . . 78
Toe-nail, Treatment of Ingrowing . . . 151
Tongue, Excision of the . . . 362, 529
Tongue, Removal of the . . . 165
Tongue, Sarcoma of the, cured by Operation . . . 683
Tonsils, Galvano-puncture for Enlarged . . . 157
Torticollis, Congenital . . . 114
Trachea, Fistula of the . . . 297
Tracheotomy without the Cannula . . . 596
Trachoma, The Bacteriological Nature of . . . 469
Translucency in Solid Tumors . . . 102
Trapezoides, Division of the Os . . . 611
Traumatism, The Influence of, upon the Origin of Gastric Ulcer . . . 278
Trephining in Epilepsy . . . 107
Trichiasis, A Case of Partial, etc . . . 222
Trichiasis, An Operation for . . . 473
Trichiasis, An Operation for the Relief of . . . 220
Trichorrhexis Nodosa and Sycosis . . . 444
Trismus or Tetanus Neonatorum . . . 278
Tubal Disease, Inflammatory . . . 245
Tubercle, Iodoform and . . . 705
Tubercular Affections of Joints, Discussion on the Treatment of . . . 192
Tubercular Disease of the Sheath of the Extensor Tendon of the Thumb . . . 297
Tuberculosis, A Congress for the Study of Human and Animal . . . 27
Tuberculosis, Bovine . . . 156, 814
Tuberculosis of the Peritonæum, Laparotomy in connection with . . . 21
Tuberculosis, Predisposition in . . . 421
Tumor, A Fibroid, of the Uterus . . . 244
Tumor, A Malignant, in the Sac of an Umbilical Hernia . . . 273
Tumor, Cerebral . . . 105
Tumor, Nodulated, in the Axilla . . . 162
Tumor of the Brain . . . 356
Tumor of the Kidney, A Case of Large Cystic, removed by Abdominal Section . . . 94
Tumor of the Uterus, Fibro-cystic . . . 693
Tumor, Spontaneous Expulsion of a Vesical, after Perineal Section . . . 166
Tumors of the Uterus, The Treatment of Fibroid, by Electricity . . . 697
Tumors, The Treatment of Mammary . . . 697
Tumors, The Treatment of Uterine, by Electrolysis . . . 20
Tumors, Translucency in Solid . . . 103
Tumors, Vesical . . . 527
Turpentine as an Antiseptic . . . 529
Twins, Conjoined . . . 297
Tympanites, The Dangers of Intestinal Puncture in the Treatment of . . . 628
Typhoid Fever, Alum in . . . 378
Typhoid Fever following Removal of the Uterine Appendages . . . 693

Ulcer, Experimental Researches regarding the Causation of Gastric . . . 278
Ulcer of the Cornea, Treatment of Serpiginous . . . 221
Ulcer, The Influence of Traumatism upon the Origin of Gastric . . . 278
Ulcers, Camphor and Charcoal as an Application to . . . 196
Ulexine . . . 420
Universities, Foreign . . . 513
"University Medical Magazine," The . . . 552
University of Buffalo, The Medical Department of the . . . 279
University of Pennsylvania, Department of Medicine . . . 27
University of Pennsylvania, The Medical Department of the . . . 495
University of the City of New York, The Medical Department of the . . . 267
University, The, of the City of New York . . . 251
Urea Center . . . 659
Ureters and the Pelves of the Kidneys, Washing out the, through the Bladder . . . 527
Urethrotomy, A New Instrument for performing . . . 79
Urethrotomy, External Perineal, as a Preventive of Complications after Operations upon the Urethra . . . 358
Urinary Organs, Surgery of the . . . 527
Uterus, A Case of Hour-glass Contraction of the . . . 317
Uterus, A Fibroid Tumor of the . . . 244
Uterus, A Gravid . . . 243
Uterus, Dilatation of the, by the Process of Progressive Obturations . . . 23
Uterus, Extra-peritoneal Removal of the . . . 23
Uterus, Fibro-cystic Tumor of the . . . 693
Uterus, Hour-glass Contraction of the . 412, 553, 496
Uterus, Supravaginal Amputation of a Fibroid . . . 721

Vaccination, Antiseptic . . . 558
Vagina, The Retention of a Tampon in the, for Twenty-nine Years . . . 73
Vaginal Septum, Remarkable . . . 613
Valves in the Portal Vein . . . 354
Vander Veer, A. A Case of Large Cystic Tumor of the Kidney removed by Abdominal Section . . . 94

PAGE

Vansant, J. Letter to the Editor..... 662
Van Schaick, G. G. The Nature of Inherited Disease..... 141
Varick, T. R., A Eulogy on the late..... 113
Vein, Rupture of a Branch of the Umbilical.... 635
Venereal and Skin Diseases, A New Atlas of... 127
Venereal Diseases, Reports on..... 443
Veritas. Letter to the Editor..... 18
Vermiform Appendix, Laparotomy for Septic Peritonitis due to a Perforation of the ..... 197
Vertebrates, Dissection of the Lower Orders of, as a Requirement in Medical Study..... 621
Vienna, Letters from..... 13, 263
Vineberg, H. N. The Internal Administration of Bichloride of Mercury as an Adjunct to the Local Treatment of Circumuterine Inflammations..... 89
Viscera, Some Surgical Lesions of the Abdominal..... 597, 607
Vision, Disturbances of, after Employment of the Galvano-cautery in the Nose..... 222
Visiting-Lists, New..... 189
Vocal Disturbance, Some of the Causes of..... 85
Vomiting, Obstinate, not connected with Pregnancy..... 23

PAGE

Vomiting of Pregnancy, Cocaine locally in the. 331
Vomiting, Pernicious, of Pregnancy..... 191

Wagner, The Death of Professor Ernst..... 354
Wallian, S. S. Ozone-Oxygen. A History and a Suggestion..... 624
Warts, Removal of, by Internal Use of Arsenic. 196
Water, The Performance of Obstetrical Operations in..... 22
Weigel, L. A. The Value of Elastic Tension in the Treatment of Fibrous Ankylosis; etc... 656
Weir, R. F. How should the Sac be treated in a Kelotomy?..... 65
Weir, R. F. On Fractures of the Head of the Fibula from Muscular Contraction and implicating the External Popliteal Nerve. 561, 582
Welch, W. H. The Cartwright Lectures on the General Pathology of Fever..... 365, 393, 449
Wessinger, J. A. Clinical Remarks on Progressive Pernicious Anæmia..... 703
Westbrook, B. F. Pleurisy as a Predisposing Cause of Phthisis Pulmonalis..... 617
Westbrook, B. F. Treatment of Fever..... 6
Wet-cup, On the Use of the, in Place of the Leech in certain Acute Diseases of the Ear. 12

PAGE

Whooping-cough, Ascending Paralysis as a Sequel of..... 499
Whooping-cough, The Treatment of..... 660
Will, The late Dr. Agnew's..... 466
Wines, American Pork and French..... 74
Wintergreen, Oil of..... 168
Womb, The Value of "Alexander's Operation" in Cases of Complete Procidentia of the..... 232
Wood, Dr. Thomas F..... 54
Wood, W. C. A Case of Extra-genital Chancre and Proposed Measures for preventing the Spread of Syphilis..... 184
Worcester, W. L. Four Cases of Pernicious Anæmia..... 491
Wound of the Liver and Lung, A Case of..... 704
Wound of the Stomach..... 516
Wounds of the Cranium, Treatment of Penetrating Gunshot..... 480
Wrist Joint, Resection of the..... 361
Wyeth, J. A. Some Surgical Lesions of the Abdominal Viscera..... 597, 607

Xeroderma Pigmentosum and its Relation to Malignant Growths of the Skin..... 386

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# LIST OF ILLUSTRATIONS IN VOLUME XLVIII.


| | PAGE |
|---|---|
| Tracheal Stenosis from an Enlarged Thyreoid | 7 |
| A Simple and Efficient Filter | 27 |
| Sphygmographic Tracings after the Ingestion of Cocculus Indicus. Ten Illustrations | 31, 32 |
| Removal of the Spinal Cord. Three Illustrations | 64, 65 |
| Fracture of the Left Foot | 92 |
| The Sphenoid Bone. Two Illustrations | 145, 146 |
| Palmer's Uterine Dilator | 151 |
| Flexions of the Uterus. Four Illustrations | 151, 152 |
| The Repair of Bone | 158 |
| Pampinocele. Three Illustrations | 175, 176 |
| Spina Bifida. Two Illustrations | 205 |
| Uterine Dilator | 220 |
| Rogers's Urethrotome | 225 |
| Wathen's Scissors and Tenaculum | 249 |
| A Combined Warming-Pan and Croup-Kettle | 444 |
| Mechanical Treatment of Pott's Disease. Twenty-six Illustrations | 453, 457 |
| Dermatitis Tuberosa of Iodic Origin | Facing 477 |
| Stimulation of the Recurrent Laryngeal Nerve. Two Illustrations | 486 |
| Treatment of Rotary Lateral Curvature of the Spine. Twenty Illustrations | 534–538 |
| A Self-retaining Tongue Depressor | 556 |
| Tumor of the Spinal Cord | 585 |
| The Capiat | 586 |
| An Attachment to Agnew's Bident | 587 |
| Femoral Osteotomy. Six Illustrations | 594–596 |
| Perforated Zinc Inhaler | 617 |
| Diagram of Variations in Altitude | 631 |
| A Substitute for Tracheotomy and Intubation. Thirteen Illustrations | 646, 647 |
| An Improved Cannular Aural Forceps combined with Scissors | 671 |
| Railway Injuries. Two Illustrations | 686 |
| A Compact Operating Case and Improved Instrument Handle | 699 |
| Examples of the Union of Fractures in the Bones of Birds | 715 |

## Original Communications.

### ARTHROPATHIA TABIDORUM.*

BY PARKER SYMS, M. D.

ARTHROPATHIA TABIDORUM, or Charcot's joint disease, is an affection of the joints found in a small number of tabetics, occurring almost invariably in the initial stage, seemingly dependent on trophic disturbance. It is not of an inflammatory nature. It is characterized by a sudden and painless onset, by a marked swelling of the entire limb, which quickly subsides except around the joint, and finally by very rapid and complete changes in the bony and soft structures of the joint, producing remarkable deformity. In some cases there may have been no general swelling, and a spontaneous fracture of some portion of the bone may be the first indication of the disease; or an enlarged and deformed joint may be casually found to exist.

I shall not attempt to give an historical account of the literature and elucidation of this very interesting disease. To Charcot, of Paris, belongs the credit of having first called attention to the condition and to its relation to tabes. Many others have contributed papers on the subject and reports of cases. The most noteworthy discussion of the disease was that which took place in the London Clinical Society in 1883.

The disease is so rare, and so few opportunities have been given to one man for its study, that great diversity of opinion exists on many points in connection with it. This is most strikingly brought out when we come to the question of its cause and of its connection with locomotor ataxia. The proportion of tabetic subjects having this form of joint disease is unknown. Both sides of the body are affected with equal frequency. It often affects many joints. In 109 cases collected by Weizsäcker, 169 joints were diseased. The large joints are chiefly involved. The disease occurs in the joints of the lower extremity much more frequently than in those of the upper, in the proportion of nearly four to one.

Weizsäcker's collection of cases is a very good one, and may be used as a basis for statistics. The 169 joints were as follows: Knee, 82 (2 were doubtful); hip, 31; shoulder, 21; tarsus, 13; elbow, 10; ankle, 9; carpus, 4; spine, 1; joints of lower extremity, 133; joints of upper extremity, 35.

Syphilis has been observed by different men in such extremely varying proportion of cases that some attach very little importance to it, while others think we may come to regard it as the cause of tabes.

The structural changes in this disease are very marked. They involve both the bone and the soft parts. The synovial membrane is usually pale, though sometimes congested. The capsule is thickened by connective-tissue increase, and there is often a very marked hyperplasia of the surrounding tissue, forming a large part of the deformity. The entire capsule may be replaced by a connective-tissue mass. There is always an effusion into the cavity of the joint and into the deep fasciæ. It consists of pure serum and lacks the characteristics of inflammatory exudation. The ligaments are stretched and the cavity of the joint is over-ample, as after a chronic hydrarthrosis. Ossification occurs in the tendons, ligaments, capsule, or on the articular surfaces. These bony masses also occur as free joint bodies.

The changes in the bones may be divided into two sets of cases, the hypertrophic and the atrophic; a combination of the two processes is common. In the atrophic form the epiphyses are more or less absorbed. The entire articular surface may be changed into a rounded extremity like a drum-stick, retaining some of its natural coverings. In this class of cases the disability is great, owing to the instability of the joint from want of surface.

In the hypertrophic form there is great increase in the size of the bone ends, depending on large outgrowths of bone on the epiphyses. These masses, as stated above, occur also in the soft parts, and are often to be found on the shaft. In this form the deformity is always great, but the function of the joint is usually better than in the atrophic cases. Spontaneous fractures are of common occurrence. They involve sometimes the shaft of the bone, sometimes the bony processes. Fractures of the shaft unite with a very good callus.

The microscopic changes, according to Blanchard, are those found in osteitis rareficans. The lamellæ are broken down or absorbed, so that several canaliculi are converted into a large canal. The bone plates are thinned, and the canals are filled with fat. According to Regnard, these bones are changed chemically, as in osteomalacia, the phosphates being decreased to 11 per cent. and the fat increased to 37 per cent.

The symptoms are well marked. The indications of tabes can not be many nor prominent early, as the joint disease begins in the initial stage. The constant symptom of tabes present is analgesia, especially of the deep parts. Usually the patellar reflex is wanting, and we can add the Argyll-Robertson pupil, and more or less inability to stand or walk without the aid of sight. The various deformities of the joint which may be found need not be described.

The sudden onset, the lack of pain, and the rapid destruction of the joint are diagnostic. They certainly distinguish it from arthritis deformans, the one disease with which it is likely to be confounded. Arthritis deformans is much slower in its progress, is always the cause of pain, and some motions of the joint are always restricted, while in Charcot's disease the joint is usually abnormally movable in every direction. Of course the nervous symptoms must help the diagnosis. The patient's disability is usually very great, though in all but one of the cases I have seen they have been able to walk with a cane.

I shall now mention some of the theories as to the origin of this disease. It has been maintained:

1. That it is purely a mechanical condition caused by the abnormal gait of the patient, due to locomotor ataxia.

2. That it is due to a direct trophic disturbance of central origin—a certain point being involved for a correspond-

* Read before the Society of the Alumni of Bellevue Hospital, February 1, 1888.

ing joint; or that there is one center responsible for the nutrition of joints. (Buzzard suggests that this hypothetical point is in the medulla.)

3. That it is not a peculiar disease, but is (*a*) arthritis deformans coincident with the tabes, or (*b*) a purely syphilitic joint in the same connection.

4. That the serous effusion is due to trophic disturbance, and that the changes in the bone are due entirely to the pressure of the effusion and the consequent anæmia of the periosteum. (Macnamara.)

5. That it is due entirely to a traumatism and that the primary changes are inflammatory, but, owing to analgesia, the joint is not kept at rest and progress is different, merely on that account, from ordinary traumatic arthritis.

6. That it is due to a direct trophic disturbance, like ulcus perforans, not of central origin, but due to atrophy of the peripheral nerves. (Weizsäcker.) I understand this to mean that only the nerves of the diseased joint were atrophied, and therefore this joint became involved.

7. That it is due to traumatism or some change in the condition of the joint to be affected. The progress attained depends on the fact that the nerves of all large joints are degenerated, and some degeneration occurs in the structures of apparently healthy joints in tabetics, as pointed out by Jurgens and Westphal.

I am inclined to the last theory. The fact that the nerves and structures of seemingly healthy joints are in a state of partial degeneration has been demonstrated, and it only remains to assign a reason why a certain joint should continue in the process. I think it is reasonable to look for this in some local condition, such as a traumatism. If it were simply a continuation of the degenerative process, other joints would be involved in time. But a patient may have a single joint affected for years.

The idea that it is dependent on the peculiar gait is not tenable, for the disease occurs before inco-ordination is present, and patients have developed it while lying in bed; also because it occurs in the upper extremity.

Neurologists have not found for us the central point alleged by Buzzard and Charcot, and changes in the peripheral nerves seem to explain the disease more satisfactorily. Charcot's disease differs in its pathology and symptoms from arthritis deformans and syphilitic joints sufficiently to give it an identity as a peculiar condition.

The idea that it is caused by the serous effusion, as suggested by Macnamara, it seems to me does not need contradiction.

I do not think I can agree with Dr. Starr in considering it of a purely traumatic nature. The changes are none of them of an inflammatory nature, and certainly must be regarded as due to nerve changes.

The treatment of the joint must necessarily be limited. The swelling tends to subside. This may be aided by pressure, massage, and external irritation. If the locomotion is very seriously interfered with by the instability of the joint, a splint should be applied, or in such a case, if the patient's general health is fair and there is no inco-ordination present, I believe excision of the joint is a justifiable proceeding. Spontaneous fractures unite well, and there is no reason why we should not get good union after operating. The patient whom I present to you to-night gives the following history:

Henry B., aged fifty-six years, a sea-cook by occupation. He denies all symptoms of syphilis. He has had gonorrhœa several times, but not since 1874. He has no gleet. When six years of age he received a kick from a horse, probably fracturing the right parietal bone, in front of its superior posterior angle. He says he was unconscious for six days; that he bled a good deal; he does not know if from the nose or ear.

He states that there was no paralysis of speech or motion. Since the accident he has been deaf in the right ear. His subsequent history till within the last four years is rather negative. About twenty years ago he suddenly lost the power of seeing in the evening or in a dim light. This lasted about six months and then improved. Since then he has been in good health till about four years ago. At that time, two days after taking a bath and exposing himself, there suddenly developed what he calls a weakness in his legs. He says that his gait was unsteady, and that he was thought to be intoxicated. At that time he had no sense of numbness in his feet. During the next six months he regained the power of walking, but lost to quite a degree the sensation. He says he feels as though he were walking on an uneven surface of soft, spongy material. He has a feeling of numbness in his legs and feet. His symptoms have always been more marked in the left than in the right side. He has had some darting pains. Cold to the surface gives an exaggerated sensation. There was very little change in his condition till eight months ago, and he was able to do some work till then. At that time the knee swelled to more than its present size within one week. He thinks it reached about its present condition of deformity and mobility in less than one month. By that time there was considerable lateral mobility of the joint. Three months later the thigh and leg became very much swollen, and the knee at that time was very large. This general swelling gradually subsided.

I first saw him shortly after this. There was a swelling of the entire limb of a hard and peculiar character. There was a very large mass below the middle of the thigh. It was imperfectly movable and seemed to have a deep origin. It has since become very much reduced in size and ossified on the shaft of the femur.

Examination at present, five months after the general swelling of the limb: He has anæsthesia, deep and superficial, of the limbs, especially of the left one. Sensation does not seem to be delayed. Patellar reflex is absent. He sways when standing with closed eyes. His walking is better, proportionately, than his standing, when his eyes are shut. His pupils are fairly dilated. They respond for accommodation, but act only fairly to light. They are about equal in size. They are not dilated well by cocaine. There is partial atrophy of the right optic nerve on the temporal side. There is catarrhal deafness on the left side and complete nervous loss on the right side. I am indebted to my friend, Dr. Asahel Barker, for the examination of the eyes and ears.

The left limb is very much deformed. The knee measures four inches more in circumference than the right. There is some increase in the whole limb. There is some fluid in the joint cavity. On motion, there is a very marked crepitus. Lateral mobility is greatly increased. The general contour of the joint is lost, owing to thickening of the capsule and marked hypertrophy of the bony processes. The internal condyle of the femur is particularly enlarged. There is a well-marked spine of bone on the inner side of the lower end of the shaft of the femur, probably four inches in length.

# ANEURYSM OF THE INTERNAL PUDIC ARTERY.*

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While the occurrence of aneurysm in the gluteal region may be said to be infrequent as compared with its occurrence in other regions of the body, still it is not rare. In a hasty and incomplete examination of the literature on the subject, I have found the records of forty-nine cases, and, if a careful search were made, many more instances would, without doubt, be added to this number. Of these forty-nine cases, forty-seven concern the gluteal and sciatic arteries, the former being affected much more frequently than the latter, and the two remaining cases are examples of aneurysm of the internal pudic. One is a pathological specimen, and the other is an interesting case, reported by Dr. Gibney in the "Medical Record" for August 27, 1887. The pathological specimen is a preparation in the museum of the College of Surgeons in London, and it exhibits an aneurysm of the trunk of the pudic an inch in diameter and full of fibrinated laminæ, the aneurysm being situated outside of the pelvis. Gibney reports a case of aneurysm of the gluteal region following a blow with the fist over the right hip of a boy of fifteen, who, for a week previous to the injury, had been walking stiffly, favoring the right hip. When seen, seventeen days later, there was a large tumor extending from the crest of the ilium to the middle third of the thigh; there was no pulsation or bruit. The tumor increased in size on the outer side of the thigh, and about its middle a small circumscribed tumor appeared; at this point there was distinct fluctuation. An aspirating-needle was introduced at this point, and it was found that the tumor was filled with blood. A few days later an incision was made into the tumor, the clots turned out, and the ends of the ruptured vessel secured with clamps. Death occurred eight hours after the operation, from secondary shock due to heart failure, the boy being afflicted with a congenital heart lesion. This was unquestionably an aneurysm of the gluteal region, but the evidence is not conclusive enough to allow it to be placed on record as dependent on rupture of the internal pudic artery. No mention is made of an autopsy to prove the correctness of the diagnosis, and it is hardly possible that the force of a blow with the fist over the hip would rupture the internal pudic, as the artery is too deeply situated and too well protected by a thick layer of muscle and connective tissue. It is most probable that the sciatic artery, being driven against the neck of the femur, was ruptured, and was thus the source of the traumatic aneurysm. On account of the rarity of this special form of aneurysm, I desire to report an instructive and interesting case which came under my care last autumn at St. Luke's Hospital.

C. R., sixty-two years of age, journalist, was admitted, September 7, 1887, to St. Luke's Hospital. Eleven days previous to admission, while going down a flight of stone steps, he slipped and fell a distance of nine feet, striking on the left buttock, and then, falling backward, struck his head against the steps, receiving a lacerated scalp wound. After remaining unconscious about fifteen minutes he recovered sufficiently to proceed to his office, and then went home. That evening the buttock was swollen and painful, and during the night he suffered from a severe paroxysm of pain running down the back of the thigh. His history for the following ten days is incomplete beyond the fact that the buttock steadily enlarged and grew more painful, and there were several attacks of exquisite pain along the course of the sciatic nerve. In the summer of 1886 and in the spring of 1887 he was under treatment in St. Luke's Hospital for chronic diffuse nephritis, chronic bronchitis, and emphysema. He has had articular rheumatism, acquired syphilis thirty years ago, and has been a hard drinker for some years. The patient was anæmic, had no appetite, was constipated, and complained of dyspnœa on exertion and pain over the cardiac region.

Examination revealed chronic bronchitis and emphysema, cardiac hypertrophy, and aortic mitral murmurs. Pulse 120, weak and irregular; temperature 100·5° F. Arteries rigid and corded, very marked at the wrist and in the temporal region. The urine was increased in quantity, specific gravity 1·011, contained albumin, granular and hyaline casts, mucus, and pus. The left buttock was of about twice the size of the right one, and the patient had to lie on the right side. The swelling extended from the crest of the ilium to the fold of the buttock, and from the edge of the sacrum outward to the great trochanter. It was firm and hard, and, although quite uniform, was particularly prominent and rather pointed over the middle of the buttock. There was ecchymosis over the entire buttock and extending downward and over the left side of the perinæum. There was great pain on pressure, entire absence of pulsation and fluctuation, no murmur or bruit was detected with the stethoscope, and examination through the abdominal wall and by the rectum was negative. Careful examination on the following day revealed nothing beyond some surface heat; temperature 101·5°, pulse 116. He had during the previous night another attack of pain along the sciatic. On the second day after admission there was found over the prominent part of the tumor a spot of about an inch in diameter where fluctuation was well marked. A hypodermic needle was introduced and a syringeful of sanious pus withdrawn. Plunging in a curved bistoury, an incision two inches in length was made, and about three or four ounces of sanious pus and several small blood-clots were discharged. This was immediately followed by the expulsion of large masses of coagulated blood with such force as to lead me to suspect something was amiss. The index finger was inserted through the wound and passed down into a large cavity filled with broken-down blood-clots, and, on pressing down farther, a warm, pulsating jet of blood could be felt playing against the finger. In the mean time a severe arterial hæmorrhage was taking place through the wound, and the patient was seen to be very faint and weak. On account of his rather alarming condition and the absence of assistance necessary in such an emergency, the cavity was firmly packed with iodoform gauze, a firm dressing was applied over the buttock, and stimulants were given hypodermically. The patient began soon to rally, and, there being no signs of hæmorrhage from the wound, all operative procedures were temporarily postponed. A few hours afterward, the general condition having improved and the necessary assistance being at hand, it was decided to cut down and ligate the bleeding vessel. A vertical incision about six inches long was made, passing through skin, subcutaneous tissue, and glutæus maximus muscle, and exposing the cavity now filled with gauze. After removing the gauze and some blood-clots, the cavity was found to extend from the upper edge of the pyriformis muscle down

* Read before the Section in Surgery of the New York Academy of Medicine, March 21, 1888.

to the tuberosity of the ischium, and then for a short distance along the great sciatic nerve. At the bottom of the cavity was an aneurysmal sac about an inch in diameter, pulsating, partially filled with blood-clots, and ruptured almost entirely across. The hæmorrhage was easily controlled by pressure. This sac was situated over the spine of the ischium; from its proximal side the artery could be traced toward the great sacro-sciatic foramen, and from its distal side the vessel could be felt passing back into the pelvis. It was evidently a sacculated aneurysm of the internal pudic where it passes over the ischial spine. After some difficulty the distal and proximal parts of the artery were secured close to the sac, the sac was split open, and the clot was turned out. Owing to the condition of the patient's kidneys, the operation was performed without ether, and by this time, owing to the previous loss of blood and the shock of the operation, his condition was again alarming. A single catgut ligature was thrown around both clamps, traction being exerted in an upward direction at the same time, and the artery tied. The cavity was thoroughly irrigated with a 1-to-1,000 bichloride solution, packed with iodoform gauze, and firm bichloride dressing applied over the buttock. During the following twenty-four hours he was drowsy, pulse 120, temperature 102°. Nourishment was retained with difficulty, and the urine was diminished in quantity. On the third day after the operation he was restless, nervous, complained of headache and dizziness, and at times was delirious. On the fifth day his symptoms were such as to indicate iodoform intoxication, so the dressings were removed and balsam-of-Peru gauze was substituted. The wound was in a satisfactory condition, the cavity reduced in size and covered with healthy granulations. The delirium and other nervous symptoms subsided in a few days, and on September 26th he was much stronger and retained his food. He was discharged in the beginning of November with the wound entirely healed and his general condition greatly improved. On February 1, 1888, he was admitted to the medical side of the hospital for treatment of his pulmonary and renal troubles, and apparently was getting better. On the morning of February 13th he was found dead in his bed.

*Autopsy Eight Hours after Death.*—The lungs were œdematous and congested. The heart was increased in size, weighing eighteen ounces, the left ventricle was hypertrophied, the valves competent. There was slight atheroma of the aortic and anterior segment of the mitral valve. The kidneys were affected with an advanced stage of chronic diffuse nephritis. In the left buttock there was a scar four inches in length; the buttock was somewhat retracted. Careful dissection was made down to the internal pudic over the spine of the ischium. Here was found a firm, white, fibrous mass, about three quarters of an inch in diameter and firmly adherent to the surrounding tissues. The internal pudic artery could be traced into this mass from above and below. A fine probe introduced into the artery from above failed to pass through the mass into the artery below. The artery was dilated above and somewhat contracted below the mass, and was atheromatous throughout. On cutting open the mass, it was found to be composed of firm fibrous tissue, and no communication could be established between the proximal and distal segments of the artery. No trace of the catgut ligature was found. The gluteal and sciatic arteries were atheromatous.

This was a clear case of spontaneous sacculated aneurysm which had existed for some time and which was ruptured by the force expended on the buttock at the time the patient fell. Blood commenced immediately to extravasate into the surrounding tissues, and the extravasation steadily increased, expanding the parts and filling the space with soft coagula, until the buttock attained the size presented on examination. As to the situation and form of the aneurysm, the cause is naturally obscure, but I will add that, some ten years ago, the patient fell on a sharp object on the deck of a ship and received a severe lacerated wound of the left side of the perinæum. Possibly the force of the fall at that time might have weakened or caused a slight laceration of some of the coats of the diseased artery, and thus have been the beginning of the trouble. It is hardly probable that it commenced then, as in the time which has since elapsed the aneurysm would have attained a size sufficient to have attracted the patient's attention. The paroxysmal attacks of exquisite pain along the back of the thigh were due to temporary increase in pressure on the sciatic nerve, caused by a valvular action of the clots at the point of rupture in the aneurysmal sac. The diagnosis of aneurysm of the gluteal region is frequently a difficult one, and, according to Barwell, "proportionally to its frequency, more mistakes have been made in cases of this particular aneurysm than of any other." In this case the history of chronic kidney disease, the atheroma of the vessels, and the swelling dating from the time of the injury, led me to suspect that it might be a case of aneurysm. On the other hand, the absence of pulsation and bruit, the increased surface heat, the ecchymosis and œdematous condition of the skin, a temperature of 102°, and finally the discovery of pus with the needle, seemed to justify the diagnosis of abscess. My interpretation of the case was, that there was a large hæmatoma of the buttock not dependent on rupture of any of the large arteries in that region, that suppuration had begun in it, and that it was about to break through the skin. The omission to use a large aspirating-needle at the time of the first examination may be justly criticised, as it would have probably given a clear insight into the case. The surgical treatment, under the circumstances, was, in my opinion, justifiable, and, if the patient had been left to expectant treatment, he would have succumbed to the hæmorrhage which was sure to follow sooner or later. The successful result was due mainly to the careful antiseptic treatment, which was carried out both during and after the operation. Whether the single ligature exerted pressure sufficient to compress the artery without cutting through its coats, thus avoiding secondary hæmorrhage, is uncertain. Had it not been for the alarming condition of the patient, I would have taken more time and tied both ends of the artery after cutting away the sac. Considering the brittle condition of its coats, this procedure might have increased the chances of secondary hæmorrhage, but that is a matter of personal opinion. I desire to express my thanks to Dr. Robert Abbe for his skillful assistance and valuable advice at the time of the operation.

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**Hæmoglobinuria in Rheumatism.**—The "Lancet" says: "If the recorded and unrecorded cases of hæmoglobinuria occurring in apparently genuine rheumatism were all numbered, it would have to be admitted that the sum would be considerable, although the occurrence is usually regarded as exceptional. Recent literature furnishes many examples of rheumatic hæmoglobinuria, frequently in association with erythemata of the skin, which occasionally present purpuric and vesiculate characters, either singly or combined."

# A RAPID METHOD FOR THE QUANTITATIVE ESTIMATION OF GLUCOSE IN URINE BY FEHLING'S SOLUTION.

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My object in writing this short paper is to call the attention of physicians to a method of using Fehling's quantitative determination for glucose in urine, which effects a saving of fully one half the time usually required.

Before getting at the gist of my subject I desire to emphasize a few peculiarities of the behavior of urine to Fehling's solution, as it is upon the occurrence of these peculiarities that the *rationale* of the method I am about to describe is based.

Every one who has critically examined many specimens with Fehling's solution will have noticed two striking facts. The first of these is that some urines from which sugar can by various tests be positively excluded will decolorize the solution, and even give it an orange or opalescent-green tint. The second is that urines known to contain sugar fail to produce a characteristic precipitate with Fehling's test, giving instead appearances identical with those just described, or filling the test-tube with a precipitate usually of a yellowish-green color, which never turns red and never satisfactorily settles to the bottom, and which is, moreover, so fine as to pass through most filters.

The reason for these disturbing variations from the classical action of the test, as described in the books, is to be found in the fact that urine contains normally two classes of bodies, one of which has the power of reducing copper oxide, and the other of redissolving such oxide when from any cause it has been reduced. Here, then, we have two substances of antithetical action, the final result of their presence being according as one or the other preponderates in quantity. The less sugar the specimen contains, the more disturbing these variations become, and it may happen that as much as one half of one per cent. of sugar is present without a characteristic precipitate being formed. Concentrated high-colored urines are, as a rule, more apt to show these peculiarities than dilute, pale urines. Two kinds of error are consequently likely: One that traces of sugar may be overlooked, the other that traces may be reported in urines containing none.

In another paper I propose to show how small quantities of sugar may be detected in spite of these disturbances, confining myself here only to the discussion of the quantitative determination by Fehling's solution.

The non-appearance of the red oxide and its replacement by a greenish-yellow precipitate, which persists in remaining in suspension for an indefinite length of time in the contents of the flask, are common sources of vexation to any one whose time is precious.

To avoid these difficulties, the following procedures should be employed:

First, use a flask capable of containing about 250 c. c., and, after adding the usual 10 c. c. of Fehling's solution, fill half full of water, or till the solution is of a very pale blue. The reaction takes place much better and can be more closely observed than when the test solution is used in concentrated form. Secondly, the urine should be well diluted. Make a preliminary qualitative test to judge approximately of the quantity of glucose present and dilute accordingly. One in ten is a convenient strength. This, together with the thinning of the Fehling's solution, will insure proper dilution of the normal reducing and dissolving substances of the urine, and minimize their disturbing action.

The temptation to use the urine but slightly diluted or of full strength when the amount of sugar is small, so as to shorten the time necessary in using the burette, is very great, but will always be regretted if yielded to, for it generally ends in being obliged to undertake the whole analysis afresh after wasting considerable time.

Put the diluted Fehling's solution on to boil while preparing the dilution of urine and filling the burette. Then, when all is ready, in starting the process, allow only a small quantity—from one half to one c. c.—to flow from the burette before boiling again, removing the flame and allowing the ebullition to cease each time before adding more. *Boil hard* each time, as this causes the particles of oxide to cohere and fall to the bottom more quickly than otherwise.

Even under the most favorable circumstances—that is, when a red precipitate appears at once and falls quickly to the bottom as the reaction nears completion—a considerable time must always elapse before the supernatant fluid is sufficiently clear to allow the analyst to determine whether all the blue color has been discharged or not, especially as the fine particles of red oxide, when in suspension, give to an otherwise colorless fluid a violet shimmer. This settling may be hastened by adding a dash of cold water to the contents of the flask; but Munk * has devised a method which is probably the greatest improvement in the use of Fehling's solution since the test was first proposed, and which it is the object of this paper to popularize.

This consists in adding a small quantity of a solution of calcium chloride to the mixture in the flask. (Munk recommends three to five drops of a 15-per-cent. solution, but in practice I simply make a pretty strong solution, and use as much as seems needed.) A voluminous, white, curdy precipitate is formed, consisting in part of calcium hydroxide and in part of calcium tartrate, the latter being less soluble in hot than in cold solutions. This precipitate, from its curdy, gelatinous nature, carries down with it the impalpably fine powder of the copper oxide, and quickly leaves a clear supernatant fluid in which the most delicate shade of blue is discernible, if present.

In practice I have found the following the best mode of procedure:

If the oxide comes down red in the beginning, I continue adding from the burette until the rapid falling of the precipitate to the bottom of the flask warns that the reaction is nearly complete. I then add about ten drops—or enough to give a pretty large quantity of precipitate—of the calcium-chloride solution. When the precipitate of

* I. Munk, Virchow's "Archiv," vol. cv (1886), p. 63. I have made an abstract of this article, which may be found in the "American Journal of the Medical Sciences" for October, 1886, p. 543.

copper is yellowish-green and shows no sign of turning red, I add the calcium-chloride solution as soon as I have satisfied myself of the latter fact. Great care must be used to boil slowly at first, allowing the flame of the burner to play gently, with frequent removals, about the bottom of the flask until the whole mass gradually boils. If this is not done, owing to the character of the precipitate, explosive boiling may occur, and the whole contents of the flask be suddenly landed on the ceiling—a monument to precipitancy for all time!

When boiling is once under way there is no more danger of such an accident occurring, and ebullition should be maintained for some minutes before the precipitate is allowed to settle. Should it be found, after the calcium tartrate with the copper oxide have settled to the bottom, that considerable copper still remains in solution to be precipitated, it will generally be necessary to add from time to time, as the urine is run out of the burette, a few drops more of the calcium-chloride solution, as the freshly precipitated calcium tartrate has greater clarifying powers than that which has already been used. Should the amount of precipitate become finally very large, more water should be added to the flask.

By the use of this method a sugar determination may be made in twenty minutes, and several can be done together in even less time each; whereas, under the common method, half an hour would be very short and very exceptional, and an hour or more—depending on the nature of the specimen—nothing unusual.

Two years' constant use, embracing specimens of all varieties of contrariness, warrants me in heartily recommending Munk's method to all who have many, or indeed any, quantitative determinations to make, and to whom time is valuable.

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## REPORT OF A CASE OF ENLARGED THYREOID PRODUCING TRACHEAL STENOSIS.

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About a year and a half ago there came to the Clifton Springs Sanitarium Mr. J. S., aged sixty-five, with the following brief history: Twelve years before, he noticed some difficulty in breathing, particularly on going up stairs. He never had a cough and never suffered with pain in the chest, or in fact in any other part of the body, and, with the exception of the dyspnœa, considered himself to be a very healthy man.

He had been examined by Dr. Austin Flint, Sr., soon after the discovery of the trouble referred to, and was told that the labored respiration was probably due to an aneurysm, for which large doses of the iodide of potassium were prescribed. This drug was taken for some time without any perceptible effect. Since then he had been examined by various physicians, and as many opinions were advanced as to the nature of the disease.

When he came under my observation he had no subjective symptoms other than the difficulty of breathing. Both inspiration and expiration were loud enough to be heard at a moderate distance from the patient, and after ascending a flight of stairs the breathing became sufficiently audible to be heard over a large room. Upon physical examination of the chest, nothing was elicited, except that the respiratory murmur on the right side was prolonged and blowing in character, the inspiratory being higher in pitch than the expiratory murmur, while on the left side both respiratory murmurs were normal. There was no dullness on percussion, nor was there any alteration of the normal vocal fremitus or vocal resonance upon either side. The expansive movement of the thorax seemed to be slightly greater on the left than on the right side. There was no upward motion of the larynx synchronous with respiration, a sign found in cases of laryngeal stenosis, and, upon examination with the mirror, nothing of an obstructive character could be seen as far as the second or third ring of the trachea. There was no rise of temperature, and the pulse was normal in rhythm, but not full. The heart was enlarged, and the first sound was weakened, but no murmur could be detected.

A diagnosis of stenosis of the respiratory tract was made, the stenosis being located in the right bronchus, mainly by exclusion; this opinion was apparently strengthened by a subsequent statement made by Dr. Bosworth, of New York.

Mr. S., having expressed a willingness to submit himself to examination by leading men in the profession, was accordingly recommended to visit Dr. Da Costa, of Philadelphia, and Dr. Delafield and Dr. Janeway, of New York. Dr. Janeway sent him to Dr. Bosworth, and the latter affirmed that the trachea was unobstructed, as he could see the bifurcation. The attention of no one had been attracted to the thyreoid gland, as there was no prominence in the neck, which was large, the patient being a very heavy man. Mr. S. returned to his home, and since then has visited Clifton Springs at various intervals, always presenting the same symptoms. His last visit to this place was on the 2d of May, 1888. It was noticed by Dr. Gault and myself that he had become slightly cyanotic, and that the breathing was louder and accompanied with rattling of mucus in the trachea. He reported that he had "taken a cold" which had "settled in his chest."

Upon examination of the chest, the respiratory murmur was observed to be much exaggerated on both sides, and there were loud mucous râles throughout both lungs; the temperature was slightly elevated, and the pulse-rate increased daily, and eventually became very irregular; the breathing grew more labored from day to day. The treatment consisted in the free use of stimulants, with five-grain doses of carbonate of ammonium and a little Dover's powder, administered every hour. No improvement followed, and finally, on the 13th, the patient died. An autopsy was held, with the following result:

Upon opening the chest the pericardium was found to be in a healthy condition, with no adhesions, and the fluid was normal. The heart was very much enlarged; the right auricle and ventricle were considerably dilated and filled with dark clotted blood, as also were the superior and inferior venæ cavæ. The auriculo-ventricular and tricuspid valves were sufficient by the hydrostatic test, and there was no evidence of any pathological lesion. The left ventricle was markedly hypertrophied, and contained colored serum. The aorta was dilated and also contained colored serum, while the coronary veins were distended to the utmost. The mitral valve was entire, but its edges were thickened and roughened. The heart with its appendages weighed a pound and a quarter, avoirdupois; there was a considerable deposit of fat upon the surface of the organ. The lungs were completely œdematous, pitting on pressure; there was no crepitation, but considerable anthracosis. The pleuræ were healthy, with no adhesions, and there was no evidence of tuberculosis. The lungs upon section were dark-brown in color and hyperæmic, and the bronchi contained mucus and serum.

The trachea was firmly compressed between the two lobes of an enormously hypertrophied thyreoid gland, which was situated behind the manubrium, extending upward as far as the upper margin of the thyreoid cartilage and downward almost to the bifurcation of the trachea. The trachea was flattened laterally,



and the mucous membrane over the area of compression was hyperæmic. The hypertrophied gland weighed a pound and a half, and consisted of two flattened, kidney-shaped lobes of equal size and of very firm consistence. A photograph of the enlarged gland, which accompanies this report, gives a view of the mass from behind. The flattened trachea is held open by means of a stick, which lies across the site of the larynx. The portion of trachea shown contained two distinct curves, and the opposite lateral walls were almost in contact.

## LIGATION OF A TONSIL FOR HÆMORRHAGE.

By EDWARD WIGHT CLARKE, M. D.,
SENIOR ASSISTANT SURGEON AT THE NEW YORK HOSPITAL.

Through the kindness of Dr. T. M. Markoe, attending surgeon, and Dr. William Gordon, house surgeon at the New York Hospital, I report the following case of hæmorrhage after amygdalotomy, with the method employed to check it:

A. M., twenty-two years of age, single, German, nurse, well nourished and robust, was received under Dr. Markoe's care on April 6, 1888, suffering from extensive hypertrophy of both tonsils. On April 11th a portion of both tonsils was removed with a volsella and angular scissors. The immediate hæmorrhage was moderate and soon stopped. About an hour later I was called to the ward, Dr. Gordon not being in the hospital, and found the patient bleeding freely from the left tonsil, a large amount of blood having been lost already. Glycerite of tannin, a mucilaginous emulsion of turpentine, and styptic cotton were used in turn without any appreciable effect. Paquelin's actual cautery was next used. This served to check the oozing and bring into view a small bleeding artery in the middle of the cut surface of the tonsil. Several applications of the cautery directly to the bleeding point were made, but failed to affect the bleeding. Long clamps, with blades padded with cotton, one blade on the tonsil, the other outside on the cheek, also failed, as they could not be kept long in place on account of pain.

By this time the patient had become very weak and pale, with the pulse rapid, feeble, and soft, and it seemed to me that unless something radical were done immediately he would soon die from loss of blood; so, as he was very restless and nervous, ether was given, a gag introduced, and as much as possible of the bleeding tonsil seized with a volsella having large, bulging double points. The tongue was then drawn out of the way with a second smaller volsella, and a large silk ligature, with a double turn in the first knot, thrown loosely around the forceps on the tonsil. With the index fingers the knot was pushed down over the bulging hooks of the forceps on the tonsil, and thus easily around that portion of the tonsil included in them. When an attempt was made to tighten the ligature it slipped off, not having been well adjusted. A second and successful effort was made, with the difference that an assistant was employed to tighten the ligature while it was held about the tonsil with the index fingers as before. To make it more secure, a second turn about the included tonsil was taken, and a double knot tied on this. The long ends of the silk were carried out of the angle of the mouth and secured to the cheek by rubber plaster. The hæmorrhage was now checked completely. The ligature came away on the fourth day with no recurrence of the hæmorrhage, but a week later, when the patient was discharged to return to his duties, he was still very pale and somewhat weak.

Ligation of a tonsil stump might be done without anæsthesia, but only in special cases where the patient was intelligent and devoid of nervousness. Whether it could be done without assistance I doubt very much, and my success in the foregoing case was, to a considerable extent, due to the efficient assistance of Dr. Merrill, of the house staff of the hospital.

## Correspondence.

### LETTER FROM PARIS.

*Typhoid Fever and Poisoning with Diseased Meat.—The Diseases grouped as Puerperal Fever.—Talc in the Treatment of Phthisical Diarrhœa.—Successive Tappings in the Purulent Pleurisy of Children.*

Paris, *June 15, 1888.*

Professor Proust, who holds the chair of hygiene at the faculty of medicine here, has been giving a series of lectures on epidemics of typhoid fever and other diseases provoked by the ingestion of meat from diseased animals. One of the most important questions raised is that of whether it has been established that typhoid fever is a specific malady, caused by a certain organism called Eberth's bacillus. In Paris this doctrine has for the most part been accepted since the late studies made by Professor Brouardel and Dr. Chantemesse, who showed that this bacillus could be traced to the water-supply. It will be remembered, however, that Murchison held that the typhoid contagium could be developed in any putrid matter, and by this theory it is easy to explain how meat could be infected by the typhoid element; but, if we accept the bacillus as the sole specific cause, and reject the pythogenic theory, which attributes the

generation of the contagium to the fermentation of fæcal matters independently of any specific germ, we must prove that these epidemics were caused by meat containing the bacillus first seen by Klebs and then by Eberth, and lately found in the living body by Chantemesse and Widal in Paris. But this is far from proved. Chauveau and Nocard, who are among the most celebrated of French physiologists occupied with the study of animals, state that they do not believe in the existence of typhoid fever in animals. Walder, however, while making an autopsy of a heifer during the epidemic at Kloten, saw that the animal had tumefaction and softening of the mesenteric ganglia and of Peyer's patches, the latter presenting signs of ulceration. A second animal examined presented the same lesions, and both belonged to a farmer who had the fever himself. It was thought, however, that these animals had had access to matters coming from the family who were ill with the fever, and also to matters coming from autopsies made on other animals. In any case, Walder sought to prove that animals could take typhoid fever. The modern progress of bacteriological study will allow us to prove the existence of Eberth's bacillus in man, as well as in animals, in case of an epidemic; but quite recent observations seem to show that different bacilli may produce typhoid states in both man and animals, so that the question is not as yet settled. There have been five well-known epidemics where typhoid symptoms resulted from the ingestion of meat in Switzerland since 1839, when it commenced at Andelfingen, up to Kloten, in 1878, and Würenlos and Spreitenbach in 1880–'81. In the first, some 450 persons were attacked, and over 700 at Kloten. Both of these epidemics followed great dinners given by musical societies, and the meat eaten was veal. The symptoms were those of typhoid fever, with the usual thermometric rise and fall so well described by Wunderlich. The autopsies made showed also the usual signs found after typhoid fever. The matter is important enough to make us insist on the fullest examination of all meat exposed for sale.

It is time that the expression puerperal fever should be shelved. As M. Guérin remarked at a late meeting of the Academy of Medicine, it no longer expresses all the troubles following confinement among those physicians who know how to diagnosticate such maladies correctly; and, indeed, it has very little sense in modern obstetrical science—no more than pulmonary fever has as expressing the various inflammations of the thoracic organs. If we are to continue to designate septicæmia, metroperitonitis, lymphangeitis, uterine phlebitis, perimetric phlegmons, and general peritonitis, as well as purulent and putrid infection, as puerperal fever, we shall not have advanced much in the direction of precision. M. Guérin, after Professor Cornil, defines three states: First, a peritoneal form, giving rise to peritonitis of a general infectious variety with pus; secondly, a pyæmic form, arising from phlebitis or any other cause; and, finally, a form called puerperal septicæmia, caused mostly by retention of all or part of the placenta, which is often curable by antiseptic injections, while the first two forms are generally incurable. In the purulent infection the temperature mounts rapidly and the pulse is rapid, while in putrid infection the fever is slow, something like hectic fever. Distaste for food is also noticed, with abnormal heat and a rapid and compressible pulse, and there is no shivering nor sweating stage. There are, then, three separate orders of accidents in affections coming on after confinement that must be carefully distinguished, and the expression puerperal fever to describe them all should be dropped from obstetrical writing. M. Widal, at a previous session of the Academy, had exposed his ideas on the specific form of microbe that causes infection in puerperal affections, and he comes to the conclusion that it is the same microbe in all the different forms of such troubles, the *Streptococcus pyogenes*. It may cause infection in lying-in women, just as it does in surgical cases, and, whether it produces suppuration (the pyæmic form), or infiltration of the tissues (the septicæmic form), or false membranes, or, again, clots in the veins (phlebitis), it is always the same form of microbe; and, still more curious to say, the same streptococcus causes erysipelas, or at least it is impossible to see any difference between the micro-organism found in erysipelas and that found in puerperal troubles, with or without the formation of pus. It is possible to produce in rabbits any form of infection with the same microbe, as has been proved by M. Widal in Professor Cornil's laboratory in Paris and by M. Arloing at Lyons, both working independently at the same subject. What effect this new discovery, that the same microbe produces infection both in surgical and in puerperal affections, will have in regard to prevention and cure is yet to be seen, but many of our local scientists can not believe that this agent is introduced either by the respiratory or by the alimentary tract, so that in the case of wounds and in the case of the uterus some local door of entrance must be left open by the surgeon or the accoucheur. It need hardly be added that strict antisepsis is the only practical indication to be drawn from these facts.

Dr. Debove has something new to propose in the treatment of chronic forms of diarrhœa. He says: "I have found the means used for the treatment of diarrhœa to be just as numerous as they are insufficient, and I concluded it would be well to attempt to stuff the intestines with some inert powder that would not be attacked by the intestinal juices." He settled on talc, which is a silicate of magnesium. This was given in doses of from six to eighteen ounces a day. It is finely pulverized and soft, and given in portions of six ounces to a quart of milk, great care being taken to add the old formula, "To be well shaken before taken." The amount of six ounces is usually enough to obtain a complete success in phthisical patients who get diarrhœa. It is interesting to note that many of these patients could not tolerate the milk treatment nor cod-liver oil, as they caused diarrhœa, but that after the administration of talc they got on very well, both with milk and with the oil, some of them taking as much as a pound of oil in twenty-four hours afterward, when they could not stand a moderate dose before without producing diarrhœa. The talc is a very light powder, and is eliminated in twenty-four hours, when the stools will be found quite white. It does not remain stationary in the bowels, but causes constipation, which, however, is not to be feared in such cases as M. Debove used it in, as the diarrhœa was of organic cause and almost certain to return, kept up as it was by intestinal ulcerations. The use of talc was continued for some time in many of the cases, but it has not yet been tried in children nor in diarrhœas of hot-climates, such as dysentery, etc.

Dr. Cadet de Gassicourt thinks that it is not necessary to practice an operation in purulent pleurisy in children, but that they can often be cured by successive punctures and withdrawals of a certain quantity of the fluid. The method is most successful in young children, owing to the facts that the thoracic walls are soft and the integrity of the lungs is such that they allow of easy expansion, and that the pleuritic false membranes are not very strong and do not resist this action. The vitality of the pleural sac is such at six to seven years of age that it will absorb with great ease. There should be an interval of four or five days between the punctures, and the temperature must be watched, as it will indicate the reproduction of the pus. The physical signs also are of importance, except that they are not always certain. The time between the punctures must always be the same, as the operator can then judge as to the increase or decrease of the pus. Four or five punctures should be enough, and the quantity taken out each time should diminish.

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## THE COLLEGE OF PHYSICIANS AND SURGEONS.

THIS institution has recently taken several substantial steps in advance, as we see by the "Annual Catalogue and Announcement." Under any circumstances the fact would be creditable to the college, and it is doubly so in the actual state of things, since it shows that the faculty has the courage to assume considerable risk of a loss of fees at the same time that it finds itself subjected to a decided increase of expense in operating and maintaining the new buildings of which it has become possessed by the generosity of the Vanderbilt family. It may be supposed, indeed, that these new possessions have rather imposed upon the faculty the necessity of doing something progressive, for a reputation for wealth leads the public, and in such an instance the medical profession as well, to look upon the individual or the institution so credited as under more than an ordinary obligation in this direction. The position is not always logical, and it may be questioned if the million dollars' worth of property lately acquired by the college has added at all, from a purely financial view, to its ability to stand a reduction of its income from students—and the risk of such a reduction it certainly runs by adding to the requirements that it exacts from its pupils. Nevertheless, we are convinced that the action taken by the college is in the direction dictated by sound business policy, and that any loss it may seem to sustain will be imaginary.

In the first place, whatever it may lose by a reduction in the number of its students will be made good to it in great measure by the receipt of fees for three courses instead of for two. But, better than that, the increased value of its diploma may, we think, safely be counted on, in conjunction with its vastly improved clinical resources, to fill up the ranks of its students in the course of a very short time. In the long run, that medical college is destined to prosper most that sends out its graduates the best fitted to compete for public confidence and favor. Doubtless many a poor boy will yet make his way to a high position in medicine, and, as heretofore, will have to enter the profession by an inexpensive portal. We would not say a word to discourage the lowliest lad who really feels himself fitted for such a career. As a matter of fact, however, the examples of success in such an undertaking are few in comparison with the number of high places to be filled, and it is getting to be understood more thoroughly year by year that satisfactory achievement in professional life, and especially in medicine, is less dependent on natural gifts or lofty aspiration than on the positive and available knowledge that commonly results only from a long and well-ordered educational course, also that such a course is necessarily expensive; consequently that the difficulties in the poor boy's way are growing greater, and that an adequate mental outfit for a practitioner of medicine calls imperatively for the investment of more and more capital. These facts are obvious to persons of ordinary intelligence, and their bearing can not fail to be felt with increasing keenness year after year. We do not fear, therefore, that the College of Physicians and Surgeons will find in the long run that it has at all jeopardized its material prosperity by incurring the risk of some temporary reduction of its income. However, it is not every faculty that, under like circumstances, would be able to free itself from the timidity of capital, and we congratulate the college on its progressive course.

## THE NEW HYPNOTIC: SULPHONAL.

IT is a striking proof of the present interdependence of one science upon another that the chief additions to our materia medica of late years have been due to the great advance in organic chemistry. Not only have new chemical compounds of important medicinal application been discovered, but there has been a steady increase in our knowledge of the relations which exist between the chemical structure of substances and their physical and physiological properties. This has led both to the synthesis of new compounds and to the re-examination of those already known, whenever an analogy of chemical structure has indicated the possibility of a similarity in physiological properties. In this way we have seen added to our materia medica such substances as kairine, antipyrine, acetanilide, thalline, aseptol, naphthaline, acetone, hypnone, urethane, and hydrate of amylene.

It is rather a remarkable circumstance that by far the greater number of these recent additions to our therapeutic resources are employed either as hypnotics or as antipyretics, so that, whereas formerly the physician depended upon quinine as his mainstay for the reduction of fever, and, when he wished to produce sleep, had to ring the changes on opium and the bromides, he now has at his command half a dozen different drugs capable of effecting the former object, and certainly as many more upon which he can rely for attaining the latter end. There has, it is true, been great difference of opinion as to the usefulness of these therapeutic novelties. This is especially the case with regard to the antipyretics—antipyrine, acetanilide, and the like. Some, indeed, go so far as to condemn this class of remedies altogether, alleging that their application is unphilosophical in principle and hurtful in practice. But against the class of hypnotics no such sweeping objection can be brought, and nobody can question the desirability of possessing a safe and generally serviceable agent for producing sleep. Of all the symptoms that attend disease and intensify its misery, few are more distressing to the patient or more annoying to the physician than persistent sleeplessness, and any remedy which can overcome it certainly, comfortably, and without danger is doubtless a great desideratum. It must be confessed that up to this time no such universal remedy has been found. Opium exerts a harmful repressing effect upon the secretions,

and, apart from the danger of immediate ill consequences which sometimes spring from its administration, there is the formidable peril of establishing a habit. Its use is mainly restricted, therefore, to cases where sleep is prevented by intolerable pain. The bromides, which blunt the sensibilities and produce a condition of hebetude favorable to sleep, often fail or exert only a transient action, and hence find their chief application in cases of undue mental excitement or exalted reflex excitability. Chloral hydrate, which has been vaunted as the physiological hypnotic, does, indeed, produce sleep, but it is dangerous in enfeebled conditions of the heart, and is not without disagreeable effects, both immediate and remote. The same may be said of most of the other substances that have since been introduced; each has its drawbacks which frequently render its use inadmissible.

Now we are informed of the discovery of a new hypnotic which, judging from the enthusiastic accounts of Kast and Rabbas ("Berliner klinische Wochenschrift," 1888, Nos. 16 and 17; "Internat. med. Presse" [Beilage zur "Internat. klin. Rundschau"], April 29, 1888), is devoid of all noxious properties, is perfectly safe and pleasant to administer, and is almost constantly certain in its action. The new substance is a compound of ethyl mercaptan with acetone, and, from the formula given by Kast $(CH_3)_2C(SO.C_2H_5)_2$, may be designated by the chemical title of diethylic dimethylcarbinyldisulphinate, or, more euphoniously, by its commercial name of sulphonal. It is a colorless body, crystallizing in large plates which are completely devoid of taste and odor, are soluble in rather more than a hundred parts of water at ordinary temperatures, and are readily soluble in alcohol. Experiments made with it by the two authors mentioned have shown it to be a very serviceable hypnotic in cerebral excitability, whether due to organic lesion or not, in the sleeplessness of febrile and other acute diseases, and in the insomnia of the aged. Almost without exception, says Kast, sulphonal produces in from half an hour to two hours a sound and quiet sleep lasting from five to eight hours, from which the patient awakes refreshed and without the least disagreeable after-effect. These observations have been fully confirmed by Rabbas, who gives the new remedy the preference over amylene hydrate and paraldehyde as being more efficacious and more certain, and over chloral as being devoid of danger and free from unpleasant taste and odor and as producing a more lasting sleep. Its continued use does not render larger doses necessary and produces no deleterious effects on the appetite and digestion or upon the functions of the heart and lungs. It is given in doses of from thirty to forty-five grains, in capsules. It is a very stable substance, not being readily affected even by powerful chemical agents, so that presumably it will keep indefinitely without deterioration.

If sulphonal fulfills all the promise that the results obtained by the Freiburg physicians seem to offer, it will constitute one of the most valuable of all the recent additions to the materia medica. Experience with other drugs that have received similar enthusiastic encomiums when first discovered, but whose subsequent performance has failed to come up to the expectations which they raised, has taught us not to be too optimistic; still, the results which Kast and Rabbas have reported are sufficiently striking to demand careful attention and a repeated trial of the new remedy.

## MINOR PARAGRAPHS.

### THE MILLS SCHOOL FOR MALE NURSES.

On Thursday of last week an event took place in New York that marks no less novel an undertaking than that of training men as nurses on the same basis that has worked so admirably in the case of women. Mr. D. O. Mills formally delivered to the Board of Public Charities and Correction a building erected at his expense, of a capacity sufficient to accommodate fifty pupils and to serve for the pathological museum of Bellevue Hospital. The building is situated on the hospital grounds. Whatever may be the number of women in the community who have been trained as nurses, and however profound may be the general conviction that women are peculiarly fitted for nursing, there will always remain a certain demand for men in this capacity, and Mr. Mills's generosity seems to us to have been wisely directed.

### JOSIAH BARTLETT.

On the 4th inst. a monument was unveiled in Amesbury, Massachusetts, in the shape of a bronze statue of Dr. Josiah Bartlett, one of the signers of the Declaration of Independence and at one time Governor of the State of New Hampshire. Great as Dr. Bartlett's political services were, and absorbed as much of his time was in their performance, he was a man of no little importance in the medical profession of his period, and even more than the community at large must physicians feel an interest in Mr. Huntington's graceful act to perpetuate his memory in his native town.

### PROFESSIONAL COURTESY.

This is what the "Journalist," in a chain of editorial paragraphs, calls a certain feeling which, it says, "fetters the medical profession as with links of steel," often leading its members to overlook their obligations to the public in matters involving questions likely to reflect on their fellow-craftsmen. For example, according to the "Journalist," it restrains them from coming to the rescue of patients who are getting no benefit from other physicians, and seals their mouths when they might reasonably be expected to testify in court against their professional brethren. We fear it must be admitted that there is some foundation for our contemporary's strictures, but we are rather startled that, speaking of a project for a trades union among newspaper men, it should say: "It would be far better to imitate the example of physicians and let the union be tacitly understood rather than openly acknowledged"—in other words, to imitate an organization than which, to use its own expressions, there is none in existence "more powerful, more unjust and iniquitous."

### ITEMS, ETC.

**Billroth on Mackenzie.**—The "British Medical Journal" publishes the following translation of a letter addressed to the "Neue freie Presse" by Professor Billroth, dated March 27th:

"With reference to your request for my opinion on Mackenzie, I can only reply that I have always warned people against passing a judgment on a man who, as a physician, occupies so difficult a position. I have never doubted the correctness of the diagnosis of my Berlin colleagues, but I have also

never been able to understand what political reasons had made it necessary to communicate this diagnosis to the whole world. It can not be admitted that Mackenzie with his vast experience has ever doubted the correctness of this diagnosis. If he behaved in such a way as to imply that he had some doubt about the correctness of this diagnosis, this could only be owing to pressure from above or from motives of humanity. I know such situations from my own experience. One is not inclined to disapprove the statements of one's *confrères*, but at the same time one is not inclined to tell the patient that his malady is incurable, for the known want of infallibility in medical diagnosis is almost the sole ray of hope to the unfortunate incurables. Falsehood in such cases becomes a moral act. The entire behavior of Mackenzie must, no doubt, be judged from this point of view. He did as a man and a physician what was still possible to be done when the unfortunate word 'cancer' had already been pronounced.

"In much the same terms as these I have on different occasions expressed myself as to Mackenzie's conduct. I ask you to consider this as a private communication, at least until the sad catastrophe has occurred in Berlin."

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 3, 1888:

| DISEASES. | Week ending June 26. | | Week ending July 3. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 8 | 4 | 6 | 1 |
| Scarlet fever | 162 | 37 | 118 | 22 |
| Cerebro-spinal meningitis | 5 | 5 | 6 | 5 |
| Measles | 223 | 26 | 236 | 20 |
| Diphtheria | 139 | 42 | 102 | 32 |
| Small-pox | 6 | 0 | 4 | 1 |

**The New Requirements at the College of Physicians and Surgeons.**—For the session of 1888–'89, and thereafter, as we learn from the "Announcement," persons who seek to matriculate at this college for the first time are required to undergo examinations for admission, with the following exceptions, viz.: 1. Applicants who declare themselves not to be candidates for the degree of M. D. from this college. 2. Applicants who present certificates of having been successful at examinations for admission to the School of Arts or School of Mines of Columbia College. 3. Applicants who present diplomas or certificates of graduation in arts, philosophy, science, or medicine, from recognized colleges or schools of science. 4. Applicants who present certificates from recognized colleges or schools of science to the effect that they have studied satisfactorily any or all of the subjects required for admission to this college, are admitted without examination in the subjects so certified to.

The examinations for admission are in writing, and in the following subjects, viz.:

1. *English:* The writing of a composition, in the form of a letter of not less than three hundred words, the subject to be announced at the time of the English examination. 2. *Latin: At the option of the candidate, either* (*a*) The translation into English of a short passage of average difficulty from one of the first four books of Cæsar's "Commentaries on the Gallic War," and the answering of elementary questions relating to the grammar of the passage; or (*b*) the translation of, and questions upon (as above), a short passage of average difficulty from the "Jugurtha" of Sallust; or (*c*) requirements as for (*b*), but the passage from the "Catalina" of Sallust. 3. *Arithmetic:* Prime and composite numbers; factors, divisors, and multiples; proportion; decimals, including percentage, simple and compound interest, and discount, but not the technical parts of commercial arithmetic; compound numbers and the metric system—the necessary tables and data being given on the papers. 4. *Algebra:* Definitions and notation; entire quantities; fractions; simple equations; as treated in the first two sections of Robinson's "New Elementary Algebra," or its equivalent. 5. *Plane Geometry:* Book I of Wentworth's "Elements of Geometry," or its equivalent. According to the results of his examinations, each candidate is either (*a*) admitted unconditionally, or (*b*) admitted conditionally, or (*c*) rejected. A candidate who has passed a satisfactory examination in each of the five branches is admitted unconditionally. A candidate who has passed a satisfactory examination in each of three out of the five branches is admitted conditionally. A candidate who has failed in three out of the five branches is rejected; but proper consideration is shown to candidates whose mother-tongue is not English. A person rejected, or "conditioned," in any branch or branches, is eligible for re-examination at any regular subsequent semi-annual examination, but at no other time, except by special vote of the authorities. No person admitted conditionally is permitted to appear for examination at this college in any one of the eight branches of medical study until he has been re-examined successfully at this college in all the "entrance" branches in which he has been "conditioned," except by special vote of the authorities.

Beginning with Commencement, 1888, the College Year is henceforth to consist of a period of vacation, extending from Commencement to about the 1st of October, and of an annual session of between eight and nine months, extending from the latter time to the following Commencement, which will be held on or about the 15th of June. At the same time the absolute number of required didactic lectures is not to be increased. A greater number of hours each week will thus be available for other exercises. Beginning with the session of 1888–'89, the work required of the students at this College who are candidates for the degree of M. D. will be distribed over three years of study, according to the curriculum set forth below. Adherence to this curriculum will not, however, be binding upon: 1. Any person who has matriculated at this College at any time prior to July 1, 1888, unless he has had due notice of the establishment of the same. 2. Any person who has been present at the entrance examinations held in May, 1888. 3. Any person who has been notified, as an individual, by authority of the secretary of the faculty, prior to July 1, 1888, that he would be eligible for matriculation without entrance examination, and who has not had due notice of the establishment of the said curriculum. For candidates for the degree of M. D., belonging to the above-described three classes, the required work will be as published in the annual catalogue of this College for 1887.

Obligatory Exercises of the Regular Curriculum.—First Year.—*Didatic lectures* in: 1. Anatomy. 2. Physiology. 3. Physics and chemistry. *Practical work* in: 1. Dissection. 2. Normal histology. 3. Physiological and medical chemistry. Second Year.—*Didatic lectures* in: 1. Anatomy. 2. Physiology. 3. Physics and chemistry. 4. Materia medica and therapeutics, including hygiene. 5. Pathology and practical medicine. 6. Principles and practice of surgery. 7. Obstetrics and gynæcology. *Dissection. Clinical lectures at the Vanderbilt Clinic* in: 1. General medicine. 2. General surgery. *Practical clinical work* in: 1. General medicine. 2. General surgery. Third Year.—*Didatic lectures* in: 1. Materia medica and therapeutics, including hygiene. 2. Pathology and practical medicine. 3. Principles and practice of surgery. 4. Obstetrics and gynæcology. 5. Ophthalmology. *Clinical lectures at the Vanderbilt Clinic* in: 1. Diseases of the mind and nervous system. 2. Gynæcology. 3. Diseases of children. 4. Genito-urinary diseases, including syphilis. 5. Diseases of the

skin. 6. Diseases of the throat. 7. Diseases of the eye. 8. Diseases of the ear. *Practical clinical work* in the eight subjects enumerated immediately above under the head of "clinical lectures," and in obstetrics. *Practical work* in pathology and pathological histology.

In the examination for the degree, the clinical professors are each to propound one question to the candidate. Heretofore they have had no voice in the examination.

**The Medical Society of the County of Clinton, N. Y.,** will hold its semi-annual meeting on Tuesday, the 10th inst., on board the steamer A. Williams, cruising northward from Plattsburgh in the waters of Lake Champlain.

**The Lehigh Valley Medical Association** will hold its eighth annual meeting at the Paxinosa Inn, near Easton, Pa., on the 15th of August.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from June 17 to June 30, 1888:*

White, Robert H., Major and Surgeon. Ordered from Angel Island, California, to Fort Myer, Va. S. O. 142, A. G. O., June 20, 1888.

Munn, Curtis E., Captain and Assistant Surgeon. Ordered from Fort Klamath, Oregon, to Angel Island, California. S. O. 142, A. G. O., June 20, 1888.

Torney, George H., Captain and Assistant Surgeon. Relieved from duty at Fort Monroe, Va., and ordered to Fort Randall, Dakota Territory. S. O. 142, A. G. O., June 20, 1888.

McCreery, George, Captain and Assistant Surgeon. Relieved from duty at Fort Meade, Dakota Territory, and ordered to Fort Monroe, Va., for duty. S. O. 142, A. G. O., June 20, 1888.

Gorgas, William C., Captain and Assistant Surgeon. Relieved from duty at Fort Randall, Dakota Territory, and ordered to Fort Barrancas, Fla. S. O. 142, A. G. O., June 20, 1888.

Morris, Edward R., First Lieutenant and Assistant Surgeon. Leave of absence granted in S. O. 61, May 28, 1888, Department of Arizona, extended one month. S. O. 142, A. G. O., June 20, 1888.

Poindexter, J. D., First Lieutenant and Assistant Surgeon. Granted leave of absence for one month. S. O. 55, Department of Dakota, June 18, 1888.

Swift, Eugene L., First Lieutenant and Assistant Surgeon. Ordered from Fort Spokane, Washington Territory, to Fort Klamath, Oregon, for temporary duty. S. O. 142, A. G. O., June 20, 1888.

McParlin, T. A., Colonel and Surgeon. Granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 52, Department of the Platte, June 20, 1888.

Brown, J. M., Major and Surgeon, will take charge of the office and duties of the Medical Director, Department of the Platte, during temporary absence of Colonel McParlin. S. O. 52, Department of the Platte, June 20, 1888.

So much of Par. 3, S. O. 142, A. G. O., June 20, 1888, as relates to Captains George H. Torney and George McCreery, assistant surgeons, is revoked. S. O. 147, A. G. O., June 26, 1888.

Owen, William O., Jr., Captain and Assistant Surgeon. Ordered to Fort Leavenworth, Kansas, for duty. S. O. 148, A. G. O., June 27, 1888.

Woodhull, A. A., Major and Surgeon. Granted leave of absence for three months, to take effect about July 10, 1888. S. O. 148, A. G. O., June 27, 1888.

Wood, Marshall W., Captain and Assistant Surgeon. Ordered to Fort Randall, Dakota Territory, for duty. S. O. 147, A. G. O., June 26, 1888.

Shannon, William C., Captain and Assistant Surgeon. Ordered to Fort Meade, Dakota Territory, for duty. S. O. 147, A. G. O., June 26, 1888.

McCreery, George, Captain and Assistant Surgeon. Ordered to Fort Warren, Massachusetts, for duty. S. O. 147, A. G. O., June 26, 1888.

Johnson, Richard W., Captain and Assistant Surgeon. Designated as medical officer for a camp of instruction in rifle practice to be established at Fisher's Island, N. Y. (near New London, Conn.), on the 2d of July, 1888, and to continue during the months of July, August, and September; and ordered to proceed to Fisher's Island in proper season and report to the commanding officer for duty. S. O. 131, Division of the Atlantic, June 28, 1888.

Gandy, Charles M., First Lieutenant and Assistant Surgeon. Granted leave of absence for three months, to take effect on or after July 5, 1888. S. O. 145, A. G. O., June 23, 1888.

Clendenin, Paul, First Lieutenant and Assistant Surgeon. Leave of absence granted in S. O. 59, Department of Texas, June 4, 1888, extended one month. S. O. 149, A. G. O., June 28, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the three weeks ending June 30, 1888:*

McMurtrie, Daniel, Surgeon. Detached from the Naval Hospital, Yokohama, Japan, and to return home.

Gravatt, C. U., Surgeon. Detached from U. S. Steamer Michigan, and ordered to hospital, Yokohama.

Edgar, John M., Passed Assistant Surgeon. Ordered to the U. S. Steamer Michigan.

Mackie, B. S., Surgeon. Ordered to the U. S. Steamer Ossipee.

Parker, J. B., Surgeon. Detached from the U. S. Steamer Ossipee, and to wait orders.

Crandall, R. P., Assistant Surgeon. Detached from the Minnesota and ordered to the Saratoga.

Shippen, Edward, Medical Director. Placed on the retired list, June 18, 1888.

Sayre, J. S., Assistant Surgeon. Ordered to the Navy-Yard, New York.

Bradley, Michael, Medical Inspector. Ordered to examination for promotion.

Kershner, Edward, Surgeon. Ordered to the Marine Rendezvous, New York.

White, C. H., Surgeon. Detached from the Museum of Hygiene and to wait orders.

Tryon, J. Rufus, Surgeon. Detached from the Marine Rendezvous and assigned to special duty in New York.

McCarty, Rufus, Passed Assistant Surgeon. Detached from the Naval Hospital, Chelsea, Mass., and ordered to the Yantic.

Henneberger, L. G., Passed Assistant Surgeon. Relieved from special duty in New York and ordered to the Minnesota.

Kite, I. W., Assistant Surgeon. Detached from the Yantic and ordered to the Richmond.

Surgeons Woolverton, White, Woods, and Du Bois ordered for examination preliminary to promotion to the grade of Medical Inspector.

Moore, A. M., Surgeon. Ordered to Naval Station, New London.

Austin, A. A., Passed Assistant Surgeon. Detached from the Gedney, and to wait orders.

OWENS, THOMAS, Assistant Surgeon. Detached from the Naval Station, New London, and ordered to the Coast-Survey Steamer Gedney.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending June 30, 1888:*

WYMAN, WALTER, Surgeon. Detailed as member, Board of Examiners, vice Surgeon Fessenden, excused on account of physical disability. June 15, 1888.

FESSENDEN, C. S. D., Surgeon. Granted leave of absence for thirty days on account of sickness. June 15, 1888.

VANSANT, JOHN, Surgeon. Granted leave of absence for ten days. June 25, 1888.

MEAD, F. W., Passed Assistant Surgeon. Granted leave of absence for thirty days. June 28, 1888.

**Society Meetings for the Coming Week:**

MONDAY, *July 9th:* New York Ophthalmological Society (private); New York Medico-historical Society (private); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private).

TUESDAY, *July 10th:* Medical Societies of the Counties of Chautauqua (annual), Clinton (semi-annual—Plattsburgh), Greene (quarterly), Jefferson (semi-annual—Watertown), Madison (annual), Oneida (annual—Utica), Ontario (annual—Canandaigua), Schuyler (semi-annual), Tioga (semi-annual—Owego), and Wayne (annual), N. Y.; Norfolk, Mass., District Medical Society (Hyde Park).

WEDNESDAY, *July 11th:* Medical Society of the County of Albany, N. Y.; Tri-States Medical Association (Port Jervis); Franklin (quarterly—Greenfield), Hampshire (quarterly—Northampton), and Worcester (Worcester), Mass., District Medical Societies.

THURSDAY, *July 12th:* Medical Societies of the Counties of Cayuga and Fulton (semi-annual), N. Y.

FRIDAY, *July 13th:* Medical Society of the Town of Saugerties N. Y.

SATURDAY, *July 14th:* Worcester, Mass., North District Medical Society.

## Proceedings of Societies.

### MEDICAL SOCIETY OF THE COUNTY OF NEW YORK.

*Meeting of April 23, 1888.*

The President, Dr. LAURENCE JOHNSON, in the Chair.

**The Indications for the Surgical Treatment of the Deflected Nasal Septum, with an Analysis of One Hundred Cases,** was the title of a paper read by Dr. W. C. JARVIS. He thought fixed rules could readily be discovered governing the surgical treatment of these cases, and to supply a want in this direction the analysis had been made. He cited one among a number of cases showing the necessity for established rules, that of a physician who had come a long distance to have him employ the snare in the removal of a supposed nasal obstruction. The patient had submitted to a number of operations at the hands of different specialists. Dr. Jarvis found, however, that no surgical interference was indicated. Those who had performed operations previously might give as an excuse the fact that the patient was very persistent in his entreaties to have something done.

He excluded from the one hundred cases those seen in dispensary practice and some seen in private practice, as in them all of the details had not been obtained. In thirty cases the deflection had been to the right and cartilaginous in character; forty of the purely cartilaginous deflections were to the left, eight were bilateral deflections; in 12 per cent. of the osseo-cartilaginous deflections the deformity was directed to the right, and in 5 per cent. to the left nostril; in 3 per cent. the deflection was purely osseous, two being bilateral. In other words, in forty cases the septum was thrown to the right, in forty-seven it was thrown to the left, and in eleven it was bilateral. The principal indication for surgical interference was nasal stenosis. It was present in eighty-one cases. In twenty-nine there was complete stenosis of the right nostril, and in twenty of the left nostril; and incomplete stenosis of the right nostril in eighteen, and of the left nostril in fourteen. Among the most important complications was hypertrophy of the turbinated bodies. There was marked hypertrophy in 58 per cent. of the cases. This did not include those slight redundancies which were present in every case of deflected septum. Twenty-nine patients showed marked ear symptoms. In some the ear symptoms were the principal reason for undertaking an operation. The eye was involved in a marked manner in eleven cases. In some instances the eye trouble had resisted every ophthalmic measure, and was not cured until the integrity of the nostril had been restored. There was well-marked catarrhal headache in fifteen cases. Periodical hyperæsthetic rhinitis was present in eight cases, bronchitis in seven, polypi in four, hypertrophic rhinitis in ninety-four, simple atrophic rhinitis in two, and fœtid atrophic rhinitis in four. In some cases the voice was affected, and there were pharyngitis, ozæna, asthma, hæmorrhage, etc. The nasal stenosis which was so common might be absolute, or it might alternate between complete and incomplete obstruction of one or both nostrils. It frequently caused snoring and affected the health and comfort of the individual. The author thought that many patients had been operated upon for nasal stenosis when the nostril was only temporarily obstructed from an acute congestion of the turbinated tissues. A diagnosis could be made by the use of cocaine, by comparing cases, by the lapse of time, etc. In a large number of cases the obstruction acted as a dam, causing an accumulation of the nasal secretions; here an operation was necessary to open the gutter.

Dr. BUCKLIN thought that the subject was a growing one, and that there were more facts which might be alluded to. In discussing a paper by Dr. Bosworth not long before, Dr. Jacobi had asked of what size the nasal passages should be to admit sufficient air in respiration. A very small tube was sufficient in intubation of the larynx. The speaker thought there should be room for the mucous membrane of the turbinated bones to have the usual play necessary in the rapid changes of temperature of ten or more degrees which often took place in our climate. The swelling and contraction of the turbinated tissues varied with the temperature and according to the health of the individual. Owing to the vacuum created, he thought more harm came from trying to breathe through a nostril which was alternately obstructed and open than would occur if complete stenosis existed. Tenacious mucus formed as a result of connective-tissue changes in nasal stenosis, and relief of the stenosis would fail, at least for some time, to give relief from the catarrh which was one of the symptoms that brought patients to the physician. Regarding the influence of nasal stenosis on phthisis, one young man on whom he had operated was suffering from symptoms of phthisis, which disappeared after the nasal obstruction had been removed, and he gained a pound weekly for some weeks subsequently. The operation was of great benefit in relieving and preventing catarrhal deafness.

Dr. C. C. Rice did not sympathize with those who were so generally condemning nasal surgery. He thought that when done in a mild, proper manner, it was a less heroic method of treatment than that so commonly employed, especially a few years ago, with nitrate of silver, the douche, etc. His views had lately changed somewhat regarding surgical interference in some cases of atrophic rhinitis; it was of benefit not only in overcoming deformities, but also in its healthful stimulating effect upon the entire mucous membrane. He preferred, when it was possible, to get the increased space by operating upon the soft structures, upon the turbinated tissues, rather than by touching the septum. The turbinated structures behaved much better under operative interference than the cartilaginous or bony septum. He thought acute rhinitis was always one of the symptoms of chronic rhinitis, and it was possible to cure it by operations upon the turbinated structures.

Dr. Phillips thought the amount of air required by the lungs had little to do with the question of nasal stenosis. He wanted free breathing space through both nostrils. When there was an obstruction, operative interference must be resorted to. There were many ways of doing the operation. The saw was, in his opinion, the best instrument. The after-treatment was very important. The surfaces should be kept separated to avoid adhesions. Therefore he insisted on seeing the patient every day when possible.

Dr. Tansley agreed with Dr. Jarvis that ear trouble was a common complication in these cases, but there were many people suffering from difficulty with the hearing who had no nasal stenosis. They had nothing but an atrophic condition of the nasal membrane. During the past year he had seen among his aural patients only five with bent septa. One of the great objections to giving the patient ether, and breaking up or taking out a piece of the bent septum, was the liability of suppurative otitis. He would not allow one of his patients suffering with otitis to be operated upon in the nose unless the posterior nares were plugged to prevent mucus and blood from getting back into the Eustachian tubes.

Dr. Bucklin remarked that his patient's ear difficulty and the nasal symptoms due to a deflected septum had preceded the atrophic rhinitis.

Dr. Beverley Robinson had, in several cases of deflected nasal septum, a condition which might be described as ridges along the septum, operated for the resulting stenosis, and for a few weeks had been gratified with the amount of relief given to the breathing, but, unfortunately, the passages had again closed. He thought many people who were suffering from catarrh had it largely as a result of an abuse of the spray, douche, etc. In the majority of cases he found the cautery and caustics preferable to the drill and the saw.

Dr. Jarvis said that, when the snare was used in operations upon the septum, the wire should be extremely fine and should cut like the edge of a knife. By the open treatment of the wound speedy union would be secured and purulent otitis media would be avoided.

*Meeting of May 28, 1888.*

The President, Dr. Laurence Johnson, in the chair.

**Report on the Sanitary Condition of the Croton River Water-shed.**—Dr. John C. Peters presented a report which was supplementary to one that, as a member of a committee appointed by the society, he had presented about a year before, the object of the report was, if possible, to induce the authorities to take action in abating the nuisances existing on the Croton water-shed, which were polluting the waters supplied by the Croton aqueduct to New York. Railroad and land speculators were doing what they could to induce people to settle in the neighborhood of the lakes supplying the Croton River, and had issued a pamphlet in which were pictured in glowing terms the beauties of the country, the excellent fishing and hunting opportunities, etc., and among other statements there were some false ones regarding the drainage of certain towns and hotels being away from the lakes instead of into them. There were three railroads running through this region, and the probabilities were that the population would be doubled within two or three years, and that the amount of pollution of the Croton waters would be quadrupled. The investigations of Dr. Lucas, about three years ago, had shown that on the Croton water-shed there lived twenty thousand people, and there were many barn-yards, condensed-milk factories, thousands of privies, etc., draining into the Croton waters.

The water drank by the citizens of New York contained over five times as many germs as that used by the people of Berlin, and twelve times as many as that of the people of Boston and of London. It contained about one hundred and ninety-two thousand bacteria to the pint. Of course, many of these were simply water bacteria, but the entire number was a general indication of the number of the more harmful varieties, those coming from sewage, etc. The possibility of contamination of the waters at the lakes or at their source with the germs of scarlet fever, diphtheria, etc., was dwelt upon. The reporter was convinced that, if the law was enforced, all nuisances on the Croton water-shed could be abated at once. The State Board of Health had the power to act, provided the officials of the city of New York would request them to do so. The nuisances could also be abated by action at common law brought before a justice of the supreme court, but the legal expenses would have to be borne by the city to be benefited. Since the committee appointed by the county society last year had not been able to get the city officials to take action, he thought something could now be done through the State Senate Investigating Committee, which also had the power to inquire with regard to the purity of the future water-supply of the city through the new aqueduct. Resolutions embodying these views were passed, to be signed by the president and secretary, and forwarded to the State Senate Investigating Committee, the Department of Public Works, the Health Department, and the Croton Water Commission.

**Acute Articular Rheumatism in the Nursing Infant.**—Dr. Henry Koplik read a paper on this subject (see vol. xlvii, page 673).

## NEW YORK CLINICAL SOCIETY.

*Meeting of February 24, 1888.*

The President, Dr. Robert Abbe, in the Chair.

**The Dangers of Intestinal Puncture in the Treatment of Tympanites.**—Dr. B. Farquhar Curtis read a paper with this title (see vol. xlvii, p. 628).

Dr. H. M. Biggs (who at a previous meeting had reported a case of fatal pneumothorax caused by an exploratory puncture with the hypodermic needle [see vol. xlvii, p. 49], and had also brought up the subject of the dangers of the indiscriminate diagnostic use of the hypodermic needle at a meeting of the Society of the Alumni of Bellevue Hospital (see vol. xlvii, p. 162]) spoke of a case in which the anterior abdominal wall had been inoculated from a cancer of the liver by puncture with an exploring needle. He wished to be understood as referring to the dangers, not from aspiration, but from puncture alone. The first operation was attended, of course, by most of the dangers arising from a simple exploration, but it was often followed also by other complications, the nature and dangerousness of which

had long been well appreciated, while exploratory puncture alone had generally been regarded as absolutely free from any danger. To the cases that he had already mentioned he would add one of the conversion of a simple into a purulent pericarditis, and one of the conversion of an ascites into a purulent peritonitis. He had not thought it necessary to cite individual cases of the conversion of a simple pleurisy into empyema, because of their comparative frequency. A large number of such cases had been recorded. In regard to the production of pneumothorax by puncture of the lung with an exploring needle, it had seemed to him possible that this condition might be produced more frequently than was ordinarily supposed, and that the occurrence of marked symptoms might depend largely upon the condition of the other lung. If it was healthy, no symptoms or only slight symptoms might follow and the condition be gradually removed. In each of the cases reported the other lung had been previously rendered practically useless by disease. Cases of pneumothorax occurring without any known cause, when no disease of the other lung existed, had been reported in which recovery took place. Some of these might have followed puncture with an exploring needle.

Dr. CURTIS recalled a case of inoculation of sarcoma in the subcutaneous tissue by the tapping of an intra-abdominal tumor with a trocar, reported by Nicaise.

Dr. G. E. MUNROE mentioned a case of operation for acute peritonitis following rupture of a perityphlitic abscess into the general peritoneal cavity. Being embarrassed by the extrusion of the enormously distended intestine through the abdominal incision, he had attempted to draw off the gas through a hypodermic needle, but failed, as it almost immediately became clogged with fæces, and the withdrawal of the needle was followed by such a considerable flow of fluid fæces that some Lembert sutures were required. The case illustrated the danger of perforation of a distended viscus by any instrument of such small caliber that it might, on account of clogging of its lumen, be unable to relieve the distension prior to its withdrawal, and the speaker suggested that probably the larger needle of the aspirator might be the safer instrument to use on this account.

Dr. SWIFT spoke of a case in which an exploratory puncture with a moderate-sized aspirator needle was followed by the withdrawal of considerable blood into the aspirator and by hæmoptysis. No further symptoms developed immediately, but the patient himself gave this—in another hospital—as the beginning of his sickness. He went on to the ordinary history of phthisis. At a recent meeting of the Medical and Surgical Society, when this question came up for discussion, the principle had been laid down that, in puncturing cysts in which there was any tension, enough fluid should be withdrawn to allow the sac to collapse.

Dr. KATZENBACH spoke of a case of a mulatto nurse-maid who, in 1881, was attacked with acute pleurisy and extensive effusion. An exploratory puncture was made with a hypodermic needle, and clear serum was obtained. No antiseptic precautions were observed. Within a fortnight the temperature rose, diarrhœa set in, and free perspiration appeared. Another puncture revealed pure pus—probably in an encapsulated cavity. A single aspiration was followed by rapid and complete recovery.

Dr. J. W. ROOSEVELT reported a case of serous pleurisy where a puncture with a hypodermic needle was followed in forty-eight hours by a chill, and afterward by the presence of pus; also two cases of dilated gall-bladder where the use of the needle produced acute peritonitis and death. He protested against the early use of the needle for diagnostic purposes in suspected cases of perityphlitis. When it was remembered that the needle might penetrate the intestines and on its withdrawal leave fæcal matter in the peritoneal cavity, and that the intestinal wound might easily leak, he thought the proceeding dangerous. Perityphlitic abcesses rarely ruptured early into the peritonæum—in fact, they rarely ruptured into that cavity at all. To avoid a possible remote danger by introducing an actual and present one was not very rational. He insisted on real antiseptic precautions whenever the needle was used, the needle and the skin being as thoroughly cleansed as if a severe surgical operation were contemplated. He thought the needle was too often used for "diagnosis" when the real object would be better expressed not by the word diagnosis but by curiosity.

Dr. G. M. TUTTLE referred to several cases observed in the hospitals in which exploratory puncture of the chest had been followed by empyema not previously existing, but added that since he had used careful antiseptic precautions no such accident had occurred to him. He alluded to a case in which the pricking of a strangulated piece of intestine with the needle had produced an escape of fæces. He considered puncture of the gut for tympanites a dangerous procedure. In four cases of perityphlitis he had searched for pus with the needle, and had found it, and the patients had recovered.

Dr. FRANK HARTLEY waited until the swelling approached the crest of the ilium or Poupart's ligament, when, if it was thought to be perityphlitic, and the peritonæum was lifted by the abscess, or the two layers were united, he used the needle. If he thought it was intraperitoneal, he preferred to make an incision; when he was in doubt also he preferred an incision. He had never operated earlier than on the fifth day.

Dr. CURTIS referred to the danger of waiting in cases of perityphlitis, and spoke of cases in point.

The PRESIDENT referred to the practice of veterinary surgeons, who sometimes relieved horses of wind colic by introducing a trocar into the intestine at a point in the loin where it was not covered with peritonæum.

Dr. D. B. DELAVAN referred to a case of pleurisy with effusion, in tapping which the needle of the aspirator had been broken accidentally, and the fragment had remained in the lung for more than eight years without producing serious results. He believed that in many instances there was far less danger in the use of the needle for purposes of exploration than there was in its omission.

Dr. J. H. EMERSON thought that in tapping a much-distended viscus the use of a cannula might prevent the escape of fluids into the peritonæum, and that a reason why this was found to occur when there had been great distension might be found in the paralysis of the muscular fibers of the walls of the viscus from stretching which promoted their contracting so as to close the puncture.

Dr. ROOSEVELT said that, in the two cases of distended gall-bladder referred to, enough fluid had been removed to relieve the tension.

Dr. J. E. WINTERS thought that his hospital observations in past years had shown that exploratory puncture of the chest either caused the appearance of pus or retarded recovery. No antiseptic precautions had been taken at that time. Since those days he had resorted to the practice but three times. Two of the three patients had died, and they had been the only ones with simple pleurisy that he had lost. In the third, empyema occurred, although antiseptic precautions had been taken.

The PRESIDENT thought that statistical collections of accidents gave an unfair semblance of danger to operations that were perfectly safe when resorted to cautiously. In regard to the points brought out by Dr. Biggs, the lessons to be drawn were, he thought, always to relieve tension of the sac aspirated, to make the procedure aseptic, to avoid the peritoneal cavity, and not to scratch the lung.

**An Inherited Idiosyncrasy with regard to Anæsthesia.**—Dr. C. D. Scudder reported a case in which the administration of ether was followed by nearly fatal results. The patient was a vigorous woman, about twenty-three years old, single, a brunette, and perfectly healthy in every way, except that a cellulitis of the parts about the right ear had complicated an otitis media suppurativa. In order to make a free incision down to the mastoid process, ether was given. Before taking it, the patient stated that there was something very important which she felt sure the doctor should know, but which she could not recall. A reasonable length of time was allowed her to remember this matter of importance, and then, as she failed to do so, etherization was begun. The ether was taken so poorly that it had to be abandoned before the patient was completely under its influence. The slight operation was performed rapidly, and in a short time the young woman was apparently herself, although a little nervous. After half an hour or more she was left in the care of some friends. A few minutes later the doctor was summoned in great haste. On his arrival, he found the patient, as it were, moribund. Breathing had ceased, the pulse could not be felt, and the face was pinched and sharply drawn, resembling closely the *facies mortis*. Nearly an hour elapsed before the patient was fully resuscitated. This case recalled one in which death had actually ensued in one of the dispensaries, the patient, a woman, having been left alone in one of the rooms, on the supposition that she had quite recovered her normal condition. When the patient, whose case had been related by the speaker, was quite well, she said that what she had wished to say before taking ether was that her mother, after being anæsthetized many years before, had only been brought to life again by the strenuous exertions of medical attendants continued through three or four hours.

**Perityphlitis.**—Dr. Scudder also reported a case of perityphlitis in which the operation was deferred until about the thirteenth day. The pus removed at that time was extremely fœtid. Although the drainage was perfect, pus was subsequently discharged by the rectum and by the bladder. The patient recovered after a tedious convalescence. The full details of this case would be published at some future time.

*Meeting of March 23, 1888.*

The President, Dr. J. West Roosevelt, in the Chair.

**Resection of the Shaft of the Tibia for Osteo-myelitis.**—Dr. F. W. Murray presented a boy whose history was as follows: He was admitted into St. Luke's Hospital on August 10, 1887. Ten weeks previously he had walked a distance of sixteen miles, and at the end of his journey pain developed suddenly in the ankle. The pain increased in severity, the leg became very much swollen, and the boy had fever and delirium. When he was brought to the hospital the foot, ankle, and leg were very much swollen and œdematous. There were four or five openings on the front of the leg which discharged pus. The probe came in contact with dead bone. A few days later an incision was made from below the upper epiphysis down to and a little below the ankle joint, and the periosteum was laid back. It was lined with a gelatinous material, poured out presumably as the first step in the formation of new bone. The cartilage of the lower epiphysis being intact, it was decided not to amputate. After removal of nearly the entire shaft the wound was allowed to fill with blood-clot, but it failed to organize. The boy remained in bed about six weeks, when he was allowed to move about. The bones had been growing very fast. A few openings still remained on the leg, and there was very fair motion in the ankle joint, with some tendency for the leg to bow outward, due probably to his having walked on it too early.

Dr. Robert Abbe inquired whether at the end of his journey the boy had sat down where it was cold; also whether the bone removed was one sequestrum.

Dr. Murray replied that the boy had sat on the piazza of a hotel, and that it had been on a hot day. The bone was removed in pieces. Only a thin lamina of the posterior portion of the upper end of the shaft remained.

**Ataxic Paraplegia.**—Dr. W. Gilman Thompson presented a patient, and said that the case was of interest in regard to its distinction from ordinary locomotor ataxia. The patient, a waiter, thirty years old, had been admitted into the Presbyterian Hospital three weeks before, and had given a good family history, with no record of syphilis. He had been a moderate drinker and an excessive cigarette-smoker. He had also indulged in sexual intercourse to excess. Five years before, he had had his left testicle removed for what he stated had been "tubercular disease." Since then his sexual power had been good until the onset of his present malady, now nine months ago. At that time he noticed extreme difficulty in micturition; there was complete loss of power to start the stream of urine, but, when once started, it was full and uninterrupted to the close. After having tried various postures and other means of starting the stream, he had at last found that by inserting his forefinger into the rectum and pressing the prostate upward he could start it. This practice he had continued to follow. He was obliged to pass urine very frequently, and had a slight burning pain along the urethra after each micturition. Four months ago he first noticed difficulty in walking, and his gait became so unsteady that he was often suspected of being intoxicated. He had no pains in the legs, no trouble with the upper limbs, and no ocular disturbances. For about two months before his admission he had had a dull aching pain in the lumbar region and the perinæum. He had often noticed spasms of the muscles of the lower limbs while he was in bed, at times causing great annoyance. He had had frequent attacks of indigestion, with nausea and vomiting, but unaccompanied with gastralgia. There was no headache. The bowels were decidedly constipated. On his admission, February 29th, his general nutrition was fairly good; he was somewhat anæmic; physical examination showed the thoracic and abdominal organs to be normal; nothing wrong was found with the urine; and the temperature was normal. Rectal examination showed the prostate slightly enlarged, but not tender. No vesical calculus was found. A No. 27 (Eng.) sound passed without difficulty. On passing bulbous bougies, a slight stricture was found just beyond the meatus. The patellar and plantar reflexes were greatly exaggerated, especially on the left side; the abdominal reflex was normal; the cremasteric was normal on the right side. The conduction of cutaneous sensation was good, with slight hyperæsthesia over the lower limbs. The thermic sense, the galvanic and faradaic reactions, and the pupillary reactions were normal. The accommodation was good. He had always been somewhat flat-footed. In walking, the toes did not fall, nor did he lift his feet unnaturally high, but the inco-ordination of both legs was so decided as to make the balance extremely difficult. The co-ordination of the upper limbs was normal. The Romberg symptom was present, the ankle-clonus well marked, especially on the left side. There were no girdle pains. There was a moderate spastic condition in both legs.

The speaker remarked that this disease was of relatively infrequent occurrence. Westphal had reported five cases in the "Archiv für Psychiatrie," viii and ix; a similar case had been given by Suckling in the "Lancet" for January 9, 1886; and Gowers had drawn an excellent clinical picture of the disease in his "Diseases of the Spinal Cord." The lesion was a combined sclerosis, involving both postero-external and lateral spinal

tracts, and the speaker was inclined to refer the symptoms connected with micturition and the extreme constipation to involvement of the centers in the lumbar enlargement. The disease was to be distinguished from myelitis by the very gradual onset of paresis (which even now was only slightly apparent) and by the irritative phenomena; from locomotor ataxia it was distinguished by the greatly exaggerated reflexes, the absence of fulminant pains, etc. But little was to be expected from treatment, and thus far the means employed to relieve the difficult micturition—such as tamponing the rectum, faradization, etc.—had been ineffectual, and the patient now used a catheter. The speaker asked Dr. Abbe whether he thought the kind of vesical symptoms present in this case could have been caused by the enlarged prostate.

Dr. Abbe replied that they were more likely, he thought, to have been due to spasm in the muscles of the bladder. The spasm was overcome by pressure, and then the stream flowed freely until the bladder had been completely emptied. He thought with Dr. Thompson that, if the difficulty with micturition had been due to tubercular enlargement of the seminal vesicles, it would continue until the bladder was quite void.

The President had seen three cases of combined sclerosis of the postero-lateral and antero-lateral columns of the cord, all in women; and in all there had been the same symptoms as in the case presented, excepting the urinary trouble.

**The Relation of Puerperal Septicæmia to Maceration of the Fœtus** was the subject of a paper read by Dr. Munroe.

Dr. Abbe remarked that his experience with the class of cases considered in the paper had been very limited. Recently he had seen a marked illustration of the septic action of a retained dead fœtus at about the tenth week of pregnancy. The patient, at about the second month of pregnancy, lay in bed, playing with her child of two years, bouncing it up and down on her abdomen, which resulted in suddenly turning the uterus and locking it under the sacrum. She suffered from pain for a week, and then the trouble was discovered. A physician replaced the uterus, which relieved her of pain. After two days, however, she began to have fever, and at the end of about two weeks she was in a septic state. The sepsis was attributed to pyosalpinx or some other form of pelvic disease. Preparations were made to do laparotomy at any moment should it be necessary. Finally, as it was thought there might be a dead fœtus, a small sound was introduced into the uterus, and within twenty-four hours the patient was delivered of a putrid fœtus, after which she made a rapid recovery.

Dr. R. J. Hall had had no surgical experience with the class of cases under discussion, but he thought the author might have further strengthened his position by allusion to two additional facts. Mikulicz had shown that, even in cases of a slight wound of one finger, blood taken from the opposite hand frequently contained septic germs, proving that even in septic conditions of the minutest kind germs were poured into the blood and produced their characteristic effect. A patient might, he thought, carry a dead fœtus three or four weeks without any ill result, and then on the development of a small septic focus elsewhere, infection of the fœtus might take place. The second fact was that the dead fœtus, although not having undergone decomposition, might contain poisonous ptomaines, which produced septic intoxication as distinguished from septic poisoning or septicæmia proper. There were a number of cases in surgery in which septic symptoms were present which could be accounted for only by the influence of ptomaines, germs not being present. That was the explanation of the septic symptoms in a case of Dr. Sands's, being that of the largest hæmatoma of the thigh on record. An operation stopped the symptoms of septic intoxication at once.

Dr. J. B. Hunter fully agreed with those who spoke of the possibilities of danger in cases of retained dead fœtus, but he had been impressed with the fact that it had often been carried a long time without producing any symptoms. He did not think there could be putrefaction without some symptoms being produced. Where air had had access to the uterus there was much more danger of putrefaction. When the fœtus died from an extraneous cause, and no air reached it, he thought it might remain a long time without undergoing decomposition, just as occurred when it was killed by electricity in extra-uterine gestation.

The President asked Dr. Hunter whether he thought the membranes would do much to oppose infection.

Dr. Hunter thought they would not, but, inasmuch as the cervix was not much dilated, there would be little danger of infection through the vagina. If the cervix were not closed, the membranes would offer very little resistance. But he had not seen a sufficient number of cases on which to base general conclusions. He could not imagine any grade of septicæmia developing which one could not detect if he were on the watch for it, and the presence of any symptoms of infection would, he thought, warrant immediate interference.

The President asked whether, if no symptoms had developed, he would recommend waiting.

Dr. Hunter replied that, if there were no doubt regarding the death of the fœtus, he would, on general surgical principles, interfere at once. But it was often difficult to determine positively whether or not the fœtus was dead. Regarding intra-uterine irrigation after removal of the fœtal remains, and also regarding dilatation of the cervix, he had found no instrument so serviceable as one called the surgical pump. For dilating the cervix it was far superior to Barnes's dilator. Either air or water could be employed; and for washing out the uterus it excelled the syringe.

Dr. Munroe asked Dr. Hall how long it required, after bacteria gained entrance to the body, for the manifestation of their poisonous effect.

Dr. Hall said that erysipelas, for instance, which was caused by one kind of bacteria, might become manifest within two hours.

**The Hypodermic Use of Antipyrine in Neuralgia.**—Dr. W. D. McKim made some remarks on the use of antipyrine by hypodermic injections in neuralgia, with the object of learning what had been the result of the experience of the other members. He had been surprised that so little had been said regarding the treatment since Germain Sée's enthusiastic indorsement of it in July or August last. A large series of cases had been experimented upon, especially those of neuralgia, and a few months later Fränkel, of Breslau, had reported excellent results. So far as the speaker had been able to learn, the method had been little practiced in England or America. Sée's method of using the drug consisted in dissolving fifteen grains in an equal quantity of water. This he used sometimes alone and sometimes in conjunction with the internal method. Finding that this degree of concentration caused pain at the seat of injection, he had increased the quantity of water by one and a half. This caused less pain. Fränkel had found that eight grains of antipyrine had an equally good effect. The speaker had made thirty-seven injections, all in one patient who was suffering from crural and sciatic neuralgia, the crural neuralgia predominating. Before the injections were made the patient had for three or four weeks been slowly improving, but there had been many relapses. The treatment had consisted in the frequent and systematic use of Paquelin's cautery, in addition to tonics, rest, etc. After a time these had seemed to do no more good, when he tried galvanism daily; he also tried aconi-

tine, the prolonged use of dry heat, and blisters; large doses of quinine were also given. All these measures seemed to be of some benefit for a time, but the effect was not permanent. He then began the use of antipyrine internally, which gave much better results than had been obtained from the other measures. But this finally ceased to be of benefit, and he then tried the use of the drug by hypodermic injection. Fifteen grains were injected into a part supplied by the anterior crural and middle cutaneous nerves. The relief was very marked indeed. The patient complained of severe pain for five or six seconds after the injection, and then instant relief came. During the remainder of the day and night he was entirely free from pain, which was something very unusual. The next day the speaker proposed to give two injections of five grains each, but the patient was so delighted with the result the day before that he insisted on having four injections, which made twenty grains. The effect was as before, giving him relief from pain for twenty or more hours. On the third day five injections were made over sensitive points, and these were repeated day after day with thoroughly satisfactory results. Most of the injections were made among the cutaneous branches of the anterior crural nerve. On one occasion he probably made an injection in the near neighborhood of the sciatic nerve, as it caused pain in the foot and moderate aching for a day or two afterward. The injections had been thirty-seven in number, and the results had continued to be satisfactory as at first. The patient was very unruly, which would account for the persistency of the case. The injections seemed to render the skin completely anæsthetic for a space from two to four inches in diameter, for from fifteen to twenty-four hours. There was no pain except for a few seconds following the injection, and then came complete relief. He had employed as much as twenty-five grains, injecting but five grains at a single point. No abscess and but very slight induration had at any time occurred.

Dr. L. B. Bangs had used antipyrine by hypodermic injection for the relief of pain in different forms of neuralgia, in traumatism, and in some cases of operations, with, in general, the beneficial results described by Dr. McKim.

Dr. McKim said, regarding bad results from the use of the drug, that on one occasion it had caused urticaria of the arm, and pain, apparently from injecting the drug too near the sciatic nerve.

The President had seen, after the internal administration of antipyrine, an eruption like that of measles develop in two cases. It faded in about six hours. In one or two cases of typhoid fever its administration had been followed by pretty severe collapse. He had seen nausea and vomiting in a good many cases.

Dr. Hall, while in Heidelberg the year before, had had a temperature of 104·75° F. He was attended by Erb, who gave him antipyrine in doses of fifteen grains every three hours. He took sixty grains. At the end of that time his temperature was subnormal, and he was considerably weaker than he had been after recovering from a mild attack of typhoid fever a few months before. When he asked Erb if that was not pretty heroic dosing, the reply was that he had a temperature which required pretty heroic dosing. He had had no bad effects from antipyrine, but the effects of acetanilide had been such that he had given up its use altogether.

Dr. Thompson had used acetanilide in three-grain doses to reduce the temperature, which had reached 105° F., in a case of otitis media following diphtheria. The temperature fell, but he was called back after three hours and found an eruption on the patient's face which resembled that of measles, while on the body there was an eruption resembling urticaria. He attributed the eruption to the drug, and ceased its use. Two days later he gave the drug again, and it caused a similar eruption within two hours and a half from the time it was administered.

**The Use of Antipyrine in Whooping-cough.**—Dr. L. E. Holt spoke of this treatment, which had been introduced only a few months before. He had tried it in six or seven cases in children about five years of age. Two-grain doses at intervals of three hours were given, a double dose being administered at bedtime. There had been very marked relief within twenty-four hours, in the reduction both of the number of spasms and of their severity. The diminished severity of the spasms during the night was very marked. In one child which had had from twelve to fourteen spasms during the night the number was reduced within forty-eight or seventy-two hours to two or three, and it was enabled to sleep without difficulty. In some of the cases belladonna had been given previously without material benefit. The speaker had never seen collapse follow the use of antipyrine.

## SOCIETY OF THE ALUMNI OF BELLEVUE HOSPITAL.

*Meeting of February 1, 1888.*

The President, Dr. Hermann M. Biggs, in the Chair.

**Arthropathia Tabidorum.**—A paper with this title was read by Dr. Parker Syms. (See page 1.)

Dr. L. Putzel conceded that this was a different disease from rheumatoid arthritis, but went further in thinking it was not like ordinary arthropathies, but had been found hitherto only in locomotor ataxia.

Six years ago the speaker had seen a man who had sustained a head injury twenty-five years previously, and had been "out of his head" for three months at that time. For years after he had had pain in the cervical spine. Shortly before he was first seen the patient had gone to bed feeling as well as usual, but his wife had been awakened by finding him in a convulsion of the upper limbs, the lower limbs not being involved. On the return of consciousness he had had severe pain in both arms, which soon became swollen, and the skin turned black from cutaneous hæmorrhage. This had disappeared in two weeks, but the shoulder joints had remained painful and tender, and since then had undergone partial ankylosis, while the head of each humerus was distinctly enlarged. If the history had not been taken into consideration, the condition would have been regarded as rheumatoid arthritis, but it was evidently an arthropathy dependent on nervous lesion, probably of the roots of the brachial nerves.

Joint lesions which resembled rheumatoid arthritis to an equal extent were often found in nervous affections, especially after injuries to nerves. In Charcot's joint disease the inception and course differed entirely from those of rheumatoid arthritis and of ordinary arthropathies. The chief points of difference were the great suddenness of onset, painlessness, the enormous effusion of fluid, the swelling of a great part of the limb, and excessive mobility of the joint. In some cases there was very rapid wasting of certain adjacent muscles, entirely out of proportion to the duration or severity of the joint trouble.

As to pathology, we were all at sea. Charcot had at first thought that the lesion was in the anterior horns, which would explain the rapid wasting of muscles sometimes observed. Buzzard had surmised a center of nutrition of the bones in the medulla oblongata, and shown the frequent association of the joint lesion with gastric crises. But the anatomical proof of these theories had not been brought forward. Peripheral neuritis had also been regarded as the cause, but, while this was found not infrequently in locomotor ataxia, it might be absent

in cases of tabetic joints. The question was, therefore, still an open one.

Dr. Syms remarked that Dr. Putzel had spoken of the gastric crises as being prominent in these cases. It had not been mentioned in the speaker's paper, as it had not occurred in the cases he had seen and was not spoken of by the German authors he had read, and was, he thought, not so common as one or two of the English writers would make one suppose. The following were his conclusions: 1. That it was a peculiar disease, depending on tabes. 2. That it was due to trophic disturbance. 3. That it was of the nature of a degeneration, and not of an inflammation. 4. That when the operation was called for, excision of the knee was justifiable, provided the general health was fair and no inco-ordination was present. The speaker asked Dr. Putzel as to the relation of syphilis to this disease.

Dr. Putzel in reply said he was opposed to the current opinion of neurologists that there was a large proportion of cases traceable to syphilis.

**Infantile Spastic Paralysis.**—Dr. R. H. Sayre presented a case with the following history:

A. M., twelve years old, of neurotic family. The child was born at full term and naturally; was stout and healthy during infancy, but showed no disposition to move about as children generally do, and at eight months was unable to sit up. Never had convulsions, but had difficult digestion. Micturition was always slow and straining, which symptom persisted at the time when he was first seen by the speaker. The child had been treated when five years old by massage, steaming, braces, etc., with some benefit.

He was first seen by Dr. Sayre on September 6, 1887. Examination showed good intelligence and no difficulty in speech. The legs crossed one another, the knees being red from friction, and he was totally unable to walk. There was contraction of the adductors, the tensor vaginæ femoris, the hamstrings, and the tendo Achillis of both legs, the flexors of both arms, the extensors of the right hand, and the opponens pollicis. He was able to stand supported by a chair, but could not rise from the floor. The co-ordinating power in the hands was almost lost. The knee-jerk was exaggerated and the ankle clonus pronounced. The reaction to the faradaic current was much diminished. The right testicle was soft and the left undescended. The foreskin was tight and the frenum short, but there was no actual phimosis. Touching the meatus produced a spasm of the entire body. The frenum was divided and the prepuce nicked so as to allow it to glide freely over the glans, the adhesions around the corona having been broken up. After the wounds had healed the various contracted muscles were stretched daily; massage was also employed, and the faradaic current applied to the weakened extensors.

Within a week he ceased to twitch at night, lay with legs separated, and was able to pass water freely. He could now dress and undress himself, sit up on the floor, crawl on his hands and knees, and walk a short distance with the aid of a cane. The co-ordinating power in the hands had so much improved that he could cut out pictures with scissors.

Dr. Putzel thought that Dr. Sayre's case showed the most rapid improvement he had ever seen or heard of in cases of that kind. In cases where the lower limbs alone were involved galvanism caused some improvement, but it was slow, and, as Dr. Sayre had used faradization, the speaker thought for this reason the improvement not to be due so much to electricity as to the other treatment employed. He thought that phimosis had nothing to do with the spastic symptoms. A long-continued course of massage, galvanism, and every-day exercise of muscles under supervision would produce considerable improvement in the majority of cases.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of June 13, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

**The Management of Delivery prior to the Seventh Lunar Month.**—Dr. William H. Parish read a paper on this subject. In the management of delivery prior to the seventh lunar month, he said, the welfare of the mother was alone considered. The non-viability of the embryo or fœtus removed it beyond consideration. It was true that the question as to whether the threatened abortion or miscarriage was inevitable or not would frequently arise, and would challenge the most anxious study, for upon the continuance of the pregnancy hung the life of the intra-uterine being if it was still living. It was his purpose, however, to discuss the management of only the inevitable deliveries prior to the viability of the offspring, and not to treat *in extenso* of any other part of the general topic of abortion or miscarriage. The impossibility of ascertaining the number of abortions occurring in any large community had been generally recognized, so that the conclusions based upon figures given as to the proportional ratio of the number of deliveries of non-viable children compared with labors after the seventh month were unreliable. It was his belief, also, that the mortality following abortion or miscarriage could not at present be arrived at even to an approximative degree. The desire to conceal the cause of death, either because of the illegitimacy of the pregnancy, or because of criminal interference, or because of the known tendency of the gossiping to ascribe all such deliveries, especially if fatal, to criminal interference, led to the writing of misleading certificates. Some of the deaths ascribed to septicæmia, or pyæmia, or typhoid fever, etc., were deaths following abortions or miscarriages. Treatment must be based, however, not only upon the actual risk of a fatal result to the mother, but also upon a full appreciation of the fact that improperly managed deliveries of non-viable offspring entailed upon the woman a number of serious conditions. Subinvolution of the uterus and of all the structures functionally associated or closely related by position was of frequent occurrence. Septic endometritis with septic endosalpingitis, oophoritis, and localized peritonitis, adhesions, crippled ovaries, imprisoned, it might be, in lymph deposits, fixed and occluded tubes, a permanently damaged endometrium, acute uterine flexions and prolapse, and septic blood infection with impaired nutrition and nerve exhaustion—such, in addition to a fatal termination, were some of the results to be guarded against by judicious treatment. Again, many cases of acquired sterility were traceable to abortions or miscarriages, and extra-uterine pregnancy, known now to be of greater frequency than was formerly supposed, might be doubtless in many instances traceable to tubes damaged by abortions. He, then, who based his treatment upon only the desire to save his patient from death had not grasped the full indications of his case. To prevent death from hæmorrhage and from intense blood-poisoning was certainly his duty, but not his whole duty. His whole duty rested upon the indication of restoring the woman to the conditions of health, both locally and generally, so that the various structures, especially of the pelvis, might be uninjured, and the various functions, especially of the sexual and related organs, be performed with physiological ease and safety. Delivery during the early weeks of pregnancy was attended with a minimum of risk to life, yet subinvolution, often with endometritis and endosalpingitis, frequently followed such an abortion. About the third month began the actual danger of death from hæmorrhage and septicæmia, and this danger increased as the period of pregnancy at which delivery occurred advanced, up to the time when viability of the child began and

the phenomena were more or less those of labor at full term. It should be borne in mind that crippling of the functional sexual capacity of the woman was apt to result, whatever the period of non-viable delivery.

The treatment of such a delivery was divisible into the expectant and the active plans. The chief difference between the two consisted, on the one hand, in securing the emptying of the uterus artificially, if nature did not effect it promptly, while, on the other hand, such interference was strictly avoided, at least until symptoms indicated danger to the patient. During the early weeks, when there was practically no danger of loss of life, the plan of non-interference was not departed from by its advocates, and was adopted by not a few of those who resorted to the more active treatment in the more advanced deliveries. In early abortions, say prior to the end of the second month, in addition to advising rest for eight or ten days in bed or on the lounge, he had practiced during late years antiseptic cleansing of the uterine cavity by means of one injection of a corrosive sublimate solution (1 to 4,000); after the escape of the ovum he resorted to only one injection, and always used a return-tube catheter. He had not thought it necessary to resort to the curette prior to the second month except when by reason of instrumental interference septic infection was especially to be feared. During the third month, in addition to the antiseptic intra-uterine injection, he used a smooth wire curette, preferably immediately after the escape of the ovum, resorting at the same time to the injection. It was during and after the third month that dangerous hæmorrhage might arise. If the patient was confined to the recumbent posture, danger from this source, however, rarely occurred. If the bleeding appeared, however, before the os was sufficiently dilated to admit of emptying the uterus, he tamponed both the cervical canal and the upper part of the vagina. For this purpose he preferred strips of baked cloth, because of the ease of their introduction and removal. Antiseptic syringing was resorted to both before the introduction and after the removal of the tampons. The tampon should not be employed as a routine treatment. Hæmorrhage that was not controlled by the postural treatment and by cold applications was the only indication for the tampon. After the os was dilated the best way of treating the hæmorrhage was to empty the uterus and to inject hot aseptic water into its cavity. In the absence of serious hæmorrhage, the rule to avoid rupturing the membranes should be adhered to rigidly, inasmuch as an unbroken ovum tended to prevent or to check hæmorrhage. If the membranes had been broken, the embryo or fœtus usually escaped, while the placenta and membranes remained within the uterus and were probably adherent to it. If the embryo or fœtus had escaped, the placenta and membranes would usually be expelled within twenty-four hours, yet in a large proportion of cases they would remain within the uterus for days, weeks, or months. The continuance of the placenta within the uterus for even a few days at a non-viable period of pregnancy brought danger to the patient. Such danger was a very considerable one to life from both hæmorrhage and septic infection. And, even should the patient escape with her life, he did not believe that any one ever escaped without serious injury to the child-bearing apparatus. Under such circumstances arose conditions which were likely to produce sterility or to cause subsequent abortions.

Septic changes of the products of conception under such favorable conditions of warmth, moisture, and contact of atmospheric air were developed so rapidly that, although absorption was probably not so rapid as at or near the full period of gestation, no one could say how soon the process of septic infection began. The incipiency of such blood-poisoning was not heralded by any definite symptom. Even the rise of temperature, as shown by the thermometer, was not fully reliable unless observed every hour or two, and to wait until hæmorrhage, or a rapid pulse, or a chill, or decidedly high temperature supervened would prove, in not a few instances, to be waiting until a fatal result was inevitable. Or, should the uterus have emptied itself within a few days without evidence of danger of death, still in the great majority of such cases he believed that grave and perhaps permanent local damage would have resulted. We were told to let the placenta remain until there were evidences of danger, and then to remove it. Wherein was benefit to be derived from such a rule of practice? Was it not wiser to take due precautions against fire than passively to await the development of flames within the building? An abortion or a miscarriage was a non-physiological accident; it was unnatural and pathological. There was no weight, then, in the argument that artificial removal of the placenta was unnatural and unphysiological and hence should not be resorted to. Its retention brought to the woman her greatest danger, both as to life and as to future usefulness. A uterus promptly and rightly emptied, uninjured by traumatism, and rendered aseptic, became a source of comparatively little, if any, danger.

As in labor after the child had become viable, so in abortions or miscarriages, ergot was of great service after the uterus was empty. It then encouraged involution, checked excessive lochial flow, expelled clots, and lessened septic absorption. Before the uterus was empty this drug was seldom of more than limited value, and often was productive of actual harm. When the hæmorrhage was considerable and the ovum was intact, its administration would aid in controlling the loss of blood, but even here the tampon was usually sufficient. He believed that he had repeatedly seen the use of ergot retard the completion of the delivery by causing an undilatable condition of the cervix. Such belief had been strengthened by finding that under such circumstances the administration of an opiate hastened the delivery by relaxing a cervix that had been rendered rigid by ergot. In incomplete miscarriage there was nothing more uncertain than the action of ergot. After its use the uterus might not empty itself for days or weeks, while the cervix closed so as not only to prevent the escape of the placenta, but also to prevent easy artificial extraction. If it was decided to empty the uterus, what was the best method of doing so? Prior to the third month the small size of the cervical canal rendered the introduction of the finger difficult, and the curette was here sufficiently efficient, either before or after the escape of the ovum. The thickened decidua could then be readily removed with this instrument. After the third month there was chiefly the placenta to deal with, and here the finger was safer, more efficient, and more reliable than any curette. The finger more thoroughly and more certainly removed all the products of conception, and told the presence or absence of such complications as polypi, fibromata, etc. When reliance was placed solely on the curette, the uterus might be supposed to be empty when it was not; fragments of placenta and of membrane, or even the entire placenta, might be left, with extreme risk to the patient. If one was present at the time of the escape of the embryo, and the placenta remained, he should at once, while the os was dilated, introduce his finger into the uterus, and, while depressing and steadying the uterus with the other hand over the abdominal wall, dissect off the secundines *en masse* and completely and remove them. To effect this it might be necessary to give an anæsthetic. After the uterus was emptied it should at once be syringed with a hot corrosive-sublimate solution. There would be, in all probability, no indication for a repetition of the intra-uterine injection, though daily intra-vaginal antiseptic syringing for eight or ten days had been his

practice. If the case was not seen until several hours had elapsed, and the placenta was still within the uterus and ergot had not been administered, the os would be sufficiently dilatable to admit of an immediate resort to prompt treatment. If at that time the cervix had already contracted because of ergot, the suspension of the ergot and the administration of an opiate, with non-interference for a few hours, would secure a dilatation of the os to such an extent as to permit of emptying of the uterus with the finger. If a number of days or weeks or months had elapsed, and the symptoms indicated an incomplete emptying of the uterus, and the cervical canal was closely contracted, it would be better to dilate either with laminaria tents or with graduated bougies, and to introduce the finger, than to rely upon any form of curette. After grave septic poisoning had occurred, a cervical canal that had previously been contracted underwent relaxation, and the placenta became detached or was so loosely adherent that its removal with the finger was usually a very simple procedure, and was, according to even the expectant practitioner, urgently demanded; but, immediately following removal of the placenta under such circumstances, evidences of more intense poisoning were frequently observed, and in many such cases a fatal termination took place.

There was but one form of curette that should ever be used for the removal of any of the products of conception. The perfectly dull wire curette was the only safe one. Every form of the sharp-edged instrument should be absolutely avoided. Simon's scoop was a dangerous instrument in the hands of the most careful. Much of the opposition to the curette was based upon the use of that or some other cutting instrument. Even with the dull wire due caution must be used not to injure the uterus. A softened womb might be penetrated even by a dull instrument. The author's preference for the finger over the curette was based, however, rather upon the uncertainty as to the efficient working of the dull curette than upon its dangers. It would seem scarcely necessary to caution any one not to mistake the somewhat elevated and roughened placental site for portions of the placenta itself; but in one instance he had seen such a mistake made by an inexperienced gentleman, who made active efforts with Simon's scoop until the uterine tissue was extensively gouged into by that dangerous instrument. Experienced men had left large masses of placenta—in fact, the fœtus and its placenta both—*in utero* after the cavity had been curetted. The possibility of double pregnancy with separate placentæ must not be lost sight of. He had seen an instance in which the physician removed with his finger, under anæsthesia, one fœtus with its secundines, and left within the uterus unrecognized a second fœtus and its placenta until uterine contraction secured their expulsion.

The various complications of non-viable deliveries were numerous and might call for special additional measures, but the management of the delivery rested upon no peculiar principle. Criminal abortion brought with it greater dangers, but usually the management did not differ materially from that of non-criminal delivery. In the criminal variety septic infection might occur before the abortion or miscarriage had begun, and the expectant plan of treatment was attended with the greatest dangers. An injudicious introduction of the sound might engender a septic inflammation of the endometrium and lead to a fatal result before any part of the ovum was expelled. Under such circumstances non-interference contributed to death. In inevitable abortion he had repeatedly emptied the uterus by compressing the body between two or three fingers within the vagina and in front of the uterus and the other hand over the abdomen. He had also in a few instances secured a prompt ending of an incomplete abortion or miscarriage by the injection of hot water into the uterine cavity, of course securing its ready outflow. The hot injection awakened active corporeal contractions with cervical relaxation, and, if the fluid was antiseptic, diminished the danger of infection.

Dr. William Goodell took exception to but one point in the paper, and that was as to the use of the dull curette. He had given up the use of the dull curette for several reasons. There was great danger of wounding the endometrium in its soft, thickened, and vulnerable state. Then there was this very danger the author had mentioned, of mistaking the placental site for tissue that should be removed, and the further danger, which he had also admitted, of perforation. The speaker was sure that he had once penetrated the wall of the uterus with a sound, and without using any force—though, fortunately, without any evil result. There was danger of wounding that portion of the uterine wall which was not at all implicated, if he might so express it; and especially, two or three days after the abortion, would this cause a liability to the creation of a fresh raw surface upon perfectly healthy tissue, with additional danger of infection. He used two styles of forceps: one a small catch-forceps, which would seize anything that projected, or, still better, a small fenestrated polypus-forceps, which could grasp any projecting mass, however small, and that only.

Dr. Regar asked how it could be told that the uterus was completely cleaned out. The finger could not always determine with certainty. How long was one to keep up examinations and attempts at cleansing?

Dr. J. B. Walker was inclined to answer the preceding speaker by saying that as long as the os was patulous the uterus contained something that needed removal; after its removal contraction would occur. That had been his experience in several cases. He would ask Dr. Parish whether the rule held good in all cases.

Dr. H. A. Slocum rather feared to follow the advice given to permit the ovum to escape entire. He remembered two cases, which fortunately had terminated favorably, but which had given him much anxiety, in which the escape of the ovum entire had been followed by alarming hæmorrhage. One of these was in a well developed florid woman who had a history of repeated miscarriages. When he was summoned she was bleeding slightly, and the labor-pains were strong and constant. With his finger in the vagina he waited for the ovum to be expelled entire. It came with a gush of blood that blanched the ruddy face of the patient and left her pulseless. He was compelled to remove the pillows, elevate the foot of the bed, and with finger and hand endeavor to excite uterine contractions, after which, with hot-water injections and other appropriate measures, the bleeding was controlled. When a uterus was distended with its contents, and the placenta left its site, and the large mass was suddenly expelled, it seemed to him that the sinuses would be left wide open, and the contractile vigor of the uterus would not suffice to close them. He concurred in the advice to remove the placenta as soon as possible. He remembered a case, however, in the practice of a distinguished practitioner, in which, for what reason he did not know, it was left for six weeks free in the cavity, becoming hard and leathery, and was then removed under anæsthesia. His only connection with the case had been to give ether, so that he knew nothing further of the circumstances than that the placenta remained for six weeks without giving rise to any bad symptoms.

Dr. W. E. Ashton would take exception to the author's low estimate of the value of ergot. While he conceded that it was contra-indicated, except with a tampon, yet, if the tampon was introduced and ergot then administered, the effect would be much more prompt and sure, and the presence of the tampon would prevent anything like hour-glass contraction. After a

complete abortion he would consider intra-uterine antiseptic irrigation uncalled for, and rather dangerous as tending to introduce air, and therefore germs, into a uterus which was otherwise in an aseptic condition.

Dr. Parvin said that, in reference to the use of the dull wire curette, Dr. Goodell could not have heard his remarks, or he must have failed to express himself clearly. He did not use it except at one stage: that was the third month, never after the placenta had been formed. He preferred the finger for many reasons, as he had stated. Even with the dull instrument there was some risk of injury, and the method was unreliable. Before the differentiation of the placenta, however, the smooth wire curette would detach and remove the deciduous membrane with no danger. He had used forceps, though not exactly of the same form as had been spoken of, but the objection was that one could not be sure with any form of instrument whatever that the uterus was empty. The finger alone would tell that. It was not only a therapeutic but a diagnostic appliance. It must be very rare for the uterus to possess the power to expel the ovum unaided, and then fail to take care of itself. There must be some special morbid condition to which the hæmorrhage was due. In the case narrated by Dr. Slocum, with its history of frequent miscarriages, he would have suspected a polypus. He did combine the use of ergot with that of the tampon, should the latter be insufficient when the ovum was intact, especially if the ovum was intact, to give a smooth mass for the uterus to contract on. Antiseptic injections were indicated after such a pathological process as a miscarriage. He doubted if the uterine cavity usually closed air-tight after such a process. Not infrequently there was a separation of the uterine from the fœtal layer of the placenta, with adhesion of the uterine portion. This adherent maternal layer was apt to give rise to septic inflammation and general infection. The patulous condition of the cervix was, to some extent, an evidence that the uterus was not empty, but the reverse did not hold good. It would be unsafe to conclude that everything had been expelled because the os was found contracted.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of April 5, 1888.*

The President, Dr. A. Jacobi, in the Chair.

**A Contribution to the Diagnosis and Surgery of Cerebral Tumors** was presented by Dr. E. C. Seguin and Dr. R. F. Weir, in the first part of which they related a case. The patient was a German, a resident of Bridgeport, under the care of his family physician, Dr. Godfrey, who first brought him to Dr. Seguin's on August 12, 1887. In Dr. Seguin's absence an examination was made by Dr. Booth. The patient was a strong, healthy-looking man, with no history of syphilis, and no history of epilepsy in childhood. The family history was supposed to be good, but it had afterward been learned that the mother had died of cancer, probably scirrhus, of the liver. The patient had been healthy until 1882, when he had malarial fever. During this illness he had a good deal of pain in the head, and one day, when feeling strangely, he got up to go to the window, when his wife observed spasm of the right cheek and neck. Consciousness was not lost. One or two similar attacks occurred before 1885. These spasms in the face and neck on the right side were the only symptoms of cerebral disease for three years. In 1885 the symptoms became more marked. One day during that year he fell unconscious and bit his tongue. He had similar attacks at long intervals afterward. These epileptic attacks were preceded by an aura, which was followed by twitching and jerking in the right hand and arm and the right side of the face, and loss of consciousness. No exciting cause had been observed. The memory was not so good as formerly; the speech had become thick. Dr. Seguin saw the patient for the first time on August 26th; he had had no purely motor attack in the hand alone; it had always been affected after the right cheek. There was no history of injury to the head. The patient was awkward with the right hand; the arm and hand were the seat of a numb, heavy sensation. The left side and lower extremities were not affected. At this time the tongue did not deviate, but at a later examination it deviated a trifle to the right. The patient was seen and examined on September 21st and October 19th, when his symptoms were found to be rapidly progressing, and an operation was advised. The diagnosis was that of a tumor in the left motor zone, in the facial center. There was slight diminution of the tactile sense in the right cheek and arm. There was slight impairment of the muscular sense in the right hand. There was constant loss of saliva from the right buccal angle. The strength of the right hand and arm was about two thirds that of the left. Subsequently tenderness developed over the motor zone of the left hemisphere. The temperature test over the scalp was negative. Whether the tumor was cortical or subcortical was not determined. Treatment by iodide of potassium had no effect. Dr. R. F. Weir performed the operation in the New York Hospital, November 17, 1887. The head was shaved the previous day, and great pains were taken to make the operation perfectly antiseptic. The spray was not used. A minute perforation was made through the scalp and the point marked with a lead-pencil which was to be the center for the trephine. Two pieces were then removed with the trephine, and the openings being joined, left one large opening two by three inches. The dura mater bulged only a little, and appeared normal. When it was cut the brain bulged somewhat into the opening, but its surface was normal. The finger recognized no tumor until firm pressure was made, when deep resistance was felt in a mass of small size under the suspected convolution. It was of the shape and of about the size of the end of the forefinger, or of an almond. It was readily lifted out by a Volkmann's spoon, blunted for this purpose. A little portion of brain, of about the size of a pea, was removed with it. The finger passed in an inch and a half to the bottom of the wound. There was no hæmorrhage from the brain itself. A rubber drainage-tube was carried to the bottom of the cavity and out through the posterior margin of the wound; the dura mater was stitched together except where the tube emerged. After the final dressing the wound was washed with corrosive-sublimate solution (1 to 5,000). The discs of bone were replaced. At the close of the operation the pulse was 125, and the general condition was good. Dr. Peabody pronounced the tumor an infiltrating sarcoma.

Commenting on the operation, Dr. Weir said he thought there had been more hæmorrhage from the vessels of the scalp than he would allow at a future operation. The patient had gone to his home a month after the operation.

Dr. Seguin gave the history of the case from the time of the operation until about the 1st of April. There was almost complete hemiplegia with aphasia just after the operation, but these subsided, leaving the man in about his previous condition. He had no convulsion until the 18th of December. Driveling had ceased. After his return to Bridgeport he again contracted a form of intermittent fever, and the symptoms due to the cerebral lesion were most pronounced when he had the fever. There was jaundice with the malarial symptoms. The wife had observed no twitching in the muscles of the face since his return home after the operation. He stated that he knew the word he wished to use, but could not utter it. The right hand no longer felt numb. The muscular sense was practically per-

fect, and sensation seemed normal in the right hand. Dr. Seguin thought life had been prolonged by the operation. The paresis seemed to be somewhat greater, but he attributed this to the patient's general health. The sensibility of the face, hands, and fingers was improved. The aphasia was about the same as before the operation. There was no indication of increased intracranial pressure and no evidence of a relapse of the disease. The speaker was not positive that the tumor had been entirely subcortical. It might have involved to some extent a deep gyrus located in its neighborhood. The case was particularly interesting when considered with reference to recent advances in the physiology of the brain and the application of such knowledge to surgical interference in a general way as well as with regard to tumors. The diagnosis of tumor of the brain for the guidance of the surgeon was, as a rule, reached gradually. Then the locality of the tumor would be determined by empirically acquired knowledge due to the studies of Broca and others, and the laws of cerebral action as elicited by Hitzig and others. The speaker here considered the signs of a tumor in the motor and sensory zones, the symptoms due to irritation or excitation of the part as distinguished from those due to its destruction, etc. Speaking of the significance of limited spasm or paresis, he had long looked upon the early spasm as a guide to correct localization of the disease. It was of so great importance that it should always be traced if possible. He would call it the signal symptom of cerebral tumor. The diagnosis of a tumor situated in the sensory zone for sight, he thought, could be made just as positively as if it were located in the motor center for the hand, face, or leg. It was of importance to determine not alone the region in which the tumor was located, but also, if possible, whether it was cortical or subcortical. He thought that at present we were unable to distinguish a cortical from a subcortical tumor by the symptoms. Regarding the significance of headache, his conclusion had been negative. Indeed, headache was an unreliable symptom of tumor of the brain independent of location. His conclusion with regard to the significance of scalp temperature had also been negative. The surgeon would be influenced as to whether he should or should not operate by the question of the probability of the tumor being multiple. The presence of tuberculosis or of cancer in other parts of the body would contra-indicate an operation. Combined symptoms of tumor in the motor and sensory zones, or different zones, whether sensory or motor, would point to multiple tumor. Where more than one growth existed in a limited area of the brain, it could not be determined during life; the surgeon might remove one and overlook the other.

Dr. Weir then considered the surgery of cerebral tumors, and read a portion of his paper, giving a synopsis of the operations performed by Bennet, Godlee, Victor Horsley, and others. From the facts presented it would seem that an exploratory operation would be justified when symptoms pointed to progressive brain pressure, whether from tumor, abscess, or an intracerebral or extracerebral blood-clot, or to continuous irritation.

Dr. Keen, of Philadelphia, related briefly the history of a case which he would at a future time publish in detail—that of a patient, aged twenty years, who had sustained a fall when three years of age, which had left a scar over the left motor region. It was not until some months before the speaker saw him that he had begun to have epilepsy and paralysis of the right leg, the right arm, and the face, and had aphasia. He removed a large tumor from the left motor zone, symptoms of pressure developed afterward, and he had to change the dressing and remove a large blood-clot. Hernia cerebri then developed and gave considerable trouble, but the patient recovered. In this case the blood-vessels were very brittle, and he had had much difficulty in controlling hæmorrhage. He employed for this purpose hot water, ligatures, and pressure. He thought the entire scalp should be shaved, to reveal any possible scars to which attention had not been drawn.

## ALUMNÆ ASSOCIATION OF THE WOMAN'S MEDICAL COLLEGE OF THE NEW YORK INFIRMARY.

*Meeting of May 29, 1888.*

The President, Dr. Mary T. Bissell, in the Chair; Dr. Sarah E. Post, Secretary.

**Acute Articular Rheumatism complicating the Puerperal State.**—Dr. Gertrude B. Kelly presented the history of a case. The patient was a multipara, and the case one of breech presentation. The membranes ruptured prematurely at 11 A. M. Dilatation was completed and the breech born at 8.45 P. M. Contractions then ceased, and the head was expelled by expression. The child was born alive, but did not cry for an hour, and died at the end of twenty-seven hours. The uterus contracted well, but an hour after labor the pulse was 100, and the patient felt chilly and her face was flushed. On the morning of the second day the temperature was 100·8° F., and the pulse 100. The patient complained of pain in the right hypochondrium and of epigastric distress. In the evening the temperature was 102·8° and the pulse 104. The face was then of a bluish tint, almost apoplectoid in appearance. The pain and feeling of weight in the epigastrium continued, and a dose of calomel was given. There was no pelvic tenderness and the flow was normal. On the morning of the third day the temperature was 100·8°. The tongue was dry and brown, and there was a decidedly yellow tinge to the skin, but the patient felt better. On the morning of the fourth day the temperature was 101·4° and the pulse 88. In the evening the temperature was 103° and the pulse 88. Still there was no tenderness about the uterus and the flow was normal. Pain in the pubic symphysis and in the right elbow now began to be complained of. On the morning of the fifth day the temperature was 101·4°, and there was swelling of the right wrist. The patient was ordered ten grains of sodium salicylate every two hours, but only two doses were taken, because the patient thought that "it stopped the flow." In the evening the temperature was 99·8°, perspiration was profuse, and there was not so much pain, but the patient was restless. After taking a drachm of tincture of hyoscyamus she was delirious. She had previously taken this dose with good effect. On the morning of the sixth day she was rational and was taking nourishment well. The temperature was 101·4°. There was now swelling of the left elbow and wrist, but the pain was less. After a fairly comfortable day, at 3.45 P. M. she began to talk incoherently, and died shortly afterward. Embolism was considered to be the cause of death. No signs of heart implication had been discovered previously. An autopsy was not allowed.

Dr. Elizabeth Cushier rather favored the diagnosis of obscure blood-poisoning in this case. She had seen cases terminate fatally without local pelvic symptoms and without the autopsy revealing any pelvic lesions, with the exception of small collections of pus in the lymph-reservoirs situated on the sides of the uterus beneath the broad ligaments. In one case which she had seen there had been scarcely a trace of peritonitis, and the only changes besides the lymphangeitis referred to were a softening of the liver and spleen and the dark and semi-coagulable condition of the blood. There was absence of local pelvic symptoms also in some cases where the patient, after having done apparently well for a few days, would have a violent chill

and high fever, lasting, with more or less marked remissions, for a number of days, then passing off, and the patient making a rapid and complete recovery. In two such cases seen by the speaker there had been complete absence of local symptoms, and the diagnosis of sepsis could only be made by rigid exclusion. In one such case the temperature had risen to 107°, and there had been furious delirium. This temperature had been controlled by cold applications, and there had been no further elevation. The joint affection in the case presented by Dr. Kelly, if taken in connection with the delirium, would point to septic rather than rheumatic arthritis, as the cerebral symptoms of acute rheumatism were usually attended or preceded by excessive fever, while in septic poisoning, on the contrary, hyperpyrexia did not necessarily accompany such disturbances.

Dr. Emma Ward Edwards thought that the implication of the joints had been too early to be referred to puerperal infection. The joints had been affected upon the fourth day, while the fever had been immediate.

Dr. Cushier replied that the poison might have gained access before the child's birth, and in that way have gained time for its work.

Dr. Sarah E. Post suggested that pyosalpinx would furnish such a focus of infective material. Obstetricians were looking toward these tubal collections for the origin of obscure cases of puerperal disease. In this case the head had been expressed. If a tubal collection had existed, it might at the same time have been emptied, and its contents, passing over the placental surface of the uterus before contraction, have been taken directly into the blood. Under such circumstances the immediate chill and rise of temperature would be easily explained. Puerperal infection usually proceeded by the lymphatics. Where the blood-current was the channel for its introduction an altered type of development and a speedier systemic involvement would be inferred.

Dr. Virginia Davis referred to three cases of joint affection occurring during the puerperal period. In one case the attack had occurred three weeks after delivery, in another two weeks and a half, and in the other four weeks. The history had been irregular and the attacks had not been promptly limited by antirheumatic treatment, yet the patients had been up and about previous to the attack, there had been no pain, nor rise of temperature, nor any local pelvic symptoms. A diagnosis of septic infection had been made in all of these cases, but the question of rheumatism was, she thought, pertinent. In one of the cases a previous history of rheumatism had been obtained.

Dr. Kelly still held to the opinion that the rise of temperature and the joint affection had occurred too early for puerperal pyæmia. In all of the cases which had been referred to a longer interval had elapsed between the delivery and the development of these symptoms.

**The Frequency of Backward Displacements of the Uterus after Parturition.**—Dr. Emma Ward Edwards read a paper on this subject. In her earlier practice she had encouraged patients wearing pessaries for backward displacements to hope that after pregnancy they would be cured. She had, however, been disappointed, having found that in all cases the old malposition was renewed. In this statement she included both flexions and versions. In the reader's experience all backward displacements of the uterus tended to return after delivery. The curability of the condition was increased, however. If the uterus was supported by tampons or a pessary during the first two or three months after delivery, a permanent cure would usually result. The theory of cure lay in a shortening of the ligaments by the processes of involution. Backward displacements in the virgin and in the sterile married woman were, on the other hand, practically incurable by pessaries. The future of Alexander's operation was therefore eagerly to be watched. It could not be denied that shortening of the round ligaments was the most important indication to be met in the treatment of these cases.

Dr. Grace Peckham referred to a case in which delivery at term had been preceded by five miscarriages, due probably to the malposition of the uterus. In this case the malposition had returned after delivery. The special cause for the displacement would in any case probably determine its recurrence.

Dr. Post referred to two cases in which posterior displacement had seemed to prevent conception, and in which pregnancy had occurred while the patients were wearing a pessary. In both cases the displacement had returned.

Dr. Cushier was sorry to say that she had had a large experience similar to that of which Dr. Edwards had complained. She knew of no case in which backward displacement existing previous to pregnancy had not returned. In regard to early treatment, she thought that, while careful attention should be paid to the replacing of the uterus as soon after parturition as the displacement was discovered, equal care should be taken that the involution of the vagina was not interfered with by large pessaries. The frequent lifting of the uterus, the Sims posture, or a well-adjusted Cutter's pessary would, she thought, prove most efficient. Subsequently an intravaginal pessary could be resorted to. The speaker did not think that backward displacements of the uterus were a frequent cause of sterility, for, while she had corrected the displacement in many cases in which it had given rise to repeated abortions, she had yet to see a case of simple retroversion with sterility which was overcome by the replacement of the uterus. In regard to shortening of the round ligaments, her experience had been too limited to be of value. She had operated six times. In three cases the result had been satisfactory; in one a subsequent operation upon the vagina had been resorted to, as the shortening of the ligaments had not prevented the sinking of the uterus; in another the patient had been obliged to continue the wearing of her pessary. In one case the operation had been done subsequent to a Battey's operation. The round ligaments were found in this case so attenuated as not to bear traction, and relief was given by drawing the cervix backward and attaching its posterior lip to the posterior vaginal wall. Even where pessaries were worn with comfort, Alexander's operation would be welcomed as an escape from the doom of wearing them, as was in some cases necessary, for a lifetime.

**The Frequency of Nephritis as a Complication of Intestinal Catarrh** was made the subject of remarks by Dr. Sarah J. McNutt. Where stupor or other head symptoms developed in the course of intestinal catarrh, the urine, she said, should be watched carefully. Scanty urine would often be found loaded with albumin and casts.

**Tumor of the Clitoris.**—Dr. Peckham presented a photograph showing the restoration of the parts in a case in which she had operated a year before.

## Book Notices.

*Atlas of Venereal and Skin Diseases:* Comprising Original Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New

York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York; and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculi i, ii, iii, iv, and v. New York: William Wood & Co., 1888.

No amount of skill in description will enable a writer on skin diseases to give his readers such a working knowledge of the appearances assumed by those affections as will fit him to diagnosticate them, except the commoner ones, with any approach to certainty. Not that didactic instruction in dermatology is valueless—indeed, it is of the highest importance—but in the particular that we have mentioned it is a necessity that it should be supplemented by something that appeals directly to the senses. The manifestations of cutaneous disease ought to be seen upon actual patients over and over again by every student or practitioner who expects to qualify himself for practice in this department; and not only seen, but felt of and examined in every available way. But this means of acquiring expertness in distinguishing between their many forms is not open to every student in this country, and museums containing collections of casts are still less accessible to him. These resources failing, it is absolutely necessary that good pictorial representations should be supplied, and it is fortunate that so many excellent colored plates are now to be had. Among them, the series prepared under Dr. Morrow's direction, together with the descriptive text supplied by him, is one of the most praiseworthy. He has shown wisdom, we think, in choosing representative plates from those already published, instead of yielding to the natural ambition to produce a collection wholly original; for it rarely if ever happens that one man's observation in this field is extensive enough to include the whole range of the cases most useful for teaching purposes. The eminence of Dr. Morrow's collaborators is a guarantee that the material supplied to him is to be of the best, and the guarantee is well borne out by those parts of the work that have thus far come to our notice; moreover, his editorial experience furnishes an equally positive assurance that it will be judiciously handled. So far as the first five parts go, we can only say that the colored plates and the woodcuts are well done, and that the text presents in a condensed form an epitome of our present knowledge of cutaneous and venereal diseases.

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*A Practical Treatise on Diseases of the Skin*, for the Use of Students and Practitioners. Second Edition, thoroughly revised and enlarged. By James Nevins Hyde, A. M., M. D., Professor of Skin and Venereal Diseases, Rush Medical College, Chicago, etc. Philadelphia: Lea Brothers & Co., 1888. Pp. xix–17 to 676. [Price, $4.50.]

We congratulate the author of this book, not alone because a second edition has been called for, but also because of the great improvement of this edition upon the first. Every page shows evidence of careful pruning, and the literary style of the book has been much improved. Nearly a hundred pages of new matter have been added, and the general arrangement of the work is much superior to that of the old edition. The author has adopted a classification different from that which he used before, and this has made an entirely new order in the position of the chapters necessary. No fewer than twenty-two more diseases are described in this than in the previous edition, and five of the old chapters have been so enlarged and improved as to be practically new. There are fifteen new illustrations in the book, and the literature of the subject has been brought down to the year 1886, with one or two references to 1887. In fact, this edition is practically a new book, and is in every way worthy of its author.

We would note that in this edition matters of diet are given proper prominence, both as ætiological factors and as therapeutical means; that the newer drugs are mentioned, and new preparations fully described; that the use of electrolysis is commended in a number of diseases besides hirsuties; that considerable care has been given to nomenclature and definitions; and that the chapter on the scrofulodermata is, in our judgment, the best presentation of the subject to be found anywhere.

We commend the book, and are confident that it will be found useful to all who read it.

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*Photographic Illustrations of Skin Diseases.* An Atlas and Text-book combined. By George Henry Fox, A. M., M. D., etc. Hand-colored Plates. Second Series, complete in Twelve Parts. New York: E. B. Treat, 1888.

The first, second, third, and fourth parts of this series have reached us. The large sale of the first series, published several years ago, made the author widely known for his discrimination in the selection of cases to be shown pictorially and for the excellence of the photographic work done under his direction. He has had very great clinical resources to draw upon, and has certainly succeeded in making a remarkably life-like and instructive collection. Many of his photographs bring out the texture of the diseased skin so forcibly that the student can almost afford to dispense with the diagnostic aid to be derived from palpation. The various skin diseases differ materially in their susceptibility to adequate photographic representation. Bearing this fact in mind, it may be said that Dr. Fox's present series of portraits is exceedingly well calculated to convey impressions that will prove of excellent service to the student and practitioner. The text that accompanies them, too, is of a character to minister directly to the same end. The work well deserves an extensive circulation.

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*A Guide to the Practical Examination of Urine.* For the Use of Physicians and Students. By James Tyson, M. D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania, etc. Sixth Edition. Revised and corrected. With a Colored Plate and Wood Engravings. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–13 to 253. [Price, $1.50.]

The most important change in the present edition is the substitution of new matter in the place of a portion of the old. The new portion is mainly in smaller type than the body of the work, and so closely fills the space left by the omitted text that the book has not materially changed its size or appearance, while it has been made to keep abreast of the times. We believe it will continue to hold its high rank among works of its class, and still be the reliance of the student and of the practitioner.

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*A Manual of the Operations of Surgery*, for the Use of Senior Students, House Surgeons, and Junior Practitioners. Illustrated. By Joseph Bell, M. D., F. R. C. S. Edin., Consulting Surgeon to the Royal Infirmary, etc. Sixth Edition, revised and enlarged. Edinburgh: Oliver & Boyd, 1888. Pp. xvi–336. [Price, 6 shillings.]

The object of this book is to describe as simply as possible the operations a knowledge of which will be most likely to prove useful, and especially those capable of demonstration on the cadaver. They include ligation of arteries, amputations, excisions, trephining, and operations on the eye, nose, lips, jaws, mouth, throat, air-passages, thorax, abdomen, pelvis, tendons, and nerves. Operations regarding which no special instruction can be given are omitted. The methods given are excellent,

the directions are concise and clear, and the work will be found very useful and valuable in the hands of a practitioner suddenly called upon to operate, as well as to the student in the operating class.

*The Essentials of Medical Chemistry and Urinalysis.* By Samuel E. Woody, A. M., M. D., Professor of Chemistry and Public Hygiene, and Clinical Lecturer on Diseases of Children, in the Kentucky School of Medicine. Second Edition, revised and enlarged, with Eighty-five Illustrations. Louisville: John P. Morton & Co., 1888. Pp. 5 to 140. [Price, $1.25.]

The object of this work is to present the essential facts of a course of lectures on the subjects of which it treats, so that the student need not wade through more exhaustive text-books. Overworked as students are, they will gladly hail the appearance of such a help, although a more complete knowledge of certain portions of the subject than is here given is necessary for graduation at some of our medical schools.

*Memoranda on Poisons.* By Thomas Hawkes Tanner, M. D., F. L. S. Sixth American, from the last London Edition. Revised by Henry Leffmann, M. D. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 177.

This handy little pocket manual remains of about its original size, although many changes have been made in it. A considerable portion has been rewritten, some of the old material exchanged for new, and modern chemical nomenclature substituted for the old. It contains much valuable information in a very small compass, and is a good book to have at hand in an emergency.

*Theine in the Treatment of Neuralgia.* Being a Physiological Contribution to the Therapeutics of Pain. By Thomas J. Mays, M. D., Professor of Diseases of the Chest in the Philadelphia Polyclinic, etc. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vii–9 to 84. [Price, 50 cents.]

This essay contains an account of the author's experiments with theine, an alkaloid which he thinks he has demonstrated to be distinct from caffeine in its physiological action. His account of its analgesic properties is very interesting. Theine has a special affinity for the nerves of sensation, and produces anæsthesia below the seat of injection when injected subcutaneously. It is a very decided adjuvant in the treatment of various forms of neuralgia, myalgia, and rheumatism, and even in assuaging the pain in locomotor ataxia. This subject deserves very careful attention, for, if Dr. Mays's conclusions are correct, a great advance has been made in the treatment of certain forms of chronic pain.

*Accidents and Emergencies.* A Manual of the Treatment of Surgical and other Injuries in the Absence of a Physician. By Charles W. Dulles, M. D., Fellow of the College of Physicians of Philadelphia, and of the Academy of Surgery, etc. Third Edition, revised and enlarged. With New Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 123. [Price, 75 cents.]

The appearance of the third edition of this little work testifies to the appreciative reception it has met with. As its title indicates, it is intended to instruct the laity what to do in emergencies before a physician can arrive. If the directions given are carefully followed, much good will result, and these directions are given so plainly that it seems hardly possible that they can be misunderstood. The author speaks as strongly as any one can of the folly of depending solely on the knowledge to be derived from such a little manual, and urges that in all cases not easily and quickly relieved a physician should be summoned immediately.

Time-honored methods of treatment are not scrupulously adhered to, but the author has incorporated new ideas; for example, he recommends a hot bath or exposure before a fire in cases of freezing, in direct opposition to the usual practice. This recommendation is based on the results of experiments performed in Russia with frozen dogs.

There are few adverse criticisms which can be made on the work, but it is difficult to understand why dislocations at the shoulder joint should be excluded from the eminently proper doctrine of non-interference with dislocations on the part of the laity, and why the method of reduction by means of the heel in the axilla should be recommended when the evils occasionally resulting from its use are remembered. It is bad enough that this method is, to so great an extent, exclusively practiced by members of the medical profession to the neglect of better ones, but it is worse to advise a layman to use it in the case of any and every patient who may have the misfortune to fall into his hands.

## BOOKS AND PAMPHLETS RECEIVED.

Atlas of Venereal and Skin Diseases, comprising Original Illustrations and Selections from Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerrier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus viii. New York: William Wood & Company, 1888.

The Transportation of the Disabled, with Special Reference to Conveyance by Human Bearers. By James E. Pilcher, Ph. D., Assistant Surgeon, U. S. Army. [Reprinted from the "Journal of the Military Service Institution."]

Woman's Medical College of the New York Infirmary. Twentieth Annual Catalogue and Announcement, June, 1888.

Catalogue of the Alumni from 1834 to 1889 of the Medical Department of the Tulane University of Louisiana, containing An Introductory Historical Sketch, An Alphabetical List of all Graduates in Medicine, An Alphabetical List of all Graduates in Pharmacy, A Chronological Table of all Professors and Instructors, A Table enumerating Annually all Students and Graduates.

Medical Department of the Tulane University of Louisiana (formerly, 1847–'84, the University of Louisiana). Catalogue for 1887–'88. Circular for 1888–'89. With Notice of the Course in Pharmacy of the Medical Department, and with Announcements of the Law, Collegiate, and Academical Departments of the University.

University of Georgetown. Fortieth Annual Announcement of the Medical Department, Washington, D. C. Session of 1888–'89.

Twentieth Annual Announcement of the Kansas City Medical College (formerly College of Physicians and Surgeons). Session of 1888 and 1889, with Annual Catalogue of 1887–'88.

College of Physicians and Surgeons in the City of New York, Medical Department of Columbia College. Annual Catalogue and Announcement, with an Account of the New Buildings. New York, June, 1888.

Catalogue of the Albany Medical College, Medical Department of Union University. Fifty-seventh Session, 1887–'88, and Announcement for Session 1888–'89.

1888–'89. Forty-eighth Annual Catalogue and Announcement of the Missouri Medical College, Medical Department of the University of the State of Missouri, Section 2.

Royal College of Physicians and Surgeons in Affiliation with Queen's University, Kingston, Canada, and University of Trinity College, Toronto. Calendar, Session 1888–'89.

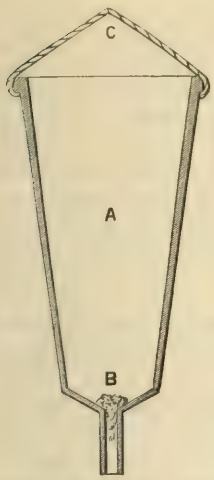
Sixth Annual Announcement of the Philadelphia Polyclinic and College for Graduates in Medicine. Sessions 1888–'89.

# New Inventions, etc.

## A SIMPLE AND EFFICIENT FILTER.

By F. A. Castle, M. D.

For a long time I have used in my butler's pantry a simple contrivance for filtering water used on the table, which has been so serviceable and, at the same time, so inexpensive that I venture to recommend it. I took an ordinary glass pharmaceutical percolator (A) and packed the outlet with absorbent cotton (B) so tightly that the water could only flow in drops. By means of a piece of copper wire (C) for a bale, it was suspended from a hook on the lower side of one of the pantry shelves, over the shelf of the sink. As often as necessary, water is poured into the percolator, and the water-pitcher is placed under the outlet. Whenever the cotton shows much discoloration (a thing which is easily observed, owing to the percolator being of glass) the maid replaces it with fresh absorbent cotton. It is in all respects the most practical and cheapest filter I know of, and has no machinery to get out of order, no patent right to carry, and the advantage over most filters that the filtering medium is always under observation, so that there is little risk of contamination of the water by accumulations of filth.




55 East Fifty-second Street, New York.

# Miscellany.

**The European Faculties.**—The "Lancet" announces the following changes:

Dr. Heymann has taken charge of the physical department of the Berlin Physiological Institute, which had been held by Professor Christiani until his death last year. Dr. L. Jacobson has qualified as Privat Docent in otology.

Dr. S. Stern has qualified as Privat Docent in methods of physical examination at Buda-Pesth.

Dr. Fouriaux has been appointed to the professorship of internal pathology at Clermont, in place of M. Bourgade de la Dardye, deceased.

Dr. Gustav Pommer has been appointed professor in ordinary of pathological anatomy at Innsbruck.

For Professor Hertwig's chair at Jena, which will be vacated by his removal to Berlin, the name of Professor Fürbringer, of Amsterdam, has been brought forward.

The professorship of anatomy at Lille has been declared vacant.

Dr. P. Smolenski has qualified as Privat Docent in hygiene at Moscow.

Don Gerado Jeremias Debesa, professor of surgery at Santiago, has been appointed rector of the university.

Dr. R. Mattei, professor of pathological anatomy at Sienna, has resigned.

Dr. Ludwig Knorr has been appointed extraordinary professor of chemistry at Würzburg.

**Precautions in Bathing.**—"The bathing season, though not yet advanced," says the "Lancet," "has already been marked by the levy of that fatal tribute which year by year is exacted of the ignorant and the indiscreet. The recent death by drowning of a young man in the public baths at Poplar suggests one cause of accident which is too apt to be overlooked. The deceased had entered the water soon after partaking of a hearty meal, and the fatal result was attributed to cerebral congestion due to sudden immersion at such a time. What may have been the particular appearances observed after death in this case we have no means of judging, but it may be well to consider shortly some reasons why the practice of bathing soon after meals is justly condemned. Effusion of blood in or upon the brain, when it occurs in such cases as that already referred to, is probably not a primary cause of mischief, but rather a consequence founded on other circulatory and nervous disturbances. It is an evidence of eclampsia, and the physiological basis upon which this is founded consists in that inward diversion of blood toward the alimentary tract which characterizes normal digestion, the other tissues, notably the brain, being at the same time proportionally anæmic, and the action of heart and lungs impeded by a distended stomach. A natural result of cold immersion at this stage is to encourage or induce a tendency to syncope, to concentrate surface blood still more about the central organs, including the heart, which, especially if at all unequal to its duties, labors ineffectually to readjust the blood-pressure, and finally succumbs with lungs and venous system engorged by passive congestion. It is as if an enemy occupied the outworks of a fortress left for a time unguarded, and forthwith paralyzed the resistance of the citadel. It is best, therefore, to wait for at least an hour and a half or two hours after a good meal before bathing. Another danger to be avoided is that of cramp. This is particularly apt to occur after severe exercise or long immersion. The effect of cold being to prolong the contraction, while exhaustion lowers both the power and the elastic recoil of muscle, it is evident that we have in a combination of these forces all that is required for the production of this dangerous condition. The obvious warning implied in these remarks requires no further admonition to impress the fact that the bather in cold water must be economical of time and free from any appreciable signs of muscular exhaustion."

**The Southern Surgical and Gynæcological Association** will meet in Birmingham, Alabama, on the 11th, 12th, and 13th of September. We learn that the programme includes papers by a large number of the leading surgeons and gynæcologists of the South, and that the local committee is taking great pains to make the meeting pleasant and profitable.

**The British Medical Association.**—According to the programme for the next meeting of the association, to be held in Glasgow, on the 7th, 8th, 9th, and 10th of August, as we learn from the "British Medical Journal," Dr. A. Jacobi, of New York, is to open the discussion on the surgical treatment of diphtheria, in the Section in Diseases of Children.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending June 29th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 9th corresponded to an annual rate of 16·2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 12·5, and the highest in Manchester, viz., 25 in a thousand. Small-pox caused 6 deaths in Sheffield, 1 in Bristol, and 4 in Preston.

*London.*—One thousand two hundred and nineteen deaths were registered during the week, including measles, 25; scarlet fever, 23; enteric fever, 8; diphtheria, 22; whooping-cough, 33; diarrhœa and dysentery, 18. The deaths from all causes corresponded to an annual rate of 14·9 in a thousand. Diseases of the respiratory organs caused 185 deaths; different forms of violence, 51; and 8 suicides were registered. In greater London 1,534 deaths were registered, corresponding to an annual rate of 14·5 in a thousand of the population. In the "outer ring" 7 deaths from whooping-cough and 5 from diphtheria were registered.

*Ireland.*—The average annual death-rate represented by the deaths

registered during the week ending June 9th in the sixteen principal town districts of Ireland was 24·3 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 8·5, and the highest in Lisburn, viz., 43·5 in a thousand. In Dublin 147 deaths were registered, including measles, 1; whooping-cough, 11; enteric fever, 3; scarlet fever, 8; and dysentery, 1.

*Straits Settlements.*—From the annual medical report of the civil hospitals, it is learned that "in Singapore sporadic cases of cholera occurred in the middle of the year, but a great proportion of the patients were coolies, lately arrived from China, in some of the ports of which country cholera was prevalent at the time. One ship from China—the steamship Amigo—was quarantined on account of cholera; her passengers were landed at St. John's Island, and cases of cholera appeared afterward among them. Some other cases occurred also among a number of passengers from China who had been landed at St. John's Island from a ship—the steamship Bellerophon—which came in with small-pox on board. Four Europeans died of cholera during the year, two of them having contracted the disease, as far as could be ascertained, on board the steamship Spaniel, and the third, a sergeant of police, having become infected at a room in the central police station, where a lot of miscellaneous rubbish and property were kept. A native sergeant was also infected on the same day and died. This room was at once cleared out, the rubbish burnt, and the place disinfected, and no more cases occurred. The fourth case was that of a boy who had recently come from another colony. It is possible that he brought the infection with him. A local outbreak of cholera occurred in the beginning of August in the old lunatic asylum. All the preventive measures we could use failed to stop the disease, and on August 12th all the patients were moved into the new asylum, which was fortunately nearly ready. After the removal, for a day or two, two or three cases occurred, which were promptly removed, and then the disease stopped. Thirty-seven cases of small-pox were reported as occurring during the year. In five of these cases death had occurred before any report was made to the police. Of the remaining thirty-two cases, twenty-five were treated at the small-pox hospital, Balestier Plain, with seven deaths, and the remaining seven—Europeans—were treated at the general hospital. Of the seven cases treated at the general hospital all recovered. In two only of these was infection contracted in Singapore. Of the other five cases, three were landed from ships, and two were children who had just come from Penang, where the disease was prevalent at the time."

*Montevideo.*—Three hundred and seventy-two deaths were registered during the month of April, including small-pox, 43, and enteric and typhus fevers, 13.

*Santiago de Cuba.*—The sanitary inspector reports for the week ending June 16th "no small-pox or yellow fever."

*Havana.*—Nine deaths from yellow fever and 1 from small-pox were registered during the week ending June 22, 1888.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Glasgow | June 9. | 545,678 | 211 | .. | .... | .... | .... | .... | 3 | 2 |
| Amsterdam | June 9. | 389,916 | 154 | .. | .... | .... | .... | 1 | .... | 2 |
| Munich | June 2. | 275,000 | 159 | .. | .... | .... | .... | .... | 2 | 3 |
| Genoa | June 9. | 179,401 | 77 | .. | .... | .... | .... | .... | .... | 3 |
| Trieste | May 19. | 154,500 | 85 | .. | .... | .... | .... | .... | .... | 1 |
| Trieste | May 26. | 154,500 | 69 | .. | .... | 3 | .... | .... | 3 | 1 |
| Trieste | June 2. | 154,500 | 73 | .. | .... | .... | .... | .... | .... | 2 |
| Stuttgart | June 9. | 125,510 | 33 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | June 2. | 122,000 | 38 | .. | .... | .... | .... | .... | .... | .... |
| Barmen | June 2. | 109,000 | 47 | .. | .... | .... | .... | .... | .... | 1 |
| Mayence | June 2. | 65,802 | 31 | .. | .... | .... | .... | .... | 1 | .... |
| Cienfuegos | June 4. | 40,753 | 14 | .. | .... | 2 | .... | .... | .... | .... |
| Cienfuegos | June 11. | 40,753 | 18 | .. | .... | 7 | .... | .... | .... | .... |
| Sagua la Grande. | June 9. | 15,605 | 24 | .. | .... | .... | .... | .... | .... | .... |
| Cartagena, Col'a. | June 9. | 13,000 | 3 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | June 9. | 12,000 | 8 | .. | .... | .... | .... | .... | .... | .... |
| S'n Juan d'l N'rte | May 28. | 500 | 1 | .. | .... | .... | .... | .... | .... | .... |

**Common Salt in the Treatment of Sick Headache.**—Referring to our "Therapeutical Note" on this subject in the issue for June 23d, Dr. Charles Hammer, of Schenectady, N. Y., writes to us that for the past twenty years he has known that chloride of sodium, in teaspoonful doses, given in a cupful of warm water, at the beginning of the attack, would abort the attack, and that it has done so in numerous instances that have come under his notice.

## ANSWERS TO CORRESPONDENTS.

*No. 201.*—1. By writing to the Surgeon-General of the Navy. 2. A very slight degree of myopia is not a disqualification. 3. Between twenty-one and twenty-six years.

*No. 202.*—1. A mixture of 6 ounces of light calcined magnesia, 2 ounces of powdered rhubarb, and 1 ounce of powdered ginger, passed through a fine sieve. 2. By precipitating a saturated solution of magnesium sulphate with a strong solution of caustic soda, and washing the precipitate on a filter. 3. To reduce the swelling, etc., of contusions, also to cool a part or to diminish the amount of blood contained in it; usually prepared by mixing alcohol and water, with or without the addition of chloride of ammonium. 4. It had better be acid than alkaline, because it is pleasanter to the taste and keeps better. 5. The evaporation test. The essential oils mentioned are volatile; cotton-seed oil is a fixed oil.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### REMARKS ON COCCULUS INDICUS.*

BY MARY PUTNAM JACOBI, M. D.

COCCULUS INDICUS, the fruit of the *Anamirta cocculus*, although said to have been used for a long time for the purpose of stupefying fishes, has been suggested as a medicinal remedy of any importance in only quite recent times. Christison mentioned the drug as useful in the form of an ointment for the cure of lice, but ascribed to it no other virtues. In 1869 Roeber published experiments upon cocculus in the "Archives" of Reichert and Du Bois-Reymond, and in 1875 Planat wrote an elaborate physiological and clinical memoir on the same subject, which received the prize of the French Academy. An essay by J. Crichton Browne was published in the same year in the "British Medical Journal." My attention having been called to the clinical use of picrotoxine, I have performed some experiments with it, which I will first relate and then compare their results with those obtained by others.

To an unmutilated frog was administered hypodermically 0·001 gramme, or one sixtieth of a grain, of picrotoxine, the active principle of the cocculus indicus. This was at 4.45; for eight minutes the frog remained perfectly motionless. This period of initial stupor has been observed by Roeber, Planat, and Browne. At 4.53 occurred convulsive extensions of the hind legs. At 5 the frog lay prone, with widely extended legs and arms, and the toes widely separated. There was therefore a general tonic excitation of all the extensors. At 5.02 the legs moved, and then extended stiffly in tetanic cramp, resisting flexion at the knees and ankles, moving all in one piece. At 5.05 there occurred a series of tetanic cramps in the legs and clonic cramps in the arms. The legs were occasionally abducted, but always in one piece. At 5.07 the thighs were flexed on the body and the legs on the thighs, then the legs were violently extended. Immediately afterward the trunk was raised up on the four extremities and on the belly as a fulcrum; then the body bent back in opisthotonos. This convulsion had the co-ordinated character of the convulsion produced in the rabbit by Crichton Browne. In the rabbit, with one twenty-fourth of a grain of picrotoxine clonic spasms of the ears, eyelids, and eyebrows were produced in twenty-two and twenty-three minutes, and in twenty-four minutes the head was drawn slowly and rigidly back, the fore paws were spread out, and the body was then drawn backward and upward with convulsive starts, until the fore paws were raised in the air. At 5.10, to return to my frog, the animal uttered a cry, and the back formed a double curvature, being in lordosis just above the sacrum, and in cyphosis throughout the upper segment. Then the frog rolled over on its back and lay with the legs stiffly extended, but the arms raised at right angles to the body, the forearms again bent and at right angles to the arms, so that the hands became interlocked over the breast.

This peculiar attitude thus resembled, but in an intensified degree, the elevation of the arms observed by Crichton Browne in the rabbit. It is entirely different from the positions assumed in strychnine poisoning. It recalls with vividness the "passional attitude" of the third stage of Charcot's hystero-epilepsy.

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At 5.12 there was a repetition of the convulsions, which continued at intervals during the next half-hour. The frog was then left, and was found dead at eight o'clock.

In a second frog the cerebral and optic lobes were destroyed, the medulla and spinal cord being left intact, then a milligramme of picrotoxine was injected. Immediately afterward the respiratory movements were very slow, and the animal remained motionless for nine minutes. Then asymmetrical movements of the limbs began; one leg was completely flexed, the other leg semi-flexed, then one arm half extended; then the frog turned entirely round. Twelve minutes after the injection the first convulsion occurred, thus five minutes earlier than in the intact frog. But the first convulsion was much more violent; the animal rolled over on its back, held the four limbs vertically in the air, and uttered convulsive screams. The arms, at first projected upward in one piece, were soon flexed at the elbow, so that the forearms crossed the chest horizontally, though held out from it, and the hands interlocked. This position was not assumed by the intact frog until twenty-five minutes after the injection. While it was lying in it the legs began to be alternately flexed and extended, but only one at a time. While the limb was in extension the toes were flexed and extended, with a predominance of extension, so that the interdigital membrane was tense. The respirations at this time were forcible but slow; the movements of the limbs occurred either once a minute or once in two minutes, the frog continuing to remain on the back, with the arms rigid and in the position described. If it was turned over, the position was immediately resumed.

In sixteen minutes the head was raised—*i. e.*, flexed forward. In twenty-four minutes the head was erected and the back curved, the curvature becoming marked in twenty-eight minutes, corresponding to the double curvature observed in the intact frog in twenty-five minutes. During all this time the convulsive movements of the limbs were being repeated in the same manner and at the same interval as already noted. In forty-nine minutes the frog turned over on the belly, in sixty-three minutes lay on the side, with all the limbs and toes extended, and was found an hour later in the same position dead.

In a third frog both the brain and medulla were destroyed, and the same dose of picrotoxine (alcoholic solution) was administered. In four minutes the frog was lying motionless on the belly, the sacrum arched, the four limbs flexed.

In six minutes, pinching of one hind leg caused the frog to leap a little.

In seven minutes, when the left leg had been passively and completely extended, the frog made no attempt to withdraw it.

In eight minutes the respirations were fifty-four, the frog lying prone, with the four limbs extended.

In ten minutes there was no reaction to pinching of the posterior extremities, but the arms were at once withdrawn if pinched.

In fourteen minutes the respirations had been slowed to thirty.

In fifteen minutes there was no reaction to pinching the left arm.

During the next-half hour the frog continued to lie prone, with limbs extended, and with occasional movements of flexion and extension of the hind limbs.

But in this frog, where the medulla as well as the brain was destroyed, there were no distinct convulsive movements, no opisthotonos, no co-ordinated convulsions of the arms, no tonic rigidity of any of the limbs.

All these phenomena were more marked with the frog preserving only the medulla than with the intact frog.

The conclusion would follow that the co-ordinated convulsions, which included a cry and a peculiar attitude, recalling the so-called passional attitude in hystero-epilepsy, result from the influence of the drug upon the medulla; further, that when the cerebral hemispheres and optic lobes are destroyed the effect of the drug is more marked than when they are intact. This seems to indicate that the irritation of the medulla continues to be inhibited or restrained by the higher centers, which, we should thence infer, were *not* influenced by the poison.

Crichton Browne does not apparently make this distinction, for he says, judging from experiments on rabbits, that the picrotoxine has a greater effect on the cerebral than on the spinal centers; but he does not distinguish between the medulla and the cerebrum proper. Roeber, however, experimenting on frogs, found, as I have done in the experiments just related, that the convulsions were not prevented by removing the cerebrum and optic lobes, but never appeared after separation of the medulla. Roeber did not note the interesting fact that the convulsions were less marked when the brain remained than when the medulla, unrestrained by the higher centers, was exposed to the action of the poison. Planat concludes that picrotoxine spares the brain and ideomotor regions, and acts principally on the pons, cerebellum, and cord. The experiments just described agree with Roeber's in excluding the cord from any marked influence in the phenomena. Nevertheless, a certain degree of excitation was observed, indicated by tonic extension of the limbs, though without rigidity. This degree of excitation seemed to be confined to the motor regions of the cord, and even to be accompanied by diminution of reflex and sensory excitability, for pinching the limbs caused no reaction, either direct or crossed.

In a fourth frog some other details were examined. The cerebral hemispheres were destroyed, and also the right optic lobe, the left, together with the cerebellum and medulla, remaining intact; half a milligramme of picrotoxine was injected. For three minutes the animal remained motionless and the respirations were arrested. Then they recommenced at the rate of thirty-three a minute.

In five minutes the right leg was observed to be paralyzed. I extended it without resistance, and it remained passively extended from that time. Extension of the left leg was resisted, and the animal turned its body over to the right side, using the extended right leg as a fulcrum, and drawing up the left leg. Repetition of the experiment, after replacing the frog, was followed by precisely the same results.

In six minutes pinching the right leg was followed by no movement; pinching of the left leg, by immediate withdrawal of the limb. At this time both arms became rigid.

In ten minutes the arms were flexed toward each other and resistant.

In eleven minutes the toes of the left foot were widely extended, and the animal raised itself up on its arms.

In twelve minutes there was a slight convulsive extension of the left leg, and then the frog moved the trunk over to the right side.

In twenty minutes both sciatic nerves were exposed, and a weak faradaic current was applied. The secondary coil of a Du Bois-Reymond apparatus stood at four hundred millimetres. This elicited distinct contractions in each leg, and showed quite as much strength in the paralyzed as in the non-paralyzed limb. Thus there was no peripheric paralysis. The faradization caused no convulsion, no reflex excitement. This fact would seem to accord with Roeber's observation, that the reflex excitability was greatly diminished during picrotoxine poisoning. Roeber tested this by the length of time required to withdraw the leg of the frog after irritation of the toes by acid. The time, measured by a metronome beating one hundred times in a minute, increased from five beats to thirty nine. At twenty-one minutes, during a convulsion with tendency to opisthotonos, the faradaic current was applied to the right optic lobe, and the convulsion was intensified. In twenty-six minutes, during absence of convulsion, faradization of the optic lobe brought on a convulsion. But when the current was sent through the cord, by placing one electrode on its exposed upper extremity and the other on the intact cutaneous surface over the spinal column, there was no convulsion, nor movement of either leg until the secondary cylinder stood at one hundred and forty millimetres. Then, though without convulsion, contractions occurred in both arms and slightly in the left leg; none in the right (paralyzed) leg. At one hundred and twenty millimetres, however, contractions occurred in this leg also. Thus the conducting power of the right half of the cord, though diminished, was not annihilated.

The principal result of this experiment is that, after destruction of one optic lobe and possibly some injury of the corresponding half of the medulla, the picrotoxine caused no convulsion in the limb paralyzed by this lesion. Thus the picrotoxine, though having free access to the cord and peripheric nerves, did not affect them. These organs, on the other hand, remained intact and responsive to faradaic stimulation.

In a fifth frog the heart was exposed, and, as in the fourth experiment, only half a milligramme of picrotoxine was given. This was one sixth of the dose given by Roeber, and, possibly on that account, I did not observe the slowing of cardiac beats described by him. Nevertheless, marked opisthotonic convulsions occurred, and also another phenomenon exactly as Roeber describes it. The lung was forced up through the open thorax in a condition of extreme superdistension, so that it could not be replaced. Instead of the rosy hue that a herniated lung usually exhibits, this was extremely pale. It was evident that the blood-vessels in it were all contracted; and, as such contraction can not be attributed to vaso-motor irritation, vaso-motor nerves apparently not existing in the lungs, we must ascribe the phenomenon to the irritation of the pneumogastric nerve or its origin in the medulla.

Roeber found that section of the pneumogastric prevented the picrotoxine from slowing the pulse, or restricted the slowing to a few beats. This justified him in assuming that the picrotoxine markedly irritated the pneumogastric root, and thus, on the one hand, slowed the pulse and, on the other hand, quickened and intensified the inspiration. The distension of the lung by increased depth of inspiration causes, in intact frogs, a swelling of the sides of the body, which is presently followed by a collapse. The collapse coincides with the cry which I have already noted as adding so markedly to the epileptoid character of the convulsions. When the jaws are separated from the brain, so that the larynx is exposed, it is said that, at a certain stage of the poisoning, the vocal cords may be seen to approximate to each other spasmodically. When, at this moment, the

expiratory collapse of the overdistended lung occurs, an increased volume of air is driven forcibly through the narrowed glottis, thus automatically causing the sound or cry.

To further test the effect of picrotoxine upon the brain, I administered it to a rabbit whose brain (under ether) had been previously exposed and portions successively sliced away as follows:

First, a vertical section was made at the level of a horizontal line that should intersect the middle of the eyebrows; all the brain anterior to this line was removed. No convulsions occurred. Ten minutes later the surface of the remaining brain was removed to the depth of one sixteenth of an inch or more, and over a surface extending to a line intersecting the posterior extremities of the orbital ridges; ten minutes later a similar slice was cut away from all the exposed surface of the brain as far back as the occipital ridge. To arrest bleeding, which, however, was not excessive, some subsulphate of iron was dusted over the surface of the brain, subjacent to the section which had removed the gray matter. The animal was quite quiet, but retained its sensibility, which was indeed exalted on the periphery. Even when the anæsthetic was withdrawn it showed no sign of pain during operations on the cranium or brain; but when the ether was approached again to the nose, it shrieked loudly and struggled violently, and did the same when one of the paws was pinched. Then quiet was resumed. Two milligrammes, or one thirtieth of a grain, of picrotoxine were injected subcutaneously. The flanks began to move more rapidly almost at once, and in a few minutes the respirations were fifty-four, and a little later sixty-three to a minute.

The dose was a medium between the fortieth of a grain employed by Crichton Brown, which produced twitchings of

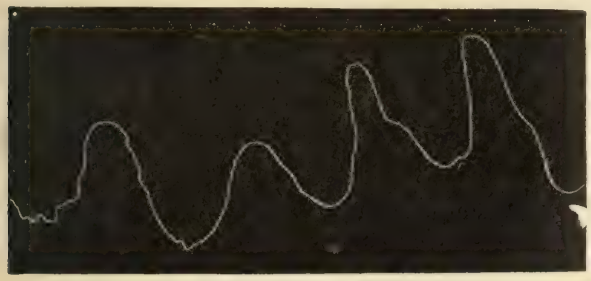


Fig. 1.—Sphygmogram from Case I, before picrotoxine.

the ears but no convulsions, and the one twenty-fourth of a grain, which caused severe convulsions. The convulsion that did occur indicated that an adequate dose had been given, but the brevity and limitation of the convulsive



Fig. 2.—Two minutes after the ingestion of 3 minims of fluid extract of cocculus indicus.

phenomena suggested that they had been restrained by the operation on the brain. The ideo-motor centers had been destroyed, and the relatively negative results might seem to indicate that, in a normal condition, it was upon these centers that the drug principally exerted its influence. But so short a time had elapsed after the mutilation that it seemed more probable that the subjacent encephalon was still in a state of irritation, and so inhibiting the action of the lower centers. The powdered iron over the surface would easily contribute to this effect.

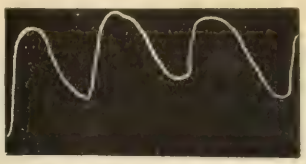


Fig. 3.—Seven minutes after the ingestion of cocculus indicus.

Picrotoxine has been observed to slow the pulse at the same time that it quickened the respiration. Roeber found that, if in frogs the pneumogastric nerve was cut previous to the administration of the poison, the pulse did not become nearly so slow. He inferred, therefore, that the effect on

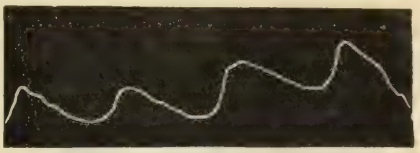


Fig. 4.—Seventy minutes after the ingestion of cocculus indicus.

the heart was mainly due to irritation of the medullary end of the pneumogastric nerves; in part, however, to a direct impression of the drug upon the inhibitory ganglia of the heart, or of the termination in them of the pneumogastric nerves. The same irritation of the medullary centers which should slow the pulse by inhibition should be the cause of the quickened respiration.

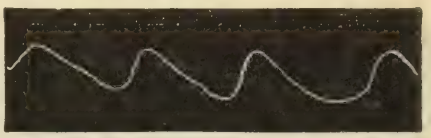


Fig. 5.—Two minutes after the ingestion of the second dose of cocculus; the pulse rises from 92 to 108.

These experiments were performed on frogs. My own, already related, have shown, on a rabbit, the acceleration of the respiration. The influence of picrotoxine on the circulation was more closely studied upon a dog in which the blood-pressure was measured. The tracings exhibit a marked effect of the drug. Fig. 8 is a tracing taken immediately before the administration of picrotoxine. Fig. 9

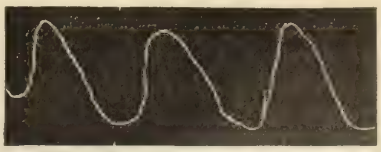


Fig. 6.—Four minutes after the ingestion of the second dose.

is a tracing taken five minutes after the injection of 0·001 gramme of picrotoxine into the jugular vein. We note first a moderate slowing of the pulse in comparison with the respiration, there being six instead of eleven pulsations to each respiration; at the same time each pulse-wave increases a little in amplitude. The respiratory movements were ac-

celerated—eight to a unit of time instead of four. Forty-five pulsations can be counted in the same time instead of forty-one. After a second milligramme of picrotoxine (see Fig. 10) the amplitude of both pulse and respiratory curves is considerably increased, as also the duration of the respiration. On the latter account, the number of pulsations to each respiration is also increased, rising to twelve; in the same unit of time there are eight respirations and forty-five pulsations.

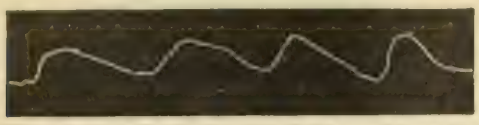


Fig. 7. Fifteen minutes after the ingestion of the second dose; the pulse has fallen to 96.

After a second injection of a milligramme the amplitude of both pulse and respiration waves still further increased, the fourth tracing showing the maximum of both attained during the observation. The pulse is now slowed, as well as the respiration; there are only twenty-one pulsations and one respiration and a half in a unit of time. The number of pulsations to a respiration is, however, doubled, rising from six to twelve. Afterward the pulsations in the same unit of time fall to eighteen, rising again to twenty-one when the respiration, which had fallen to one, rises to a little more than one in the same unit.

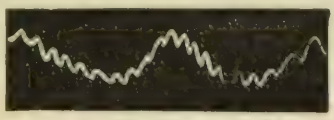


Fig. 8.—A blood-pressure tracing from the carotid of a dog, before the administration of picrotoxine; eleven pulsations to each respiration, four respirations in a unit of time.

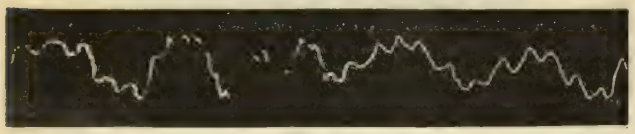


Fig. 9.

Some of the tracings, especially in Fig. 10, show that the prolongation of the respiratory excursion is especially marked in the inspiratory phase, shown at the lower part of the curve.

These curves also exhibit a diminished pulse-wave during the ascent or beginning of expiration, and usually a slackening of the pulse with increased amplitude during the descent of the curve or beginning of inspiration. This is the normal proportion. The changes described were not accompanied by any change in the arterial tension or pressure; the lever of the manometer did not rise; the mercury stood at the same height as before.

Slowing of the pulse was observed to a moderate extent upon a patient who exhibited no other effect of the drug. After one drop of the fluid extract of cocculus indicus the pulse fell in an hour from 75 to 70, but no effect was produced during the first fifteen minutes. Two drops slowed the pulse from 80 to 70 in fifteen minutes, and the same rate was observed at the end of an hour. With four drops the pulse fell from 70 to 64 in ten minutes, but in fifteen minutes rose again to 68. With five drops, also, the result was a slight acceleration of the pulse, which rose from 72 to 80, and at the end of an hour was still 76.

In another patient sphygmographic traces were taken. No. 1 is the trace before the administration of the drug. It is taken with a Mahomed's sphygmograph, under a pressure of seven ounces, and shows a pulse of extremely low tension and very variable in character. The patient was an extremely nervous person, without any organic disease. Three minims of the fluid extract of cocculus were taken by the mouth, and a new sphygmographic observation was made in two minutes (see Fig. 2). A very marked increase in the tension and the regularity of the pulse is observable. In seven minutes the pulse is released from the first effect, the tension falls again, and the pulse-wave tends to resume its original amplitude, but not the irregularity or degree of dicrotism existing before taking the medicine (see Fig. 3). Tracing 4 shows the pulse at one hour and ten minutes after taking the cocculus. Its characters resemble those observed immediately after the drug, and not those noticed in seven minutes. At this time the pulse-rate was 92. A second dose of three minims was then taken. In two minutes, as shown by tracing 5, the pulse-rate rose to 108; the pulse-wave became a little more ample. In four minutes the tension diminished, exactly as it had done in seven minutes after the first dose (trace 6). In fifteen minutes the rate had fallen to 96, and the increased tension had been resumed, the tidal wave being somewhat less ample than at two minutes after the drug.

On another occasion, when the patient took the medicine at home and merely counted the pulse, the rate was found to remain the same—it was 96 at the end of two minutes and ten minutes, but in an hour had fallen to 86. It is stated that before the medicine the pulse was weak and compressible, the patient suffering at the time from a severe neuralgic headache. In ten minutes, the pulse-rate remaining unchanged, its character was modified, being more am-

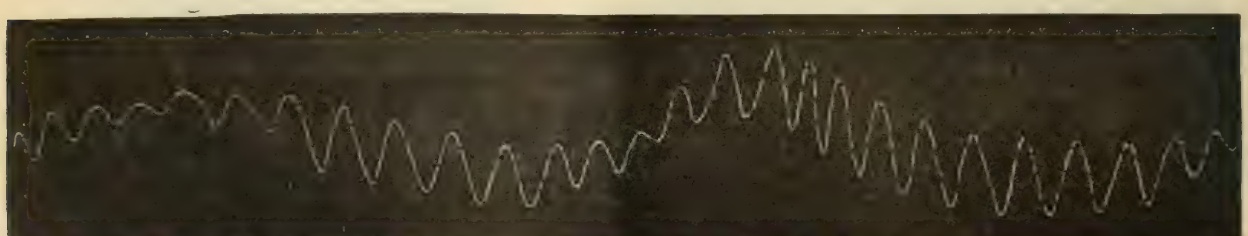


Fig. 10.—A tracing immediately after the injection of a second milligramme of picrotoxine; pulse excursions greatly amplified, twelve pulsations to each respiration, a respiration and a half to a unit of time. A few minutes later there were eighteen pulsations to each respiration and one respiration to a unit of time.

ple and less compressible. At the end of an hour, when the pulse had slowed ten beats a minute, the neuralgic pain had subsided; indeed, it began to lessen in half an hour.

The first time this patient took the cocculus was a few days before a menstrual period. Three drops were taken. In two minutes the heart began to throb violently, then beat hard, but slowly. At the same time arose a feeling of a ball in the throat and suffocation, then of great depression and weakness; she could scarcely speak aloud. These symptoms passed away after a dose of brandy. They were not observed on any subsequent occasion, although the medicine was continued at the same dose every four hours for several days. Another patient, subject, like the first, to violent nervous headaches and spasmodic dysmenorrhœa, noticed after each dose of the cocculus—from one to four minims—a feeling of warmth to an uncomfortable degree, as if she had a fever; the feeling lasted about fifteen minutes. This effect recurred before the menstruation, but during the period, when a larger dose—of five minims—was taken, no such effect was produced.

The most interesting circumstance about the convulsions which are so prominent an effect of poisonous doses of picrotoxine is their marked epileptoid character, at least in warm-blooded animals. Crichton Browne insists that the convulsions consist, like those of epilepsy, in sudden excessive discharges from co-ordinated centers, not only in the medulla and pons, but also, and to begin with, in the cerebrum. The initial lethargy, noticeable in both rabbits and frogs, indicates an action on the cerebrum, as does also the succeeding stage of restlessness and unsteadiness of gait. Browne compares the picrotoxine convulsions to those which Ferrier excites by electrical stimulation of the cerebral hemispheres. Thus there are—

1. Twitching of the head and ears, due to irritation of a region in the lower part of the frontal lobes, close to the main trunk of the middle cerebral artery.

2. Convulsive movements of the eyebrows, eyelids, mouth, and fore paws, the cortical centers of which are localized in an area surrounding the former, and corresponding to the distribution of the middle cerebral artery.

3. Some movements of the tail and hind legs which are to be referred to a more remote point, close to the median fissure, and corresponding to the outermost ramifications of the same artery.

The corpora quadrigemina, cerebellum, pons, and medulla are drawn into the vortex of morbid perturbation, partly by the explosion of the higher center, and partly by the direct action of the poison. The implication of the corpora quadrigemina is marked by the occurrence of opisthotonos. Nystagmus indicates affection of the cerebellum; sudden exacerbation of the spasms shows irritation of the pons and medulla. Browne further insists on the facts which indicate that the spinal cord remains exempt from the influence of the drug; just the facts which I have recounted in my experiments on the frog. In them there was no hyperæsthesia, and there were no reflex spasms from peripheric irritation, either mechanical or electrical; convulsions were not induced by sensory irritation, but were (in the intact frog) by attempts at voluntary motion, which implied stimulus of the cerebrum. This condition is in marked contrast with that induced by strychnine.

Browne thinks, finally, that the severity and long continuance of the convulsion also imply that it is due to irritation of the cerebrum. Planat, whose essay in 1875 seems to have initiated modern therapeutic experiments with picrotoxine, denies any action upon the brain, and explains its effects by irritation of the pons, and also, strange to say, an action on the cerebellum and cord.

Crichton Browne's theory is dominated by the prevailing English view of epilepsy, as formulated by Hughlings Jackson and Gowers, namely, that its seat is in the cerebrum rather than in the medulla. In antagonism to the theory is the fact that in the frogs from which the cerebrum was removed the convulsions were earlier and more severe than when the cerebrum as well as the medulla was intact. But it would be quite in accord with this theory that the rabbit from which the frontal lobes had been removed, together with nearly the entire cortex from the rest of the brain, should have almost entirely escaped convulsions after one thirtieth of a grain of picrotoxine. Crichton Browne did not perform this experiment; and it is for that very reason that I did, in order to supplement his series of experiments. It is indeed highly probable that the action of a drug like picrotoxine should differ in different animals, there being a special difference between frogs and warm-blooded animals. If, as the epileptoid character of the convulsion implies, the picrotoxine does act upon the cerebral cortex, its action should be expected to vary with the degree of development of the cortex peculiar to the animal experimented upon.

There can be no doubt that it also acts upon the medulla. This is proved in frogs by the convulsions produced when all the higher regions of the encephalon have been removed. But it is also shown, and with doses insufficient to produce convulsions, by the marked changes of the pulse and respiration; and is only explicable by an influence upon the cardiac and inspiratory centers in the medulla. The question arises, Is such stimulation direct or indirect?

The experiments on the dog and on human beings show: 1, that the pulse is accelerated; 2, that it is retarded; 3, that the pulse-wave is greatly amplified; the greatest amplitude a little preceding the moment of maximum retard, but the amplification beginning immediately after the injection of the drug, and with the initial acceleration of the pulse. When the drug is injected into the jugular, the acceleration might possibly be attributed to direct stimulation of the excito-motor ganglia of the heart. But the same acceleration was observed after ingestion by a human being. The acceleration may be compared with the initial pulse acceleration caused by minute doses of digitalis. In that case, however, the pulse-wave is not amplified, as it is so markedly after picrotoxine. The amplification is in excess of what might be due to an increased energy of cardiac contraction. The blood-pressure neither rose nor fell in the carotid tracing, but in the sphygmographic tracing from the radial pulse of an extremely susceptible patient the tension of the arterial wall was greatly increased, as shown

by the diminished height of the percussion stroke. The amplitude of the tidal wave is somewhat increased.

All these circumstances point to a dilatation of the peripheric arteries, permitting a larger pulse-wave, associated with such increased force of cardiac contraction as prevented a fall of blood-pressure. The beginning of the arterial dilatation would account for the initial acceleration of the pulse. The subsequent retardation of the pulse can only be due to stimulation of the medullary center of the pneumogastric. But neither the initial nor consecutive phenomena indicate any stimulation of the neighboring vaso-motor center, but rather its inhibition. The inhibition could depend on an increased energy of action in the cortex of the hemispheres, the normal function of which, as Meynert declares, is to inhibit the subcortical vaso-motor centers.

This effect of picrotoxine, therefore, though manifested through the medulla, would be indirect, and result from the primary stimulus of the brain by the drug. Again, the stimulation of the pneumogastric may be in like manner traceable to a primary effect on the brain, occasioning an increased intracerebral pressure.

The effect on respiration differed in the dog from that in the rabbit and frog. In all these the inspiration became much more energetic, as shown by the curve of the dog's carotid tracing and also by distension of the frog's lung. But in the rabbit and frog the respirations were accelerated; in the dog, after a slight initial acceleration, they were much slackened, and in proportion to the increase in their energy. Now we know that central stimulation of the pneumogastric increases the frequency of inspiration; section of the pneumogastric, especially of both nerves, renders the inspiration much slower and at the same time much fuller and deeper.

The effect of the picrotoxine on the dog imitated the effect of section of the pneumogastric. The excitability of the inspiratory center seemed to be diminished, so that it was necessary that more afferent impulses should accumulate before it reacted, the reaction then being more intense. This behavior resembles that of the inspiratory center under increased intracerebral pressure, as in so many forms of brain disease. The phenomenon might therefore be classed with the phenomena exhibited by the pulse as an indication of increased inhibition over the medullary centers exercised by the cerebral hemispheres. Apparently such an influence is not manifest in the rabbit, the cerebral inhibition in which is normally so much slighter. In our rabbit the inhibition should not be expected, for the cortex was removed. The increased arterial tension in the human being suggests at first increased vaso-motor action; but it simply implies an increased tonus of the arterial wall that had been abnormally deficient, but was now enabled by the drug to better resist the shock of the pulse-wave. Such an increased tonus will result from increased energy of the cerebro-spinal axis throughout its course. It does not necessarily imply contraction of peripheric arteries beyond the point of application of the sphygmograph.

If the foregoing analysis is sound, we should expect to find a good result from picrotoxine in neuroses dependent on deficient energy and inhibiting power in the cerebral tissue, and similar deficiency in the cord with consequent loss of arterial tonus, irregular vaso-motor action, and spasms of unstriped muscle. Rohrig, as quoted by Falck ("Lehrbuch der prakt. Toxikol.," 1880), asserts that the drug excites tetanic cramps of the uterus by irritation of the medullary uterine center. Phillips, on the other hand (quoted in the "Brit. Med. Journal," January, 1880), has administerd it with success in the dysmenorrhœa and associated headache of delicate nervous women. I have tried it in three such cases with marked benefit.

Case I.—An extremely nervous woman of twenty-eight, married about four months. Throughout life, and especially during the last three years, subject to extremely intense dysmenorrhœa, accompanied by violent nervous headaches, which, moreover, recur frequently during the intermenstrual periods. Patient very blonde, with thin, delicate skin, light-blue eyes, and variable pupils. Uterus found in congenital anteflexion with anteflexed cervix, as well as flexion of the body. Impossible to pass even a fine probe with any curve—apparently as much on account of spasm of the canal as of real stenosis. The uterine canal was stretched under ether, the cavity swabbed with iodized phenol, and a glass plug inserted, which remained for several days, though exciting severe uterine cramps. The patient also suffered from vesical cramps. She remained in bed until the next menstruation, the first day of which was quite free from either headache or local pain. The flow, moreover, was extremely profuse, and, apparently from this cause, the second day was attended by severe cramps. After the menstruation the uterine canal was found to readily admit a Peaslee's sound. The patient remained for some weeks much troubled by her severe headaches and also by vesical cramps, the latter finally yielding to faradization. The second menstruation was also profuse and exhausting, but attended with little pain. The succeeding menstruations of January, February, and March were also nearly free from local pain, but attended by headache and exhaustion. In April she began to take the fluid extract of cocculus three days before menstruation, three drops every four hours. On this occasion she had absolutely no pain, felt much stronger, and was able to go out on the third day, the first time in many months. This effort, however, brought on a severe headache. Took three drops of cocculus. In a few minutes the pain was lessened; in ten minutes much easier, and the chilly sensations habitually present with the headache had disappeared. This showed the lessening of vaso-motor spasm.

Case II.—A girl of eighteen. From the beginning of menstrual life had always suffered extremely severe pain at menstruation. Two years ago I discovered retroflexion and catarrh of the uterus. The displacement was completely rectified, the catarrh was cured, and the circum-uterine tenderness disappeared under iodine applications, yet the menstrual cramps persisted or were only controlled by chlorodyne. This patient was also subject to severe headaches of various kinds and an habitually flushed face. The father had suffered all his life from sick headaches. In the girl's case depletion of the portal circulation with Carlsbad salts often affected the headaches very favorably. In April the cocculus was administered, as in the first case, during three days before menstruation and during the period. The patient had scarcely any local pain, the first time this had happened to her except under the influence of chlorodyne.

Case III.—A blonde girl of twenty, also with retroflexion of the uterus, with very thin skin, face habitually much flushed, pupils variable, suffering from severe dysmenorrhœal cramps, frequent headaches, and much inability for mental exertion.

The dysmenorrhœa was lessened at the first menstruation after the uterus had been replaced with a pessary. But the administration of cocculus, begun this time on the second day of menstruation, dissipated the remaining pain, and relieved the headache, flushing, and feeling of excess of blood in the head.

Planat, as is well known, advised picrotoxine in an entire list of convulsive diseases, and notably in epilepsy; but also in chorea, eclampsia, or painful contraction of the extremities, and paralysis agitans. Planat related twenty cases of epilepsy benefited or cured by the drug. Gubler indorses its administration. Hammond relates forty-three cases, all benefited, but gives no cure.

I have had as yet no opportunity of using picrotoxine for epilepsy myself, but my friend, Dr. Annie News, formerly of Newport, now of New York, has kindly communicated to me the following case:

Case IV.—E. P., aged fourteen, before coming under observation, had been for six months affected with petit mal. The attacks, commencing with two or three in a day, had increased to many, sometimes more than twenty, in twenty-four hours. His intellect was becoming impaired; he could no longer acquire his lessons, and had begun to have a slight idiotic look. Had been treated with bromides without effect. I at first gave him Brown-Séquard's preparation, which did not control the attacks, and *did* profoundly depress his system. I then began with tr. coc. ind.; afterward substituted picrotoxine, gr. $\frac{1}{60}$, four times daily, with the effect to control the attacks from the first. They grew fewer in number, and in a few weeks ceased altogether. Stopping the remedy for a week, they returned. It was then given for two months, gradually decreasing the doses to one daily, finally stopping it altogether. It is about five years ago, and the disease has not returned. The boy, I am told, lost his idiotic look, went back to school, and did well in his classes.

The other most noticeable therapeutical application of picrotoxine is as a remedy for the night-sweats of phthisis. Dr. Murrell, who seems to have first used the drug for this purpose, reports twenty cases, with only one failure.

This effect is very singular, for picrotoxine, like pilocarpine, increases the elimination of sweat in normal conditions, acting as an efficient diaphoretic (Bartholow). Its anthidrotic action in disease must therefore also be ranked with the similar action of pilocarpine. Although in phthisis the sweat-glands are presumably irritated, the drugs in question do not act through a sedative influence; but, apparently, a minimum degree of the stimulus which they cause when the excitability of the sweat-centers is at the normal level serves to increase the resistance of these centers to the morbid excitations.

This effect of picrotoxine, therefore, like the increased tonus of the arterial wall, implies that degree of stimulus of the ganglionic centers of the spinal cord which is conveniently expressed as an increased tonus. The expression is schematic, but it corresponds to the general fact of antagonism always existing between the energy of the cerebro-spinal centers and the energy of the vaso-motor centers, or of the peripheric vascular mechanisms of the vaso-motor system. Functional depression of the cerebro-spinal axis is liable to be followed by evidences of uncontrolled and excited action of vaso-motor nerves, spasm of blood-vessels, spasm of unstriped muscular fiber in œsophagus, bladder, intestine, and uterus. This is the entire *cortège* of hysterical symptoms which are so common when the cerebral cortex has lost its inhibitory control over the subcortical vaso-motor centers.

This, therefore, should be the effect of medicinal doses of picrotoxine: increased tonus or energy of action of the ganglionic tissue of the brain and spinal cord, by which the excitability of vaso-motor mechanisms and of the inspiratory center is restrained, respiration is rendered more energetic, and circulation steadier and more ample.

Exaggeration of this stimulating action causes convulsions which, in the higher animals, from the form, probably start from the cerebral cortex, but which in frogs may start from the medulla alone. The beneficial influence of picrotoxine in epilepsy should be due to its increasing the resistance, and therefore the stability, of cortical tissue, rendering this less liable to irregular discharges. The effect is directly opposite to that of the bromides, which depress the sensory irritability of the same tissue. It resembles the action of picrotoxine on morbidly excited sweat-centers.

The same action should be beneficial in the headache of such nervous women as are relieved of dysmenorrhœa by picrotoxine. The immediate cause of this headache seems to be the lack of tonus in the walls of the cerebral arterioles, which thus yield irregularly to the shock of the pulse-wave and allow it to be transmitted in full force to the nerve-tissue. In addition there is probably irregularity of local blood-supplies, from alternate contraction and dilatation of blood-vessels. All three patients whose dysmenorrhœa was improved noted marked improvement in the accompanying headache.

Relief to the dysmenorrhœa depended on the inhibition of the spasm which the uterine fiber shared in common with all other unstriped muscle. The diffused vaso-motor irritability so often seen just before and during menstruation, in women of the constitution described, seems to be associated with a defect in the wave of supplementary nutrition which should sweep over the nerve-centers at this period, but has failed to do so. If the energy of the brain and cord does not rise in the menstrual period, they become depressed relatively to the medullary centers, and the latter escape from normal restraint and control. Hence a multitude of nervous symptoms, local and diffused, which may accompany organic lesions of the uterus and ovaries, or persist after these have been cured, or manifest themselves in entire absence of structural disease. These symptoms are appropriately treated by picrotoxine. Finally, and for the same reasons, picrotoxine has been found useful in gastro-intestinal neuroses, gastric or enteralgic cramp associated with abundant flatus in the colon.

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**Massage, Rest, and Position in Sciatica.**—Dr. A. S. Eccles ("Practitioner," Nov., 1887) has treated with good results fifteen cases of this obstinate condition by massage, combined in some cases with rest and position. Of the fifteen cases which he publishes, four were in the subjects of neuritis, six were of a doubtful character, while five appeared to be distinctly of a neuralgic nature. The author does not consider an inflamed condition of the nerve as a contra-indication of this method of treatment.

# APOPLECTIFORM, EPILEPTIFORM, AND HEMIPARETIC ATTACKS IN LOCOMOTOR ATAXIA.

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In those cases of locomotor ataxia which terminate with mental disorders, apoplectiform and epileptiform seizures are not infrequent after the mental disorder has appeared. These seizures differ in no way from those observed in cases of progressive paresis of the insane. Apoplectiform and epileptiform seizures and passing attacks of paresis have not generally been considered a part of the clinical history of locomotor ataxia, and although within the last few years cases have been reported in which these symptoms have been a marked feature in the case, it is a phase of the clinical history of posterior spinal sclerosis which is little known.

Most of the treatises on nervous diseases make no allusion to the possibility of such symptoms appearing in the early part of the disease. That these symptoms should now be considered a part of the clinical picture in locomotor ataxia there is no doubt, as cases reported by Trousseau, Debove, Pierret, Vulpian, Bernhardt, Lecoq, and my own cases, show clearly.

In the last few years some cases having come under my observation in which these apoplectiform and hemiparetic seizures have occurred during the course of the disease, I venture now to report them, with a brief summary of a few of the cases reported by others.

Case I (Personal).—B., aged forty-five (?), lawyer, referred to me by Dr. Mathewson and Dr. C. R. Agnew, seen by me in August, 1886. He is a large, stout man, and in former years appeared to his friends in vigorous health. About fifteen or eighteen years ago he suffered from what he calls neuralgia in his legs, for which, at the advice of his physician, he took Russian baths. The pain was most severe in the right leg; it was sharp and stabbing in character. Soon after this (he is unable to say just how long) he began to have pains and numbness in the soles of his feet; soon this numb feeling extended up his legs and after a time into his hands. These neuralgic pains, as he calls them, lasted about a year and a half and ceased; he has never had any pains as severe since. About this time or soon after he began to have on his body, arms, and legs spots of numbness with burning pain in them; they were of about the size of a silver dollar; they were not constant, but would come and go from time to time.

Some ten years ago he consulted Dr. Mathewson for dilatation of the left pupil. In about 1880 or 1881 his first disturbance in walking began. He was one day playing lawn-tennis with some friends. In attempting to run after a ball he suddenly felt "as if his back-bone had been taken away from him," and he fell to the ground at once. He had no pain in his back. From this time he began to have some unsteadiness in walking. About ten years ago he began to lose his hearing. Some time ago he had cramps in his toes, especially if he were putting the muscles in action. About two years ago he began to have the feeling as if an iron band were drawn tightly around the lower part of his abdomen. In July, 1886, one night when it was very hot and he was coming from Albany to New York on the boat, on going to bed he noticed that his left hand and leg were more numb than usual. During the night he was awakened with intense numbness in the hand. When he attempted to arise in the morning he felt faint and sick at his stomach, and was unable to stand without holding on to some piece of furniture. He was unable to use the left arm and leg; could not dress himself. He had to be dressed, carried off the boat, and put in a carriage; when he reached home the coachman had to help him upstairs. The arm and leg remained so weak that day that he was unable to move about his room, but the next day he was sufficiently recovered to be able to get to New York from his house in Brooklyn. He has never had an attack of the kind since. At present the left pupil is still dilated, the optic nerves pale, the pupillary reactions quite sluggish, the tendon reflex absent, and the muscular power in both lower and upper extremities remarkably good. He is now completely deaf, even to the tuning-fork.

He is quite ataxic in the upper and lower extremities. He has mitral disease, casts and albumin in the urine. He denies syphilis.

Case II (Personal).—C. E., aged fifty, seen September, 1885. He has always enjoyed good health; never had syphilis. Is an excitable man and has always worked hard. About eighteen months ago he had some pleurisy and bronchitis, from which he entirely recovered. Has been doing a good deal of work of late, which he thinks was more than he could well accomplish, and he was anxious and worried about it. Three months ago, one day at about 11 A. M., he was standing near a mantel-piece taking a glass of ale, when he suddenly felt faint and dizzy, fell at once to the floor, and lost consciousness, he thinks for not more than twenty or thirty seconds; he had no convulsions; immediately after he found difficulty in walking, was quite unsteady, had to hold on to the furniture to get about the room; when he was able to go into the street, he found it necessary to take his wife's arm to steady himself. He complains of an "icy," sometimes a "drawing sensation" in the back of his head and neck. There are no pupillary changes; the fundus of both eyes are healthy; tendon reflex present; muscular power good; shows some unsteadiness in walking and standing with his eyes shut; no other symptoms present.

*October 31st.*—The peculiar sensation in the back of his head and neck has entirely disappeared, but he still has the unsteadiness in walking, and has to take his wife's arm when in the street. In the last week he has had sharp, lancinating pains in various parts of his body, legs, and face. His difficulty in walking has increased, and shows itself most when he starts to walk; then he is quite unsteady. He has no disturbance of sensation, no urinary or visceral disorder, and never had diplopia. He is quite ataxic and unsteady in the lower extremities; this is shown especially when he passes through a door or attempts to cross the sidewalk or step up on the curb-stone.

This patient removed to another city, and I did not see him again.

Case III (Personal).—H., aged forty-two, married, seen in January, 1887. Syphilitic infection denied. Health good up to beginning of present condition. Eight years ago he had loss of consciousness for a very few minutes, followed by some thickness of speech and weakness of the right side, which soon passed away. About three years ago, one cold morning, when having breakfast in a restaurant, he suddenly had loss of vision, beginning in the right eye. He claims that the upper half of the visual field was first obscured, then the lower; it lasted only a short time.

His present condition shows the toes of the right foot very much swollen; they are white and puffy, and are the seat of intense, sharp pain. He attributes this condition of his toes to the wearing of a shoe which he says must have caused it. He admits having sharp pains in the legs, but it is very difficult to get a history from him. No pupillary changes at present. No

ophthalmoscopic examination made, and, owing to the painful condition of his foot, no satisfactory examination can be made of the lower extremities.

In this case the swelling of the foot is unquestionably the evidence of some nerve lesion. It is similar to the arthropathic troubles seen in the knee and other joints in locomotor ataxia.

Case IV (Personal).—C., aged thirty-six, seen in March, 1888. Has always been of a nervous, active temperament, and a hard worker. Has always enjoyed good health up to ten years ago, when he contracted syphilis. The only secondary manifestation which he says he has had was an ulcer of the tongue near the root, the scar of which can now be seen. For the past seven years he has suffered intense pain in the legs, which he calls neuralgia. These pains occur at all times, but mostly at night; they come in paroxysms, lasting from twelve to twenty-four hours or more; they occur in localized spots, which he says he could cover with the palm of his hand; they may be in his thighs, below the knees, or in his feet. His little toe is a favorite place for these pains; they are lancinating in character, and very severe. In the past year he has begun to have some pains in his arms, but they are not severe. About a year ago he began to feel weak compared to what he formerly did. Found he could not do so much work or as quickly. Became easily fatigued, and his legs became easily tired. About four weeks ago his business occasioned his making a visit to a neighboring city. While there, one evening, when sitting in a restaurant with a friend and resting his left arm across the back of a chair, he suddenly felt a peculiar numb feeling in the entire arm, which was soon followed by the same feeling in the leg and entire half of the body, including the head and face. He was alarmed, and, on attempting to arise from his chair, found he was unable to do so except with difficulty. Of his condition he gives a minute description. He had a certain amount of muscular power in the extremities, but he had no control over their movements; he could not put his leg where he wanted it. This inability to guide the parts was most marked in the upper extremity. When he attempted to take his hat from the rack he groped about in all directions before he could get it, and when he tried to take his cigar out of his mouth his hand was so much beyond his control that he got his fingers on the ashes and lighted end. He illustrates this action to me, and it appears to have been a combination of paresis and ataxia. With aid he reached his hotel, and the next day returned to Brooklyn, where with difficulty he reached home and got upstairs to bed. A few days afterward he began to have severe pain in the left side of the head, which continued more or less for twenty days; at times it was intense; during some of these paroxysms he was almost delirious. When I first saw him he was suffering this intense pain; after its relief, and further examination made, it was found that he had no remains whatever of the hemiparetic attack or disturbance of sensibility. Pupillary reaction to light and accommodation are very sluggish, and the pupils are small. The ophthalmoscope reveals no changes in the fundus; tendon reflex absent; he appears to have no ataxia, but the Romberg symptom is very decided. He has a peculiar sharp cough, which is frequent and no condition of his lungs or throat explains, and which I look upon as a disturbance of the laryngeal nerves. He has also a kind of choreic twitching of the shoulders. He is still under observation. Trousseau appears to have been the first to speak of this condition in locomotor ataxia, for, in his lectures on "Clinical Medicine" (Sydenham Society translation, vol. i, page 143), he says, in the chapter on locomotor ataxia: "Certain forms of transient paralysis also precede the want of co-ordination."

Case V.—I was lately consulted by a gentleman from Côte-d'Or who, nine months ago, was suddenly seized with left hemiplegia. There was no impairment of the intellect, and he could resume his occupation at the end of a week. "In July of the same year the patient was seized, on two different occasions, with paralysis of the tongue, of a few seconds' duration only. From that time, however, his gait became uncertain, and the locomotor ataxia soon made frightfully rapid progress."

In 1881 Debove, in an article on hemiplegia of ataxics, records two cases:

Case VI.—A man, forty-eight years old, who never had syphilis, and up to the age of twenty-five enjoyed good health. At this age he began to have paroxysms of lancinating pains in his thighs; at twenty-seven years of age he had diplopia, which lasted a year; at thirty-three he began to have gastric crises; and later he began to have difficulty in walking about, and soon his walk was ataxic. In 1871 he had a fracture of the femur, from which he recovered. In 1876 he had a sudden attack of right hemiplegia, with aphasia; these paralytic symptoms had entirely disappeared at the end of five days. In May, 1880, one morning he found difficulty in moving his right arm; in twenty-four hours it was impossible for him to move it; later the leg became weak, and he had difficulty in speaking, and right facial paralysis. This attack of hemiplegia did not pass off before his death, which occurred in July.

Debove looks upon the first attack of hemiplegia as dependent upon the tabes; no lesion was discovered to account for it. The second attack appeared to depend upon a spot of softening in the left half of the pons.

Case VII (Debove's second case).—A man, fifty-eight, who had lancinating pains in his legs since 1865. Inco-ordination in 1874. In 1863 he found one morning that it was impossible for him to move the right upper and lower extremity, and he had difficulty in speaking. The hemiplegia gradually improved, and in eighteen months he had no remains whatever of it. When examined by Debove in 1881, there was not a trace of hemiplegia.

A very interesting case is published by Vulpian in "Archiv. de médecine" (1882), which is briefly given here:

Case VIII (Vulpian).—A man, twenty-seven years old, who had no neurotic family history. He had not had syphilis. Neither had he used alcoholic drinks to excess. Since the age of eighteen, which was in 1870, he had had diarrhœa, which came on every two months and lasted about three or four days. In 1879, while in a coffee-house after his breakfast, he was taken suddenly with vertigo, weakness, and unconsciousness; he said he was not convulsed, there was no discharge of saliva from his lips, and he did not bite his tongue; five minutes after he had recovered himself.

In the following May, one evening he was taken, without vertigo or stupor, with spasm of the left facial muscles and left eye. He did not lose consciousness. Five minutes after, he had entirely recovered. Toward the end of this month he became weak; he tired easily. From time to time he had headache, which caused the sensation of a vise compressing the forehead and the two temples, and a burning sensation in the forehead. In September he had to do military duty, but was unable to; his legs flexed under him, and he became exempt from all duty. His condition when admitted to the hospital under Vulpian was headache every day, in paroxysms of short duration; it was at times very severe and accompanied by redness of the face, congestion of the conjunctiva, and a feeling of fullness in the head. There were abnormities of sensibility. The tendon reflex was absent. He appeared to have no true lightning pains; there was rather a sensation of small shocks; the pupils were contracted. On November

29th he had a sudden loss of consciousness, preceded by a sensation of formication passing from the extremities to the head. On December 12th, when on his way to take a sulphur bath, he was taken with an attack, and was found on the stairway in an unconscious condition with epileptiform convulsions in the four extremities; the attack appeared to have lasted half an hour; when he recovered he could not speak; he had almost complete right hemiplegia without manifest disturbance of sensibility. By December 19th he began to speak somewhat freely. December 30th the hemiplegia had entirely disappeared.

In 1882 Bernhardt reports two cases:

Case IX (Bernhardt).—A man, aged forty-seven, who for the past five years has suffered from pains in the lower extremities, sensory disturbances, and disorders of motion. He can not stand erect without support; he has diplopia, and the tendon reflex is absent. Ten weeks ago he had sudden motor weakness in the right arm, which soon passed away; at the same time he had for ten minutes inability to speak. Six weeks after, he had twenty attacks of the same kind in twenty-four hours, and always accompanied with disturbance of speech.

Case X (Bernhardt).—A man, forty-four years old, who for many years had experienced painful sensations in the right half of his face. Three years and a half ago he was taken suddenly with aphasia; speech soon returned, but in the evening he lost consciousness, which lasted three quarters of an hour. Two years ago he began to have lancinating pains and difficulty in walking. The tendon reflex was absent and there was diminution of sensibility to pain.

Lecoq, in 1882, in an essay on this subject, gives a number of similar cases.

Dr. William A. Hammond, in his work on "Nervous Diseases," in speaking of locomotor ataxia, says: "The first symptoms may be cerebral, and may consist of attacks of vertigo, pains, either in the front or back of the head, epileptic fits, etc."

In one of my cases there is a clear history of syphilitic infection, and objection may be made to the case on this ground. Apoplectiform and epileptiform seizures have been spoken of by Fournier in those cases which he calls locomotor ataxia of syphilitic origin. When the symptoms up to this time present in my case are so typical of posterior spinal sclerosis, and it has been shown in the last few years that something like seventy-five per cent. of the cases of locomotor ataxia give a history of syphilitic infection (Erb, Seguin, and others), this case is, I think, justly classed as one of posterior spinal sclerosis of the usual type.

These cases are sufficient to show that apoplectiform and hemiparetic seizures are not so infrequent in locomotor ataxia, and that their importance as a part of the clinical history of this disease has not been sufficiently recognized. When these symptoms appear early in the course of the disease, as they do sometimes, if careful inquiry be not made it may lead to errors in diagnosis. It is at present impossible to offer any satisfactory explanation as to the cause of these sudden and temporary seizures. The explanation usually offered of the apoplectiform and epileptiform seizures in general paralysis of the insane, a condition somewhat allied, is that they depend upon localized congestions, an explanation which has always appeared to me unsatisfactory. It is now well known that in the course of locomotor ataxia we may have more or less sudden paralysis of muscles which are under the innervation of certain nerves, such as paralysis of the muscles supplied by the third nerve, or of the facial or the anterior tibial, which are temporary, and probably dependent upon a neuritis. The occurrence of the apoplectiform seizures in the ordinary cases of ataxia has led Grasset to the conclusion that locomotor ataxia, instead of being a disease confined to the posterior columns of the cord, is really a more or less diffuse lesion of the cerebro-spinal axis. This view of the subject appears to be not without foundation.

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## THE USE OF ANTIPYRINE DURING LABOR.

By EGBERT H. GRANDIN, M. D.

Although it is written, "In sorrow thou shalt bring forth children," it is the laudable aim of the obstetrician of to-day to mitigate, in so far as he is able, the pangs of childbirth. The means to this end to which we may resort without damage to either the mother or the child are few in number, and the most valuable of all justly finds its chief rank after the completion of the first stage of labor. During this stage the accoucheur is in a position to do but little toward relieving the maternal suffering, and this little consists in the administration of opium or of chloral. The former drug I have always been loath to administer to the parturient, for the reason that if pushed it may retard the labor, and further because it is of the highest importance to the puerpera that the intestines should functionate normally in order that this main emunctory should not become locked, and poisoning from fæcal accumulation ensue. In chloral we possess a most valuable means of "taking the edge off the pains" and of regulating their rhythm, but the woman's suffering during the acme of the pains is still intense, and we often wish we had an adjuvant to the chloral which, whilst nullifying none of its effects, would render the contractions practically painless. In the hands of certain observers, electricity—the faradaic form chiefly—

has rendered service in this direction, but, valuable as this agent has proved in my hands as an oxytocic, it has never appeared to me to possess any anæsthetic effect on the uterus. When cocaine was discovered, before long it was heralded as of value as a local anæsthetic during childbirth. In my hands, however (and other observers are in accord with me), it has proved of no value whatsoever during the first stage of labor, and questionably if at all during the second stage. The excellent results yielded me by antipyrine in dysmenorrhœa and other affections where it is a question of nerve pain have led me during the past year to test it during the first stage of labor, and my results have been sufficiently gratifying to justify me in asking other obstetricians to try the drug. Possibly it has been similarly used by others, but if such be the case I have seen no record of their experience. My habit in regard to the administration of the drug is to give fifteen grains well diluted, and preferably with some stimulant, such as the aromatic spirits of ammonia, and to repeat the dose in one hour thereafter. In two hours after the second dose the patient receives ten grains, and so on every two hours if needed. The chloral mixture I administer, as has always been my custom, in fifteen-grain doses every three quarters of an hour till three to four doses have been received. The result of this combination has been to nullify the pains so much as to be in two instances scarcely perceptible, and in others simply uncomfortable. The progress of labor has not been at all interfered with, and neither the mother nor the child have presented evidence of injury from the administration of the antipyrine.

I report this experience thus briefly in order that other observers may test the validity of my results. Should there be concurrence of opinion, the first stage of labor will be rendered practically painless by antipyrine, even as the second and the third may at any time be made through resort to chloroform.

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## THE USE OF DRAINAGE-TUBES AFTER OVARIOTOMY.

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While the use of drainage-tubes has enabled many a patient who has undergone ovariotomy to recover who would otherwise have died from septicæmia, peritonitis, or secondary hæmorrhage, their abuse or misuse has undoubtedly caused or been a prominent factor in two bad after-results occasionally following an otherwise successful recovery from the operation.

It is the object of this paper to mention the various kinds of drainage-tubes in general use, with their merits and disadvantages; also to briefly indicate in what cases and how they may be used so as to lessen the danger of hernia and that which should so seldom follow, but which so frequently does, an incurable deep sinus leading into the abdominal cavity.

That the glory of many a brilliant operation is dimmed by such unfortunate sequelæ must be admitted, and I have no doubt that if as much careful attention was paid to the selection, care, and removal of the drainage-tube as to the sewing up of the abdominal wound, it would result in fewer hernias, and a decidedly smaller percentage of sinuses. Whenever, following the removal of any organ or tumor from the abdominal cavity, or even a simple exploratory incision, there is oozing of blood to any extent into the peritoneal cavity, or any good reason to expect hæmorrhage into the same on account of numerous torn adhesions, it is always conservative surgery to insert a tube.

When any foreign fluid—as pus, ovarian, etc.—has found its way into the peritoneal cavity, a drainage-tube should be used. Certain operators—as Goodell, Péan, Olshausen, Martin, and Tait—hold radically different views, preferring, in most instances, to close the wound entirely; after cleansing the peritoneal cavity by sponging, etc. Sterilized water and certain dilute chemical solutions, as dilute boric acid, used for the purpose of washing out the peritoneal cavity, are innocuous at about the temperature of the body and in small quantities in themselves, but usually where there is any occasion for their use we have other conditions present, which we have already mentioned, as the presence of pus, ovarian fluid, or blood, rendering it safer to employ the drainage-tube. When, however, warm water is poured into the peritoneal cavity in case of shock, if the greater portion can be removed at the time, no drainage is necessary, as the little remaining will undoubtedly become absorbed. Pus-cavities, it is unnecessary to state, should always be drained, and very thoroughly, more than one tube being used if necessary.

The advisability of employing drainage when ascites is found following an exploratory incision depends on the end in view—that is, whether an attempt is to be made to permanently relieve the patient of this complication or not, and also brings up the question of the cause of the accumulation of fluid. If the cause of the ascites can be removed at the time of the operation, as when due to the pressure from a tumor, etc., and the fluid in itself is not malignant, there is no necessity of establishing drainage for the little which afterward remains. In most cases of cancer of the peritonæum accompanied by ascites drainage is also unnecessary. In such a case, where an exploratory incision has been made and it is deemed useless to remove the cancerous mass, the operator gains nothing by using a tube, but does give the patient a decidedly better chance of rallying from the operation and dying a natural death by simply sewing up the wound, and from time to time afterward removing the accumulating fluid by tapping, whenever the necessity arises. With the single exception of tubercular peritonitis, in affections complicated with ascites, I think few operators would advocate the use of the tube unless there was some other element present, as hæmorrhage, escape of cyst fluid into the peritoneal cavity, or pus. Occasionally, however, the events subsequent to an exploratory incision for cancer of the peritonæum prove that it would have been the wisest plan to have established drainage in the first place. For instance, in one of these cases which I saw some

time ago, the surgeon operating sewed up the abdominal wound completely. In a short time the ascitic fluid commenced to rapidly reaccumulate, a decided hectic developed, and suddenly one day an enormous quantity of purulent and most fetid fluid escaped through the weakened line of incision. Probably drainage would have prevented this accumulation of pus. This patient, of course, died in a short time. At the time of the operation, from the character of the fluid, etc., no one thought drainage even advisable.

Ascites due to tuberculosis of the peritonæum has occasionally been permanently cured by drainage, and this method of treatment is now recognized, not only as a justifiable procedure, but as one which offers a person afflicted with this dread disease a strong probability of recovery. Lately, however, several cases* of this nature have been reported where the simple removal of the ascites following an exploratory incision has resulted in a cure, and this without the use of drainage; so that in these cases, from the experience taught from these more recent operations, it would seem perfectly justifiable to omit the tube.

It might be supposed where a drainage-tube had been introduced into the peritoneal cavity, when ascitic fluid was present, that we should have a steady oozing from the tube for a long time. This is seldom the case except prior to the second or third day. On the contrary, a layer of lymph soon forms around the drainage-tube, and in the course of two or three days completely cuts off all communication with the peritoneal cavity. In tubercular peritonitis with ascites, the sinus seems to remain open, according to the experience of several operators, and permits of permanent drainage.

In about 150 cases of laparotomy which have been directly under my observation, and in many of which there were drainage-tubes inserted, in I should say a quarter of all the cases, with one exception, all communication with the healthy peritonæum was cut off in two or three days, usually earlier. Quite recently Dr. Polk and Dr. Klotz† came before the public advocating the radical cure of retroversions and flexions of the uterus by performing laparotomy, freeing the malplaced and possibly adherent uterus, and stitching each round ligament close to the uterine origin into the tissues of the abdominal wall just above the symphysis pubis; then, placing a glass tube posterior to the uterus and into Douglas's *cul-de-sac*, they expected to have a firm support for the uterus, and one which would not permit of any relapse. Modifications of the operation consisted in first removing the ovaries and tubes, and then stitching the stumps to the abdominal wall. This operation, with certain modifications, has also been advocated for marked prolapse of the uterus. By this method of treating the displacement it is claimed there is no strain on the uterus in position, and but few, if any, relapses. Klotz leaves the tube in from three to four weeks. In the course of forty-eight hours a layer of newly organized lymph has formed around the tube, which subsequently becomes a firm cord, made up of connective tissue, and probably adherent to the peritonæum covering the uterus, portions of the intestines, that lining part of Douglas's *cul-de-sac*, and the abdominal wall. It is claimed that the uterus is quite movable afterward. I shall not attempt to criticise the operation, but merely point out in connection with this paper one bad after-result which must take place in many cases where the tube is left in place any length of time, and that is an incurable deep sinus, which certainly is very annoying, to say the least, to many patients. On account of this result and the dangers of the operation, it does not seem, when performed in this manner, that the operation is warrantable.

Certain abdominal fistulæ which I have seen treated have actually caused their owners as much worry and discomfort as the original trouble for which the operation was done. The vitality of the tissues lining these sinuses seems peculiarly weak, and it is often an impossibility to stimulate the sinus to contract at all. Frequently, when closed up to a certain point, the tissues break down again, making the sinus as deep as before.

Dr. Mundé has recently called attention to the reflex gastric irritation "apparently produced by the tube," and cites a case with such symptoms in which the removal of the tube caused the cessation of the vomiting.

From the results already obtained, it seems quite evident that the operation of hysterorrhaphy as performed by Dr. Kelly, Dr. Sänger, Dr. Paul Zweifel, Dr. Staude, Dr. Brennecke, Dr. Wirth, Dr. Senn, and Mr. Tait—and the operation is performed most successfully by Dr. Thomas in two cases of stitching the pared surface of the fundus of the uterus to the abdominal wall—answers the same purpose and accomplishes the desired result in a much more rational way, and with the undesirable complications of the operation as suggested by Dr. Polk and Dr. Klotz. Another objection to the tube raised by Dr. Kelly, of Philadelphia, is that the uterus propelled by the intestinal movements can with ease slip either one side or the other of its prop, thus demonstrating the uselessness of the latter.

By a few operators the practice of placing drainage-tubes through Douglas's *cul-de-sac* into the vagina in suitable cases has been advocated. Except in the case of a pelvic abscess, where it is almost universally admitted that this method is desirable, I am not familiar with the results, but understand that they have not been favorable. It is certainly easier to care for the abdominal tube, and the discharge is nearly as free; moreover, it has the advantage of being constantly under one's eye. According to Thomas,* "drainage *per vaginam* by means of tubes passed up into the peritonæum is calculated to increase the dangers of ovariotomy by opening a way for putrid fluids into the pelvic cellular tissue."

To briefly formulate a rule as to the advisability of using a drainage-tube in a given case, one always errs on the safe side by adopting that given by Bantock, of England, at one of his operations in this country. When asked in what cases he was accustomed to employ drainage, he replied:

* Dr. J. W. Elliot, "Boston Medical and Surgical Journal," May 17, 1888, page 492.

† "Centralblatt für Gynäkologie," January 14, 1888.

* Thomas, "Diseases of Women," page 745.

"Whenever I have the slightest excuse and whenever I am in doubt I insert a tube."

At the present time most operators are accustomed to employ glass drainage-tubes of varying diameters, either plain or perforated by several small openings along the side. I think that the former answer every purpose, for fluid naturally gravitates to the bottom of the cavity, and the small openings in the side of the tube soon become plugged by the surrounding viscera; moreover, the intestines or a piece of the omentum are liable to be sucked into these perforations and injured on the withdrawal of the tube. As a rule, the smaller tubes are the most desirable, say three eighths to half an inch in diameter. The objections to a small tube are that it is more easily blocked at the end, and is more liable to be broken. The latter objection also applies to a very long tube. Of course, the walls of the tube should be made so thick that any ordinary force will not crack it. Soft-rubber tubes in laparotomies* are, as a rule, not as convenient or as efficacious as glass or hard rubber, as they are very liable to be compressed, thus preventing perfect drainage, are more irritating, and are not easy to keep clean and free from odor. In abscess cavities, in many cases, on account of the convolutions of the sac, they will reach the bottom where a hard-rubber or glass tube will not, and here certainly their use would be preferable. It is also the custom of some operators on withdrawing the hard tube to insert temporarily a soft-rubber and shorter tube. Single hard-rubber tubes in themselves possess no advantages over glass, except they are less liable to breakage. This accident I have heard spoken of several times, but have never known personally of its occurrence when the tube was *in situ*. I should be glad to learn of an authentic case.

Except when a collection of pus is formed, it is not at all necessary to wash out the tube when leading into the peritoneal cavity. Simply removing the accumulating contents fulfills every requirement. A single tube usually answers every purpose, and I should have entire confidence in one. Nearly all the double tubes fail to work satisfactorily, and it not infrequently becomes necessary to insert a single tube in order to secure proper drainage. In the case of sacs, or a large cavity, conditions of which I will speak later, this is not necessarily true. To assist in the demonstration of hæmorrhage, I think they are far from being as satisfactory as single tubes. Tubes made of absorbable material, as bone, are undesirable here, and are not now in use, so far as I am aware. Peaslee at one time advocated the use of a cloth tent. Its disadvantages, compared with the many manifest advantages of the glass-tube, are, I think, quite marked. Koeberlé was accustomed to use metal tubes, one entering through the abdominal wall, and one into Douglas's *cul-de-sac* through the vagina. Mikulicz and Fritzch are accustomed to use and recommend highly the use of a piece of sublimate or iodoform gauze, one end resting at the most dependent point, and the other coming out at the lower end of the incision, thus draining by capillary attraction. It is to be drawn out gradually. It certainly does not permit of irrigation or demonstrate hæmorrhage as well as the glass tube.

My preference in most cases, with possibly the exception of those cases where we have to deal with abscess cavities, and usually these also, would be to use single-glass drainage-tubes, for the following reasons: They are the most simple kind made, are cleansed with the greatest ease, allow free drainage, their contents can be removed more easily than from any other tube, and, if necessary, they can be easily washed out. As I said before, I do not consider that perforations along the side are of any advantage.

The contents of the tube should be removed as often as every two hours, and, if the discharge removed at one time be an ounce or more, at more frequent intervals, occasionally as often as every half-hour. The first twenty-four hours after the operation the tube should be most carefully watched for hæmorrhage. I have seen marked hæmorrhage from either the stump or torn adhesions, and rendering it necessary to open up the abdominal wound in six cases, in two of which it had to be done a second time. In one of these cases a bright and watchful nurse detected the trouble by means of the pulse, no drainage-tube being used. In all the other cases, if I remember correctly, the very first manifestations were the appearance of the blood through the tube.

The removal of the fluid is easily accomplished by means of a rubber tube attached to a small glass syringe. In the absence of the syringe, a soft-rubber tube will answer the same purpose. As I have several times seen physicians puzzled how to accomplish this simple manœuvre, I will state that it is executed in the same manner that we withdraw urine in a pipette. Insert the rubber tube to the bottom of the glass tube and hold it there for a second, and then, after closing the upper end by pinching the tube with the finger, withdraw it, and nearly all the contents of the drainage-tube will be removed. I lay great stress on the frequent removal of fluid in this manner as one of the safeguards against septicæmia. It is unnecessary to emphasize the fact that the syringe or tube for the removal of the fluid should be kept in an antiseptic solution, and that one should be as careful about the condition of his hands, etc., as of the apparatus used. As the discharge diminishes, the necessity for its frequent removal ceases. The tube should be closed by a plug of absorbent cotton or gauze. Mundé protects the tube by a little wire cage, its object being "to avoid the danger of pressing on the projecting flanged end of the tube and pushing the other end against the bottom of Douglas's pouch."

Most surgeons make the mistake of leaving the tube in altogether too long. It should be removed just as soon as the discharge becomes clear serum, or ceases, and in most cases it is entirely unnecessary to substitute a soft-rubber tube. I never saw but one case where the tube was removed too early. Here an abscess, discharging very fœtid pus and having formed in Douglas's *cul-de-sac*, broke the day after the tube was removed, which was done on the third day, and then discharged through the track of the sinus, showing that the abscess did not form as a result of the too early removal of the tube, but rather had formed

* "Drainage after Laparotomy," "Gynæcological Transactions," 1887.

before, the end of the tube probably having become blocked. In this case there was an escape of some of the cyst fluid into the peritoneal cavity, which probably acted as the exciting cause of the abscess. The late removal of the tube also leaves a weak point in the abdominal wall, which undoubtedly predisposes to a hernia.

Some ten months ago I had the good fortune to see such a case, a small hernia having presented at the lower end of the line of union, at the point where the patient had worn a drainage-tube. An interval of some five months had then elapsed since the laparotomy had been performed. Proper care of the drainage-tube, and frequent removal of its contents, will certainly hasten its removal, and do much in this way toward the prevention of hernia, as well as of a bad sinus.

The discharge through the tube, when no pus or septic matter has been present at the time of its introduction, usually presents the following characteristics: For the first six hours it is quite abundant, strongly colored with blood, and rather thin in consistence; it then steadily diminishes in amount, the color becomes lighter, and in from twenty-four to seventy-two hours the fluid becomes a clear serum; this grows less and less, and, if not removed frequently, soon solidifies in and around the tube, being of a jelly-like consistence. If the tube is still allowed to remain in place, the slight serous discharge gradually changes to a purulent one, apparently forming on the surface of this jelly-like fibrinous deposit, and after a time the pus increases, so that there is a steady discharge of perhaps several drachms in the course of twenty-four hours. This almost invariably happens when the tube is left in too long. When pus has once commenced to form in any amount, it is wiser to gradually draw out the tube, at the rate of an inch shortening every day or two, the result of removing it entirely in such a case being the damming up of the pus by the closure of the upper end of the sinus, and the formation of an abscess. This I have seen several times; but, as the pus always discharged through the track of the sinus before it accumulated in any amount, it did no permanent harm, except to delay the closure of the sinus.

When pus or septic material is present to start with, the tube should be gradually shortened, or until the discharge becomes serous, when it can be removed entirely.

The drainage of adherent cysts is usually accomplished by stitching the sac-wall to the abdominal wall, and tightly around a glass or hard-rubber drainage-tube. This method is followed by several annoying features. If a slight adhesive inflammation could be set up in every case, so that the opposing surfaces of the sac would unite and thus obliterate the cavity of the sac, this would be the ideal method. Unfortunately, this seldom happens. Out of ten cases which I have seen or assisted in the care of, only one apparently took this course. Here everything seemed to do nicely; there was no pus discharged from the sac—in fact, there was hardly any discharge at all. The washings all came back clear and sweet, and there was no rise of temperature. At an early date the tube was removed, and the patient was sent to her home "well." Subsequent examination of the woman showed that the sac had probably never been entirely obliterated, but only around the end of the drainage-tube; that cyst fluid had again accumulated, and that the patient was in quite as bad condition as when she first presented herself for operation. More commonly the story is somewhat different. At first we have an abundant discharge through the tube of cyst fluid, which soon becomes exceedingly offensive, especially when sloughing of the sac commences. This latter takes place in most cases. As the cyst-wall absorbs very freely indeed, the patient soon becomes a subject of septicæmia unless the sac is kept clean.

It is quite certain that a simple non-malignant and adherent cyst which has been properly drained and irrigated never need cause the death of a patient from septic absorption. Unless, however, a free and permanent opening be made, not only sufficiently large to permit free irrigation, but so large that sloughing fragments can be easily removed, it is not improbable that a fatal termination may result. It is not enough that fragments can be washed away; they should be removed before sloughing has reached that point. All sloughs and débris should be pulled or cut away as rapidly as possible. By doing this and washing frequently, the sac can be kept clean and free from odor; but this must be emphasized: the opening into the sac should be kept as large as possible.

In these cases an ordinary drainage-tube seems comparatively useless. One can stitch the edges of the sac to the edges of the wound, leaving an opening two or three inches in diameter, pack the opening with absorbent cotton or gauze, and secure ample drainage, without the trouble of a drainage-tube. There is not the slightest doubt that the opening will contract enough before the sac has entirely sloughed away, and the advantages of having this large opening are only too obvious. If it be thought desirable, a drainage-tube can be inserted, in addition, to reach some remote corner of the sac, or continuous drainage can be instituted, but with the large free opening neither are necessary. In no other way can sloughing fragments be so easily or so early removed.

It is not often that continuous drainage is desired, nor is it always easy to effect. If a Kibbee cot, or a good substitute for it, can be obtained, the problem is much simplified, as then a continuous stream of warm or medicated water may be allowed to run into the sac or wound and overflow into the cot, thence running into a tub at the foot of the bed. The overflow can usually be confined to any part of the bed by means of blankets, rolled up and placed so as to form a hollow square, covered with a rubber sheet which acts as a basin with the rolls for its edges. To keep a person quite dry and still keep up a continuous drainage is much more difficult. Here a double drainage-tube either Dr. Thomas's or Dr. Sims's, or even two plain rubber tubes, can be used to advantage. It is desirable to have the escape tube of rather larger diameter than the entrance tube, and arranged as a powerful siphon. These openings around the tubes should be plugged. The apparatus must be carefully watched, as the tubes are continually getting blocked by sloughs, etc., and as a result the water is very apt to run over into the bed. The stream of water should be very slow. When such sloughing is going on, an intermittent

and forcible stream, such as the Davidson syringe gives, is preferable, as it dislodges débris which may be adherent much more easily and quickly.

I will end this paper by indicating briefly the few points I wish to emphasize, none of which are new, but, at least concerning some, there is a decided difference of opinion, and one or two which it is self-evident many surgeons neglect:

1. A glass drainage-tube of rather small diameter and thick walls should be used in preference to all others.

2. A drainage-tube should be inserted when in doubt and when any of the causes already mentioned for its use are present.

3. A tube which is not perforated along the sides answers every purpose.

4. The contents of the tube should be removed at very frequent intervals—every half-hour to three hours.

5. One of the greatest uses of the tube is in the early demonstration of hæmorrhage.

6. A tube should be removed just as soon as the discharge becomes clear serum.

7. When a drainage-tube is left in too long a sinus remains which it is frequently impossible to close, and there is an increased liability to hernia.

8. In draining a sac, a large and free opening made at the time of operation seems preferable to sewing the sac-walls closely around a drainage-tube.

**Exophthalmic Goitre.**—"We may look," says the "Lancet," "to rare morbid associations of ill-understood diseases for some elucidation of their pathology. Considerable hypertrophy of the tonsils has been observed in association with hypertrophy of the thyreoid, and such a connection suggests many ideas which it can do no harm to entertain, but by which we must not set too much store. Sometimes considerable mental disturbance may accompany other symptoms of exophthalmic goître. The insane state has occasionally been of that description met with frequently in general paralysis—the expansive and grand sort. Why the right lobe of the thyreoid and the right-sided proptosis should be greater than the left, supposing the observation to be true, may be dependent on other causes than a sympathetic nervous association. Though ophthalmic goître is most frequent between the advent of puberty and the full development of womanhood, yet children and aged persons may present all its signs. Benedikt places the essential lesion in the medulla oblongata, Eichorst in the grand sympathetic, and Filehne in the restiform body, while Charcot considers it as a general neurosis allied to hysteria, and other authors believe it to be specially related to chlorosis or anæmia."

**Enema Lesions.**—"Dr. Achilles Nordmann, of Basle," says the "Lancet," "has published a description of twenty-five bowel lesions due to the operation of administering enemata. They include three complete perforations and ulcers, and wounds of various depths and sizes. The causes of these lesions seem to have been the use of defective instruments, ignorance of the direction of the rectum, catching of the transverse fold on the tube, extreme irritation of the mucous membrane of the bowel, and obstructions caused by certain conditions of the uterus, the fœtal head, or an enlarged prostate. As a rule, these lesions are to be found on the anterior wall of the rectum, from one to seven centimetres from the anus. They are not always easy to diagnose, as other foreign bodies or caustics may produce similar appearances. Tubercular and hæmorrhoidal ulcers may be mistaken for them; these are, however, generally higher up. A perforating wound gives rise to paraproctitis, but this is not necessarily fatal, though a stricture generally results."

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## THE DISINFECTION OF SHIPS AND THEIR CARGOES AT NEW ORLEANS.

THE Surgeon-General of the Marine-Hospital Service appends to a recent issue of his "Weekly Abstract of Sanitary Reports," dated June 29th, an interesting report of a series of tests of the efficiency of the methods of disinfection employed by the State Board of Health of Louisiana, as applied to ships and their cargoes, together with the personal effects of the ship's company. The investigation was made by Assistant Surgeon J. J. Kinyoun, of the Marine-Hospital Service, at the request of the Louisiana board.

Before describing the tests which he applied, Dr. Kinyoun quotes from a clear and detailed description of the processes in use, by Dr. Joseph Holt, formerly the president of the Louisiana board. Substantially, they consist in irrigating the decks and the interior of the vessel itself with a strong solution of corrosive sublimate; in subsequent fumigation with sulphur dioxide, the hatches being closed; and in the subjection of bedding, wearing apparel, and the like, to the action of dry and moist heat in a chamber of ingenious construction. Dr. Holt's description gives abundant evidence that the Louisiana board has zealously and intelligently made its fight against the introduction of the germs of disease by maritime channels; if additional testimony were wanting on this point, it is to be found in the very fact of the board's having made a request for such an investigation as Dr. Kinyoun has carried out.

Dr. Kinyoun has no fault to find with the principles on which the processes are founded, but he finds that in some respects their application is lacking in thoroughness. The solution of corrosive sublimate does not actually wet all parts of the ship and its contents that it is intended should be reached by it; the sulphur fumigation is shorn of much of its supposed efficiency by the absorption of a portion of the sulphur dioxide by the moisture present, by the union of some of it with the mercury salt, producing an inert compound, and by the insufficient length of time that the gas is kept imprisoned in the vessel; and the heat in the chamber employed for disinfecting clothing, etc., seems to be either not intense enough or not so distributed as to act adequately upon all the articles in the chamber. These inferences are founded on volumetric analyses of the air contained in ships treated by these processes and on cultivation tests with the micro-organisms of various infectious diseases, including the *Spirillum choleræ asiaticæ*, the *Spirillum Finkler-Prior*, the *Bacillus anthracis*, the *Bacillus typhi abdominalis*, the *Bacillus coli communis* of Hueppe, the *Bacillus muris septicus*, the *Bacillus pneumoniæ* of Friedländer, the *Staphylococcus pyogenes albus*, the *Staphy-*

*Micrococcus pyogenes aureus*, the *Streptococcus erysipelatos*, and a micro-organism alleged by Dr. Finlay, of Havana, to be that of yellow fever. The cultivation media were blood-serum, peptone-gelatin, agar-agar, potato, and rags. Twenty-one cultivation tests were made, and in only one instance were all the organisms found to have been killed. In that instance cultivation tubes of peptone-agar-agar infected with the *Spirillum cholerae asiaticae*, the *Bacillus anthracis*, the *Bacillus typhi abdominalis*, the *Bacillus coli communis*, and the alleged microbe of yellow fever were hung in one of the compartments of the heating chamber. In the course of sixteen minutes a dry heat of 79·4 C. was reached, and then the steam was turned on for twenty minutes.

Dr. Kinyoun suggests certain modifications of the processes which he thinks would render them sufficient for the purpose. They include the use of a large spray apparatus for applying the corrosive sublimate, and under some circumstances the postponement of the mercurial irrigation until after the fumigation with sulphur; a decided prolongation of the confinement of the sulphurous fumes within the vessel; and the diffusion of the dry and moist heat by a pressure of at least twenty-five pounds to the square inch, for which purpose a chamber of boiler iron would have to be made.

The present president of the Louisiana board, Dr. C. J. Wilkinson, states that, whatever may be the defects of the processes employed, it is certain that no case of yellow fever has developed on any vessel that has been subjected to them, but Dr. Kinyoun remarks that such an experience was not uncommon under the methods previously in vogue. We infer from the board's earnestness and from the intelligence with which its efforts are sustained by the people of Louisiana that all practicable attempts to carry out Dr. Kinyoun's suggestions will be made without delay. This investigation is but one of the results of the establishment of the Marine-Hospital Service's bacteriological laboratory, of which we lately spoke in commendation, and the community should feel under a special obligation on account of it, both to Dr. Kinyoun and to the progressive management of the service to which he belongs.

### THE MEDICO-LEGAL ASPECT OF DEATH BY DROWNING.

In the Section in the Medical Sciences, at the recent meeting of the French Association for the Advancement of the Sciences, M. Brouardel and M. Loye submitted some new observations in regard to the mechanism of death by drowning, an abstract of which is given in the "Gazette hebdomadaire de médecine et de chirurgie." They remark that the period of resistance to inspiration which immediately follows the single deep breath of surprise, in cases of submersion, has been regarded by some physiologists as due to the action of the will. It has been thought, for instance, that dogs closed the glottis in order to prevent the penetration of water into the lungs. But this is not the case, for the same period of resistance is observed in tracheotomized dogs and in those that are anæsthetized. The lung possesses an expiratory force evoked by excitation of the superior laryngeal nerve, which excitation, in drowning persons, is brought about by the contact of water with the mucous membrane of the larynx. A submersion of four minutes, the authors say, is required to make death certain; yet it is during the first ten seconds that the greatest quantity of liquid penetrates into the lungs—a somewhat surprising fact, they add, when it is remembered that under many circumstances an animal that has been submerged for only a minute may be resuscitated, whereas after a more protracted submersion success is not met with in laboratory experiments, although after the expiration of the minute not much more water is present than before.

The water that enters the lungs is absorbed and penetrates into the blood, where it acts as a diluent, not only before death, but also after the last respiratory effort—a fact of prime importance in legal medicine. The investigator is often called upon to ascertain whether a corpse is that of a person who has met death by drowning or that of one who has been thrown into the water after death. Inasmuch as, according to past teaching, the blood of a drowned person is liquid and not coagulated, one would decide in favor of drowning if fluidity of the blood was ascertained. It has been seen, however, that water passes into the circulatory system after the last gasp. Moreover, even in a drowned person, the blood is always found coagulated if the examination is made within a short time after death; it is found to be liquid in the right chambers of the heart and in the great vessels, but coagulated elsewhere. Fluid blood may be met with in the thoracic inferior vena cava, and clots in the abdominal vena cava. The authors have never found the portal vein containing liquid blood, but always a very solid clot.

## *MINOR PARAGRAPHS.*

### MAMMARY CANCER IN THE MALE.

Two cases of cancer of the breast in the male subject are recorded in a recent number of the "Archiv für klinische Chirurgie," one observed by Dr. Berns, of Amsterdam, and the other by Dr. Franke, of Brunswick. The history of the latter is furnished by Dr. Schuchardt, of Gotha, and abstracts of the two histories are given in the "Centralblatt für Chirurgie." Berns's case was that of a man, forty-two years old, whose breasts had attained to very great size in his youth and had quite the characters of a woman's at the time of the observation. The tumor, an alveolar carcinoma, was situated on the outer aspect of the right breast. It was removed, but returned, and, after a second operation, proved fatal by dissemination, but without involvement of the axillary glands. In Franke's case the patient was sixty-nine years old, and the tumor, which was seated in the right breast, was as large as a walnut.

### IODINE IN THE TREATMENT OF DISSECTION WOUNDS.

M. Louge ("Gazette des hôpitaux"; "Centralblatt für Chirurgie"), founding his statements on four years' experience as prosector in the Marseilles School of Medicine, recommends tincture of iodine as the best antiseptic and caustic to apply to dissection wounds in order to prevent infection with cadaveric poison. He advises that all injuries of the skin of the hands should be touched with the tincture before an autopsy or a dissection is begun. When the hands are wounded during the

work, the wounds should be allowed to bleed freely, and the iodine then applied; if no bleeding takes place, it should be applied at once.

### AN EPIDEMIC DUE TO SOPHISTICATED WINE.

During the past winter, as is recorded in the "Semaine médicale" (cited in the "Province médicale"), an epidemic was observed in Hyères, France, that was at first supposed to be one of influenza of a peculiar form. In many of the persons attacked there was paralysis of the feet or hands, preceded by pains in those parts. To cover the paralytic element of the affection, it was given the name of *grippe infectieuse*. But one of the physicians was led to suspect that the disease was due to something taken into the stomach, and systematic inquiry brought out the fact that none had been attacked but those who had used wine furnished by a particular dealer, and it was found that the severity of the symptoms was in direct ratio to the amount of the wine consumed. An investigation has been undertaken, and it is thought that the nature of the substance used in adulterating the wine will be ascertained.

### STRANGULATION OF THE CLITORIS.

The "Internationale klinische Rundschau" cites from the "Orvosi hetilap" what seems to be a unique case, observed by Dr. Bókai, of Buda-Pest, in which a girl, ten years old, tied a thread around her clitoris, causing the strangulated portion of the organ to assume the dimensions of a walnut. The thread was cut, and the furrow of ulceration that it had caused was treated antiseptically. The parts soon resumed their normal appearance, save that the swelling showed no disposition to disappear altogether, so that the knob-like portion of the organ still remained as large as a hazel-nut. It was feared that this enlarged state of the clitoris would lead to further unnatural procedures on the part of the child, and the mass was therefore removed with Paquelin's cautery.

### POTENTIZED ARSENATE OF GOLD.

A contributor to the "Progrès médical," Dr. Regourdin, makes some enthusiastic statements as to the manifold therapeutical virtues of arsenic—among others, that it is a "cohibent"—and likewise those of gold, the latter having been particularly recognized since the time of the celebrated Dr. Chrestien, of Montpellier, and attention having been called to them anew by the researches of Burcq and others in metallo-therapy. It seems that an English physician, Dr. Addison, has bound these two peerless remedies together in an intimate combination termed potentized arsenate of gold (*arséniate d'or dynamisé*), which is the particular preparation recommended by M. Regourdin, especially in affections of the nervous system, all sorts of cachexiæ, the majority of skin diseases, and secondary and tertiary syphilis. We are not told how the "potentizing" is accomplished, but the dose is given as from one to thirty milligrammes.

### THE WILLARD PARKER HOSPITAL.

The Report of this institution for the quarter ending June 30, 1888, shows that 152 patients were admitted, making, in addition to 26 patients who were in the hospital at the beginning of the quarter, a total of 178. Of this number, the Report states, 118 were discharged and 35 died. Of the deaths from scarlet fever, 82·35 per cent. occurred in children under five years of age, 42·9 per cent. of the number being complicated with diphtheria. According to the Report, a comparison of these statistics with those for the corresponding quarter in 1887 shows that there were admitted during the past quarter 48 cases more of scarlet fever and 46 of diphtheria, making a total increase of 94 cases. During the first quarter of the present year there were 21 cases less of scarlet fever and 20 cases less of diphtheria admitted than during the past quarter, which exhibits an increase in admissions over any like period since the hospital was opened, and a total number of cases only 9 less than were admitted during the year 1886.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 10, 1888:

| DISEASES. | Week ending July 3. | | Week ending July 10. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 6 | 1 | 8 | 5 |
| Scarlet fever | 118 | 22 | 77 | 19 |
| Cerebro-spinal meningitis | 6 | 5 | 5 | 2 |
| Measles | 236 | 20 | 195 | 22 |
| Diphtheria | 102 | 32 | 103 | 32 |
| Small-pox | 4 | 1 | 0 | 1 |

**The Marine-Hospital Service.**—At the recent session of the Examining Board there were 21 applicants. Of this number, 4 were rejected on account of physical disability, 3 withdrew their names, and 6 successfully passed the examination.

**The New York Polyclinic Hospital.**—The Faculty of the New York Polyclinic have decided to increase the clinical facilities of this institution by establishing a spacious hospital immediately connected with the college building. It will be opened for the reception of patients in October next.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 1 to July 7, 1888:*

Baxter, J. H., Colonel and Chief Medical Purveyor, will proceed to New York city on public business connected with the Medical Department, and on completion thereof will return to his station in Washington city. S. O. 150, A. G. O., June 29, 1888.

Bentley, Edwin, Major and Surgeon. Relieved from active service, July 3, 1888, by operation of law. S. O. 153, A. G. O., July 3, 1888.

Johnson, Richard W., Captain and Assistant Surgeon. Designated as medical officer for a camp of instruction in rifle practice to be established at Fisher's Island, New York (near New London, Conn.), on the 2d of July, 1888, and to continue during the months of July, August, and September: and ordered to proceed to Fisher's Island in proper season and report to the commanding officer for duty. S. O. 131, Division of the Atlantic, June 28, 1888.

Crosby, William D., First Lieutenant and Assistant Surgeon. Leave of absence extended one month. Par. 8, S. O. 151, A. G. O., June 30, 1888.

Clendenin, Paul, First Lieutenant and Assistant Surgeon. Leave of absence granted in S. O. 59, Department of Texas, June 4, 1888, extended one month. S. O. 149, A. G. O., June 28, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending July 7, 1888:*

Crandall, R. P., Assistant Surgeon. Detached from the U. S. Steamer Saratoga and ordered to the U. S. Steamer Galena.

Peck, George, Medical Director. Placed on the retired list on the 9th instant.

**Society Meetings for the Coming Week:**

Monday, *July 16th:* Hartford, Conn., City Medical Association.

Tuesday, *July 17th:* Ogdensburgh, N. Y., Medical Association; Medical Society of the County of Otsego (annual—Cooperstown), N. Y.

Thursday, *July 19th:* New Bedford, Mass., Society for Medical Improvement.

Saturday, *July 21st:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

**A. Y. P. Garnett, M. D.,** of Washington, D. C., died at Rehoboth Beach, Del., on Wednesday, the 11th inst., in the sixty-eighth year of his age. He was born in Essex County, Va., and was graduated from the University of Pennsylvania Department of Medicine in 1841, in which year he was appointed an assistant-surgeon in the United States Navy, in which he served until 1848, when he settled in Washington. At the outbreak of the civil war he entered the Southern army as surgeon, returning to Washington at the close of the war. From 1858–'61 and 1866–'70 he was professor of clinical medicine in the National Medical College of Washington. In 1870 he was appointed emeritus professor, which position he held at the time of his death. He took an active part in organizing the Ninth International Medical Congress, and was elected president of the American Medical Association in 1887.

# Proceedings of Societies.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of May 3, 1888.*

The President, Dr. A. Jacobi, in the Chair.

**Studies on the Sweat-Glands.**—Dr. A. R. Robinson read a paper in which he gave a brief description of the sweat-glands, and then proceeded to discuss some disputed points connected with their structure and function. The sweat-glands, or coil-glands, were present in the skin of all parts of the body except the glans penis and the margin of the lip. They were most numerous in the palms of the hands and the soles of the feet, where, according to Krause, they numbered twenty-seven hundred to the square inch. They extended from the free surface upon which they opened to the lowest part of the corium or into the subcutaneous tissue, and consisted of two parts, the gland proper, or secreting part, and an excretory duct. The gland proper was the most deeply seated, consisting of the lower portion of the sweat apparatus coiled upon itself, the tube terminating in a blind extremity. The remaining portion constituted the excretory duct. As it passed through the corium it pursued a straight or slightly wavy perpendicular or oblique course, and entered the epidermis through an interpapillary process of the rete. The direction of the tube through the rete was either straight or spiral. In the corneous layer it pursued a more or less spiral direction, according to the thickness of the layer, *as a rule.* Within the epidermis the tube consisted of a canal lined, according to some, by a bright homogeneous membrane and surrounded by the epithelia of the part. Within the corium the duct was lined by a homogeneous bright membrane, called the cuticula; outside of this there were epithelial cells, and outside of them there was a delicate membrana propria. The gland proper was usually divided into a proximal and a distal section, the former, about one third or one fourth of the coiled tube, having the same structure as the duct, but being coiled and having the lumen larger. In the distal part there were unstriped muscle fibers outside the epithelium, and, according to some, the cuticula was there wanting. The gland was surrounded by a somewhat loose, fibrous, connective tissue, and this tissue was present between the coils of the tube. The glands were specially and richly supplied with blood-vessels. The sweat-glands were supposed by some to be sweat-producing and fat-producing organs, and by others to form fat only, for lubricating the general surface, while the sebaceous glands, which had formerly been believed to be the source of the fat found on the general surface, only oiled the hair.

The results of the author's studies, so far as they differed from those commonly recorded, were as follows: Kölliker and others had stated that the sweat-glands began to form at the fifth month of fœtal life. In the case of a fœtus of the eleventh week, the author had made sections of the end of the index finger, where he found sweat-glands so far formed as to warrant the opinion that their development must have begun a week previously. He thought other observers had not discovered them at this early period, because they had failed to examine at the end of the finger, but rather on the middle of the finger or in the palm, where they developed later. It had also been stated that the coil and lumen did not form until the sixth or seventh month. He had found them formed in the end of the index finger at four months and a half. He had also, in some of them, found the lumen communicating with the free surface at this period instead of at the seventh month, as stated by others. The formation of the lumen had been described as a breaking down of epithelia. He had been unable to verify this assertion; according to his observations, the lumen was formed by a process of secretion, the product collecting between the cells. No permanent cuticula existed in the secreting part of the gland. The cuticula, in the localities where it existed, was not composed of endothelia. It was often present in the epidermis as far as the granular layer, and consisted of the chemically changed internal part of the epithelia. But one row of epithelia lined the excretory duct until the rete prolongation was reached. The muscular layer was not derived from epithelium, as maintained by Ranvier; it was situated between the membrana propria and the epithelium, when forming a continuous layer, and when the fibers were isolated a few might be in the capsule.

The general view of the function of the sweat-glands was that they secreted sweat, but this view had lately been strongly combated, especially by Unna. That they, instead of the sebaceous glands, produced the fat necessary to keep the general surface oiled, seemed very probable for the following reasons: The fat from the sebaceous glands was contained principally in cells, and was deposited on the corneous layer of the hair-follicle orifice, while the fat from the sweat-glands was free, and could be used by the corneous layer. The palms of the hands and soles of the feet had no sebaceous glands, yet those parts were oiled. In the coil lumen there were found albuminoid or mucoid substance, cell detritus, fat drops, and pigment granules, and there were two million sweat-glands in the body, while there were only one hundred thousand sebaceous glands, of which eighty thousand were on the scalp, leaving but twenty thousand to furnish fat for the entire surface. As the amount of free fat produced by a single sweat-gland was very considerable, as was readily shown by microscopical examination, there seemed to be no doubt that they were the organs which furnished the oil for the skin, and that the disease called sebor-

rhœa oleosa was probably not an affection of the sebaceous, but of the sweat-glands—a hyperidrosis oleosa, as first pointed out by Unna. In the fœtus the glands were fully developed before birth, as fat was needed for the body, which swam in water, but surely the fœtus did not sweat. Finally, in the dog, sweat-glands were well developed and opened into the hair follicles, but the dog did not sweat on the general body. Such were the arguments used by Unna, who believed that the sweat came from the blood-vessels of the papillæ and that it reached the surface by way of the coil-duct. In opposition to this view it might be said that persons sweat most on those parts of the body most richly supplied with glands; but there also was the best opportunity for the escape of liquid from the papillary blood-vessels. But the process seemed to be one of secretion, and gland tissue was necessary. That the glands were not merely fat-forming organs was shown by the presence of urea, uric acid, lactic acid, and oxalate of calcium in certain forms of disease. Sweat secretion was aided by vascular dilatation, and some of the fluid probably came by a transudation process from the blood-vessels of the papillæ; but sweat could form when the blood-vessels were not dilated, and certain experiments showed that there were special nerves in the sweat-glands which governed sweat secretion independently of the blood-pressure and circulation, although not of blood-supply.

The author here discussed certain pathological conditions in their bearing upon the physiology of the sweat-glands. He described lichen tropicus, which was associated with excessive sweating, and showed that the sweat-coil gave anatomical evidence of physiological activity. He further described a cystic disease of the sweat-glands, the cyst being situated in the corium and containing pure sweat, which, hence, must have come from the coil part. These two diseases showed that the sweat-glands secreted sweat. In conclusion, he described a catarrhal inflammation of the sweat-gland coil with clinical characters somewhat like those of an eczema or the dysidrosis of Tilbury Fox.

*Meeting of May 17, 1888.*

The President, Dr. A. Jacobi, in the Chair.

**Pleurisy as a Predisposing Cause of Phthisis.**—Dr. B. F. Westbrook, of Brooklyn, read a paper with this title. (See volume xlvii, page 617.)

**Some Determining Causes of Pleural Exudates.**—Dr. H. F. Williams, of Brooklyn, discussed this subject, and in the course of some general remarks spoke of pleurisy as either sthenic or asthenic. That pleurisy might be provocative of phthisis was a view which he thought would be accepted without a dissenting voice. He submitted for consideration by those who wished to treat pleurisy successfully three determining causes of pleural exudates:

1. Hereditary or constitutional temperament, with demonstrated richness of cell proliferation in inflammatory products with proneness to organization. The subject of such a pleurisy would have the pleural surfaces covered with false membrane out of proportion to the exciting cause.

2. Early pulmonary immobility, regional or entire, not the circumscription of pulmonary movement by pleural disease, but antedating this, commencing perhaps in fœtal life.

3. Constitutional infection by the *Bacillus tuberculosis*, the germ finding the weakest spot at the pleura rather than in the meninges or elsewhere. Healthy blood formed an impregnable barrier to tubercular invasion.

Dr. J. Blake White continued the discussion in a brief paper in which he said it had been established that pleurisy not only frequently occurred in those having phthisis, but might give rise to phthisis in persons previously healthy. Pleuritic adhesions following sero-fibrinous pleurisy were too often overlooked until attention had been attracted by a dry, hacking cough and progressive emaciation—a stage at which, in the majority of cases, the lesions had become irreparable. The question of preventing as well as curing phthisis depended more upon an increase of lung capacity, especially about the apices, than on purity of air or bacilli. Regular systematic lung exercise in children with rhachitic manifestations, together with judicious diet, would do much to prevent phthisical tendency and chest deformity in advanced life. Regular forced expirations and inspirations formed one of the best means of ridding the lungs of infiltrating products and removing pleuritic adhesions. The speaker said that the views expressed by him might appear somewhat opposed to the microbic origin of phthisis. He was not prepared to accept that teaching, for all his experience with the disease tended not only to confirm what he had said, but also to place the bacillus as the result of the phthisical process.

**Treatment of Predisposition to Phthisis in Children who have had Pleurisy.**—Dr. W. B. Wood, in discussing this subject, said that between the condition of no disease and the time of well-developed phthisis lay somewhere that border-land, predisposition—a condition which was not phthisis, but which might be recognized and successfully treated, and which, if unrecognized and untreated, would ultimately become phthisis. The first physical manifestation of predisposition to phthisis was diminished breathing power, deficiency of respiratory function. Two great causes of deficient respiratory function in children were impeded nasal respiration and thickened and immobile pleura at the base of the lungs. Any treatment which would successfully overcome these conditions, constituting predisposition, would, in a vast majority of cases, effectually prevent the development of phthisis in children. The treatment would have to consist in securing free nasal respiration by treatment of the nose and by a system of lung gymnastics. The history of most cases of phthisis in children, when reliable, contained evidence of earlier deficiency of nasal respiration or deficiency of lung expansive power caused by pleuritic disease.

Dr. E. T. Bruen, of Philadelphia, was asked to open the general discussion. He said that from time immemorial the view had been entertained that pleuritic disease had considerable bearing upon the development of phthisis. But during the last few years much study had been devoted to the question whether the conditions which caused the phthisis had not been the cause of the pleuritic process. In addition to the evidence already published, he cited two cases which had come under his observation during the past year, in one of which extensive pleuritic adhesions over the entire chest had been present, and, although the microscopic sections had demonstrated the characteristic anatomical changes denominated tubercular, there had been no lesion whatever in the lungs. The fact that patients with pleurisy often recovered did not go to prove that the process was not tubercular, for we often saw complete recovery from tubercular peritonitis, where we might suppose the conditions were less favorable. Sir Andrew Clark had expressed the belief that these cases of pleurisy were simply inflammatory, but that had been at a time when less was known about the microbic origin of phthisis. It seemed to the speaker that the cases in which absorption of fluid from the pleural cavities did not take place were usually those in which it was sacculated, and he had come to look upon tapping as rather unsatisfactory, and resorted to it only in dyspnœa or other urgent conditions. It was in persons of the tubercular or scrofulous diathesis or enfeebled constitution that special attention should be given to preventing the development of phthisis following pleurisy. He could do no better than repeat Sir Andrew Clark's words on this subject: "We should not try to develop the chest too much, and at the

same time fail to fortify the whole body. Physicians often devote too much attention to developing respiratory capacity to the neglect of the general condition."

Dr. F. C. Shattuck, of Boston, said that about three years ago he had written a note to Strümpell's "Text-book of Medicine" to the effect that the experience of physicians in America was not like that of the Germans, who, according to Strümpell, found pleurisy due to cold only in very rare instances. He had given as his reason for the statement that here so many patients with pleurisy entirely recovered. Since then his views had undergone a marked change. Facts seemed to be pointing to the stand taken by some Continental writers that pleurisy was always due to tuberculosis. We were in the habit of associating in our minds tuberculosis and an unfavorable or fatal prognosis, because formerly only tuberculosis pulmonalis had been recognized, and then only when going on to a fatal issue. But we had learned that local tuberculosis frequently existed and was recovered from, whether in the pleura or elsewhere. It was true that the tubercle bacillus had not always been found in the pleuritic effusion or on the surfaces of the membranes, but that was only negative evidence and could not be regarded as of weight when it was remembered that in the most favorable cases for finding the bacilli the search was tedious. Nor was our inability to account for the arrival of the germs at the pleural cavities an argument of value against the microbic origin of the disease. The best possible form of pulmonary gymnastics was mountain climbing.

Dr. E. G. Janeway thought that the study of the relationship between sero-fibrinous pleurisy and tuberculosis was a difficult one. If within a few months, or even a year, after sero-fibrinous pleurisy he were to find evidence of tuberculosis he would be very much inclined to believe with Dr. Shattuck that the tuberculosis preceded in the pleura or was already present in the lung, although undemonstrable, and was directly or indirectly the source of the pleurisy, rather than that the sero-fibrinous pleurisy had produced the pulmonary tuberculosis. Autopsies went to confirm him in this belief. One was struck at the frequency with which he found at autopsies tubercles in the pleura in cases that he had supposed from clinical observation to be those of simple pleurisy. He had seen cases of pleurisy in the rheumatic in which other forms of infection could be excluded. As to treatment, when the effusion failed to be absorbed, there was a method which had often proved successful after repeated paracentesis had failed. It consisted simply in limiting the amount of fluids taken to one third or one half the amount of urine passed, at the same time giving iodide of potassium and salt in sufficient quantity to make the blood thirsty for fluid. In febrile cases the patient should be kept quiet. The speaker had lately seen three cases which had shown the difficulty of arriving at the facts regarding the presence or absence of the tubercle bacillus in seeking to establish the diagnosis.

Dr. Westbrook said that he had written his paper from a clinical rather than a pathological standpoint. He had simply expressed his belief in the probability, perhaps he should have said the possibility, that there were cases of primary non-tubercular pleurisy which stood in the relation of a predisposing cause to phthisis pulmonalis in affecting the lungs in such a way as to render their tissues favorable to the development of the tubercle bacillus. As to the question whether the pleurisy was tubercular or not, he was entirely unable to express an opinion upon it, although he had read the literature on the subject. The evidence had not been at all conclusive to his mind that pleurisy was always tubercular, or that the pleura, of all the tissues of the body, should become inflamed only under the influence of infection.

# Book Notices.

*Lectures on Certain Diseases of the Jaws.* Delivered at the Royal College of Surgeons of England, 1887. By Christopher Heath, F. R. C. S., Hunterian Professor of Surgery and Pathology in the College; Holme Professor of Clinical Surgery in the University College, London, etc. Sixty-four Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888.

More than twenty years have elapsed since Mr. Heath published his well-known work on "Injuries and Diseases of the Jaws, including the Antrum," being the Jackson Prize Dissertation for 1867, a second edition of which was issued in 1872. The present volume is the result of further studies on the same subject.

The first lecture deals with diseases of the antrum—suppuration, polypus, etc.—and cysts connected with the teeth. The author draws attention to the fact that "it does not require the development of a cyst to render a misplaced tooth important, for there are many recorded instances in which mere displacement of a tooth from its normal position has given rise to deformity and the suspicion of grave disease."

The second lecture treats of tumors of the jaw. The author first records cases of a rare form of odontoma in which an irregular mass of dental tissue, in no way resembling a tooth in shape, is formed. Fibrous epulis, fibroma, enchondroma, osteoma, sarcomatous tumors, epithelioma, and that rare disease, actinomycosis, are then considered.

The third lecture is devoted to diseases of the "temporo-maxillary articulation and closure of the jaws."

The volume deals only with the clinical aspect of the subject, and is therefore an extremely valuable book. It is illustrated with sixty-four woodcuts, showing the amount of deformity to the face that these tumors produce, and the appearance of the parts involved in disease after their removal. One can not read the volume without feeling that Mr. Heath has added much to his former work.

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*A Treatise on Dislocations.* By Lewis A. Stimson, B. A., M. D., Professor of Clinical Surgery in the University of the City of New York, etc. With One Hundred and Sixty-three Illustrations. Philadelphia: Lea Brothers & Co., 1888. Pp. xx–17 to 539. [Price, $3.]

This volume forms the second part of a work upon fractures and dislocations, the first portion having been issued five years ago, and exhibits the same thorough and painstaking study and investigation that characterize all the author's writings. It is a work on which the writer has expended a great amount of time and labor in consulting not only all previous treatises on dislocation, but also all reports of cases bearing upon this subject scattered through the files of foreign and domestic medical journals. He informs us in his preface that, so far as possible, he has gone to original reports and has subjected them to a careful scrutiny. "This has resulted in the rejection of some cases and in the transfer of others to different groups. A number of errors—some of long standing and wide circulation—have been corrected."

The volume is divided into three parts. The first treats of traumatic dislocations in general; their ætiology and mechanism; the pathological anatomy in recent dislocations; complications; the process of repair after reduction; the pathology of unreduced dislocations (ancient); symptoms and diagnosis; course and prognosis; treatment; and, finally, the accidents that may be caused by attempts to reduce a dislocation. Part second treats of congenital and spontaneous dislocations, while part third is

devoted to the special dislocations of individual joints. The volume is a book mainly of facts, and as far as these go it is beyond criticism; only when the author draws inferences and maps out a line of treatment is criticism possible. But even here the deductions are so convincing and the line of treatment so judicious that we hesitate to find fault. We are rather surprised at the results of operations for the correction of old unreduced dislocations of the hip, especially after arthrotomy. We know of at least three cases where a good result has been obtained by cutting down and dividing all the muscles which opposed a return of the head of the femur into the acetabulum, and a straight and useful limb obtained, although with some shortening.

The author has given in foot-notes on each page his authority for all cases referred to, so that the volume not only forms a complete treatise, but contains a bibliography of cases of this class of injury to joints. It is illustrated with one hundred and sixty-three cuts, all of which are good and to the point. We can not close this notice without congratulating Dr. Stimson upon the completion of his work, as well as on the thorough manner in which it has been done. It will long remain an authority on this class of joint injuries.

*A Manual of Diseases of the Nervous System.* By W. R. Gowers, M. D., F. R. C. P., Assistant Professor of Clinical Medicine in University College, London, etc. American Edition, issued under the Supervision of the Author, and containing all the Material of the Two-volume English Edition, with some Additions and Revisions. With Three Hundred and Forty-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xx–25 to 1357. [Price, $6.50.]

Clearness of thought and language, a wealth of personal information concerning the topics under discussion, together with a thorough mastery of the most recent researches in the department of neuropathology and nerve-therapeutics, characterize this work as one of the very best ever presented to the English-reading public. The leading morbid types of nervous disease are discussed with comprehensive skill and directness, while numerous minor forms of nerve disturbance, mentioned only in quite recent papers and monographs, receive the same careful attention and add to the interest and value of the manual. The book begins with diseases of the peripheral nervous system, preceded by a general introduction on symptomatology. Then come diseases of the spinal cord; next diseases of the brain; and lastly general and functional diseases of the entire central nervous system. There are admirable chapters on the anatomy and physiology of the cord and brain, furnishing to the student or clinician concise descriptions of rare excellence. The nicest discrimination and an absence of prejudice are almost everywhere manifest in the treatment of each particular subject. According to its merits is it judged and not by the light of special study or experience. One great charm about the book—and it has many—is the author's thoroughly dispassionate attitude. There is no great nor small—only truth according to investigation. An exception to this broad statement exists in the slighting—just a little—of functional nervous diseases. Our national neurasthenia is dismissed with but a page, and its existence as a clinical entity denied. This challenges the conviction and criticism of those thoroughly familiar with the form of nervous trouble too frequently seen in America. To the general and to the special student Gowers's manual is equally valuable. The mass of detail is of the greatest possible advantage to the former, while to the specialist the manual recommends itself as an unfailing book of reference. Medical literature at large has been enriched by this recent acquisition. The volume is at once helpful and profound, vast in scope, philosophic in its grasp, and clear in minute particulars. It takes its place quite naturally as an English classic and an ultimate authority upon matters neurological.

### BOOKS AND PAMPHLETS RECEIVED.

The Ethics of Marriage. By H. S. Pomeroy, M. D., Boston. With a Prefatory Note by Thomas Addis Emmet, M. D., LL. D., New York, and an Introduction by Rev. J. T. Duryea, D. D., of Boston. Also with an Appendix showing the Laws of most of the States and Territories regarding Certain Forms of Crime. New York: Funk & Wagnalls, 1888. Pp. xxxi–33 to 197.

The National Formulary of Unofficial Preparations. First Issue. By Authority of the American Pharmaceutical Association. Published by the American Pharmaceutical Association, 1888. Pp. ix–176.

Nature's Hygiene: a Systematic Manual of Natural Hygiene, containing a Detailed Account of the Chemistry and Hygiene of Eucalyptus, Pine, and Camphor Forests, and Industries connected therewith. By C. T. Kingzett, F. I. C., F. C. S., Past Vice-President, Society of Public Analysis, etc. Third Edition. London: Baillière, Tindall, & Cox, 1888. Pp. xii–439.

Medical Expert Testimony. By F. H. Darby, M. D., Morrow, Ohio. [Reprinted from the "Transactions of the Ohio State Medical Society," 1887.]

An Experimental Contribution to Intestinal Surgery, with Special Reference to the Treatment of Intestinal Obstruction. Read in the Surgical Section of the Ninth International Medical Congress. By Nicholas Senn, M. D., Ph. D., Attending Surgeon to the Milwaukee Hospital, etc. [Reprinted from the "Annals of Surgery."]

McGill University Annual Calendar, Faculty of Medicine. Fifty-sixth Session, 1888–'89.

Fracture of the Spine: its Immediate Treatment by Rectification of the Deformity and Fixation by Plaster-of-Paris Jacket. By Herbert L. Burrell, M. D., etc. [Read at the Annual Meeting of the Massachusetts Medical Society, June 7, 1887.]

Cocaine Dosage and Cocaine Addiction. By J. B. Mattison, M. D., Brooklyn, N. Y. [Read before the Medical Society of the County of Kings, February 15, 1887.]

Medical Department of the University of Georgia. Annual Announcement of the Medical College of Georgia, with a List of Graduates from 1829 to 1888. Augusta, Georgia. Session of 1888–'89.

Forty-second Annual Announcement of Starling Medical College, together with Catalogue and Order of College and Hospital Exercises for the Session of 1888–'89. Columbus, Ohio.

Abortive Treatment of Typhoid Fever. By L. D. Woodbridge, M. D., of Williamstown, Mass. [Reprinted from the "Journal of the American Medical Association."]

The Annual Report of the Department for the Insane of the Pennsylvania Hospital for the Year ending Fourth Month 21st, 1888. Presented to the 137th Annual Meeting of the Managers of the Pennsylvania Hospital.

Fever: a Clinical Study. By T. J. Maclagan, M. D. London: J. & A. Churchill, 1888. Pp. 166.

## Reports on the Progress of Medicine.

### OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

**Retinoscopy.**—Baker ("Amer. Jour. of Ophth.," Oct., 1887), in teaching retinoscopy, usually selects for examination a person with emmetropic eyes, and dilates the pupil with cocaine. His ophthalmoscope is furnished with two mirrors attached by means of a screw—one large mirror of 24 inches focus for making examinations by the indirect method and for retinoscopy, and one small mirror placed at an angle of the usual focus for direct examinations. The patient is placed with his back to the light, and the student opposite, at a distance of three or

four feet. The light is then reflected into the eye of the patient, and the mirror is rotated from side to side slowly and the red reflex carefully watched, in order to see the slight shadow moving across the red disc. The mirror is then rotated in the vertical meridian until the shadow is seen again. A + D 1 glass is then placed in a spectacle-frame in front of the eye examined. No shadow is then seen. A plus lens is then introduced, and the shadow is again seen and the direction in which it moves is noted. With a plus lens the shadow moves in the opposite direction to that in which the mirror is moved, and with a minus lens it moves with the mirror. The + D 1 lens is left in to neutralize the shadow in emmetropia, because with a mirror of 24 inches focal distance the rays of light do not cross before reaching the observer, and an erect image of the illuminated and shaded portion of the retina is obtained exactly as when a plane mirror is used. By means of ordinary trial lenses it is easy to measure the amount of refractive error. If the shadow moves with the mirror, concave lenses must be placed in the spectacle-frame until the shadow is neutralized, and the number of lens required will indicate the amount of myopia. If the shadow moves opposite to the direction in which the mirror is moved, convex lenses are used until the shadow is neutralized, and the lens required to neutralize the shadow will indicate the amount of hypermetropia. In cases of simple astigmatism no shadow will be seen in one meridian, and a shadow moving with or against the mirror in the opposite meridian. By neutralizing this shadow with the appropriate lens it will indicate the number of the cylindrical lens required to correct the astigmatism. In cases of compound astigmatism it will be necessary first to correct the meridian with the least error of refraction. Retinoscopy does not require any expensive apparatus. It is more easily performed than ophthalmoscopy by the direct method. It is more accurate as a means of correcting errors of refraction than the examination by the upright method, and the examination is made as quickly as with the optometer. The examination can be made without the assistance of the patient, and is especially valuable in cases of toxic amblyopia and in nystagmus.

**Anophthalmia.**—Collins ("Roy. Lond. Ophth. Hosp. Rep.," xi, 4) gives the results of an examination of twelve cases of anophthalmia, which gave rise to the following interesting questions: 1. Does an eyeball in a very rudimentary state exist far back in the orbit, so small and mobile that it can not be detected by sight or touch, or are they cases of true anophthalmia? 2. What is the condition of the optic nerves and brain in these cases? 3. What is the cause of this malformation? Do maternal impressions or frights during pregnancy have anything to do with it? In nine of the cases the examination showed that no primary optic vesicle had budded out from the anterior primary encephalic vesicle, or, having budded out, it had failed to form a secondary optic vesicle. Hence some disturbance affecting the development of this anterior primary encephalic vesicle is one cause of anophthalmia. Therefore the exciting cause must occur very early in the course of pregnancy.

**Some of the Forms of Congenital and Infantile Amblyopia.**—Nettleship (*ibid.*) thinks that in every case of infantile blindness it is important to observe the shape and size of the cranium and the condition of the fontanelles and sutures; to inquire fully into the question of congenital syphilis and of any acute illness the child may have had; of defective sight or intellect or other cerebral or spinal disease in any kinsfolk; and of consanguinity of parents. One group of cases contains certain rare cases of infantile blindness from gross disease of the chorioid, with swelled cranium, premature closure of fontanelles, and ridging of sutures, but without evidence or history of hereditary syphilis or other assignable cause. In another group may be classed all such cases as give a history of meningitis at a very early age. Some of these patients recover more or less perfectly without either papillitis or marked atrophic changes. Fluid pressure in the ventricles does not offer a probable explanation of the defective sight in these cases, since there is no proof of any great increase of cerebral fluid; and if there were such pressure it would not account for the sight being worse in one eye. On the other hand, in ordinary chronic hydrocephalus, where the chiasm must be considerably pressed upon by fluid in the distended third ventricle, blindness with optic atrophy, though well known, is not common. In another group of cases the blindness is not due to either syphilitic or other chorioiditis, or to disease of the optic nerves from meningitis. In many of these cases idiocy or defective intellect is present. This group is not a homogeneous one, for some of the patients were congenitally microcephalic, idiotic, and blind, while in a few both brain power and sight were lost by disease coming on after birth. In cases of infantile blindness with little or no ophthalmoscopic change the absence of a history of meningitis is usually unfavorable to a recovery of sight. In another group of cases a form of disease exists which is closely allied in pathogeny to true retinitis pigmentosa, but differs from it in several important points. In this malady the night-blindness is stated to have been present from earliest childhood, seems to be stationary, and does not appear to have the same pathological relations as the other disease, and none of the patients are deaf. The ophthalmoscopic appearances are different from and much less conspicuous than those seen in the common disease, consisting chiefly in irregularity of the pigmented epithelium, and the presence of scattered, minute white dots. In still another group day-blindness exists. The patients are always amblyopic and color-blind, usually for all colors. Their difficulties are dated from birth and are stationary. There is no great preponderance of either sex. Consanguinity is very common. The ophthalmoscopic changes are quite inconsiderable. High errors of refraction are not usual. In a final group of cases the defect of sight, without any sign of disease, is confined to one eye. There is no evidence that the defect is recent, unless the case proves to be retrobulbar neuritis, hysterical amblyopia, or damage to the optic nerve from injury to the orbit or head. The direct reflex action of the pupil is natural, while it is more or less interfered with in retrobulbar neuritis and injury of the optic nerve. The defect of vision may be trivial or so great that only large objects are seen. It may be remediable by glasses, in which case there is almost always anisometropia, and the defective eye is nearly always the more ametropic of the two; or only partly remediable by glasses, or glasses may not help at all. There may be a history of convergent squint which has been cured by operation or has disappeared without treatment. In others convergent or divergent squint of the amblyopic eye is still present. In the absence of proof of cases of decided amblyopia of one eye without anisometropia there is ground for accepting the theory that the amblyopia commonly met with in squinting eyes is in some way the result of the squint. On the other hand, the indirect evidence is all against the suppression theory and in favor of the defect being congenital. The amblyopia of squinting eyes can not be properly considered without reference to the function of binocular vision. Since the latter varies in its perfection, and may even be entirely wanting, though each eye separately sees well, the functional association of the two eyes with each other is by no means always so developed as it is often assumed to be.

**A Case of Chronic Progressive Ophthalmoplegia Externa, with Description of Ganglion-cell Groups in the Region of the Oculo-motor Nucleus.**—Westphal ("Arch. f. Psychiatrie," xviii, 3) reports an interesting case of this kind occurring in a man, aged forty-four, who first was seen in September, 1882, and who died in October, 1883. The father had given signs of mental deterioration before the age of forty-three, and a sister was emotional and quarrelsome. In 1876 the patient had what was probably syphilis, and from this dated his weakness, emaciation, and loss of vision. On one occasion he had remained unconscious for three days, and in 1881 he had a similar attack and was paralyzed in the right arm. In a third attack he was also paralyzed on the right side. For six months he had suffered from delusions. When Westphal saw him he had marked ptosis of the left eye, the left pupil contracted and inactive, marked divergent squint, and complete absence of ocular movements in all directions. Eccentric vision of both eyes good. Right eye, vision normal; left eye, vision $\frac{20}{30}$. In February, 1883, both papillæ were pale, and vision in left eye was $\frac{2}{9}$. Visual field normal. Both eyes motionless. Speech was blurred, nasal, and monotonous. The palate movements were deficient, the sensibility of the face was much diminished, the taste was uncertain, and the smell very defective. Gait fairly firm, left knee-jerk just perceptible, and right knee-jerk absent. Incontinence of urine. His mental condition deteriorated steadily, and he died in October, 1883, from œdema of the lungs. At the autopsy the pia mater on the convexity was found œdematous and thickened, and contained on the lower surface of the pons and

medulla a thin, fresh clot. The sixth nerves were reduced to thin gray threads and the third nerves diminished in diameter two thirds. From the dorsal region downward there was gray degeneration of the posterior columns of the cord. The oculo-motor nucleus showed advanced degeneration. Dorsally from the atrophic oculo-motor nucleus and as far as the posterior commissure in the column of the nucleus there was a group of ganglion cells lying on each side of the rhaphe, oval and partly oblique to the rhaphe. On the level of the upper extremity of this group, but laterally on each side, was a second oval group. The two last groups were separated by a band of fine nerve-fibers passing downward to the crusta of the crus cerebri. This band widened out above, and with the rhaphe completely surrounded the median group of cells. The nucleus of the fourth nerve showed no degeneration of its ganglion cells, but a diminution in its smaller cell groups. The roots of the nerve and its terminations in the superior oblique were greatly degenerated. The nucleus and trunk of the sixth nerve showed extreme atrophy. In the optic nerves there was a thickening of the connective-tissue septa, extending to the finest subdivisions. There was degeneration of the posterior columns of the spinal cord throughout their entire length. The bundle of fine fibers separating the two groups of cells above referred to evidently sprang from the cells of the groups and passed downward as root-fibers, and this makes it probable that the cell groups give origin to oculo-motor fibers. The cell group ordinarily known as the oculo-motor nucleus was almost entirely degenerated, and the external ocular muscles were all more or less degenerated likewise. On the other hand, the median and lateral cell groups were healthy, as were also the internal ocular muscles, and hence it may be inferred that these internal muscles are innervated by the cell groups in question.

**The Tarsocheiloplastic Operation for the Cure of Trichiasis.**—Van Millergen ("Ophth. Rev.," Nov., 1887) describes his operation as follows: The intermarginal space is split from end to end sufficiently to produce a gap 3 mm. in breadth at the central part of the lid, and gradually becoming narrower toward the canthi. The gap is kept open by sutures passed through folds of skin on the upper lid, by means of which the lid is prevented from closing for twenty-four hours. As soon as the bleeding has ceased, a strip of mucous membrane of the same length as that of the lid, and 2 or 2½ mm. broad, is cut out from the inner surface of the lower lip and placed at once in the gap at the intermarginal space. It should be pressed *in situ* with a pledget of cotton soaked in sublimate solution. Sutures are superfluous. The lid operated on is then covered with a flap of linen coated with a thick layer of iodoform vaseline, and this is covered by a layer of cotton. Both eyes should be bandaged, and the bandage should be renewed once in twenty-four hours. The sutures in the upper lid must remain for two or three days.

**On Sensory Disorders in Diseases and Changes in the Field of Vision in Menstruation.**—Tinkelstein (*ibid.*) has found that in *epilepsy* the fields of vision undergo a general concentric narrowing under the influence of the fits. There are two varieties of the constriction: a more or less regular or equal narrowing of both halves of the field, and a more or less hemianopic narrowing. All radii of the field are diminished, the most marked change being in the internal radius. The constriction coincides in time of appearance with the general premonitory symptoms of the fit. The greatest narrowing is observed immediately after the fit, and lasts for two or three days. Constriction in the field of color vision occurs in all cases, the greatest diminution being in the green field and the least in the blue field. In a majority of cases a perversion of color perception is also observed. The central vision grows more or less worse after the fit. Scotomata and synchysis scintillans often occur after the fit, as well as a rapid exhaustibility of the retina. In *hysteria* the fields of vision also undergo a concentric narrowing, and the color fields also undergo a similar change. Perversions of color perception are very frequent and varying. Paracentral scotomata not infrequently occur. In *neurasthenia* the visual and color fields are invariably narrowed in a concentric manner. Perversions of color perception are extremely varying and irregular. In *chronic alcoholism* a stable concentric diminution of the visual fields is met with almost invariably. Perversions of color perception may be met with in fifty per cent. of chronic cases. In *women* during the menstrual period there takes place a concentric narrowing of the field of vision. The phenomenon makes its appearance one, two, or three days before the beginning of the menstrual flow, reaches its greatest intensity on the third or fourth day of menstruation, and gradually disappears about the seventh or eighth day of the period. The narrowing of the field varies in individual cases. The color fields undergo a corresponding limitation. Perversion of color perception is rarely observed except for green. Central vision becomes slightly impaired and rapidly returns to the normal standard after the catamenia.

**Hereditary Atrophy of the Optic Nerve.**—Habershon (*ibid.*) concludes that the hereditary nature of the affection depends on the transmission of a neurotic diathesis which leaves the patients specially prone to any exciting influence liable to affect the optic nerve. The liability to nervous disorders at the two periods of life represented by the disease must be regarded as extremely significant. These influences are more potent in young men than in women. Still, Habershon has not been able to find any case in which a disorder of vision could be attributed to sexual influences alone, because in most of the cases other common exciting causes are present—such as tobacco or alcohol. He considers that all the evidence points to some peculiar inherited predisposition to pathological disturbances of the nervous system, the precise part of the nervous system being determined by the kind of exciting influence.

**Brain Disease with Hemianopsia.**—Sharkey (*ibid.*) reports a case of cortical and subcortical disease of the occipito-angular region, producing hemianopsia. The patient was a man, aged twenty-nine, who had suffered for twenty years from ordinary epilepsy, and afterward from epileptic insanity. In October, 1886, he was struck on the vertex, and the wound left a scar. Since then he had not been able to use the right hand; the right leg was weak. On December 17th he had a fit, and was brought to the hospital. The pupils were dilated, the right being the larger; there were clonic spasms of the facial muscles and rigidity of the right arm and leg. There was hemianæsthesia of the right side, including the special senses, and optic neuritis. Right lateral hemianopsia developed, and, after some days of headache, insomnia, and coma, he died on February 1, 1887. On the day of his death his temperature rose to 107·4° F. At the autopsy a tumor was found in the left cerebral hemisphere, beneath the cortex, occupying the occipital lobe and part of the parietal lobe. The convolutions of the anterior half of the occipital lobe, superior parietal lobule, and upper extremity of the angular gyrus were thinned. The growth had involved part of the leg-centers in the superior parietal lobule. The optic neuritis was ascribed to the chronic thickening of the meninges at the base of the brain. The homonymous hemianopsia was ascribed to the destruction to the cortical and subcortical region of the occipito-angular region. The concentric contraction of the visual fields was probably due to the optic neuritis. The hemianæsthesia was due to the damage to the fibers which go to make up the sensory crossway, or to damage to the sensory radiations into the temporo-sphenoidal and callosal regions, and the optic radiations of the occipito-angular region.

**Quiet Iritis.**—Hutchinson, Jr. (*ibid.*), reports several cases of iritis in which the attack, sometimes leading to extensive adhesions and involving much deterioration of sight, was from the first unaccompanied by the typical features of inflammation. Iritis in certain cases does not reveal its presence by the characteristic frontal pain, and is practically unattended by congestion or photophobia. Sympathetic inflammation, congenital syphilis, and inherited arthritic tendency are probably the most frequent causes of quiet iritis. This form is very rare in the iritis of acquired syphilis, that of the ordinary rheumatic type, and in traumatic or herpetic iritis. Sex and age have little or no influence in modifying the severity of the symptoms accompanying iritis. A constitutional tendency can not always be invoked as the reason for iritis taking on an insidious form, as shown by the occasional occurrence of two attacks in the same patient, one being accompanied by violent inflammatory symptoms, the other being perfectly quiet throughout. The absence of the ordinary symptoms of iritis by no means always implies a mild course of the disease.

**Experimental Researches on Antisepsis and Asepsis in Ophthalmic Practice.**—Gayet ("Arch. d'ophthal.," Sept.–Oct., 1887) draws the following conclusions from his observations and experiments: 1. Most eyes

have concealed beneath them lids the germs of microbes. 2. The employment of antiseptic or aseptic methods exerts but a very slight influence on the presence of germs in the conjunctival *cul-de-sac*, and we can never be certain that the region for operation is free from them. 3. These germs are of several different kinds—cocci, staphylococcus aureus, staphylococcus albus, citreus, bacilli, and bacteria. 4. These germs are not all pathogenetic. 5. The cocci seem to be the dangerous species, as they have always been found in eyes which have undergone phlegmonous inflammation; still they must not be regarded as necessarily dangerous.

**The Nutrition of the Vitreous Humor.**—Leplat ("Ann. d'oc.," Sept.–Oct., 1887) concludes from his own observations and experiments that, assuming that it can be and has been demonstrated that the ciliary body furnishes the fluid portion of the vitreous, we still do not positively know where and by what channel this fluid passes out of the eye, though it is probable that the elimination occurs through the papilla. He forms the following idea of the intra-ocular lymphatic circulation: The ciliary body secretes a fluid which passes over by two channels. The first forms the aqueous humor, passes between the lens and the iris, and is excreted through Fontana's spaces. The second passes through the hyaloid membrane, makes a channel for itself between the elements of the vitreous humor, enters the central canal, and passes out of the eye by means of the optic nerve. Glaucoma may therefore result from some obstruction in the course of either circulation.

**Myxosarcoma of the Upper Lid.**—Van Duyse and Cruyl (*ibid.*) report a case of this nature occurring in a young girl aged seven. Nine weeks previously she received a contusion of the left upper lid from a rope. The contusion was followed eight days later by a small tumor at the middle of the lid, resembling a chalazion. This nodule increased in size very rapidly, was at first painless, and the skin overlying it was not discolored. Finally it became enormous, and larger than the child's fist. Its surface was hemispherical, and the skin over it became thinned and of a reddish-purple color. It was soft, elastic, irreducible, and non-pulsating, and was tender to the touch. The conjunctiva was thickened, everted, and secreted considerable pus. The growth was carefully removed, leaving the eye uninjured, and weighed eighty grammes. The neoplasm originated in the loose cellular tissue between the tarsus and orbicular muscle, and had grown forward, pushing the muscle and skin in front of it, and was separated from the eye and orbit by the tarso-orbital fascia. There was no trace of glandular or epithelial structure, and no pigmentation of the elements of the growth, which proved to be a sarcoma, poor in cells. Most of the cells were of the fusiform variety, and there were numerous embryonic elements among the cells and around the blood-vessels. The myxomatous elements were, however, but accessory.

**The Operation for Strabismus.**—Landolt ("Arch. d'ophthal.," Sept.–Oct., 1887) gives the following directions for the steps of the operation: After having determined whether the squint is paralytic or concomitant, he measures its degree and the field of fixation in the plane of deviation. He considers the age of the patient, the duration of the defect, the amplitude of convergence and accommodation, the refraction, and the visual acuity. He then determines the degree of loss of the binocular vision, and the possibility of producing diplopia by means of a prism or the stereoscope. If the individual is young, he first tries all methods of diminishing the strabismus before proceeding to an operation. If the squint is convergent, all work is stopped, atropine is used in both eyes, and convex glasses which correct the total hypermetropia are prescribed. If the squint is divergent, he advises a tonic treatment and orthoptic exercises, such as the use of the stereoscope. If the squint is by these means somewhat diminished, then the kind and extent of the subsequent operation are based upon the degree of deviation which persists. It should not be forgotten that in young persons convergent squint is often connected with excessive contraction of the ciliary muscle and often disappears spontaneously with advancing years. If a child has a convergent strabismus of 30°, and an operation is done to correct the entire deviation, without any other procedure, there is almost sure to be a divergence sooner or later, which will be much more difficult of correction than was the original convergence. Hence the child should first be submitted to the treatment previously indicated until no further diminution of the strabismus is demonstrable, before any operative treatment is undertaken. When it becomes necessary to operate on both eyes, by double tenotomy of homonymous muscles, it is better not to operate simultaneously, but to base the second operation upon the final result of the first. If we can not obtain by the operation the precise correction of the deviation, we still have recourse to orthoptic methods to complete the result. A deviation of 20° will not yield to a simple tenotomy, and we must choose between a tenotomy of both internal recti and a combination of tenotomy of the internus with advancement of the externus of the same eye. If the strabismus is alternating, the first operation is to be done, but if it is unilateral, the second one must be chosen. The instillation of atropine must be continued and both eyes must be closed by an antiseptic bandage. Immediately after the operation there will be a certain amount of overcorrection, an estimate of which will be had either by the aid of crossed diplopia, or by means of the perimeter. This surplus must be gradually diminished to the desired degree, even if it should become necessary to advance the internal rectus which has been already divided. If the divergence is very marked, the atropine is at once discontinued. If the divergence persists on the third day, the sutures in the advanced muscle are removed, but the binocular bandage is continued. If it still persists, the unoperated eye is uncovered. On the fourth or fifth day gymnastic exercises in convergence are to be instituted by causing the patient to fix his own finger, which must be gradually brought nearer the eye, and the operated eye follows it even under the bandage. As soon as the desired correction is obtained, we must endeavor to re-establish the amplitude of convergence—that is, the power to converge and diverge; and for the satisfactory re-establishment of this condition the patient must maintain single vision in spite of an abducting prism of 4°. The faculty of positive convergence must also be exercised by recourse to a black spot on white paper, or, if the sight of one eye is very weak, to the luminous line of the dynamometer. These objects are gradually brought near the patient in the median line, and he endeavors to maintain binocular single vision. This exercise of the accommodation aids in causing a disappearance of the divergence. If, in spite of all this, the divergence persists, then recourse must be had to advancement of the muscle previously divided, which is easily accomplished even a week after the first operation. Utilizing the old conjunctival wound, a strabismus-hook is passed beneath the muscle and a suture is passed through the latter. A slight pulling on the hook will detach the muscle from the eyeball, and it is then pulled forward and attached nearer the corneal margin. In choosing the method of operating for squint, it by no means suffices to recognize the degree of deviation, but it is also necessary to thoroughly appreciate the functional power of adductors and abductors. The examination of the visual field will very often show a perceptible limitation on the nasal side of both eyes. It is only when the divergence is very weak and when the field of fixation of each eye amounts to at least 47° inward that a tenotomy suffices to correct the astigmatism. If the visual acuity of the two eyes is about equal, and if the muscular conditions of each are good, a second tenotomy on the other eye will easily correct what the first tenotomy failed to correct. If, on the contrary, the divergence is of long standing and high degree, if the eye is highly amblyopic and its internal rectus very weak, if this muscle is elongated and atrophied, then the union of a complete tenotomy with an equally complete advancement of the antagonist is urgently demanded. It is even sometimes necessary to perform on the other eye either a tenotomy or an advancement, or a combination of the two, to obtain a perfect result. Before doing this, however, the atropine should be discontinued; only the operated eye is bandaged after a tenotomy; or, if an advancement has been combined with a tenotomy, both eyes are bandaged for only two days. The operated eye should be bandaged until the muscles have become attached at their new lines of insertion. In those cases marked by insufficiency of convergence, surgical interference must be guided by great prudence. It will be found that an advancement is generally more effective than a tenotomy, and an advancement combined with tenotomy on one eye is preferable to a tenotomy done on both eyes.

**The Relation of Ophthalmic Disease to Certain Normal and Pathological Conditions of the Sexual Organs.**—Power ("Ophth. Rev.," Dec., 1887) considers that the effects of onanism upon the visual or-

gans have been exaggerated, and that the eye symptoms are usually of a functional character, such as amblyopia, muscæ, and failure of accommodation. In some instances serious affection of the optic nerves ensues. In women, when the institution of the menstrual flow is interfered with, the eyes, in common with other organs, are the subject of symptoms attributable to the uterine disorder. In such cases chorioidal hæmorrhage not infrequently occurs, which enters the vitreous, and vision is seriously impaired. Various forms of keratitis are seen in women suffering from amenorrhœa and dysmenorrhœa. Serous iritis as a concomitant of amenorrhœa and dysmenorrhœa has frequently been observed. Retinal hæmorrhage consequent on sudden suppression of the menses has frequently been noted. Paresis of ocular muscles, both external and internal, has been observed in connection with catamenial irregularity. Power holds that menstrual disorders constitute a factor in the development of conical cornea. In pregnant women failure of accommodation is of frequent occurrence, and is usually met with in the later months of pregnancy. Retinal hæmorrhages sometimes result from the strain of the severe vomiting of pregnancy. Gravidic retinitis, a condition closely resembling albuminuric retinitis, is of not very infrequent occurrence. In the puerperal state we also meet with septic puerperal embolism and paralyses of the ocular muscles. In the suckling woman failure of the ciliary muscle, keratitis, and hypopyon are frequently met with, and are indications of the general exhaustion resulting from prolonged lactation.

**Ivory Exostosis of the Orbit removed by Drilling.**—Grossmann (*ibid.*) reports an interesting case of this kind occurring in a young man aged twenty-four, who was first seen in October, 1884. Protruding below the inner half of the right eyebrow was a large, spheroidal tumor, very hard and immovable, completely filling the upper and inner half of the orbital margin. The right eye was pushed outward and downward to the zygoma, and its movements in all directions impaired. The conjunctiva was hyperæmic, the optic disc was of a reddish color, and the retinal veins were dilated. $V = \frac{1}{20}$. The left eye was quite normal, but in the inner side of the left orbit was a small, hard prominence, as large as a cherry-stone. The growth had been coming on gradually for nearly ten years. In September, 1886, he was again seen. On the right side the tumor almost entirely filled the orbit, and the eye was destroyed. The cornea had sloughed and vision was nil. The small exostosis in the left orbit had grown, and the eye was pushed downward and outward. $V = \frac{5}{20}$. The right sloughing eyeball was removed at once. It was decided to drill long holes close together through the whole base of the tumor in the left orbit, and to sever the septa between them by drills which cut laterally. Special drills were made for the purpose, those for boring the holes being one tenth of an inch in diameter, and those for cutting laterally being one sixteenth of an inch in diameter, and they were long enough to drill holes more than an inch and a quarter deep. After forty minutes tedious work an intensely hard, flat exostosis was taken off. A second tumor was found behind the first, and was also removed. The whole operation lasted two hours and a half and was very fatiguing. The wound was closed in the usual way, a small drainage-tube being left in, and the patient left the hospital on the twelfth day. Six weeks later the eye had resumed its normal position and vision was re-established. One year after the operation there was no change, and the tumor seemed to have stopped growing. When an exostosis is flat and extremely hard, Grossmann prefers drilling to chiseling. The drill can be used as lightly as a pencil, and the treadle is more reliable than electricity or any other mechanical means.

**Congenital and Hereditary Defects of Ocular Movements.**—Lawford (*ibid.*) reports four interesting cases, those of a father and three of his seven children, the remaining four being unaffected. The three affected children were Nos. 2, 4, and 7. In all four patients there were almost complete bilateral ptosis, loss of upward and downward movements of the eyes, and very defective lateral movements. Visual acuteness and accommodation were good, and there were no ophthalmoscopic changes. No other congenital defect was present in any of the cases. Lawford draws attention to the fact that the ocular muscles, and not their nerves, were the structures at fault. In similar cases previously published, in which autopsies had been made, these muscles were in some instances found absent; in others they were ill-developed and shorter than the average measurement, while in almost every case their insertions into the sclerotic were displaced more or less backward.

**Bichloride of Mercury in the Treatment of External Diseases of the Eye.**—Alt ("Amer. Jour. of Ophth.," Nov., 1887) considers that sublimate solutions are very valuable aids in ophthalmic therapeutics. The strength in which he uses the drug varies from one part in 2,500 to one part in 5,000. The first solution sometimes causes severe pain, and must then be diluted. In all cases the solution is to be *poured* into the eyes while the patients are recumbent. In simple conjunctivitis with hardly any discharge, but with heat and dryness of the lids, instillations of sublimate solutions morning and evening act very well. In acute catarrhal conjunctivitis it is not so satisfactory, but in chronic catarrhal conjunctivitis it is very agreeable to the patients. In phlyctenular conjunctivitis it has a bad effect. In all forms of purulent conjunctivitis the frequent irrigation of the conjunctival sac with a solution of 1 to 2,500 is extremely efficacious, and Alt has obtained the same excellent result in diphtheria of the conjunctiva. In trachoma the remedy is of great help, as well as in blepharitis ciliaris. Ulcers of the cornea all do better when freely irrigated with the sublimate solutions.

**Ocular Symptoms due to Nasal Disease.**—Gradle ("Arch. of Ophth.," xvi, 4) presents his observations in the following order: 1. Lacrymation is not infrequently the result of nasal disease, without primary lesion of the tear-passage or of the eye. In some instances the persistent and annoying epiphora follows an acute attack of nasal catarrh. In other cases the lacrymation varies with the season, and is preceded by the signs of irritation of the front part of the nasal passages. It is probable that the flow of tears is increased in a reflex manner by the nasal irritation. 2. A marked type of ocular trouble of nasal origin is presented by a combination of a feeling of fullness of the lids and itching, with or without lacrymation, sometimes with more or less pain in the eyes. The ocular symptoms may be intermittent, remittent, or persisting for weeks or months. The diagnosis of nasal reflex is strengthened in such cases by the fact that the correction of any existing refractive anomaly is insufficient to remove the annoyance. Whenever in such instances the eye-strain is persisted in, there usually follows a congested condition of the conjunctiva. In all these cases the nasal disease consists of irritability of the blood-vessels in and beneath the mucous membrane on the anterior end of the inferior and middle turbinated bones, and in rare cases the upper and forward part of the septum. Distant reflexes, which sometimes involve the eyes, may arise from almost any part of a diseased nose or throat, but the great majority of nasal reflexes depend on the anomaly termed "irritable nose," with sudden engorgement of the nasal blood-vessels. In some instances the irritability of the nose depends upon the presence of some other lesion. Polypi may play this rôle of primary factor, but more often it is a catarrhal inflammation of the nares. In these instances a 4-per-cent. spray of nitrate of silver once a day, preceded by a spray of cocaine, gives relief to the patient. Where there is much discharge, it is better to remove it first by means of a douche of bicarbonate of sodium. Where no cause can be found for the nasal irritability, the only means of relief consists in the destruction of the cavernous tissue, and where the vascular tissue is not much hypertrophied this may be done by chromic acid. The galvanocautery is more thorough in its action, provided a strong current is employed. 3. Another type of ocular disturbances, also characterized by itching and discomfort in the lids, is peculiar in the periodicity of the attack. The trouble begins between May and July every year, and terminates promptly with the first cold days of autumn. A peculiar conjunctival lesion forms during the course of this affection, appearing first as a slight follicular enlargement, and ending in the formation of large, flat, yellowish follicular granules. 4. A somewhat different type of symptoms results in those instances in which there is less itching of the lids, while photophobia, with or without pain, is more prominent. Such eyes are often bloodshot. There may be more or less asthenopia and lacrymation. 5. In other cases there may be a more or less marked injection of the circumcorneal vessels. 6. Sudden congestion of the lids, varying from an erysipelatoid condition to a mere superficial erythema, is not very uncommon in patients with irritable noses. The attack resembles genuine erysipelas, but it does not spread, and, as a rule,

is not accompanied by much rise in temperature. It may last from two to six days, and is followed by more or less desquamation. After its first occurrence it is apt to return at intervals of months or years. 7. In other instances vaso-motor reflexes occur in the form of sudden œdema of the lids. The attack lasts only a few hours, or, at the most, a day.

**The Connection between Diseases of the Eye and Diseases of the Nose.**—Nieden (*ibid.*) considers that one of the chief causes of anisometropia lies in the general asymmetry of the orbital and nasal region and cavities which is so often found to exist. He also recognizes the fact that various affections of the eye are due to a previously diseased condition of the nasal mucous membrane. Some of these processes are propagated by direct intermediation of the nasal portion of the lacrymal canal, and so introduce infectious inflammation of the neighboring lining membranes that are similarly constructed. Reflex processes, excited by the nerves of the nasal mucous membrane, also give rise to reflex sympathetic affections in the eye and its neighborhood. These reflex processes depend upon the anatomical fact that both cavities are supplied by twigs of the first and second trigeminal branches of the naso-ciliary and spheno-palatine nerves. They can also be explained by the associated action of the ciliary and rhinic ganglia. Nieden thinks that chronic inflammation of the nasal mucous membrane, in which a thin secretion desiccates upon the surface in the shape of brown or greenish crusts of dried mucous, which readily decompose and give rise to the repulsive characteristic odor, together with the atrophy of the turbinated bones, are considerably influenced by the absence of the constant though slight moistening of the nasal passages normally excited by every motion of the eyelids. The development of chronic rhinitis into ozæna is largely due to the absence of this regular lacrymal secretion. He considers that phlyctenular keratitis almost invariably has its origin in a disease of the nose, and that the trouble can only be permanently and certainly relieved when simultaneously the pathological condition of the diseased mucous membrane of the nose has been treated and restored to its normal state. Nieden concludes his paper by reporting in detail four very interesting cases: The *first* was a case of polypus, starting from the upper portion of the nostrils, first perforating the median left and then the right orbital wall, and causing bilateral exophthalmus, and finally death, with cerebral symptoms. The *second* case was one of myxosarcoma of the mucosa of the superior nasal sinus, rupture of the ethmoid plate, extension into the cranial cavity, and thence to the base of the brain and into both orbits, with neuro-retinitis, bilateral exophthalmus, amaurosis, and death in coma. The *third* was a case of chronic empyema of the right frontal sinus and e hmoid labyrinth, with rupture into the right orbit, dislocation of the eyeball outward, and direct communication of the abscess with the nasal antrum. The *fourth* was a case of diffuse hypertrophy of the nasal mucous membrane, empyema of the maxillary sinus, infra-orbital neuralgia, right blepharospasm, with a cure following evacuation of the abscess and cleansing of the nasal and maxillary cavities.

**A New Instrument for testing Insufficiencies of the Recti Muscles.**—Holden (*ibid.*) proposes to test these insufficiencies by measuring the horizontal distance between the images. He describes an instrument which has a strong vertical prism for producing displacement of the image, and a rotating prism which serves the purpose of a series of horizontal prisms, and brings the displaced image to the vertical line. The vertical displacement and the lateral correction may, however, be made by a single glass. If a mirror is held horizontally a little above one eye, a reflection of a distant light may be seen in the mirror, while a screen below cuts off the view of the object itself. The other eye will see the light, and with the two eyes will be seen two images, one above the other. The mirror has the same effect as the vertical prism, and if there is an insufficiency of either the internal or external recti, the images appear obliquely, and the rotation of the mirror will bring them into a vertical line. When the mirror is tilted from side to side, the displaced image describes a curve. If it is rotated from a vertical position 180° to another vertical, the image describes a circle, passing through the true position of the image. When the axis of rotation is tilted up from the horizontal, the image is displaced farther upward, and the circle described by the image during the rotation of the mirror is larger. The axis of the mirror should be elevated until the image is displaced as much as a 14° prism would displace it, and then, when the axis is directed exactly toward the light and the mirror rotated, the image will extend laterally an equal distance to each side of the true position of the light. A scale may then be made on the stand of the instrument, and, in a case of insufficiency when the two images are brought to a vertical line by the rotation of the mirror, the degree of prism necessary to correct the insufficiency may be read off the scale. When the mirror does not rotate on a fixed axis, but one end of the axis describes a curve of a variable radius corresponding to the width and elevation of the mirror, the image, instead of moving in a curve, moves in a horizontal line. This double motion is easily secured by extending from one pole of the mirror two wires which slide in a curved slit. By having a hinge in the stand which can be turned 90°, insufficiencies of the superior and inferior recti muscles can also be tested.

**Tuberculosis of the Eye.**—Neese (*ibid.*) reports a very interesting case occurring in a man, aged thirty-three, who on July 21, 1882, came for advice for pain in one eye. The media were slightly cloudy, the papilla was indistinct, and the vessels were engorged. On dilating the pupil, vitreous opacities were seen. Syphilis was acknowledged. Under antisyphilitic treatment the eye became steadily worse. On October 4th an iridectomy upward was made. By October 31st the eye was totally blind, and on November 4th was enucleated. The eyeball lay in Müller's fluid for two years, and, on being opened, a tumor of the ciliary body was discovered which was supposed to be a gumma. In the medial portion of the ciliary region, with its medium transverse diameter near the boundary between the chorioid and the ciliary body, was an oval tumor 8 mm. long and 4 mm. wide, well defined from the sclera by the thickened uvea. The retina was totally detached and the chorioid was thickened in spots. The tumor had a peripheral zone and a central portion. In the upper portion of the former could be seen the margin of the normal uvea, with the posterior part of the ciliary body swollen into a spindle shape, and the chorioid thickened. Below was the tumor, partly bounded by the fluid which had coagulated behind the detached retina, and partly by the innermost layer of the detached and folded retina, and partly by a fibrous structure which filled the entire zonular region as far as the capsule of the lens. There were a large number of giant cells appearing in spherical clumps or as disc-like, elongated, or stellate structures. The central portion of the tumor consisted of amorphous granules and dense masses of cell detritus, and a few giant cells. The ciliary body consisted of a thick fibrous tissue interspersed with round cells and nuclei, and in part of a looser mesh-work containing several round nodules like those already described. In the thickened granular layer of the retina were two similar nodules with central flat giant cells. The retina in the posterior temporal section terminated in a second circumscribed focus, inclosed between itself and the chorioid, and consisting of cheesy nodules and giant cells, round and granulation cells. The chorioid was thickened, interspersed with round cells, nodules, and giant cells. The microscopic investigation seemed to favor the view of a circumscribed tubercle of the chorioid with disseminated transmission into the chorioid and retina. Haab's method for determining the presence of tubercle bacilli was employed and sections were left for three or four days in a freshly prepared fuchsine solution, bleached in alcoholic nitric acid, and again colored in methyline blue. Long search among many sections at last revealed a few genuine bacilli in the giant cells as well as in the reticulated tissue.

## Miscellany.

**The late Dr. Cornelius R. Agnew.**—At a meeting of the Medical Board of the New York Foundling Asylum, held on June 1, 1888, the following resolutions were unanimously adopted:

In the vicissitudes and uncertainties of life, death comes to call those whose lives are sometimes of the most value, because most useful to their fellow-men.

Such was the case in the person of a member of the consulting staff of this asylum, Dr. C. R. Agnew.

Dr. Agnew was a man of uncommon ability and of urbane and accomplished manner, and his life was largely devoted to the performance of good works. He was identified with many of our public charities, either on the consulting staff or as one of the board of directors or governors. He was large-minded and of a varied and rare executive ability, which he exercised freely on all occasions for the public weal.

His colleagues deplore his untimely death when his mind was brightest and his life most active, useful, and fruitful for good. Be it therefore

*Resolved*, That for the sorrow which has befallen his family we offer our respectful condolence and sympathy. As a further token of our esteem and respect, the secretary is requested to enter as a minute in the records of this board this preamble and resolutions.

*Resolved*, That a copy of these resolutions be sent to his family, and published in the "New York Medical Journal" and "Medical Record."

CHARLES CARROLL LEE, M. D., } *Committee.*
GEORGE F. CAREY, M. D., }

**The Healing Properties of a Brass Mule.**—The "China Medical Missionary Journal" says:

"A friend, recently returned from Pekin, tells us that he saw a method of cure which may be new to some of our readers. In a temple outside one of the city gates is to be found a brass mule of life size supposed to have wonderful healing properties. Patients suffering from every imaginable disease seek this temple to obtain a cure. The method pursued is as follows: Supposing you suffer from sciatica, you go with all speed to this famous temple, and having discovered the particular part of the brass mule corresponding to the painful region of your own body, you first rub the animal a certain number of times and then with the same hand shampoo your own disabled member, and then —well, then the pain goes. The special feature of this method of cure is its delightful simplicity. Is your tooth aching? Just scrub the mule's teeth and afterward your own, and, *voila!* the cure is complete. Have you an ulcer of the cornea? Pass the tips of your fingers to and fro over the particular eyeball of the mule, and then with well-regulated pressure rub repeatedly the afflicted eye. The mule has unhappily lost his sight during the many years he has been engaged in his benevolent work, the eyeballs, we are told, having been gradually worn away as the result of constant friction, until now you have only the empty orbits to operate upon. The animal is patched in all directions with fresh pieces of brass, put on to cover holes produced by the constant friction of eager patients, and a new, perfectly whole mule stands ready at hand, awaiting the day when his old colleague, having fallen to pieces, shall give him an opportunity of likewise benefiting posterity."

**Succus Alterans.**—Dr. George Howe, of New Orleans ("Atlanta Medical and Surgical Journal"), publishes notes of a number of cases in which he has continued to observe good results from the use of this preparation in various stages of syphilis.

**Mental Affections and Aural Disease.**—The "Lancet" says that "sufferers from noises in the ears are sometimes greatly distressed by the tinnitus, and cases of suicide have been ascribed to sheer desperation resulting from an inability to get relief from the everlasting noise. Ménière's disease and some cases of epilepsy are attributed to disease in the ear setting up changes in the central nervous system. The question is still unanswered whether actual mental disease, mania or melancholy, may not be produced by aural disease, apart from any annoyance due to tinnitus or deafness. Coarse diseases, such as otorrhœa, suppuration in the mastoid cells, perforations of the drum, polypi, waxy concretions, and foreign bodies, are easy of recognition, and can be appropriately treated generally by simple surgical methods. But nervous affections due to irradiation from the obscure aural mischief are not always so open to treatment, because the changes in the ear are more subtle, but none the less real. Sometimes an obstruction of the Eustachian tube may be the chief cause of tinnitus, owing to unpoised atmospheric pressure leading to excitation of the labyrinth and acoustic nerve by actual compression. M. Boucheron believes that, besides vertigo, epilepsy, and other nerve troubles, mental disease may be originated, and simple inflation of the middle ear has been followed by a cure."

**The Health of Michigan.**—According to the State Board of Health's summary for the four weeks ending June 30th, during that period diphtheria was reported from nineteen places, scarlet fever from thirty, typhoid fever from ten, measles from forty, and small-pox from one place.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending July 6th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 16th corresponded to an annual rate of 16·2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 9·9, and the highest in Manchester, viz., 27·9 in a thousand. Small-pox caused 2 deaths in Sheffield, 1 in Bristol, 6 in Preston, 1 in Manchester, 2 in Hull, and 1 in Leeds.

*London.*—One thousand one hundred and sixty-seven deaths were registered during the week, including measles, 21; scarlet fever, 19; diphtheria, 18; whooping-cough, 34; enteric fever, 8; diarrhœa and dysentery, 16. The deaths from all causes corresponded to an annual rate of 14·2 in a thousand. Diseases of the respiratory organs caused 213 deaths; different forms of violence, 71, and 14 suicides were registered. In greater London 1,438 deaths were registered, corresponding to an annual rate of 13·6 in a thousand of the population. In the "outer ring" 8 deaths from whooping-cough, 6 from scarlet fever, and 6 from diphtheria were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending June 16th in the sixteen principal town districts of Ireland was 22·5 in a thousand of the population. The lowest rate was recorded in Dundalk, viz., 4·4, and the highest in Kilkenny, viz., 33·8 in a thousand. In Dublin 167 deaths were registered, including whooping-cough, 5; enteric fever, 2; scarlet fever, 4; and diarrhœa, 3.

*Scotland.*—The deaths registered in eight principal towns during the week ending June 16th corresponded to an annual rate of 20 in a thousand of the population, which is estimated at 1,299,000. The lowest mortality was recorded in Dundee, viz., 15·2, and the highest in Glasgow, viz., 23·9 in a thousand. The aggregate number of deaths registered from all causes was 505, including measles, 13; scarlet fever, 5; diphtheria, 1; whooping-cough, 5; fever, 3; and diarrhœa, 9.

The death-rate during the preceding week corresponded to an annual rate of 18·5 in a thousand.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having an aggregate population of 1,129,676, during the month of April, corresponded to an annual rate of 24·1. The lowest rate was recorded in Haarlem, viz., 19·7, and the highest in Arnhem, viz., 36·1.

*Bordeaux.*—Four hundred and seventy-three deaths were registered during the month of May, 1888, including enteric fever, 4; scarlet fever, 1; diphtheria, 14.

*Fayal, Azores.*—The United States consul, in his dispatch dated May 29, 1888, relative to small-pox in the island of Terceira, states that "it continues there, and passengers thence were quarantined at the other islands until now, when an order from the home government has forbidden the mail-packets to receive at that island either cargo or passengers. At the island of St. Michaels the disease manifested itself in two of its most distant villages from the town, but has been prevented from spreading thus far."

*Preston, England.*—The United States consul at Liverpool, in his dispatch dated June 11, 1888, states that "small-pox is now raging in an epidemic form at Preston, a sea-port of 103,234 inhabitants, distant about thirty-five miles north of this city, at the head of the River Ribble. The disease assumed an epidemic form about the 4th instant, since which time the total number of registered cases is 183, of which 7 were fatal. During the last few days the number of cases reported has decreased, but some of them were of a more virulent type than

these previously registered. The medical officers of health have recommended the abandonment of all public assemblies for the present, and every precaution is being taken to arrest the spread of the disease."

Mortality Table, Foreign Cities.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Paris | June 16. | 2,269,945 | 890 | .. | .... | 8 | .... | 6 | 6 | 32 |
| Glasgow | June 16. | 545,678 | 242 | .. | .... | .... | .... | 3 | 2 | 1 |
| Warsaw | June 2. | 444,814 | 198 | .. | .... | 5 | .... | 2 | .... | 3 |
| Calcutta | May 12. | 433,219 | 236 | 53 | .... | .. | .... | .... | .... | .... |
| Rome | April 28. | 388,300 | 172 | .. | .... | .... | .... | 3 | .... | 3 |
| Palermo | June 9. | 250,000 | 81 | .. | .... | .... | .... | 1 | 5 | 1 |
| Genoa | June 16. | 179,416 | 73 | .. | .... | 2 | 3 | .... | .... | 1 |
| Trieste | June 9. | 154,500 | 90 | .. | .... | 5 | .... | .... | .... | 6 |
| Toronto | June 23. | 130,000 | 35 | .. | .... | .... | .... | .... | 1 | .... |
| Stuttgart | June 16. | 125,510 | 42 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | June 9. | 122,000 | 38 | .. | .... | .... | .... | .... | .... | 1 |
| Havre | June 9. | 112,074 | 71 | .. | .... | 4 | .... | 5 | 2 | .... |
| Pernambuco | May 29. | 110,000 | 98 | .. | 1 | .... | .... | 4 | .... | .... |
| Barmen | June 9. | 109,000 | 51 | .. | .... | .... | .... | .... | .... | 2 |
| Leghorn | June 17. | 101,718 | 35 | .. | .... | .... | .... | .... | 2 | .... |
| Reims | June 2. | 97,903 | 59 | .. | .... | 1 | .... | 2 | .... | 1 |
| Cadiz | June 16. | 65,028 | 53 | .. | .... | .... | .... | .... | .... | .... |
| Merida | June 18. | 48,800 | 32 | .. | .... | .... | .... | 2 | .... | .... |
| Cienfuegos | June 18. | 40,573 | 20 | .. | .... | 1 | .... | .... | .... | .... |
| Gibraltar | June 9. | 23,631 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Cardenas | June 21. | 22,000 | .... | .. | .... | .... | .... | .... | .... | .... |
| Sagua la Grande | June 16. | 15,605 | 16 | .. | .... | 2 | .... | .... | .... | .... |
| Bermuda | June 27. | 15,260 | .... | .. | .... | .... | .... | .... | .... | .... |
| Cartagena | June 2. | 13,000 | 8 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | June 16. | 12,000 | 8 | .. | .... | .... | .... | .... | .... | .... |
| Nassau, N. P | June 23. | 12,000 | .... | .. | .... | .... | .... | .... | .... | .... |
| Lagunayra | June 16. | 7,428 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Turk's Island | June 13. | 5,000 | 3 | .. | .... | .... | .... | .... | .... | .... |
| Livingston | June 16. | 2,503 | 1 | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

*Florida.— Yellow Fever.*—This Bureau is informed that about the middle of June yellow fever reappeared at Plant City, and there was one death therefrom, June 22d. Another case in the vicinity, four miles and a half from Plant City, died on the 26th. There have been several mild cases in the village, which contains less than 300 inhabitants, but for the present trains will not stop at Plant City, and it is understood that mails will be delivered at Cork post-office, five miles west of Plant City. In the mean time, by direction of the governor, the most active measures are being taken by the president of the county board of health, Dr. J. P. Wall. The board have promulgated the following regulation concerning the epidemic:

The Board of Health of Hillsborough County adopts and promulgates the following rules to prevent the spread of yellow fever at and from Plant City:

1. Railroads passing through or into Plant City are prohibited from carrying passengers and baggage to or from Plant City, or from delivering or taking on freight, or transferring freight from the cars of one road to cars of another road at or near Plant City, except the delivery of the necessary supplies for the people living in the place. Said railroad companies are also prohibited from delivering or taking on the United States mail at Plant City.

2. All employees of the railroads living at or near Plant City must be acclimated to yellow fever by a previous attack of the disease; and such employees should be enjoined to keep away from the sick, if any, and aloof from all places suspected of being infected with yellow-fever poison.

Rule 3. These rules are substituted for Rule 2 of the rules adopted and promulgated April 24, 1888.

The president of the county board of health states that—

In explanation of the foregoing stringent rules, it is necessary to say that the Board of Health of Hillsborough County believes Plant City to be infected with the poison or germs of yellow fever; and inasmuch as expensive efforts to disinfect the place and stamp out the disease have failed, it is due to the public safety and welfare of the State to isolate the place and have it shunned as an infected place until such time as the Board of Health may deem it safe for people to go there. It is deemed absolutely necessary to suspend all business and cut off all communication with Plant City to prevent the risk of a widespread epidemic of yellow fever this summer. It is true that there is not much sickness there, and happily the large majority of the residents in the place are acclimated by a previous attack of the disease; but by visiting the place or commingling much with the people who still reside in Plant City there is unquestionably great risk of spreading the disease. The summer is here, and the time for temporizing measures has passed. It is probable that Plant City will remain infected for some time, if not for the whole season, and hence the necessity for these stringent measures. Everybody is especially cautioned from being deceived by assertions of the disease being anything else but what the Board of Health has honestly pronounced it—yellow fever.

Mortality Table, Cities of the United States.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Philadelphia, Pa | June 16. | 1,016,758 | 353 | .. | .... | 3 | .... | 14 | 4 | 4 |
| Philadelphia, Pa | June 30. | 1,016,758 | 536 | .. | .... | 2 | .... | 12 | 5 | 7 |
| Baltimore, Md | June 20. | 431,879 | 248 | .. | .... | .... | .... | 4 | .... | 1 |
| New Orleans, La | June 23. | 216,090 | 120 | .. | .... | .... | .... | 1 | .... | 4 |
| Richmond, Va | June 30. | 63,600 | 61 | .. | .... | .... | .... | 1 | .... | .... |
| Charleston, S. C. | June 30. | 60,145 | 34 | .. | .... | .... | .... | .... | .... | .... |

**To Contributors and Correspondents.**— *The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

### A CLINICAL LECTURE ON SYPHILITIC OTITIS.

*Delivered at the New York Polyclinic, June 28, 1888.*

BY MATTHIAS L. FOSTER, M. D.,

INSTRUCTOR IN OTOLOGY AT THE NEW YORK POLYCLINIC; SURGEON TO THE OUT-POOR DEPARTMENT OF BELLEVUE HOSPITAL; CLINICAL ASSISTANT AT THE MANHATTAN EYE AND EAR HOSPITAL.

GENTLEMEN: At our last meeting I was requested by certain of your number to give you to-day a few points on syphilitic otitis. In response to this request I have prepared some notes on its pathology, symptomatology, and diagnosis. I lay no claim to originality in these remarks; they have been compiled from various works on diseases of the ear and on syphilis, and contain, I think, most of what is at present known on this subject. Our knowledge regarding it is of quite recent date and is, as yet, by no means complete. Some of the lesions presented by this disease are readily recognized, while many are not. Those which are easily recognized are situated in the external portion; those affecting the internal ear are largely known only by inference from the symptoms and analogous lesions elsewhere.

Syphilis may attack any portion of the auditory apparatus, from the auricle to the origin of the auditory nerve in the brain. Beginning with the auricle, we find the cutaneous surface or the cartilage destroyed by ulcers and gummata which present the characteristics familiar to you, the same as those presented by similar syphilitic lesions elsewhere in the body.

In the external auditory meatus one may find mucous patches, with spongy granulations, erythema, or pustules. Mucous patches, or condylomata, in the external portion of the meatus are usually isolated, but more internally they may be multiple. Sometimes the granulations fill the canal so as to hide the membrana tympani. It is very difficult to decide in a given case whether these growths are or are not of a specific nature, as they are frequently observed in cases where there is no reason to suspect syphilis. These are usually painless, but a lesion is described which appears at first as an ill-defined swelling, with redness and pain, followed by a discharge of purulent matter. In its early stage it is readily mistaken for an ordinary furuncle, but the diagnosis may be established by its course after incision and evacuation of its contents. A simple furuncle goes on rapidly to repair; one with a syphilitic taint does not disappear, but an ulcerative process supervenes, which may continue indefinitely. Sometimes there is a considerable exfoliation of epithelium in the meatus which accumulates in the form of scabs upon the membrana tympani and may interfere with the hearing. Its action on the ceruminous glands is uncertain; in some cases the meatus presents a dry appearance on account of the absence of the normal amount of secretion, in others supersecretion by the glands seems to result in impaction of cerumen. I do not know of any means by which to determine that the cause is syphilis in any given case of impacted cerumen. If this could be determined, a certain number of cases might possibly be cured of their tendency to rapid reaccumulation of the secretion. Gruber maintains that exostosis and hyperostosis of the external auditory meatus may result from syphilis, but other writers express a good deal of doubt regarding this. All these forms of otitis syphilitica externa are rare.

When we come to the middle ear we find the pathology in the main similar to that of syphilitic lesions of other mucous membranes, as of the throat and nose. A specific inflammation in the fauces may travel up the Eustachian tube, or isolated lesions may occur in the tube in connection with or independently of the tympanum itself. Such an inflammation, causing ulceration, adhesion, and stricture of the tube, produces disastrous effects upon the hearing, as you may readily understand. I should mention in this connection that another cause which produces the same effect is sometimes met with in cases of gummata of the soft palate, in which the remains of the soft palate become adherent to the walls of the pharynx and mechanically obstruct the Eustachian tube; for, this condition once formed, if even a very small portion of the tube itself is involved, there is no remedy, but in a certain number of cases the adhesions surround without involving the tube, and the obstruction can be successfully removed. The mastoid cells may be involved by extension from the tympanum with or without perforation of the membrana.

Gruber describes a hyperplasia of the bony tissues of the tympanum, sometimes affecting the ossicles either wholly or partially. Periostitis seems to be the basis of these cases. According to Sexton, there may occur a disarrangement of the integrity of the chain of ossicles, most commonly at the malleo-incudal joint, probably sometimes at the incudo-stapedial joint, or at both. The movements of the stapes in the oval window may also be interfered with. The first-mentioned condition may serve to explain the tinnitus and autophony; the last increases the anomalies of hearing.

In the internal ear there is good reason to believe that there may be hyperæmia and periostitis as well as gummata, but I am unable to speak definitely concerning this. Most observers are agreed that the labyrinth is usually the seat of the syphilitic lesion. It is a peculiarity of syphilis that it may produce its well-marked textural changes in almost any spot in the body, while the neighboring parts may exhibit no evidence of being involved or affected by the process. Thus the membranes of the round and oval windows may be much swollen without involving any of the remainder of the mucous membrane of the tympanum, or being associated with an exudation into it; hence without any evidence of middle-ear disease. But this swelling must press on the fluid of the labyrinth, and therefore may produce the symptoms referable to such pressure, such as deafness, staggering, and dizziness, and may work irremediable changes in the delicate structures of the internal ear. When this occurs in acquired syphilis it is usually in the secondary stage.

The lesions in the acoustic nerve which are due to syphilis do not differ from similar lesions in the other cranial nerves, regarding which you have been taught in the department of neurology.

From this brief review of the pathology of syphilitic otitis you will readily and correctly infer that the symptoms presented will in many cases differ little, if at all, from those seen in non-specific cases. Passing over, with what I have already said, the diseases of the external ear, we will consider first the symptoms presented by disease of the middle ear.

As long as the lesion is confined to the Eustachian tube the symptoms and physical signs on the membrana tympani are those of chronic catarrhal otitis media with stenosis of the Eustachian tube, and can be diagnosticated only by the appearance of specific lesions in the fauces. When the mucous membrane of the tympanum is involved, certain changes may at times be noted in the membrana. Usually it looks dry, its brilliancy is more or less lost, and it is reddened moderately or not at all, with perhaps redness at the inner end of the meatus. Its surface may become uneven and the membrana itself infiltrated. This infiltration in some cases becomes so great that the position of the malleus-handle can be recognized only by the injected vessels which run along it. Very rarely it becomes perforated. The attack of deafness is usually painless, is sudden, and may yield as suddenly to energetic antisyphilitic treatment. In these cases the deafness is evidently due to interference with the apparatus in the middle ear, because the patient can hear his own voice (autophony), and the tuning-fork can be distinctly heard when placed on the head.

When the internal ear is affected the onset is sudden; both ears are usually involved, but not of necessity simultaneously or to the same extent. There is loss of hearing by both aerial and bone-conduction in the same ratio, accompanied perhaps by neuralgic pains in the temporal and frontal bones, but seldom by any external evidence of inflammation. Tinnitus is usually present and very distressing, frequently associated with giddiness. The progress is rapid and, unless treatment is very prompt and unusually successful, absolute deafness may result.

When a patient comes to you with a history of sudden painless deafness, with tinnitus, dizziness, and nausea, especially if a syphilitic history can be elicited and no other cause can be ascertained, push antisyphilitic treatment as hard as possible. Put the patient in bed and use mercury so as to touch the gums within a week. It is possible that no improvement will be obtained until the system is thoroughly under the influence of the drug, and that then the deafness may disappear as suddenly as it came. In acquired syphilis this severe form is, happily, not common. The inherited disease is, on the contrary, a rather common cause, but is much less amenable to treatment than the acquired. It is one of the most frequent causes of non-congenital deaf-mutism, and is more often met with in females than in males. We do not know in these cases whether the disease is located in the labyrinth or in the nerve itself.

As I have said, the diagnosis of syphilitic otitis is frequently very difficult. Often there are absolutely no diagnostic signs which may enable us to determine whether the affection of the ear is due to syphilis or not. The presence or absence of other lesions syphilitic in their nature should be determined by careful physical examination of the patient, for direct questioning often fails to obtain aught but an indignant denial. When there is simply catarrh of the middle ear without the characteristic signs I have mentioned, when no easily recognized specific lesions can be found elsewhere and no history can be elicited, the actual trouble may sometimes be suspected from the obstinacy of the affection under ordinary treatment, or the more rapid and complete loss of hearing than in non-specific catarrh, and may be determined in a few cases with a fair degree of certainty by the wonderful effect produced by constitutional treatment. But it must be borne in mind that non-specific exudations may be removed by the same means. The best diagnostic sign is the rapid or sudden loss of hearing without apparently sufficient local cause. Sudden facial paralysis and deafness are diagnostic of disease of the internal ear, or of the auditory nerve involving the facial.

A pervious Eustachian tube with no sign of disease on the membrana does not of necessity exclude middle-ear complication, for the lesion may involve the ossicles or the inner wall of the tympanum to such an extent as to seriously interfere with the hearing without affecting the Eustachian tube or the membrana. The greatest difficulty in diagnosis is experienced in those cases in which the middle ear is known to be diseased and it is desired to learn to what extent the labyrinth or nerve is involved. This is to be determined in the usual manner by means of the tuning-fork.

The prognosis must be considered bad as regards the hearing, although quite a number of brilliantly successful cases are on record. When the true condition is recognized in an early stage, as it probably will be with increasing frequency in the future, the prognosis is very much better.

In treatment we rely on mercury and iodide of potassium, either separately or in combination. Little or no reliance can be placed on local measures. Follow the same course of treatment that you would in specific lesions elsewhere, but push it energetically, remembering that time is invaluable to save the delicate mechanism of the ear from injury which can never be repaired.

101 West Seventieth Street.

## Original Communications.

### INTRAPELVIC KIDNEY

### MISTAKEN FOR DISEASED UTERINE APPENDAGES.

*ABDOMINAL NEPHRECTOMY; RECOVERY.*

By PAUL F. MUNDÉ, M. D.,

PROFESSOR OF GYNÆCOLOGY AT THE NEW YORK POLYCLINIC; GYNÆCOLOGIST TO MOUNT SINAI HOSPITAL.

Movable or floating kidneys are so frequently met with nowadays and so easily recognized, as a rule, that no one thinks of recording isolated cases. Landau, in his monograph on "Die Wanderniere bei Frauen" (Berlin, 1881), gives a list of forty-five cases seen by himself; Lindner ("Frauenarzt," July, August, September, October, 1887) bases his article on twenty-four personal cases; and I myself remember having encountered at least a dozen. They occur by far more fre-

quently in women, as a result, as was formerly supposed, of the relaxation of the adipose attachments of the kidney by repeated pregnancies, assisted by some sudden strain. Landau's observations seem to confirm this ætiological relation. But Lindner denies that parturition has any special predisposing influence on a dislocation of the kidney, since he has seen movable kidneys in nulliparous women of every condition of life and of ages from sixteen to forty years. He believes that the predisposition to dislocation of the organ is based on a congenitally loose attachment, to which is added a general malnutrition; the exciting cause, then, lies in a sudden violent strain or a succession of moderate downward propulsions of the movable abdominal viscera (tight lacing, constipation, carrying heavy weights, etc.). In the majority of cases where sudden pain is felt in a certain part of the abdomen after some violent exertion, and examination reveals a floating kidney at that spot, Lindner believes that the kidney was movable long before, but suddenly became forcibly dislocated.

In all the cases of movable kidney which I have seen and which I have found reported in detail the mobility of the organ varied from a few inches below its normal site as far down as the superior pelvic strait. But few instances are recorded where the kidney descended below the iliac fossa, and none where it was contained completely within the pelvic cavity. When the organ is found floating about the brim of the pelvis it may easily be mistaken for a small, solid ovarian tumor or a pediculated fibroid of the uterus, both of which in shape may resemble a kidney; or, if on the left side, the spleen may be thought of. If the tumor is larger than the normal kidney, the diagnosis may be still more obscure. A careful bimanual examination of the pelvic organs, eventually even the introduction of the whole hand into the rectum under anæsthesia, and the discovery in this manner of the uterus and ovaries in their normal positions, will, of course, at once eliminate those organs from consideration; and the absence of the kidney from its normal position, as shown by bimanual palpation and percussion of the lumbar region, will aid in settling the diagnosis. The examination of the urine is of no avail as a diagnostic sign for floating kidney, since only in renal tumors (chiefly malignant) does bloody urine indicate disease of that organ, whether displaced or not.

When, however, there is no suspicion whatever of displacement of the kidney; when the urine is normal; when pain dating from a certain period is complained of in one side of the pelvis; when bimanual examination reveals a distinct, oblong, slightly movable, very tender, elastic body in the pelvic cavity where the pain is complained of; when the normal ovary on that side can not be felt and the uterus is found to be slightly limited in mobility but otherwise normal in size and position; and when, moreover, this oblong, sensitive, and slightly movable body in the sensation it imparts to the examining fingers corresponds exactly to an enlarged and adherent ovary and tube, the result of perioophoritis—then, I say, the presumptive diagnosis is certainly in favor of the latter condition, and a failure to suspect or diagnosticate the intrapelvic tumor as a displaced, if not exactly floating, kidney may well be excused. Such a case is the one I now wish to report. So far as I have been able to ascertain from a careful search through literature, the case is unique as regards both the peculiar position of the kidney and the operative treatment:*

S. P., twenty-one years of age, married, the mother of two children, the last fourteen months old, was admitted to my service in Mount Sinai Hospital on Tuesday, May 22, 1888, complaining of severe pain in the left ovarian region which, she stated, had come on after an accident (falling of her baby upon her) three weeks previously. On being questioned, she said that she had had a chill and fever at that time and been confined to her bed for some days. Menstruation normal; urine amber, acid, 1·020 specific gravity, negative. Bilateral examination of her pelvic organs without anæsthesia (which was unnecessary, as the abdominal walls were lax and thorough palpation was practicable) showed the uterus in normal position, its lateral mobility slightly impaired, the right ovary not recognizable; in the left side of the pelvic cavity, apparently touching the bottom of Douglas's pouch, there was an irregular ovoid, exquisitely sensitive tumor of about the size of a flattened orange, which was slightly movable in every direction, and which presented the characteristic feel of an enlarged ovary and tube bound together by adhesions. No attempt was made to push this body out of the pelvis, since no doubt was entertained of its nature. The diagnosis was verified by several other gentlemen who happened to be present.

As I was about to leave town for several weeks, and as the patient complained of a great deal of pain, I suggested to her to have the offending organs removed at once, to which proposal she readily assented. Accordingly, on May 25th, in the presence of Dr. John A. Wyeth and one of the gentlemen attending the New York Polyclinic, and assisted by the house surgeon, Dr. Howard Lilienthal, and the other members of the surgical house staff, I opened the abdomen in the usual manner. My first step was to feel for the right ovary and tube, which I found normal. I then passed my fingers down to the tumor, which was quite difficult to reach, as it lay on the floor of the pelvis; at first it seemed to be completely adherent, and I could find no place to begin enucleation. I remember saying to Dr. Wyeth that it felt just as though it were entirely covered by peritonæum. Still no suspicion occurred to me that the tumor might really be extraperitoneal, since my fingers failed to encounter the left ovary, and I had frequently met with apparently quite similarly adherent ovaries and tubes. Suddenly the adhesions seemed to give way about the center of the tumor, my fingers slipped into a small furrow, and the enucleation of the mass was rapidly accomplished. Finding some difficulty in lifting the slippery tumor through the incision, I grasped it with flat forceps, which tore out, and quite a flow of dark blood took place. During these manipulations I remarked that I had never before had to handle so peculiarly feeling a mass in that locality. Finally I succeeded in drawing the tumor out of the incision, and a glance revealed its character. It was the left kidney in a high state of venous engorgement.

I need not describe my surprise and almost, I may say, consternation. If the capsule had been intact, I should have at once returned the organ to its bed; but I had peeled the capsule as smoothly from the kidney as it could be done on the dissecting table. There was nothing to be done but to remove

* The case most similar to it which I have been able to discover is that of Polk ("N. Y. Med. Journal," 1882), where the left kidney was attached to the ovary and was removed by an incision parallel to Poupart's ligament. The kidney had not, therefore, descended to the pelvic floor. Its mal-position was supposed to be congenital.

the organ. Still I employed the precaution to feel for the right kidney, which I thought I felt in its normal position. I at first laid an elastic ligature around the pedicle to stop the profuse venous oozing from the forceps bruise; and then I transfixed and tied off the pedicle with silk, using the Staffordshire knot, cut off the pedicle without searing it, and, having satisfied myself that no vessels required separate ligatures, dropped it back and laid the folds of peritonæum over it. I then looked for the left ovary and at first could not feel it. At last I detected a small, flat body, bound down by adhesions to the posterior leaf of the broad ligament, and so covered as to be almost indistinguishable. The patient thus had been through an attack of perioophoritis, as her history led us to surmise, and the limited mobility of the uterus was thereby explained. I decided to leave the left ovary, as I was afraid the manipulation and traction required to detach it and ligate the pedicle might do some injury to the stump of the kidney. The abdominal cavity was then carefully cleansed of coagula by sponging and flushing with warm Thiersch's solution, and the wound closed with silkworm-gut sutures. The operation had lasted about forty minutes, considerable time having been devoted to a careful toilet of the peritoneal cavity.

The patient came well out of the anæsthesia, which was by chloroform. Directions were given to draw the urine and measure its amount each time, also to examine it chemically and microscopically daily.

The condition of the patient for the first three days was that of depression or shock; the morale was bad; the pulse was small and high, usually 120, temperature 100° F.+, and respiration 28. There was some vomiting and she was nourished *per rectum*, chiefly with Rudisch's sarco-peptones. Immediately after the operation she was catheterized and 2¼ ounces of urine were removed. Six hours later, 6 ounces were withdrawn. On the second day, at intervals of six hours, 4, 5, and 4½ ounces, respectively, were withdrawn; five hours later, 4 ounces of urine were passed voluntarily—in all, 17½ ounces in the twenty-four hours. Urine acid, 1·026 specific gravity; reddish deposit; albumin, 3 per cent.; a few pus cells, abundant urates, no casts. Treatment, caffeine, brandy, seltzer-water, and milk.

*May 27th.*—Temperature 99° to 100·8°, pulse 122 to 128, respiration 20 to 24. Passed 18 ounces of urine voluntarily. Kumyss, sarco-peptones, brandy and eggs in enemata.

*28th.*—Passed 24½ ounces of urine; one stool.

*29th.*—Twenty-five ounces and a half of urine.

*30th.*—Nineteen ounces and a half.

*31st.*—Nineteen ounces. Chicken-soup and crackers; pulse 96, temperature 99° to 100·8°, respiration 22.

The temperature and pulse gradually became entirely normal; the amount of urine voided increased to 31½ ounces on June 4th; bowels regular. Urine practically normal; no casts.

*June 5th.*—Stitches removed and patient moved from the private laparotomy-room into the general ward. Further recovery uninterrupted.

*15th.*—No pain and gaining flesh; out of bed. The weight of the kidney after five weeks' preservation in 50-per-cent. alcohol is 3 ounces 5 drachms. A microscopical examination showed nothing abnormal.

*July 6th.*—A vaginal and bimanual examination revealed nothing abnormal. Patient discharged well. The case after the third day passed under the care of my friend, Dr. B. Scharlau, who kindly acted as my substitute during my two weeks' absence from the city, and to his efficient supervision and the unremitting attention of Dr. Lilienthal I think the rally from the deep shock must be largely attributed.

Whether the left kidney actually slipped down into the pelvis at the time the patient complained of the severe pain in the left side, three weeks before admission, or whether it had gradually descended and for some reason only began to be troublesome at the time mentioned, it is impossible to say. Indeed, the history and the condition of the left broad ligament and ovary render it more than probable that the pain complained of three weeks before, attended by a chill and fever, was due to a localized pelvic peritonitis, and that the presence of the kidney in the pelvis was an entirely accidental complication. At first sight it would seem certain that the descent of the kidney must have taken place after the birth of the second child, fourteen months ago, since it is hardly probable that so delicate an organ as the kidney could have endured without speedy reaction the injury inevitably inflicted on it in its abnormal position by the child's head in its passage through the pelvic canal. An acute nephritis would more than probably have rapidly followed the confinement. For this reason I at first rejected the otherwise plausible idea that the malposition was congenital. But a curious fact has led me to reconsider this decision—namely, after the woman's recovery, one of her children, a boy of three years, was brought into the hospital with cholera infantum, and died, and at the post-mortem his left kidney was found displaced to the brim of the pelvis, although not so low as that of his mother. The hereditary tendency to floating kidney, therefore, seems not improbable. But we are not so much concerned here with the questions when and how the kidney got into the pelvic cavity as with the uncommon and unexpected fact of its being there without exciting the least suspicion as to its true character.

The question, therefore, is one of *diagnosis*, or how to enable us to distinguish between a retroperitoneal tumor (as in this case, the displaced kidney) and an intraperitoneal mass, the general feel and outline of both being similar to that peculiar to an ovary and tube enlarged and adherent together and to the neighboring tissues, the result of local adhesive inflammation. I am not aware that any of the usual diagnostic methods employed in these cases will enable us to make an absolutely correct diagnosis, except, perhaps, the introduction of the whole hand into the rectum under anæsthesia, combined with palpation with the other hand through the abdominal walls. But this measure is not devoid of danger either by overdistension of the rectum or rupture of pelvic adhesions, and is not likely to be employed unless the extraperitoneal situation of the tumor is suspected and a knowledge of its real character is indispensable.

Simple bimanual palpation will usually (but not always) permit us to decide whether the ovaries and tubes are normal (that is, if they can be felt); and, if the normal appendages can not be recognized, the probability always is that the mass felt to one side or the other, or on both sides, of the uterus is the more or less diseased appendages. What the exact nature of their pathological condition is—whether the tube contains serum, blood, or pus, or the ovary is polycystic or a hæmatoma—can not be determined until the abdomen is opened.

Lindner * reports a case of Lawson Tait's † where a right movable kidney was mistaken for an ovarian or tubal tumor, the error only being discovered at the laparotomy.

An additional source of error lies in the fact that women suffering from movable kidney complain of sacralgia, bearing-down pelvic pain, reflex gastric, cephalic, and other disturbances, usually supposed to indicate pelvic disease, but all disappearing after replacement or removal of the kidney.

If now the appendages are diseased, especially atrophied, and the broad ligament is contracted by more or less recent peritonitis, so that the ovary can not be distinguished by palpation, as in my case, I do not see how a correct differential diagnosis of the intrapelvic tumor can be made.

In this respect the only lesson to be learned from my case is that the possibility of the kidney's descending into the pelvis should always be borne in mind in diagnosticating and operating on intrapelvic tumors which present outward characteristics similar to the kidney.

Lindner ‡ has collected thirty-six cases of removal of the displaced kidney, with a mortality of nine, or about 25 per cent. All the deaths occurred after the abdominal (intraperitoneal) operation; the lumbar incisions were all followed by recovery. In such a case as mine, of course Hahn's method # of cutting down over the normal site of the kidney, pressing it back into place, and attaching it there by sutures passed through the circumrenal fat and the edges of the incision (nephrorrhaphy), would be impracticable, since I do not believe that the kidney could have been pushed out of the pelvis and back to the lumbar region.

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## REACTION; A GENERALIZATION.

By C. W. LYMAN.

In the study of medicines and other therapeutical agents, such as heat, cold, or electricity, we examine principally what we call the reaction that they excite. In looking into the phenomena of certain diseases of a severe type, like cholera, typhoid fever, and yellow fever, at that point where the body spontaneously exerts itself to recover its lost grip; in the treatment of the state known to surgeons as shock, and in other conditions of extreme depression; or in gaining an understanding of the means by which a healthy and vigorous adult is to preserve his health and bring his powers to their best—a medical student or practitioner has to deal constantly with what is termed reaction.

Finding it to be a force in play in very diverse fields of the knowledge of his art and coming upon it at every turn in physiology, a thoughtful man will at some time ask himself the question to which this paper will attempt to make an answer, "What is reaction?" It is unnecessary to premise that to this question no concise or absolute sort of answer can be given. Of life, if it is asked "What is life?" there is no compact exact definition. Biologists collect and more or less arrange in classes its various observed phenomena, activities, subjective sensations, its conditions and limitations. That is, they do this so far as they can, surrounded always by undiscovered or undiscoverable forces. Reaction also, a thing connected somehow very closely with the impalpable life principle itself, we can conceive of most plainly by collecting and reviewing some of its more significant and evident manifestations, in both healthy and diseased bodies. We shall find it, I think, a force with which a physician needs a most intimate and varied acquaintance, not alone in grasping the theoretical and learned sides of his art, but more particularly in applying practically and graduating and adapting those forces or agencies which are called collectively his *resources*.

Two or three uses of the word reaction in medicine deserve notice and differentiation as being almost opposite. First, it is applied to that innate energy of living and nervously active protoplasm by which it takes on in the presence of a change in environment or of a disturbing agent a countervailing activity of an opposed and opposite sort. As illustrations, take the quickening of the nutritive process and the heat production when the weather becomes cooler, the heightened force and frequency of the heart in the primary stage of the action of atropine, the sudden fall of temperature and abatement of symptoms that may occur at any time after the onset of typhoid fever, or the rise of temperature to and above normal and the general inflammations of the third stage of cholera.

Second, the term reaction is used to express the immediate resultant of an irritation, and not the effort, also called reaction, which might afterward be made to offset it. Thus, digitalis, for a few moments just following its exhibition, lowers the blood-pressure. When a current of electricity is thrown into a muscle's nerve we get at once a contraction which we call the reaction of the muscles to such and such a current. If this stimulus were repeated often, in time might come a reaction of another sort on the part of the nerve by which it would become tolerant, either from habitual resistance or from physiological exhaustion. Which it would be—that is, how soon exhaustion would succeed to resistance—would depend on the strength and frequency of application of the electricity and the vitality of the nerve. In either case there would be a lessened response to the same stimulation. The body sets up for a time a resistant reaction to many drugs if taken in *moderate* doses, though in the end it is undermined and exhausted by that exertion. This exhaustion may appear suddenly, as in the protracted use of arsenic and digitalis. Examples of this temporary resistance we see also in conium, opium, tobacco, coffee, strychnine, and bitter tonics. People of intelligence, however, are constantly confounding this relation, and mistake the exhilaration accompanying the outgo of their own vitality in this resistance for some new force which the drug is imagined to infuse into them. To some disease-germs the body's reaction of resistance may be permanent, or practically so; for example, to mumps, measles, small-pox, and their poisons. I prefer this view to the idea of a material element the supply of which the disease has exhausted; the latter requires too much imagination. Vaccination sets up a resistance which lasts for some years. Typhoid fever

* *L. c.* † "Birmingham Med. Review," 1885. ‡ *L. c.*

# A very complete article, with a list of cases of nephrorrhaphy, by Maurice Richardson, of Boston, has recently appeared in the "Boston Medical and Surgical Journal."

recovered from leaves a more or less permanent resistance. To malarial poisoning a resistance often comes by long residence. According to Dr. Thomas, some men become similarly acclimated to the poison or germ of gonorrhœa—that is, locally. When pus or infected fluids enter the circulation there is primarily a chill, which is the first reaction. Then comes a febrile movement which may in the second sense be called a reaction. On going out to sea, if the boat heaves and rolls badly, the immediate reaction of unusual motion on the brain gives the nausea known as seasickness. Let several days pass. The nervous system ordinarily reacts against this influence and permanent resistance or tolerance is established. Similar to the above-described immediate effects of things on the body is, in chemical parlance, the direct effect, called reaction, of one substance or agent on a second, as of acid urine on litmus-paper, sunlight on iodine, hydrochloric acid on binoxide of manganese. There is here no following reaction of either resistance or exhaustion in the case of non-vital bodies, such as takes place where there is life to deal with. In only a few instances can the body in its entirety be acted upon like a chemical compound, once and for all. This is too often forgotten.

Finally, we say reaction in speaking of that state of collapse or physiological quiescence into which the body passes after some period of greatly heightened activity and excitation. A notable instance we see after pregnancy and delivery; or in the depression which immediately follows the excitement stages of belladonna, cocaine, eucalyptus, digitalis, alcoholic drinks, cannabis indica, or coffee. Similarly, after any strong mental exaltation or severe strain, a moment of great danger or of uncontrolled passion, there normally comes a depression or a lethargy of about corresponding intensity and greater or less duration. Or after a paroxysm of malaria, tetanus, or eclampsia, the same thing appears. Those two opposite sorts of reaction—namely, excitement and collapse—do indeed characterize so many diseases, succeeding one another or in some instances alternating many times back and forth, that good authority has made as a definition of disease, in a wide sense, "the substitution of spasmodic for uniform physiological action." It is the same law that obtains in the moral nature.

I wish to review briefly the practical points for a physician connected with this very wonderful capacity for reaction in living bodies. Looking first at the reaction which a vigorous body shows under changes of environment, we see a most beneficent and singularly adaptable power, making life to an extent independent of changing outward circumstances. By an increased opposite activity of its own, a strong man's body will endure prolonged exposure to cold water or arctic temperatures and be itself undisturbed. In very high latitudes we are told the effort of reaction keeps the body in a state of exuberant activity for about three years. Beyond that it begins to be worn out. A certain hardy explorer in the Andes, with another man accompanying him, once waded six miles up the bed of an ice-cold mountain stream, shut in by vertical cañon-walls, up to the waist in the chilly water. He had no after-effects, but his more delicate comrade died a few days afterward of pneumonia. A strong constitution will adapt itself equally well to tropical heats, to the heat to which are subjected the puddlers around a puddling furnace, or even to that of a baking oven. It will thrive on the sea-coast or in the thin, dry air of high mountains. It will withstand a severe and often an astonishing amount of muscular exertion; it will go on for a time without natural food, without regular sleep, and almost without water, within limits. Beyond certain limits for each person, exhaustion results, and that not recoverable from, as in the case of the war-correspondent Archibald Forbes. But the limits of safety may be very wide, as we shall see. Now, while, on the one hand, in the case of sick and delicate persons, it is, as every one knows, the primary condition of recovery that they should avoid exposure to extremes of temperature, sudden changes in the weather or climate, and beware of overexertion, deficient or excessive food, loss of sleep, and mental excitement, their reactions from which are necessarily feeble, yet, on the other hand, it is important that persons in possession of health should train their bodies to meet a certain amount of vicissitude in these matters. The vital power of adaptation by counteraction, which is my first definition of reaction, needs exercise in all the functions of body and mind, and especially is it needed at the time when growth is being attained, beginning very gently in infancy and childhood, but increasing that exercise along with the natural increment of the body toward its maturity. Vitality itself seems to become greater where, by graduated exposures and strains, it is trained into its full capacity of vibration through its conservative reactions, as if it were a set of pendulums that gained weight by swinging through certain arcs, but grew thin and light if they hung too still. This has often been observed in the advanced and hale old age of those who, in the years of their prime, filled positions of high responsibility and great labor without actual excesses. Children can be so over-carefully reared as to have no resistance to adverse conditions, and to contract fatal illness from the first fall into a mill-pond, a meal of unripe fruit, or an overexertion in sport followed by "catching cold." A number of natural pregnancies are found to leave a woman stronger than her unmarried sister, other things being equal.

Exposure and abstinence it was which nurtured the rock-like strength, the endurance of frost, fasting, wounds, and marching in those stern warriors of ancient Germany whom the Roman generals and legions did not subjugate. The same invulnerable sort of constitution was similarly developed among the Norsemen and piratical Danes of later times, among the English tars in the days of sailing-vessels and British naval supremacy, the early American explorers and pioneers—like Clarke, Simon Kenton, and Boone, of Kentucky, or Governor Sevier, of South Carolina, who quite outdid their Indian adversaries in being superior to fatigue and exposure. And now comes a very important and noteworthy point. Men having bodies so trained have a capacity for digesting food after long privation, and for sleeping after intense and protracted fatigue, to a degree corresponding to their previous ability to do without either. I prefer to call this, too, reaction on the part of the whole vitality. It may be accompanied by accumulation of leuco-

maines, producing digestion and sleep. It would then be a question of increased power to hold and store these leucomaines.

But, taking the case of weak bodies, sick and poisoned bodies, and bodies severely damaged, it often happens that the physician must interfere with some aid of art because reaction is too long delayed, insufficient in intensity, or over-violent, or becomes exhausted and ceases before the balance is restored. For, contrary to much which has been written, on theoretical grounds largely, nothing is more certain than that the body when in serious trouble often does *not* use all its latent forces for its own good, does *not* employ them in the most desirable direction for a recovery of health. Stimuli which save life in the disorganization of shock introduce no actual vitality not already present in the body; but by artificial exercise they arouse and set agoing certain motions in the internal machinery which, once started, go on. A brief course of bitters for torpid digestion does this, and nothing else. A morphine-eater suddenly deprived of his drug and given nothing in place of it, before he regains healthy action suffers vastly more than if stimulants, sedatives, and hypnotics were employed to ease the suddenness of the change, and initiate a normal order of things. A high German authority insists that "alcohol, always alcohol," be the reliance in delirium tremens. Often a heart that is on the point of stopping forever in some severe case of poisoning or infectious disease may be stimulated into a transitory power till the stress of the general effort is past. The expectant plan of leaving nature unaided and undisturbed may have very great advantages at times. It is not everything. "There is such a thing," to borrow the words of Dr. Jacobi, "as letting bad enough alone, to the cost of the patient." Excessive reactions to be prevented or modified may be seen in the case of fevers when the temperature threatens to run past the danger point; or of a frost-bitten limb where snow must be rubbed on it for hours that the return to normal temperature be not so sudden and reaction consequently so uncontrolled as to destroy the vitality of the tissues by that excess. Deficient reaction may occur in a new-born child, in whom, as is well known, notwithstanding the rapidly increasing lack of oxygen in the respiratory center, it may yet fail to go into action. Here it is the imperative duty of the doctor to come to nature's aid, apply other stimuli to respiration, and start up reaction from other quarters. And illustrations might be multiplied indefinitely.

To secure a reaction soon enough, in the amount and of the sort that are needed, is often the most difficult undertaking to which a physician is called, and yet that in which success will give the most valuable results to life, for cases will be found to vary unaccountably. He needs to have at command all known general principles controlling reactions, but be ready to lay aside precedent and study each case as individual and unique. He must be *willing* to perceive what reaction does actually take place after the employment of a given measure, and then take advantage of it if favorable, but abandon it if unfavorable. It is found clinically that many reactions can be secured in disease from measures and substances the actions of which on healthy bodies give perhaps no explanation at all of that obtainable on diseased bodies—thus, from alcohol in puerperal fevers; quinine in malarial disease in favorable cases; aconite in small doses in some throat affections and fevers; belladonna in the same, and according to some, in meningeal inflammations. A cup of weak coffee gives sleep in unnatural bedtime wakefulness after an evening nap; hyoscyamus is useful in some forms of insanity; small doses of opium, a drop or half a drop of the tincture, in constipation; minute amounts of mercury in some bone inflammations; ipecac in the vomiting of pregnancy, in gastritis, and in some diarrhœas.

Evidence for these employments is experimental mainly, and yet final, according to Dr. Peabody. The same clinical or inductive evidence is needed for each person in regard to the value of either climates or foods, and should be obtained regardless of superficial theory, for foods have another function besides supplying wastes. They determine processes by elements not in themselves nutritive; and what besides a trial shall discover for each human being what flavorous or stimulant elements in his food will set up the reactions needed in the constantly varying state of his body and its activities?

It will be found that individuals will differ widely as to how much or what sort of reaction will arise in them from a given drug, bath, climate, or other therapeutical measure brought to bear. Those must be selected, and in the amount which it is found they best react from. More stimulus than is sufficient for the reaction is always injurious. The latter should always be equal to the former, never fall below it.

120 West Sixty-third Street.

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## THE SPINAL CORD: ITS REMOVAL.

By A. H. P. LEUF, M. D., Philadelphia,
director of physical education at the university of pennsylvania.

In the "New York Medical Journal" for May 5, 1888, there appeared a brief paper by Dr. E. R. Axtell, of Cincinnati, on the difficulty of removing the spinal cord. The opening paragraph of that paper is inaccurate, and apt to mislead; it follows:

"Every pathologist who has attempted to remove the spinal cord has, no doubt, sighed as the magnitude of his work loomed up before him. No matter how skilled one may be with post-mortem implements, the present method of removing the cord has ever been and ever will be most tedious and laborious, and, until an easier method is found, our pathology of spinal-cord affections will be retarded; only those who are most patient, and with more time than the average pathologist has to spare, being able to derive fresh knowledge from study in this wide-reaching field."

The statement in the first sentence is certainly not correct, for more than one pathologist will bear me out in the assertion that the removal of the cord is by no means a work of magnitude, especially such as would evoke a sigh simply by contemplation.

In the remainder of the quotation the author errs again in supposing the removal of the cord to be "tedious and laborious," "no matter how skilled one may be with post-

mortem implements." Neither is it necessary to adopt a new method of removal before the operation becomes simplified. The old and customary method, if properly followed, requires no special patience and only a short time.

Again he says:

". . . as a very general rule, the removal of the cord to the majority of pathologists is a herculean effort, and only done under the greatest stimulation.

"Every institution will furnish numerous instances in which most interesting cases of spinal-cord trouble have not been examined post mortem owing to the inaccessibility of the cord, or where a small portion was made to answer for the entire cord. Thus we are daily losing valuable contributions to the pathology of spinal troubles."

This is another too sweeping statement. To controvert it, I may be allowed to say that in none of the positions in which I officiated as pathologist for some years was there a failure during my tenure to examine a cord, if such examination was in the least indicated; in fact, I have removed many for purely anatomical and histological purposes for professional friends, students, and myself, and to me it never seemed so difficult a task as the removal of the brain, and that seemed easy enough. All will allow the supposition that there are other pathologists who can honestly make the same statement. It must, therefore, also be admitted that this last-quoted statement is too sweeping.

Another paragraph says:

"Could we but separate the spinal cord from its bony attachments—even at the loss of its coverings—would not much be gained? Once separating it, it could readily be withdrawn and examined. But how could such a separation be effected?"

Much would not be gained by removing the cord without its coverings, but, on the contrary, much would be lost, for it is important to see the membranes externally and internally, and also the inner wall of the canal.

It is next suggested to excise the cord from the cranial orifice of the vertebral canal by introducing a vertebrated hollow cylinder having a serrated edge at its entering end. After the brain has been removed, the instrument is placed around the upper projecting end of the cord, which is securely held while the cylinder is forced down the canal outside of the cord with a rotary motion, cutting the connections of the cord and the spinal nerve-roots on the way down. A "slight mechanism," not described, is to cut off the cord at its lower end. No account seems to be taken of the damage that would be done to the interior of the cord by the dragging and tearing upon the nerve-roots incidental to sawing them off with the lower serrated edge of a vertebrated cylinder. The tearing of the ligamenta dentata would also disturb more or less the histological relations of the cord. If this operation were a feasible one, it would be much better to pass the cylinder down outside of the dura, which would be possible after severing its attachment to the foramen magnum.

The paper concludes as follows:

"Thus could the cord be extracted most readily and without difficulty. The need of such a method is most obvious."

The first sentence seems just enough, but reconsideration suggests that any cylinder of adequate diameter to freely include the transverse diameter of the cervical enlargement could not pass through the thoracic portion of the canal. The concluding assertion is amply negatived by what has been said. The suggestion is ingenious, and creditable to that extent, but as a procedure in the dead-room it would never, could never, have any value to the pathologist. Moreover, it would be expensive and save very little, if any, time, and negative nearly all the pathological value of a cord so extracted, because of its incompleteness and the disturbance of histological relations.

The following method is the one which I have adopted after considerable experience in the removal of spinal cords: The instruments consist of a strong knife, a slender knife, a forceps, a saw, a costotome, and a pair of bone-nippers. The position of the body is important. It must lie face down, with the arms folded under the belly or lower edge of the chest, and the head hanging down over the end of the table. The object of this is to produce as far as possible an even arching of the back. The strong knife is then inserted just below the occipital protuberance and pushed down against the spinal vertebræ of the neck, whence the incision is extended over the vertebral spines in the usual way to nearly the base of the sacrum. Two corresponding parallel incisions, one on each side of the vertebral spines, are next made down to the laminæ at their junction with the pedicles, at which point the knife naturally refuses to go any further. The muscles are *not* cut away, but the saw is now made to traverse the two cuts, resting with its outer side upon the pedicles and deep muscles of the back, while its edge is directed against the laminæ close to their junctions with the pedicles. It is extremely important to keep the saw-blade at right angles to the laminæ, and, as they change their direction or slope at different parts of the column, it is necessary to change the slant of the saw correspondingly.

Figs. 1, 2, and 3 show the relation of the laminæ and saw at the cervical, thoracic, and lumbar portions of the column by way of elucidation and are self-explaining.

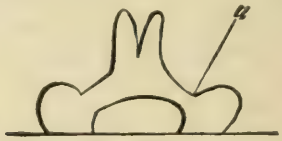



Fig. 1.—Diagram of the posterior arch of the vertebræ in the cervical region. *a* represents the direction of the saw against the lamina and resting alongside the pedicle.

The sawing should be rapid and without fear of injuring the cord, for this lies loosely within the canal and is usually

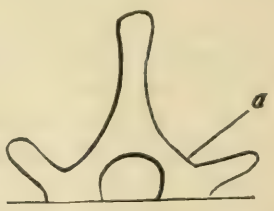



Fig. 2.—Diagram of the posterior arch of the vertebræ in the thoracic region. *a* represents the direction of the saw against the lamina and resting alongside the pedicle.

surrounded by some fat. The saw never even injures the dura; at least it has never done so in my experience, and so I feel warranted in saying that even careless sawing is comparatively safe. It is best to begin this in the mid-thoracic region and extend it upward on each side to the atlas; then the saw should be reversed and the cut extended to the lower lumbar region. Care must be taken to keep the saw at right angles with the laminæ, well against the pedicles and the deep muscles of the back, and to cut entirely through.

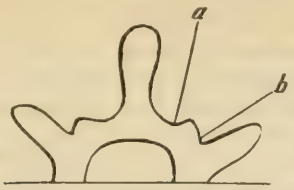



FIG. 3.—Diagram of the posterior arch of the vertebræ in the lumbar region. *a* represents the direction of the saw against the lamina and resting alongside the articular processes; *b* represents the same between the articular processes and pedicle, showing the necessity for more lateral deviation at this point; *a* is the best place for sawing.

The next step is to cut through the supra-spinous ligament between the two most prominent vertebral spines. The upper spine is then seized with the costotome and readily lifted with the upper posterior arches as far as the upper cervical region, exposing the cord all the way. The lower portion is lifted in the same way. Very often the saw has not entirely done its work, and then the partially divided laminæ are cut through with the costotome. One must not be afraid to well insert the lower end of this instrument in order to insure easy cutting of the bone. The cord and meninges easily give way to the entering blade.

Sometimes edges and spiculæ of bone project into the canal because of incomplete sawing, and these are quickly removed with the bone-nippers. The cord is then severed at its lower end, the dura held with forceps, and the smaller knife used to cut the spinal nerves, connective tissue, and upper end of the cord. This completes the procedure.

This method is rapid enough to meet any necessity, for I have frequently done it within ten minutes, and very seldom has it taken more than fifteen minutes. The time here mentioned can be vouched for by those who have repeatedly seen and timed the operation, though I really never hurried. Fair dexterity and quickness of movement are all that is required to equal this time for taking out the cord. I am well aware that it not infrequently requires an hour and a half to remove the cord, but this is because it is improperly done.

The objection to the anterior method—*i. e.*, when the bodies of the vertebræ are cut off—is the difficulty in getting out the entire cord, even if the incision is extended up the neck to the chin, and this is always very objectionable because it disfigures the body. Another objection is that it may cause an unnatural limberness of the trunk, noticeable if the body should happen to be lifted by friends or relatives.

In conclusion, the fact that Dr. Axtell should have felt justified in writing his suggestive paper—in fact, felt a need for it—is indicative of the defective work of so many of our pathologists and pseudo-pathologists. He has done well to call attention to the shirking of work because it is supposed to be hard. May we hear from him often.

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# THE CHIAN TURPENTINE TREATMENT OF CANCER.*

BY DANIEL LEWIS, M. D.,
SURGEON TO THE NEW YORK SKIN AND CANCER HOSPITAL.

CHIAN TURPENTINE, the internal administration of which as a remedy for cancer has been recently recommended anew by Professor John Clay, obstetric surgeon to the Queen's Hospital, Birmingham, England, is a product of the *Pistacia terebinthus*, a tree which in its native island of Scio, in the Mediterranean, grows to the height of thirty or forty feet. The gum is obtained from incisions into the bark, and the many impurities which it contains are composed of sand, leaves, straw, and particles of the bark and fruit. As Professor Clay insists that its efficiency depends upon the genuineness of the drug, it is well to carefully consider the following description from Flückiger and Hanbury's "Pharmacographia":

"Chian turpentine, as found in commerce and believed to be genuine, is a soft solid, becoming brittle by exposure to the air; viewed in mass, it appears opaque and of a dull brown hue. If pressed while warm between two slips of glass, it is seen to be transparent, of a yellowish brown, and much contaminated by various impurities in a state of fine division. It has an agreeable, mild terebinthinous odor, *and very little taste.* The whitish powder with which old Chian turpentine becomes covered shows no trace of crystalline structures when examined under the microscope."

It is believed that Strassburg and Venice turpentine and Canada balsam are often substituted for it, which can usually be easily detected by applying the tests as to taste, odor, and appearance given above.

The turpentine, as used by Clay in his first reported cases ("Lancet," March 27, 1880), was given in the form of a pill, containing three grains, combined with two grains of flowers of sulphur. Two of these pills were given every four hours for many weeks, and in some cases for nearly a year. It was found that in some instances the turpentine in the pill form was not well digested, and the latest recommendation of Professor Clay is to administer it in an emulsion made as follows:

One ounce of the Chian turpentine is to be dissolved in two ounces of pure sulphuric ether. This solution has been termed the turpentine essence, and the emulsion is made by adding one ounce of this essence to a mucilage of acacia (one ounce and a half of powdered gum arabic and water to nine ounces), making a ten-ounce mixture, a teaspoonful of which contains about three grains of the drug. A dessertspoonful, it will be observed, contains the same amount of turpentine as the two pills which were previously recommended. In some cases resorcin has been added in doses of a grain. This emulsion is not of a dis-

* Read before the Medical Society of the State of New York at its eighty-second annual meeting.

agreeable taste, as nearly all of my patients who are under the treatment testify.

Tonics have been used when indicated. In some instances local applications have been made, in others this internal remedy alone has been employed. When it has been taken for about three months it should be omitted three days in every fortnight. The sulphur is often given in a separate pill, especially in cancer of the uterus and rectum. I have given this description of the plan and exhibited the preparations in order that we may have an accurate knowledge of what this Chian turpentine treatment really is.

We are all familiar with the statements which Professor Clay has repeatedly made concerning its efficacy. He has seen a number of complete cures, not only of uterine cancer in advanced stages, but also of cancer of the rectum and surface epitheliomata. In cancer of the breast he reports marked improvement of symptoms and complete arrest of the new growth.

No report has yet been published, as far as I can learn, stating the precise changes in the tumor, but he maintains that the primary action is upon the periphery of the growth. The plan has been tested in the London Cancer Hospital, and, after a tolerably thorough trial, condemned by Dr. Marsden and Mr. Purcell. Another trial has recently been made, however, and one of the surgeons of the same hospital declares the Chian turpentine to be a very useful remedy in many cases.

In the "Lancet" for November 22, 1887, the editor says there can be no doubt that Professor Clay's reports of cures are trustworthy, and that it can hardly be possible, with a man of his large experience, that they were *all* cases of mistaken diagnosis. He advises a continued trial of the remedy.

The drift of pathological research is now strong in the direction of a specific origin of the disease, to which theory Sir James Paget expressed a qualified preference in his recent "Morton Lecture."

To cure by internal treatment may, in the next decade, become as possible in cancer cases as it has long since become in syphilis.

My own experience is still too limited to be of much value. Several patients in my service at the Skin and Cancer Hospital have been under the treatment for varying periods—from one to six and eight months. All take the remedy well, by giving them a brief rest occasionally. A cancer of the uterus has been greatly benefited; pain has decreased, hæmorrhage has ceased, and granulations have become healthy.

A large epithelioma of the face has decidedly changed in character. In some no effect whatever has yet been noted. We shall watch the cases with great interest, and give a full report to the profession.

62 Park Avenue.

**M. Charcot and the Emperor of Brazil.**—Sometimes, says our Paris correspondent, doctors are properly paid for their services, as witness the case of Professor Charcot, who was called over to Milan to see the Emperor of Brazil. It was a two days' service. Milan is twenty-four hours from here, and Dr. Charcot was paid 40,000 francs—say $8,000; $2,000 a visit is not bad, even for a Charcot.

# Correspondence.

## LETTER FROM LONDON.

*A Successful Operation on the Spinal Cord.—The Use of Electricity in Gynæcology.—The Relationship between Alcohol Addiction and Disease.—The Death of Dr. Milner Fothergill.*

London, *July 3, 1888.*

Dr. Gowers and Mr. Victor Horsley have redeemed the promise they made some months ago, and have given the public a full account of their case of successful removal of a tumor from the spinal cord. The patient was a man, aged forty-two, who had suffered for three years from localized pain beneath the lower part of the left scapula. The pain was at times so intense that the patient's manner was such as to suggest to several who saw him that he was insane. Four months before the operation the legs became weak, first the left then the right, and the weakness gradually increased to absolute paraplegia. When Dr. Gowers first saw him there was both motor and sensory paralysis up to the level of the sixth dorsal nerve, with intense spasm in the legs, foot-clonus and rectus-clonus. There was retention of urine, with cystitis. At the level of the sixth dorsal nerves there was severe pain encircling the trunk, greater on the left side and increased by movement. The diagnosis was compression of the cord by a tumor arising either from the vertebræ or from the spinal membranes. An operation having been determined upon as affording the only prospect of relief, Mr. Victor Horsley, whose great reputation in dealing with cerebral cases justified his selection, was asked to undertake it. This was accordingly done, and the growth, which proved to be a myxoma, was removed under strict antiseptic precautions. The wound healed by first intention, and the patient gradually lost all pain, and recovered motor power and sensation in his legs. Ultimately his recovery was so complete that at the time the case was reported he could walk three miles without fatigue. Owing to the novelty of the operation, there was but little discussion on the paper. There can be no doubt that we shall soon hear of the results of other like operations, as cases of a similar nature are by no means rare, and have hitherto been regarded as quite without the pale of the healing art.

There has been a prolonged and vigorous debate at the Obstetrical Society on the use of electricity in gynæcology, which has left us much where we were, the advocates having stated their case, chiefly in papers presented by Dr. Steavenson and Dr. Gibbons, the opponents, including several of the leaders in that department, not considering that the results were better than were obtained by other methods. The purposes for which it is maintained that electricity may be usefully employed are the relief of stricture of the female urethra, stenosis of the os uteri or cervical canal, chronic cervical catarrh, chronic metritis, and fibroid tumors of the uterus, and the control of hæmorrhage in cancer of the uterus. The chief objection to the more extended use of electricity in these cases would appear to be that it requires more skill in its application than the ordinary practitioner can ever hope to attain, and that when applied by an electrician it is imperative he should have a good practical knowledge of uterine disorders. In both respects Dr. Steavenson and Dr. Gibbons are thoroughly well qualified to carry out the treatment, but there are not many practitioners who unite in their own persons the needed qualifications. The results obtained by these two observers show, however, that in proper hands electricity is a powerful and valuable agent.

The Collective Investigation Committee of the British Medical Association has put forth a report upon the connection be-

tween habits of intemperance and disease. In the summary of conclusions it is stated that habitual indulgence in alcohol tends to shorten life, that in the production of cirrhosis and gout alcohol plays a very important part, and that it probably plays a special part in the ætiology of chronic renal disease. These conclusions will, I presume, be regarded by everybody as correct, but the committee further tells us that the tendency to apoplexy is not in any special manner induced by alcohol, a statement directly at variance with the previous one about chronic renal disease, for surely, if there is a well-ascertained fact in morbid anatomy, it is the close connection between arterial degeneration and chronic renal mischief. Again, we are told that the mortality from pneumonia, and probably that from typhoid fever also, is not specially affected by alcoholic habits. Such an assertion, contradicted by the most every-day experience, is a good illustration of the well-known saying that you can prove anything from statistics. The non-alcoholics, however, do not have it quite all their own way, for the report tells us that there is some reason to think that alcoholic excess may delay the production of malignant disease, and that, in the young, alcoholic liquors seem rather to check than to induce the formation of tubercle. To these advantages in favor of alcohol I might add another, which came out in a discussion on tobacco amblyopia, at a recent meeting of the Ophthalmological Society, when there was a tolerably general agreement that drunkards were less liable to this affection than total abstainers, and that, when they did suffer, their condition was more amenable to treatment.

By the death of Dr. Milner Fothergill, a well-known medical writer disappears. An immensely corpulent man, he had, I believe, for some time past suffered from perforating ulcer of the foot or feet; he died from gangrene of the feet, and, I believe, was the subject of diabetes. He was a very ready writer, and his books were always readable, though, from a scientific standpoint, they added little or nothing to our knowledge.

**A New Form of Infectious Pneumonia.**—"At the recent Medical Congress in Italy," says the "British Medical Journal," "Professor Cantani presented a communication on a new form of infectious pneumonia which had been observed by him. The clinical history showed broncho-pneumonia, which had been preceded by a diffuse bronchitis, with remittent and very pronounced fever, considerable emaciation, and great enlargement of the spleen. The disease was contagious, and was a primary affection of the bronchi, which extended downward through the lung, and sometimes over the pleura and upward along the trachea, and even to the larynx and pharynx. Bacteriological examination revealed the presence of numerous diplococci, and especially streptococci, similar to those found in erysipelas. The pure cultivations did not, however, produce erysipelas when injected subcutaneously. When they were injected under the skin of a rabbit's ear, only swelling and reddening at the site of puncture were produced. All the cases ran a favorable course."

**Athetosis in an Infant.**—The "Lancet" says: "Athetosis of genuine sort is a clinical rarity in infancy. MM. Comby and Féréol have recently described cases at the Société médicale des hôpitaux. Comby's case occurred in a female child, aged twenty months, badly fed and rhachitic. Various movements were noticed in the toes of the right foot, also in the fingers of the right hand, flexion and extension, abduction and adduction going on incessantly, slowly, without jerkiness, but in exaggerated fashion. The hemiathetosis did not involve the face. General sensibility was intact, and the eyes exhibited no sign of squinting or nystagmus. There was no muscular wasting. The movements began at eight months, were preceded by generalized severe convulsions, which lasted many days. The convulsions left behind them right-sided hemiplegia, with athetosis. Cases in which infantile hemiplegia with hemispasm are after several years followed by choreic movements are by no means rare."

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## THE SOCIAL POSITION OF THE MEDICAL PROFESSION.

DR. THOMAS WILLIAM THURSFIELD, of Leamington, England, considered the subject of the present social position of the medical profession in his country, in a presidential address lately read before the Birmingham and Midland Counties Branch of the British Medical Association, which appears in the "British Medical Journal." He stated it as an admitted fact that in England the doctors held a place in public esteem inferior to that of either the lawyers or the clergymen. This we believe is not the case in the United States, but it must be confessed that even here the medical profession does not stand as it ought to stand. Perhaps it must further be admitted that our advantageous relative status is not so much due to any superior merits of ours over those of our English brethren as to the inferior favor with which Americans in general look upon their lawyers and their clergymen. But possibly something is due to the fact that all of us have a degree, such as it is, and that there is no class among us corresponding to the so-called apothecaries of the United Kingdom.

It is quite as true here, however, as in England that the medical profession is in need of greater esteem than it now enjoys, and the means by which the need may be satisfied are probably not essentially different in the two countries. It is edifying to note, therefore, the items to which the Leamington physician attributes the present state of things, and his suggestions toward its amelioration. Among the factors conspiring to hold the profession down he first mentions the imperfect preliminary education of the English medical student as compared with the student of law or theology, and, secondly, his defective professional education. Probably both these disadvantages are absolutely greater here than in England, but relatively not so great; for we are confident that American medical students are generally more advanced in their preliminary studies than their compatriots in the schools of law and theology, and it seems as if the disparity were yearly growing more decided. For this we can take credit to ourselves, for there is no retrogression in the law or in the Church. In the course of professional training, too, we are constantly advancing, out of proportion apparently to the progress made in the schools of the other professions.

Dr. Thursfield then enumerates professional quackery and dishonesty, concerning which it is difficult to say whether they prevail here more or less than in England; professional jealousy, which we fear is the same the world over; professional etiquette (meaning mainly the disposition often shown by physicians to throw obstacles in the way of their patients' obtaining other advice), which maintains "a code of laws which is 'not

understanded of the people,' and which is believed by them to be made entirely for the benefit of the members of the medical profession at the expense of the public," and therefore proves "a constant source of distrust and dislike"—a condition that is probably quite the same here as in England; deficient public spirit, giving rise to "the political powerlessness of the medical profession," a matter in which we can hardly profess to be better off than the British profession; and the multiplication of "provident" dispensaries and out-patients—evils that are still of minor proportions with us, but threatening to grow into abuses of alarming magnitude. It is true that the last-named evil strikes more directly at physicians' prosperity than at their social standing, but none the less effectively, for whatever saps the prosperity of the profession goes far to do away with its attractiveness to the better class of young men, and the results it needs no inordinate brilliancy to foretell.

In general, medical men, like those of any other class, are sure to take precisely the social position that they deserve, and such an enumeration of their shortcomings and disadvantages as Dr. Thursfield has furnished points clearly enough to their rectification; but he adds certain specific suggestions that are worthy of attention. In the first place, he would insist upon a good classical education, which, in our opinion, he correctly calls "a priceless possession"; then he would lengthen the medical curriculum to five years, and increase the facilities for clinical teaching. His further recommendations hinge upon the substitution of a proper *esprit de corps* for the absurdities of etiquette, and upon a less oligarchical management of medical corporations.

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### QUEER COMPLICATIONS IN GENERAL BOULANGER'S CASE.

It is truly a sad subject for contemplation when misfortunes are piled, Pelion upon Ossa, upon the head of a brilliant and popular man. Such a one is General Boulanger, and recent reports as to his physical and political condition seem to indicate that he has reached the lowermost point of his downward course. But yesterday he was the idol of a large portion of the French people; to-day he lies on a sick bed, his life trembling in the balance and with a grisly danger brooding over him. The downfall started by the "Boulanger March" has been rapid and complete, and has now culminated in the dangerous and painful wound inflicted by a civilian by the purest bad fortune. But we are now informed by a foreign correspondent of the New York "Sun" that various "unpleasant complications" which may impede his recovery are hovering about him, awaiting a favorable opportunity to fix their pathological talons in his hapless throat. The horror of the "less familiar complaint, embolie, caused by clots of blood in the bronchial tubes," and the weird, ghastly, hideous doom of what is "still rarer, suffocation by hæmaturia into the respiratory channels," are staring him in the face. But the imminence of this last calamity arouses grave misgivings as to the conventionality of the brave General's anatomical arrangements. It is absurd to believe that the punctured wound in the carotid region would reveal the anomalous conditions which must exist, for it is safe to assume that the innate chivalry of the Frenchman would prevent the possibility of the suffocation of even a bitter political enemy being caused by any hæmaturia other than his own. The only valid hypothesis we can suggest is that possibly an examination of the sputa has revealed, instead of tubercular bacilli or those of "embolie," hyaline casts and triple phosphates. The correspondent alludes to this possibility with a cold-blooded nonchalance that speaks but poorly for his humanity, but too many visions of what that complication involves come up before the mind's eye of the physician, and send a thrill of pitying horror through his being.

We have heard unmoved of men throwing up their immortal souls by an emesis so thoroughly whole-hearted that their rejected spiritual essence was dyed a navy blue or a cardinal red, according to the color of their hosiery, but the thought of expectorating one's Malpighian bodies and removing from one's interdental spaces long snarls of uriniferous tubules with a tooth-pick after each fit of coughing, together with the necessity of keeping the cuspidor in the closet, causes the most hardened among us to shudder. But, should the patient escape this threatened danger, what a future lies before him! His calculus must be removed by tracheotomy, and his bronchi irrigated when symptoms of cystitis develop. In one of such impulsive nature, the polyuria of nervous excitement will literally submerge the molars, and, if diabetes should occur, no one could distinguish it from pulmonary œdema. Poor Boulanger! Though powerless to help him, we can still sympathize with him, and we sincerely hope that our contemporary's informant has been mistaken.

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## *MINOR PARAGRAPHS.*

### STEAMSHIP MEDICAL SERVICE.

In a letter to the editor of the "Medical Record," Dr. Frank Trester Smith, of Chattanooga, Tenn., pleasantly describes the medical service on the Dutch transatlantic line. Much that he finds to say might apply with equal force to the service on almost any line of passenger steamships, but it strikes us that the Dutch company is more than usually parsimonious in dealing with its medical officers. Speaking of steamship medical service in general, Dr. Smith cites a saying to the effect that "the sea will spoil any doctor in three years." This is not strictly true. Doubtless the routine of life on shipboard is ill adapted to bring out a medical man's best qualities, but it is well known that there are many ship's surgeons who are excellent practitioners, and it is a fact that some of the most successful physicians pursued a seafaring life for many more than three years in the early part of their career. Dr. Smith's letter is very entertaining, but it is curious that he calls porpoises "fish," and by implication classes whales also in the same list.

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### SMALL-POX IN TENNESSEE.

In a recent issue of its "Bulletin," the State Board of Health of Tennessee calls attention to one of the drawbacks that accompany whatever advantage may accrue to a community by an increased growth by immigration, namely, the more frequent importation of infectious diseases. The occurrence that gave rise to the board's remark was the simultaneous outbreak of small-

pox at two widely distant points within the State in the month of May. The board properly suggests that physicians should be incessant in urging vaccination, and says that such a condition of things as the one in question "may any day be duplicated in any railroad or river town in Tennessee."

### THOMAS'S OPERATION FOR BENIGN MAMMARY TUMORS.

The operation proposed a few years ago by Dr. T. Gaillard Thomas, of New York, whereby many benign tumors of the breast could be removed without leaving an unsightly scar, has not been given a very extensive trial. It has lately been employed in five instances, however, by Dr. Alexander Jamieson and Dr. Boone, of Shanghai, China, the former of whom speaks favorably of it in the "Lancet."

### INTUBATION IN FRANCE.

M. Bouchut, who originally proposed *tubage* of the larynx, but was unable to accomplish its acceptance by the profession, seems to have realized that Dr. O'Dwyer has finally succeeded in the undertaking, and he writes to the "Gazette hebdomadaire des sciences médicales de Montpellier," urging further trials of the operation in France. It is natural that he should express, as he does, a preference for his own instruments over those made in America, but it is hardly likely that this predilection of his will lead to the suppression of Dr. O'Dwyer's tubes.

### THE HIGH MORTALITY OF AN ENGLISH TOWN.

The Manchester correspondent of the "Lancet" comments upon the recent mortality returns of that town, which was at the rate of 27·2 in a thousand of the population for the year 1887 according to the local health officer, and 28·7 in a thousand according to the Registrar-General. It appears that the rate is increasing, and the writer expresses the hope that, attention having been drawn to the increase, more energy may be shown in the sanitation of the town.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 17, 1888:

| DISEASES. | Week ending July 10. | | Week ending July 17. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 8 | 5 | 18 | 2 |
| Scarlet fever | 77 | 19 | 103 | 15 |
| Cerebro-spinal meningitis | 5 | 2 | 5 | 4 |
| Measles | 195 | 22 | 244 | 16 |
| Diphtheria | 103 | 32 | 137 | 41 |
| Small-pox | 0 | 1 | 3 | 0 |

**The Health of New York City.**—The following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department during the four weeks ending Tuesday, July 17th: Typhoid fever, 40 cases and 12 deaths; scarlet fever, 460 cases and 93 deaths; cerebro-spinal meningitis, 21 cases and 16 deaths; measles, 898 cases and 84 deaths; diphtheria, 481 cases and 147 deaths; small-pox, 13 cases and 2 deaths.

**Changes of Address.**—Dr. William Oliver Moore has moved to No. 128 Madison Avenue. Dr. George H. Bosley will spend July and August in the Catskills as physician at the New Grand Hotel.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending July 14, 1888:*

Martin, William, Assistant Surgeon. Ordered to the Marine Rendezvous, San Francisco, Cal., and to attend officers of the Navy and Marine Corps not otherwise provided with medical aid.

Auzal, E. W., Assistant Surgeon. Detached from duty at the Marine Rendezvous, San Francisco, Cal., and special duty there, and ordered to the Naval Academy.

**Society Meetings for the Coming Week:**

Wednesday, *July 25th:* Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Middlesex, Mass., North District Medical Society (Lowell); Gloucester, N. J., County Medical Society (quarterly).

Thursday, *July 26th:* Cumberland, Me., County Medical Society (Portland).

### OBITUARY NOTES.

**T. Matlack Cheesman, M. D.,** who had recently retired from active practice in New York, died at his home, in Ridgefield, Conn., on Saturday, the 7th inst., in the sixty-fourth year of his age. The deceased took his medical degree from the College of Physicians and Surgeons in 1859. He was a member of the Academy of Medicine and of the Medical Society of the County of New York. He was a son of the late Dr. John C. Cheesman. Dr. Cheesman led a busy life for many years as a family practitioner, and was highly esteemed in the profession and in the community. For a number of years he was the surgeon of the Seventh Regiment, N. G. S. N. Y. He was a gentleman of remarkable urbanity and humor. Although his quiet mode of life prevented his being widely known beyond the limits of New York, his personal qualities made him many close friends.

**William H. Maxwell, M. D.,** a retired New York practitioner, died on Tuesday, the 17th inst. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1838. At first he practiced for a short time in Syracuse, but the remainder of his long and creditable professional career was followed in New York.

## Letters to the Editor.

### KEFIR.

Mount Vernon, N. Y., *July 4, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: On reading the title, "Dexia-Kefir," of Dr. Liell's article, in the Journal for June 30th, I hoped to be enlightened regarding the meaning of the prefix "Dexia," but I knew as much about it before as I know now. The impression, however, that is gained is that it means a preparation made with skimmed milk. If not, why does Dr. Liell make such a statement as the following? "Ordinary cows' milk, when given by the stomach, forms a more or less dense curd, rendered all the more insoluble by the fat which forms a *greater part of its bulk.*" Now, this blow at the fat, which we all know is not the greater part of the coagulum of milk, must be aimed with a design to make us believe that any preparation deprived of the milk-fat would thereby have its dietetic value increased, and this is decidedly not the truth.

The author's use of the word "predigested" needs no com-

ment, but "a peculiar fungus ferment, called kefir, *a plant indigenous to the Caucasus*," does need some explanation. This peculiar ferment is not a plant in the true sense of the word, but it is "peculiar," and its history is interesting. After Struve first called attention to it, Kern, in 1882, contributed an article in the "Bot. Ztg.," entitled "Ueber ein Milchferment aus dem Kaukasus," and he described the masses now known as kefir, stating that the source from which the Caucasians obtained them was a mystery. Other writers, notably Hueppe and De Bary, took up the subject, and the beverage prepared from this ferment became quite popular, and, as in the case of all popular medical mysteries, notwithstanding the fact that the source of supply was apparently an unsolved problem, the market was well supplied with the ferment. These kefir grains are described by Crookshank, in his "Manual of Bacteriology," as the *Bacillus caucasicus*, "rods forming two spores, one at each end, otherwise similar to the *Bacillus subtilis*. They occur in the form of whitish lumps in company with the *Saccharomyces mycoderma*." De Bary, in his lectures on "Bacteria," says: "The hay bacillus skum is properly a zooglœa with a special characteristic form; formations more or less like it are found often enough in fluids containing decomposable bodies. Highly characteristic zooglœa developed in a fluid are the 'frog-spawn bacterium' of the sugar factories, and the 'bacterium of kefir.'" Thus it will be readily seen that this ferment is not a plant, but a mass of diseased germs, and the source from which it is derived—namely, the dirty skim-milk sacks of the Caucasian mountaineers—would of itself indicate what the mass really was, namely, zooglœa, similar to mother of vinegar and like bodies that are found in old decomposing fermented fluids.

Why this mass of sprouting fungus, numerous forms of bacteria, and other dirt derived from the dirty skim-sacks of a dirty, half-civilized people, should be used by us perhaps Dr. Liell can tell; I can not. The doctor says that with the use of this ferment "both a lacteous and an alcoholic fermentation are set up." Now, as I understand the fermentation of milk for food, the lacteous fermentation must be avoided, because it is this latter form of fermentation that takes place spontaneously in milk exposed to the atmosphere, and always precedes the putrefactive and the other changes that produce the dangerous ptomaines; and thus, in fermenting milk, just in proportion as the sugar is converted into alcohol is the value of the preparation for food increased, because the formation of the dangerous alkaloids is thus avoided. And this leads us further into the history of kefir. Those men in France and Germany who had contributed to the literature of the subject recognized the foregoing facts when A. Levy came forward and stated that, if fresh milk was bottled, and shaken vigorously while the casein was coagulating, a larger amount of alcohol would be formed than would be formed in the same amount of milk by the addition of kefir grains. After this discovery was announced Professor Schmiedeberg verified it, and De Bary, who had taken so much interest in the subject of kefir, made the following statement: "A. Levy, of Hagenau, has recently discovered that the effervescing alcoholic kefir may be obtained without any kefir grains simply by shaking the milk with sufficient violence while it is turning sour. A trial convinces me of the correctness of this statement; our former explanation, therefore, must be abandoned, and there is no other ready at present to take its place. But the case is *full of instruction for our warning*."

This and other contributions in the same tone killed the kefir business on the European continent, and, with the large amount of the "peculiar" and mysterious ferment on hand, something had to done. So the French and German kefir companies are coming here, and expect to use among us the old exploded European medical bolsters which have all been called in on the other side. A few medical contributions on the subject have been published in this country, but I am inclined to think that, if the authors will look into the subject carefully, they will save themselves the pain of renunciation.

E. F. Brush.

## EXTRAORDINARY TOLERANCE OF MORPHINE IN AN INFANT.

244 West Forty-second Street, *July 10, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: On September 5, 1887, I attended a lady at the completion of her third pregnancy. She gave birth to a girl apparently healthy. The father and mother were each twenty-five years old, and both were healthy. The boys, aged respectively two and four years, are healthy. When two months old, the girl began to show symptoms of hydrocephalus, and became very nervous and irritable. To overcome this, I gave her drop doses of tincture of belladonna, in water, increasing the amount gradually to ten-drop doses. She was taking at the same time five-drop doses of syrup of hydriodic acid. This was increased to teaspoonful doses at bedtime. When the child was six months old, I was advised by a physician whom I consulted in the case to give a thirty-second of a grain of sulphate of morphine at bedtime. This seemed to do well for a week or more; then it had to be increased so that at the age of seven months the child was taking quarter-grain doses. The doses of morphine were gradually increased till at last the child was taking ten grains a day, and still crying for more. She died on May 31, 1888, under the influence of chloroform administered by a nurse. Her age was eight months and seventeen days.

A few years ago the late Dr. J. L. Little reported a case in which a boy of eight years, having a diseased knee joint, took seven grains of morphine daily. If any physician has observed greater toleration of this drug in a child less than twelve months of age, I should be glad to hear from him.

William M. McLaury.

# Proceedings of Societies.

## KENTUCKY STATE MEDICAL SOCIETY.

*Thirty-third Annual Meeting, held at Crab Orchard Springs, Wednesday, Thursday, and Friday, July 11, 12, and 13, 1888.*

The President, Dr. J. G. Brooks, of Paducah, in the Chair.

The attendance was large, and the papers and discussions were of an unusually interesting character. Among them were the following:

**Progress in Gynæcology.**—Dr. L. S. McMurtry, of Danville, read a report on this subject. He referred especially to the progress in abdominal surgery, and reported three very interesting and successful laparotomies for tubercular peritonitis. He reviewed the literature of the subject carefully and gave statistics of thirty-six operations for tubercular peritonitis, with only six deaths. He had cleansed the abdomen carefully with a weak solution of bichloride of mercury, and in every way observed rigid antiseptic and aseptic precautions.

Dr. W. H. Wathen, of Louisville, said that he had been very much impressed with the report; the results were indeed gratifying, and bore testimony to the correct method of treatment pursued. The speaker was interested in the subject especially, because he had been studying the literature relating to it very

closely, and had recently observed the reports of operations that were of great interest. He thought it was positively demonstrated that abdominal section in tubercular peritonitis was the correct treatment, and the only treatment that one could expect good results from. Laparotomy in septic peritonitis was attracting the attention of the gynæcological surgeon; but whether it was to be followed by results comparable in success with those following abdominal section for tubercular peritonitis, experience alone must decide, as but few operations had been performed. But, if there was a legitimate field for experimentation to develop the value of a surgical procedure to cure disease, it was admissible here; for the reason that septic peritonitis was nearly always fatal in a very short period, it mattered not in what form the disease arose. When puerperal peritonitis was well developed, and there was well-marked tympanites, the disease tended almost certainly to death. He believed that here was a legitimate field for the gynæcological surgeon to give abdominal section a test. The speaker had recently, in consultation, witnessed a case of this sort, in which he could only advise, and in which he regretted that the operation had not been performed, because the case was otherwise incurable, and the opening of the abdomen might have cured the patient. He desired to call attention, however, to the reckless haste of many members of the profession to open the abdomen in cases where the operation was in no sense indicated, the operator being ignorant of the pathology or diagnosis of the disease, and controlled by an ambition to record another case of abdominal surgery. Success in abdominal work was certainly the crowning glory of modern surgery; but there was not a man in the medical profession of extended experience relating to this subject, or who had read its literature, who was not familiar with the fact that the abdomen was cut open by persons who were not familiar with the pathological conditions that existed within the abdominal or the pelvic cavity, and who were incapable of making a perfect diagnosis. Where the operation to remove a tube or an ovary was not positively indicated, it could do no good, and might result in the untimely death of the patient; and there was no other department of abdominal surgery that was carried to such an extreme. He referred especially to cutting open the abdomen to remove healthy tubes and ovaries, because there were a few vague neurotic symptoms which had not yielded to an imperfect treatment; or to cure epilepsy, which had no direct or positive relation with the generative organs—the destruction of the distinctive organs of a woman to satisfy an imperfect diagnosis and a faulty pathology or the ambition of the operator; the removal of an important part of woman's machinery, which regulated the symmetrical and harmonious action of the various organs of her body; a woman's life, as it had been expressed by Dr. Jackson and Dr. Bigelow, poised between heaven and earth, without the possibility of doing any good; a woman's life sacrificed on the operating-table. Now, the trouble was, men were attempting to do abdominal surgery without the preparation for it. No man should perform laparotomy until he had acquired a correct knowledge of the symptomatology, diagnosis, and pathology of all the diseases of the pelvic and abdominal cavities, and acquired a knowledge of the technique of the operation. To open a woman's abdomen was a simple operation; but it was important to know when to open it and when not to open it; to know how to deal with the pathological conditions one might encounter. He doubted whether there was one case in a hundred of removal of healthy ovaries or tubes that was a justifiable operation. The removal of healthy ovaries or tubes to cure epilepsy or vague nervous diseases not referable to irritation of the pelvic organs was not more consistent than the castration of a man for similar purposes; but who would have the hardihood to do the latter under such conditions? The statistics of these operations were faulty. The successful operations were usually reported too soon to judge of a permanent improvement; the patient might improve for a while, but then relapse into a worse condition than existed before the operation. It was well known to surgeons that many persons felt temporarily improved from the mental shock or impression of a surgical operation. These reports were not valuable except in cases where the condition of the patient had been carefully noted for several years after the operation, and all the facts honestly related. Dr. Robert Battey, in a report to the American Gynæcological Society, in September, 1887, of fifty-four cases of "Battey's Operation" which ended in recovery, had shown conclusively the worthless character of reports made just subsequent to the operation; in very few cases were there immediate positive changes, and the majority of patients passed through various climacteric disturbances, and the abnormal symptoms did not disappear until from one to five years. In the reports of the late Professor Schroeder, of Berlin, it appeared that some of the patients who had at first apparently been benefited soon retrograded into a condition as bad as or worse than existed before the operation. Hegar had not met with that success that his early experience had indicated. But this surgical craze was not confined to cutting out the ovaries and tubes, but extended to abdominal or vaginal hysterectomy for uterine tumors or malignant disease of the uterus. These operations were the most heroic and dangerous in surgery, and should never be performed until other less dangerous means of treatment had been exhausted, and one was satisfied that the removal of the uterus and its appendages would give the woman the best chances of recovery. The speaker did not believe that hysterectomy for carcinoma or sarcoma of the uterus was often a justifiable operation, and certainly it was not if there was any involvement of the peritonæum or pelvic tissues or a discernible infection of the system. His friend, Professor August Martin, of Berlin, was probably the best authority on the success of this operation; and, while some of his results were apparently encouraging, the majority were not so. Dr. A. Reeves Jackson, of Chicago, had written a great deal to show that hysterectomy for cancer had destroyed many years of valuable life. Better results had followed hysterectomy for fibromata of the uterus; and, if the patient recovered from the immediate effects of the operation, she was usually much improved or entirely cured. Dr. Keith, as an authority in this operation, had no superior, and probably no equal, and, while he had formerly operated often, he seldom did so now, and maintained that no one was justified in performing hysterectomy for fibromata until he had exhausted other valuable means of treatment, and especially carefully used electrolysis after the manner of Apostoli. The speaker did not wish it to be inferred that he was opposed to abdominal section in properly selected cases, for in ovarian tumors and in diseases of the pelvic organs attended by detectable alteration in structure, which positively destroyed comfort, health, or life, and resisted all other means of treatment, laparotomy was imperative. He wished to inveigh earnestly against abdominal surgery as a fashionable craze; measured by the results in the hands of the learned and experienced gynæcologist, it was the grandest success of modern surgery, but, when practiced by an ignorant, ambitious doctor, ever ready to risk the life of his patient that he might record another laparotomy, it was positively criminal. It was a great misfortune that many young men in the nursery of the medical profession, without special training, had a semi-insane desire to cut open the abdomen without a precise diagnosis, and before the merits of a more exact course of treatment had been tested. They wanted to begin where the great masters had left off, and

assumed to be Keiths, Bantocks, Schroeders, Martins, or Taits. But this craze was only another instance of the peculiarity of the human mind; the pendulum had gone too far, but finally it would return to its proper place, and matters would correct themselves—the bad would be excluded and the good retained. This was the history of the world: the theory of yesterday became the superstition of to-day, and the orthodoxy of to-day the heterodoxy of to-morrow. And sometimes the pendulum in its return went too far in the opposite direction, and some valuable discoveries were lost, to be discovered again by another generation. We learned from the papyrus of Ebers that the Egyptian surgeons performed iridectomies in the time of Ramses II, and then the custom fell into desuetude, to be revived several thousand years afterward.

**Rectal Surgery.**—A report on this subject was read by Dr. Joseph M. Mathews, of Louisville. Last year, in his report to the society, he had stated that he did not believe that antiseptic surgery could be practiced in operating upon the rectum. Since that time he had given the subject proper attention, and the statement then made was to be modified now. His habit was, before doing any surgery upon the rectum, to have the patient take an aperient for several days prior thereto, and upon the morning of the day for operating wash out the bowel with very hot water. Then, at his visit, he used an instrument, which could be attached to a Davidson syringe, the purpose of which was to allow of the return flow of water. Through this he injected as much as half a gallon of carbolized water. He then took a sponge, which had been rendered thoroughly aseptic, and pushed it up into the rectum, say about three inches, after the manner of Gerster. The operation was then done, and the wounds, if there were any, were dressed after the antiseptic fashion. Since he had adopted these precautions he had had far better results. However, the antiseptic treatment was more applicable to operations done for fistula, especially where it was desirable to get union by first intention. Of this he would speak directly.

*Hæmorrhoids.*—It was the fact that more attention had been given by the profession to this subject in the last decade than ever before. Like all other subjects, it was sometimes overdone. He was glad to say that, in so far as the carbolic-acid treatment of piles was concerned, it was nearly obsolete with the regular profession. Many of the charlatans still used it. Ten years ago he had made a report to the society, in which he predicted that this plan of treating piles would be short-lived. At the same time he had pointed out what he conceived to be the dangers that might attend this treatment, all of which had been verified. Andrews, in his excellent little work on diseases of the rectum, had taken pains to collect statistics, which showed a number of deaths following this plan of treatment. In the last few years excision of internal piles had received favorable mention by a number of authorities. In the hands of an expert, the speaker quite agreed, it was a suitable operation, but in the hands of men not accustomed to doing these operations he saw great danger in it. He had had his assistants at the City Hospital do it before the classes, but in each instance it had been followed by great hæmorrhage. It would never come into favor with the general practitioner.

*Fistula in Ano.*—There was something new in the way of operating for this affection. It had been suggested that many of these cases could be cured, under the antispetic treatment, by procuring union by first intention. The author saw many things in the way of this, yet he believed that in selected cases it could be accomplished. After a thorough trial of the method he had concluded: 1. That where a single sinus existed, which did not communicate with the gut, union by first intention could be obtained by making a clean cut and drawing the parts into perfect apposition. 2. That this manner of treatment was advisable, even if the sinus communicated with the gut, but the results would not be so favorable. 3. That this plan should not be followed if additional sinuses exist.

*Nervous Rectum.*—Professor Goodell had read a paper on this subject at the last meeting of the American Medical Association, and the author had been reminded by his friend, Professor Anderson, that he (the author) had read a paper a number of years ago upon the same subject, giving cases having the same line of symptoms as those reported by Dr. Goodell. Under this caption he would include neuralgia of the rectum, for whenever there was an exposure of a nerve the consequent irritation excited to neuralgia, and this to the so-called nervous rectum. It was a question whether or not there was always a lesion in these cases. Believing that there was, he invariably stretched the sphincter-ani muscle, and with perfect success. In this connection he wished to call attention to some cases which he had watched with much interest. For want of a better term, he would name the affection rheumatism of the sphincter muscle. He had noticed that some patients suffering from the rheumatic diathesis complained of an intense aching of the anus. Examination revealed nothing. After the rheumatism was subdued, the anal pain subsided.

Dr. J. G. Carpenter had taken great interest in the report. There was one point that he wished to call special attention to—viz., that of stretching the sphincter for the irritable condition of that muscle that sometimes existed. He had had a striking exhibition of its curative effects in his own person. He had suffered the greatest torture occasionally for years, all of which had been cured by simple divulsion, as recommended by Dr. Mathews.

Dr. W. B. Rodman thought that the method of treatment of internal piles depended upon the kind of pile one was dealing with. Kelsey had made the best division when he spoke of the kind of pile that he injected with carbolic acid: 1. A pile that had a pedicle. 2. The pile having a broad base. 3. The bleeding pile. It was in the first class that he injected the acid. The speaker had used the injection many times in selected cases, and must say that it had seemed to prove of much benefit.

Dr. D. W. Yandell said that it seemed to him that Dr. Mathews had made too strong an assertion when he said that the carbolic-acid injection of piles was nearly obsolete in the profession. He had used it in cases where he had been satisfied that it did much good. As to the pain which was referred to it, it depended very much upon how the injection was used. The classification as given by Dr. Rodman he agreed to, and thought that in such cases as he had mentioned the injection could be used with benefit. The manner of treatment certainly depended upon the kind of pile one was dealing with. Sometimes the injection was best, sometimes the ligature, and sometimes the clamp and cautery, as suggested by Mr. Smith, of London.

Dr. Mathews said the gentlemen who had spoken, save Dr. Carpenter, had agreed in saying that a pile with a pedicle should be injected, and had taken Dr. Kelsey as authority. He desired to say that this description of pile was to him entirely new. In all his experience he had never seen a pile with a pedicle. Ergo, if Dr. Kelsey only injected piles that had pedicles, he injected no piles at all. The speaker could say, beyond fear of contradiction, that there never was an internal pile that had a pedicle. In a paper read before the society in 1887 he had taken the position that this injection plan was a dangerous procedure, and had given as his reasons the following: 1. The danger of death from embolism. 2. Hæmorrhage from sloughing 3. Dangerous hæmorrhage. 4. Peritonitis. 5. Ulceration and

stricture as a result. All these predictions had been verified by the table of statistics as given by Dr. Andrews in his work.

Dr. YANDELL would like to ask Dr. Mathews if he did not also observe a slough when he ligated piles.

Dr. MATHEWS would say that there was a vast deal of difference between the sloughing of a pile proper which had a ligature around it and the sloughing of cellular tissue caused by the injection of an acid.

**Progress in Ophthalmology** was the subject of a report by Dr. J. M. RAY, of Louisville. A knowledge of eye diseases, he said, was slowly marching toward the attainment of perfection. Innovations were not so numerous as in the earlier infancy of the science; but we were more firmly grounding ourselves in what had already been brought to our notice. Close study by careful clinical workers, conjoined with the researches of diligent pathologists and microscopists, was daily adding valuable observations to the science. Of the well-established procedures, the operation for cataract demanded consideration. Von Graefe had taught that the linear incision, combined with iridectomy, was the most desirable operation. Previous to his teachings, the method of Daviel had been in vogue. This operation consisted in a large incision in the corneal margin, with extrusion of the lens, without removal of the iris. Its principal danger, however, was the large incision required, which led to suppuration of the cornea, and the iris often prolapsed into the wound. If this danger could be eliminated, the operation would again come into use. The operation of Daviel was being extensively used by Galezowski, De Wecker, and Panas, and their results presented strong evidence in favor of its adoption. In conclusion, he agreed with Landolt, who much preferred the operation of iridectomy; and believed it was better to seek for a fair amount of useful vision than for a symmetrical pupil. The after-treatment of cataract, he said, was now under consideration. It had formerly been the custom to keep both eyes bandaged and the patient in a darkened room for six or seven days. Recently many had advocated the admission of light and the use of bandages for only a few days. Chisolm had gone so far as to use only a piece of isinglass plaster, and placed no restriction over his patients. The speaker had recently performed cataract operations, bandaged only one eye, and sent the patient home, and no bad result had followed. He said that much of the brilliant work recently done in ophthalmic surgery was due to the employment of strict antisepsis. Weeks maintained that the most valuable of antiseptics were bichloride of mercury and nitrate of silver. He said that the question of contagious eye diseases was one that confronted every practitioner. It had recently been brought to the attention of the Legislature of the State of New York, and measures had been taken to prevent the spread of such diseases in the various public institutions of that State. He had recently combated an outbreak in a charitable institution of his city. Out of forty-three inmates, twenty-three had diseases of the conjunctiva in different degrees of severity. He added that it was clearly the duty of those intrusted with the care of such institutions to keep strict watch and ward against the entrance of contagious eye disease, which, when established, was difficult of treatment and might result in serious impairment of vision. He spoke of recent attempts to cure opacities in the cornea by surgical methods which had long ago been declared physiological impossibilities. Von Hippel, however, had recently addressed himself to the question, and his efforts had aroused much hope. Dr. Fox, of Philadelphia, had reported a successful case following the method of von Hippel. Others had tried the same operation; but, as yet, sufficient time had not been given to demonstrate its permanent effect. He spoke of new drugs, calling attention to erythrophlœine hydrochloride, the local anæsthetic. He called attention to the value of the use of myotics in the relief of increased intra-ocular tension, and quoted Meyer as saying that regular instillations of pilocarpine had a decided influence on glaucomatous tension. He next called attention to the relationship between diseases of the eye and those of other organs of the body, especially menstrual diseases and changes in the cerebral centers. He asserted that, while the ophthalmoscope gave valuable aid in the diagnosis of many cerebral diseases, it should not be used as an encephaloscope. Attention was directed to the relationship between errors of refraction in the eye, especially astigmatism, and many functional nervous disturbances. The successful oculist must not rely too much on local medication, neglecting constitutional conditions, which often influenced ocular states.

Dr. DUDLEY S. REYNOLDS, of Louisville, said that the report seemed to have covered all the ground in which real advances had been made. He wished to call attention to the fact, however—and he took it for granted that no one would dispute that it was a fact—that suppuration of the cornea was never due to the extent of any incision into its substance. He objected to that part of the report relating to the incision for cataract, because it suggested the idea that suppurations might arise without bacterial infection. He felt that it was necessary in the interest of the general practitioner—he had almost said the country practitioner, who compounded his own medicines or was dependent upon some person living in a town which was too small to come within the provisions of the pharmacy law—to say that the statement that one used one part of bichloride of mercury to five parts of water was very indefinite. How was it to be determined—by the weight of the bichloride crystals and by the weight of the water? As generally happened, he supposed a grain of the salt was made to represent a minim of the fluid. Another method of measuring the fluid was upon the hypothesis that so many drops represented the equivalent of so many grains. Until there was a more uniform method of determining the actual amount, we could not know what was meant by one part of solid to so many parts of fluid. In his own practice he used one grain of the bichloride in twelve ounces of distilled water. In reference to trachoma, he was unable to determine whether or not Dr. Ray would lead us to believe that the chronic suppurative form of conjunctivitis brought on the trachoma or meant that trachoma was due to the epidemic conjunctivitis; but he would like to say that a great deal of confusion had grown out of the use of such terms as trachoma and granular lids, which was unfortunate. The word trachoma was not restricted in its meaning. As Sir Jeffrey Marston, of Her Majesty's Army, had ascertained, the light-colored, shining bodies on the conjunctival surface in the retrotarsal folds, as well as the ocular conjunctiva itself, resembling rice grains or sago grains, were the local manifestation of constitutional infection. The malarial infection, as Sir Jeffrey Marston had stated, was often shown first by the presence of trachoma conjunctivitis. The hypertrophied papillæ of the palpebral and retrotarsal portions of the conjunctiva which followed purulent conjunctivitis were in no sense akin to trachoma. The speaker had had some striking experiences himself, extending over twenty years, in one of the largest orphan asylums in Kentucky. Part of that time his friend, Dr. Coomes, had had opportunities of examining cases in the same institution. In the month of April there were one morning two cases of purulent conjunctivitis; in the next forty-eight hours nineteen more cases occurred. Those children were separated from all the other children in the house; they were put into separate dormitories, and had access to separate playgrounds; they were kept restricted with regard to their liberties until there was a cessation of all morbid phenomena. Since that time not a single case had occurred. Bichloride of mercury and borate of sodium had constituted the principal medica-

ments. There was no relation existing between constitutional disease and contagious diseases of the eye. Even von Hippel's operation of transplanting the cornea of the rabbit, in Dr. Fox's case, mentioned by Dr. Ray, was not the latest. By far the most brilliant result had been reported by Dr. Chisolm, of Baltimore. It was in a recent case, and it was very much more encouraging than that of Dr. Fox. As to erythrophleine bringing on glaucoma, it was, as Dr. —— found out, a pretty difficult statement to maintain. It was difficult to say that glaucoma might be made to attack persons who had not had it before. It had appeared in persons whose nervous system had been subjected to great tension, loss of sleep, mental anxiety, straining of the eyes, or long-continued exposure to glaring light, and it might come on without any particularly marked symptoms. The use of pilocarpine by Meyer, of Paris, had been alluded to. The speaker regretted that it had; it misled the profession. Meyer was a conscientious man, but he had heard him exalt pilocarpine for no other reason than that his chief rival in the practice, Sichel, used eserine instead of performing iridectomy; but he did not agree with Galezowski, who excised the retrotarsal portion of the conjunctiva by seizing and pulling it forward and snipping it out with the scissors, a serious operation, notwithstanding it forever restricted the movements of the eyes. He took it for granted that glaucoma could not be relieved by eserine, pilocarpine, or anything else but von Graefe's iridectomy; and for the very excellent reason that it allowed the cut vessels to be emptied into the aqueous chambers, where solution and ultimate absorption might take place. The operation of puncturing the sclera had proved unavailing. In all these cases the disease had returned. There were two eye affections—glaucoma and cataract—which nobody but the specialist should undertake to manage, because in glaucoma there were necessarily so many details in diagnosis that the general practitioner, unarmed with the instruments of the ophthalmic surgeon and unaccustomed to the use of these instruments, could never undertake to reach by any possible means. In the extraction of cataract the success of the operation was dependent upon more important things than the particular form of the operation—an educated sense of touch, a thorough mastery of instrumentation, etc.

As to the muscular deficiencies of the eye, the speaker thought that Dr. Stevens, of New York, had done the greatest possible service in his work on the "Relation of Ocular Diseases to the General System, and especially the Reflexes from the Genito-urinary Organs." The relations of the genito-urinary organs and the eye are well known in many forms of disease. To illustrate the subject more pointedly, he would state the case of a boy, twelve years of age, of good family, and apparently well nourished, who would make spasmodic movements about the eyelids, and would snuff and move his head from side to side. He had a very slight error of refraction in the eye, H. amounting to $\frac{1}{8}\frac{1}{0}$. He had, however, a constantly annoying double vision on any attempt at reading or going out into the strong sunlight. In cloudy weather he was comfortable; when the sun came out, he saw double. A critical inspection showed that his eyes squinted outward. The use of prisms developed no muscular deficiency. The speaker had been a little troubled to determine the nature of his diplopia. He looked at the way he stood, and watched his way of walking, and noticed that he turned his toes in. He found that he had phimosis. He sent him to his family physician in Louisville, who circumcised him. He now no longer saw double, and would not allow his small degree of hypermetropia to be corrected.

**Progress in Obstetrics** was the subject of an address by Dr. J. W. Irwin, of Louisville. It was brief and confined chiefly to the more important subjects that had attracted attention during the year. The old and the new methods of performing the Cæsarean operation were compared, showing the more encouraging statistics following the latter. Remarks on puerperal eclampsia, on the uses of electricity in obstetrical practice, on the causes of lacerations of the perinæum, and on post-partum antiseptics were presented. The essayist said that anal ulcers, fissures, and fistulæ and hæmorrhoids were strong predisposing causes of laceration of the perinæum. Such troubles, he said, brought about tonic contraction of all the muscles of the outlet of the pelvis, causing, during labor, greater resistance to the descent of the fœtal head, and rupture of the perinæum was the inevitable result. He then reviewed the recent methods of post-partum antiseptics, and spoke of the rules laid down by Playfair for the governance of monthly nurses in the management of cases of confinement, in which that author advised that "the vagina of the puerpera should be washed out daily with an antiseptic solution," and concluded his remarks by saying that, when the entire field of antiseptics in obstetrical practice was viewed in the light of reason, one could not help believing that the numerous methods which had been suggested from time to time for the destruction of germs in the lying-in woman should be supplanted by cleanliness by means of pure water.

**Genito-urinary Diseases** was the subject of a paper by Dr. E. R. Palmer, of Louisville, in the course of which he referred to the use of iodoform; to that of mercury, hypodermically and by inunction; and to heredity.

**The Surgical Treatment of the Urinary Bladder and Urethra** was the title of a paper read by Dr. Archibald Dixon, of Henderson, as a part of the discussion of Dr. Palmer's paper.

Dr. W. E. Rodman, of Hodgensville, said that it was simply with reference to his experience in gonorrhœa as a cause of sterility that he wished to speak. He remembered that several years before he had treated a case of gonorrhœa in a lady—contracted from her husband—and afterward had delivered the woman of three children; and he remembered another case where he treated the husband for gonorrhœa, and also the wife, pregnant at the time, and afterward she conceived and had another child.

Dr. Palmer said that Dr. Dixon had spoken of urethral injection, and credited it to George Brewer. John O'Reilly had published in the "Practitioner," in 1874, a long paper in which he asked attention to that treatment, which antedated Dr. Brewer by at least ten years. They called that "Brewer's method," just as they now called it "carbolized treatment," just as they called it "Levick's treatment." In regard to the abortive treatment of syphilis, the speaker thought it was generally recognized that syphilis was not the dire disease that it had been formerly. He remembered that when he was a young man he had remarked that he had a great deal rather have syphilis than stricture. It could be cured in a comparatively limited time, and abortive syphilis was an every-day occurrence in common practice. Dr. Johnston had said that the gynæcologists here had seen uterine obliquities. He had seen sterility in women which he had no doubt was dependent upon the fact that the right broad ligament was so contracted as to throw the os on the left side of the vagina. These obliquities were not the ordinary flexions and versions, but the pulling of the womb on the top, to one side, and throwing the cervix out of the axis, accounting for the sterilities attributable to gonorrhœa. With regard to Cox's operation, the more he saw of it the less he liked to do it. He had rather do a cystotomy than go prowling around without a guide. A man was almost foolhardy to attempt to open into the bladder without a guide.

**Improvements in Nasal Surgery.**—Dr. M. F. Coomes, of Louisville, reported on this subject substantially as follows:

The most important improvements in nasal surgery had occurred within the last ten years. Until recently operative procedures for correcting abnormities resulting from deviations of the septum had consisted in the removal of a portion of the most prominent part of the offending structure. This was usually accomplished by the use of a chisel or a sharp knife. Where there was a circumscribed prominence decidedly conical in shape, the chisel was probably the most convenient instrument for its removal. There was a little skill necessary in the use of the chisel—viz., to know how to regulate the amount of force used. It was always best to dissect up the overlying structures before attempting to remove bone or cartilage. By doing this, the annoyance from hæmorrhage is avoided, and the operation could be done much more successfully and satisfactorily. Where there was stenosis, the result of a bony or cartilaginous growth, the Morrison, or dental, engine, as it was called, was one of the most valuable means for relief. With suitable drills, it had the advantage of being applied just where it was needed without injuring or interfering with other structures, and its application was painless. It enabled the operator to do just what he desired without doing any more. Trephines, which were now a part of the surgical paraphernalia, were most conveniently used with the engine for the removal of certain osseous or cartilaginous growths found in the nose. While it had been more than ten years since the introduction of the galvano-cautery for the purpose of removing growths from the nose, its perfection had not been attained until recently. While the galvano-cautery was an instrument of incalculable value to the rhinologist, the speaker knew of no instrument which was calculated to do such an amount of injury by its improper use. The fact of its use being unattended by hæmorrhage made the patient much more willing to submit to its application, thus enabling designing persons (and they existed in the medical profession) to take advantage of unsuspecting people who fell into their hands. He believed that he could say without appearing egotistical that he observed as many persons afflicted with diseased noses as any man in the Southwest, and he was free to say that he rarely found it necessary to use the galvano-cautery. As to its curing hay-fever, it was a myth, and the man who had done most to urge the public to believe that destruction of the so-called sensitive area in the nose by the use of the galvano-cautery would cure hay-fever now admitted that he had been too sanguine, and that it was a failure. Failure to cure would not be so bad if it left the nose in as good condition as before its application; but it often happened that destruction of large areas of mucous membrane in the nose resulted in cicatrices which were without any of the functions of a mucous membrane, and the result was that the secretions became dry and accumulated in the nose and created such an unpleasant odor as to call for the patient's constant care in order that he might not become a nuisance to his associates.

The introduction of the use of artificial light as an aid in this branch of surgery had rendered it much less difficult, and enabled us to accomplish many things which, under ordinary circumstances would be unattainable. It was but a few years since our outfit for nasal surgery had consisted of a Gross's polypus forceps and a snare. Now we had a variety of snares, the most valuable among them being Jarvis's and Wright's. The latter had a ratchet-like movement for tightening the wire. This was moved by a trigger similar to that of an ordinary pistol, which enabled the operator to control his patient and do his work much more satisfactorily. The author claimed the credit of having devised a number of instruments for the removal of tumors from the nasal cavities, the most important of which were a pair of scissors and a forceps. The allegation made for both instruments was the greatest amount of strength in the smallest amount of space. Either of these instruments could be used through a large ear speculum. This hook and cutting-fork had been devised by him some five years before. He considered the hook one of the most valuable instruments that he had, both for the removal of tumors and as a diagnostic instrument. Here was a cutting snare which he had recently had constructed. Its mechanism spoke for itself, and with its compactness showed at once that it was a valuable adjunct to the nasal armamentarium.

**Insanity and Life Insurance** was the title of a paper by Dr. B. W. Stone, of Hopkinsville, who cited the case of a man who had become melancholy, abandoned his business, and sought a life policy, which he finally obtained, and then on the next day committed suicide.

Dr. F. H. Clarke, of Lexington, said that there was hardly a medical school which sent out graduates that did not teach them in regard to cases such as they would not see in years of practice. No man practiced any length of time without being called upon to see an insane person, either in court or privately. There was no case that he knew of in the practice of medicine more difficult of diagnosis than one of diseased mind; it baffled the most careful observer. He did not believe that there was any well-marked line—theoretically—between a healthy body and a diseased body. Fortunately, however, there was a standard of health, and it was known when a person was sound or unsound. In the cases of persons sent to an asylum, the classification of the diseases was often embarrassing. He did not know of a more important field than that of insanity. The reason was that in his State, as soon as a man got insane, he was sent to the hospital. He could be as well treated elsewhere as in the hospital. He would be injured by being sent to an asylum for the insane. He believed that a man who was insane or becoming insane should be made provision for. He hoped that medical jurisprudence would become the subject of a special chair in all the medical colleges.

Dr. L. S. McMurtry, of Danville, was elected president for the ensuing year. The next meeting will be held in Richmond, beginning on the second Wednesday in May, 1889.

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## ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

*Fourth Meeting.*

The President, Dr. W. H. Baker, of Boston, in the Chair.

**Septic Peritonitis following Laparotomy.**—Dr. P. F. Chambers, of New York, read a paper with this title (see vol. xlvii, page 173).

Dr. Porter, of Providence, had had no deaths from septic peritonitis following laparotomy, but he had had several due to other causes. In his early laparotomies he had had a good many cases of mural abscesses. Fortunately they had all broken externally, and septic peritonitis had thereby been avoided. Since he had paid greater attention to the antiseptic treatment of the parietal wound no mural abscess had formed. When the patient was troubled with vomiting and it was desirable to give a cathartic, he administered calomel in grain doses until the desired effect was produced. The movement of the bowels often resulted in cessation of vomiting and relief of tympanites. Should he have a case of septic peritonitis he would adopt the course recommended by the author.

Dr. James B. Hunter, of New York, agreed with Dr. Chambers in nearly all respects. He had washed out the peritoneal cavity in peritonitis several times, in three instances after the peritonitis had been fully developed. He thought it better to wash out the cavity thoroughly, and not to sponge it after-

ward. He did not add any antiseptic to the water—not that he disbelieved in antiseptics, but because here he considered them out of place; they were dangerous when employed of sufficient strength to be of value. The peritonæum healed quickly after the operation. Unless there was carelessness, mural abscesses would never cause death. Vomiting was not usually the first symptom of septic peritonitis. When the disease had reached the stage of abdominal distension and vomiting the case was almost hopeless. One other point had been touched upon which he regarded as of great importance—namely, the non-use of opium or morphine. In his last twenty-four cases of laparotomy he had not used morphine in a single one, and peritonitis had not developed in any of them. He believed that by the abundant administration of morphine, paralyzing the intestinal coats, tympanites was developed, which caused much of the pain and distress accompanying peritonitis. With good nursing it was better not to give an anodyne, but if the patient was restless, and it was impossible to control vomiting, an anodyne might be given. Dr. Bantock had informed him that in sixty cases of hysterectomy he had not given opium or morphine in a single one. The speaker judged of the temperature of the water by the hand; it ranged between 100° and 105° F. Large quantities were employed until it came away clear.

Dr. George T. Harrison, of New York, was in accord with Dr. Chambers in most of his statements, but he agreed with Dr. Hunter regarding sponging. The important thing was that the operation should be perfectly aseptic. He did not think there was any danger in leaving a limited amount of material like blood in the peritoneal cavity provided no septic matter had been introduced. When mural abscesses developed it showed that antiseptic precautions had not been thorough. He had known of death resulting from the bursting of a mural abscess into the abdominal cavity; of one case, at least. Therefore he thought it important to first bring the surfaces of the peritonæum together with a catgut suture.

Dr. John G. Perry, of New York, had watched with a great deal of interest what other surgeons were doing, and among other things which had impressed him was the difference of opinion existing among them on apparently important subjects. Various points had been brought out as having more or less bearing upon the success of the case, but there was one which seemed to be very generally overlooked—namely, the vitality of the patient. Certainly in publications one failed to find much stress laid upon the question of the nutritive powers of the patient. The human system could not be handled as one would handle a machine, tearing down its various parts and putting them together again at pleasure. The spinal cord and the chylopoietic system should be examined very carefully before an operation. When this was done, he thought, new light would be thrown upon the cause of death in many cases.

Dr. Hunter thought the note referred to by Dr. Perry had been struck a good many times. He had himself dwelt upon it a number of times. About a year before he had read a paper in which he laid stress upon the importance of careful examination of the stomach, kidneys, heart, lungs, and other organs.

Dr. Perry was still disposed to think that examinations were limited too much to that of the urine only for albumin or albumin and casts, and that too little attention had been paid to the nutrition of the body.

Dr. William M. Polk, of New York, deeply regretted not having heard Dr. Chambers's paper, as it treated of a subject of great interest to all operators. Dr. Perry had touched upon a point of great moment—namely, what the kidneys were doing, as indicated not alone by the presence or absence of albumin and casts, but in excreting effete material. He had had certain experience in consequence of neglect of the urinary secretion which had led him always to examine that fluid with reference to its quantity and the amount of its solid elements as well as with reference to casts and albumin. He attached so much importance to this subject that a few days before, when Dr. Lusk had a case of Cæsarean section in which septic symptoms of different kinds developed, he had asked the house surgeon how much urine the patient was passing, and when he replied thirty-five ounces in twenty-four hours, had predicted that she would get well, which she had done. Whenever he found the kidneys doing their work well, no matter how seriously ill the patient might be, it was a banner of hope to which he clung with more pertinacity than to any other one thing. We should examine patients as carefully as was demanded in the papers of life-insurance companies. In spite of the exceedingly good results obtained in laparotomies, there was one thing which might well frighten any one. Hæmorrhages could be taken care of fairly well, but even a pin-head quantity of dirt might kill the patient. When he began to operate in Bellevue Hospital, and before students, he did it with fear and trembling, but the results had proved good, and he had therefore come to the conclusion that many of the conditions which before had been held to cause sepsis should be thrown out of consideration. Since Mr. Tait's visit to New York he had come to believe that nine tenths of the deaths from septic peritonitis were due to meddling with the peritonæum. Mr. Tait's deaths occurred among his first cases, and Dr. Polk thought he struck the key-note of the situation when he said that those deaths were due to bothering around inside the pelvis a long time to secure bleeding vessels; whereas in subsequent cases he threw a ligature around the broad ligament, tied it, cut short the operation, and spared the abdominal cavity prolonged manipulation in seeking to control all bleeding points. The speaker thought that not much attention need be paid to points of oozing, but the question of drainage was one of most importance. When there was oozing he infinitely preferred to get such material out of the abdominal cavity by means of a drainage-tube. He preferred Tait's method, consisting in emptying the drainage-tube just after the operation every half-hour. In that manner any considerable accumulation of fluid would be avoided. At the end of twenty-four or thirty-six hours one had to do only with fluids immediately in contact with the tube. In this way encysting of fluids in the peritoneal cavity would be avoided. Regarding the method of cleansing the abdominal cavity, it was generally agreed, or should be, that hot water was by far the best agent to employ; it gave much better results than any other which had been tried. It was pretty well established that antiseptics used with the water were unnecessary. It was better to have the water too warm than not warm enough, therefore it was better to have it of a temperature between 105° and 110° than between 100° and 105° F. The influence of heat on the shock was beneficial. The best way to get the fluid out of the peritoneal cavity was by means of a siphon. It should not be sponged out. The point had also been brought out by Mr. Tait that one should put as few sponges into the peritoneal cavity as possible. If the operator was in any doubt as to the necessity for the use of hot water to cleanse the cavity, no matter how slight the indication might be, the water should be used. The speaker had never seen it do any harm when employed as he had indicated, but he had seen harm come from failure to use it. The use of opium was bad. If the woman was delirious and could not be kept quiet, it might be required, but he would not employ it except as a last resort. More harm than good had been done by opium. The pain which patients suffered was often largely hysterical, and was not so excessive as it might seem to be. It was an after-effect of ether. As to movement of the bowels, he thought

we stood on firm ground in that regard; catharsis was indicated. The agent employed was of little importance, but a free discharge should be secured. His preference was for gray powder and bicarbonate of sodium, ten grains each, followed in four hours by a Seidlitz powder. If there was tympanites which did not subside readily, he repeated the cathartic in about seven hours. He preferred this to an enema. He thought the patient would feel more comfortable after catharsis, but it was wrong to suppose that catharsis would cure peritonitis. It had been the custom twenty years ago at Prague to purge patients with puerperal peritonitis indefinitely, but they did not get well; they died. Death resulted from want of drainage. It was that fact which led to the reaction against catharsis and to the adoption of the opium treatment in peritonitis. We now employed drainage and catharsis. As to the question of reopening the peritonæum to discover septic matter, it was difficult for the gynæcologist to avoid the hope that the apparently grave symptoms were not due to some trifling condition, and that they would soon pass away. But his judgment, based on experience, led him to open the cavity and cleanse it thoroughly. He had done this again and again, and had never had occasion to regret it. But it was not well to do so in an extreme condition, in a state of collapse. It was better then to give opium and use an enema. But if the case was seen early, and one was convinced that there was a sharp attack of peritonitis, no harm would result from opening the peritonæum and irrigating thoroughly. Regarding the signs of peritonitis, it might be easy enough to say that the patient had peritonitis which would go on and prove fatal, but how could one affirm it? The speaker relied more upon the pulse than upon any other sign. A woman suffering from peritonitis might die without having a temperature above 101·5° F., but the action of the heart, showing how severely her vitality was being taxed, and the pinched countenance, showing the effect upon the nervous system, were signs of the greatest significance. Tympanites might be absent. He had seen patients die of septic peritonitis so late as the fifth day, and yet without any tympanites being developed. He paid less attention to the temperature than to anything else. In fact, he did not mind a good frank advance in the temperature on the third or fourth day after the operation. He would rather see it than to see a considerable advance in the pulse-rate independent of increase of temperature. Increase of temperature might be due to an ordinary inflammatory reaction, whereas an increase in the pulse-rate without increase of temperature indicated heart-failure. As to sewing up the abdominal wound, his predilection had been in favor of first closing the peritonæum, following in that regard the example of Martin, of Berlin. But the more he had thought of the matter the less did he consider this precaution necessary, save in certain cases, such as those of hysterectomy in which the stump was treated outside the cavity of the abdomen. In ordinary cases he believed it involved loss of time and was unnecessary. If a needle were used which would not cause much laceration, and the peritonæum, fascia, and skin were brought into proper relation, there would not be much danger of trouble from abscess. He described the method which he had recently been led to employ in suprapubic amputation of the uterus. It consisted in enucleating the mass, after the manner instituted by Bantock, cauterizing the stump, and stitching it to the abdominal parietes. The procedure was analogous to that suggested by Minor in the enucleation of parovarian cysts, and there was just as little danger of decomposing material entering the peritoneal cavity. By this method also one avoided the use of pins, which were a source of great annoyance in other methods of suprapubic amputation of the uterus.

Dr. Andrew F. Currier would emphasize the objections to the use of opium, and indorse the employment of cathartics and the remarks made regarding a thorough examination of all the organs before the operation, particularly of the liver and kidneys. A case of extirpation of the uterus through the vagina, about a year ago, had impressed him with the necessity of a careful examination of the kidneys and liver. We could by ordinary analysis say whether the urine contained casts or albumin, yet it was difficult to say whether the patient had not a predisposition to acute nephritis, which in his opinion was the cause, rather than peritonitis, of many deaths after laparotomy. In the case of hysterectomy referred to, he believed the primary cause of death lay in the liver, and the cirrhosis present could not have been foretold. The operation was also of long duration. In one case of marked tympanites, causing distress and dyspnœa, soap-suds and turpentine were injected into the rectum, and afterward a large tube was introduced eight or nine inches. Within two hours there was a free evacuation of the bowels, the tympanites disappeared, and the temperature fell two or three degrees during the night. He thought turpentine would sometimes be found a valuable aid to catharsis, etc.

Dr. Chambers used simply hot water in washing out the peritoneal cavity, adding no antiseptics. The water was previously thoroughly boiled. When septicæmia developed he thought it was due to septic material introduced in some way from without. Regarding signs of septicæmia, he had seen death result when the temperature had not risen above 101° F. Vomiting sometimes began when there was scarcely any rise of temperature. The pulse was a more important sign. He made it a custom to keep the drainage-tube well cleansed. After the operation he put some iodoform gauze or other antiseptic material into the tube, through which the fluids would pass by capillary attraction.

Dr. Henry C. Coe, of New York, was inclined to regard with some distrust the diagnosis "septic peritonitis" so frequently assigned as the cause of death after laparotomy, especially in cases where an autopsy had not been obtained. According to modern antiseptic teachings, it was generally assumed that, provided septic influences had been rigidly excluded during the operation, there was no reason why this factor should be active several days after the abdomen had been closed. The causes of death after laparotomy were not yet all fully understood. The speaker had frequently performed autopsies in cases in which death had been ascribed to septic peritonitis, but peritonitis was sometimes absent and sometimes quite limited, while there were no evidences of septicæmia in other organs. How could we decide between septic and non-septic peritonitis from the intensity of the inflammatory process, from the presence of numerous adhesions, or from a quantity of offensive exudation in the cavity? Or, was the diagnosis based on clinical symptoms alone? There were great difficulties in the way. The speaker had formerly believed that the condition of the stump (whether healthy-looking or sloughy) might give a positive clew to the presence of a septic element, because the peritonitis commonly began in the coils of intestine adherent to the stump; but he had found extensive exudative peritonitis with healthy-looking stumps and *vice versa*. Before deciding that the sepsis was the cause of death we must exclude other causes. The speaker intended to give the results of his observations on this point after he had collected more data, but he had now no hesitation in affirming that the true cause of death in these cases was not infrequently overlooked. Even in a series of only fifty autopsies he could recall unsuspected lesions in the thoracic or abdominal viscera which had really led to the fatal termination, instead of the supposed septic peritonitis. Moreover, there was reason to believe that a moderate non-septic peritonitis would kill a patient with a damaged heart or kidneys, where another patient would recover. But in the majority of such fatal cases there was no

autopsy, so that there remained considerable doubt as to the true cause of death.

The purpose of these remarks was not to make light of antiseptic precautions, which should be most rigidly adhered to. The "antiseptic conscience" (as Dr. Howard Kelly had happily put it) was indispensable to every operator who aspired to success. The point urged was that we were not justified in inferring that every low grade of peritonitis developing several days after laparotomy was necessarily of septic origin; furthermore, that, relying upon clinical symptoms alone (without the confirmatory evidence afforded by an autopsy), we might assume that death was due to sepsis when it was really due to prolonged shock, exhaustion, or visceral lesions.

**Urethral Caruncle; its Ætiology and Progress.**—Dr. J. G. Perry, of New York, read a paper thus entitled (see vol. xlvii, page 234).

Dr. Ingalls, of Hartford, said that his experience with the condition had been only clinical. He was rather surprised to hear that Dr. Perry had seen so few cases, for within the last four years he had operated upon three patients coming from a territory about twenty-five miles in diameter. From his own experience he was disposed to believe that urethral caruncle arose from pressure on the vessels during childbirth. In all of his cases there had been a history of hard labors, and the caruncle had developed from six months to two years later. The tumors, he thought, must be most liberally supplied with nerves and blood-vessels, for in all of his cases there was great sensitiveness, and in one considerable hæmorrhage had taken place before he operated. In two he destroyed the tumor with chromic acid; the other one was so large that he resorted to the actual cautery. There had been no return.

Dr. Howard Kelly, of Philadelphia, thought with Dr. Perry that the subject was in a state of confusion; that we were including under one name a number of different diseases. The disease to which the author had particularly referred was, he thought, a hæmorrhoidal condition, which was apt to involve the whole urethral wall, although it might be limited to the meatus. He had operated in a number of such cases, and called them cases of urethral caruncle until recently, when he had seen an example of true urethral caruncle. In the other cases he cut out the hæmorrhoidal veins after Dr. Emmet's method. In some of the cases there was exquisite sensitiveness similar to that in piles. In the case of true urethral caruncle he proposed to bring down the tumor, exsect it, and cauterize the base.

Dr. A. B. Townshend, of New York, related a case bearing on the ætiology, that of a married woman who had not borne children. She had a severe gonorrhœal urethritis, and an anteverted, very heavy uterus. She complained bitterly of a condition which was worse sometimes than others. Examination showed an irritable meatus, and on separating the lips a considerable fold of mucous membrane on the posterior wall came down, presenting an appearance almost like a polypus. It was exquisitely tender and purple in color. He took it off with the snare, without pain, under cocaine.

Dr. Dudley said, in reply to a question by Dr. Ingalls, that he had seen urethral caruncle in those who had not borne children. He had seen the condition result from gonorrhœa, directly, he believed, from straining in urination and from irritation. The caruncle had begun in slight rolling out of the mucous membrane. The membrane, having been deprived of its epithelium, was very sensitive. The treatment consisted in tying off the tumor with a ligature. This was less painful than the action of an escharotic, and left no scar to give trouble afterward.

Dr. J. Duncan Emmet had had no experience with urethral caruncle. He had seen so-called cases, in which the tumor, however, had consisted simply of prolapsus of the mucous membrane of the urethra. This, becoming congested and thickened, had the appearance of a neoplasm. Dr. Thomas Addis Emmet taught that true urethral caruncle was one of the rarest diseases.

Dr. Hunter agreed with Dr. Emmet that many so-called cases of urethral caruncle were cases of prolapsus of the urethra which had been subjected to pressure and become inflamed and irritated, and were excised for neoplasms. He would employ Dr. Emmet's method of treating such cases. True urethral caruncle was very rare.

Dr. Coe had examined microscopically two or three specimens of what he regarded as genuine caruncle. He saw no reason for regarding them as different from any other papillomatous growth—for instance, papilloma of the bladder. But the epithelial covering was very thin and often was entirely removed by friction. The nerve-ends being thus exposed explained to him why they were so sensitive.

Dr. Reilly, of Baltimore, had recently seen two cases of a distinct growth in the urethra, one of considerable size, the other one small. The latter was not sensitive. He was unable to say why some should be sensitive and others not.

Dr. Perry recapitulated some parts of his paper. He regarded the conditions variously called irritable vascular excrescences, caruncles, etc., as not in themselves a disease, but as the product of a cellular inflammation. There might be a urethritis, an inflammation of the mucous membrane alone, but the condition under consideration resulted from inflammation of the deeper cellular tissue. Irritable caruncle, or urethral excrescence, was more common, he believed, than was generally supposed. As to its presence in women who had not borne children, he had such a case under treatment at present. One point he wished to emphasize was the absence of cystitis as a cause of the condition in the case related; nor were there phosphates or urinary sediment. But the urine was of high specific gravity and contained much uric acid. That was an indication for constitutional treatment which he never neglected. The specific gravity of the urine having been reduced, the pain was relieved, but it returned when she disobeyed instructions, and again passed urine of high specific gravity. In this case treatment was begun while there was only superficial urethritis; but had it been neglected the patient would have returned in ten days or two weeks with an irritable urethral caruncle. The deep cellular inflammation could invariably be arrested before the formation of a caruncle, if it was treated in time. The development of the tumor in the direction of the meatus was an anatomical necessity. He had not referred to the nerve-supply, because physiology taught that in new tissue there were vessels and nerves. He had said little about treatment, because literature was full of it, and every physician had his favorite method.

# Reports on the Progress of Medicine.

## SURGERY.

By MATTHIAS L. FOSTER, M. D.

**Œsophagotomy.**—Upon a case of successful removal of a foreign body from the upper end of the thoracic portion of the œsophagus McArdle bases some remarks on the precautionary measures necessary when perforation of the œsophagus has occurred and the important vessels are implicated, and on the after-treatment of these cases ("Dublin Jour. of Med. Sci.," April, 1888).

In the case which he describes he found the sheath of the vessels firmly adherent to the œsophagus, the artery thickened and surrounded by a firm, fibrous exudation for two inches of its length, one half of this being below the upper border of the sternum. At the center of the exudation the foreign body had perforated the œsophagus and was pressing on the carotid artery. To avoid danger from hæmorrhage, provisional ligatures were passed above and below this point before any attempt was made to remove the foreign body. If hæmorrhage should occur in the absence of such provisional ligatures it would be very difficult, if not quite impossible, to seize and tie the vessel, with the blood pouring into the œsophagus and welling up into the wound.

Suturing the œsophageal wound is indicated when the foreign body is removed before it has caused ulceration or suppuration, but is contra-indicated when there are erosions of the œsophageal mucous membrane, abscess about the foreign body, severe inflammation of the walls of the œsophagus, or of the connective tissue between it and the vertebræ, and perforation of the œsophagus by the foreign body. The passage of a strong silk thread through each lip of the œsophageal wound is useful, as they serve as guides in case of the occurrence of hæmorrhage, or of the necessity of intubation. Dressings must not remain on longer than twenty-four hours at first, because of the danger of infection from the œsophagus and because of the tendency of serum, mucus, and pus, if allowed to collect, to pass downward toward the anterior mediastinum and set up additional mischief. The cervical wound must be carefully packed to prevent such accumulation.

The methods of feeding the patient after œsophagotomy are by enemata or by a tube passed through the mouth, the nose, or the œsophageal wound. The use of the tube passed through the nose is preferable whenever practicable, as enemata can not be depended on for over forty-eight hours, and its passage through the mouth is, after the first day, more uncomfortable. To pass the tube through the wound delays the healing, but may sometimes be necessary. The administration of small amounts of iced chicken essence at frequent intervals served admirably in the given case. He notes particularly the readiness with which small pieces of iced foods can be swallowed when liquids give trouble by escaping, for the most part, from the wound.

Frew ("Ann. of Surg.," March, 1888) reports a successful case of œsophagotomy for an irregular broken piece of glass, measuring over an inch across, which had lodged about an inch above the sterno-clavicular articulation. The glass had penetrated the œsophagus and probably caused the excruciating pain the patient suffered when he swallowed or bent his head backward. In the operation he finds the cervical vertebræ, which can be distinctly felt after the superficial tissues are divided, form the best guide to the œsophagus, as the trachea is necessarily drawn to one side. The patient was rendered very anæmic by two attacks of secondary hæmorrhage, but recovered after transfusion of twenty-four ounces of warm water containing seventy-five grains of chloride of sodium, thirty-seven grains and a half of carbonate of sodium, and three grains of phosphate of sodium into the radial vein.

**Gastro-enterostomy.**—The results of Lücke's operations as reported by Rockwitz ("Deutsche Zeitschrift f. Chir."; "Ctrlbl. f. Chir.," No. 1, 1888) are remarkable as compared with those of former operators. Rockwitz has collected reports of twenty-one operations by others, seventeen of which were for carcinoma causing stenosis, and four for cicatricial stricture of the pylorus and duodenum. Of the patients, twelve, or 57·2 per cent., died—eleven directly from the operation, and one four weeks later from marasmus. Lücke's cases number eight, six being carcinomatous, two not. Only one patient died; that one, two weeks after operation from inanition and pneumonia. This success is ascribed largely to the fact that Lücke performs gastro-enterostomy instead of pylorectomy in all cases in which after laparotomy the extent of the disease is found to allow any doubt concerning the possibility of removal. Pylorectomy should not be undertaken when the condition of the parts does not warrant a favorable outlook for a radical cure, when the size of the cancer is great, or when there are secondary deposits in the pancreas, liver, or other parts. A careful selection of cases in this manner will leave very few suitable for pylorectomy.

In all his operations Lücke is very attentive to detail. The bowels are kept open; an hour before the operation the stomach is washed out and the peristaltic action of the intestine quieted with a rectal injection of opium. Median laparotomy is performed with careful antiseptic precautions. The most dependent portion of the stomach and the most convenient loop of intestine are clamped, an incision is made through the wall of each, and the corresponding edges of the wounds are sutured carefully in apposition so as to leave a gastro-intestinal fistula. The form of suture employed is immaterial, but it must be very carefully applied. A prolonged operation is to be deprecated, as it is better to avoid complicated methods. The stomach and intestine should be so joined that the peristaltic action of each shall be in the same direction. This is determined by Nothnagel's test, the application of a crystal of common salt to the mucous membrane of the intestine causing active peristalsis.

The result is very markedly palliative. The subjective pain and annoyance caused by the retention of food in the stomach disappear, while the rapid convalescence and the almost immediate increase in weight are very noticeable. The non-cancerous cases seem to have been radical cures; the cancerous ones ended in death two weeks, three months, four months, and fourteen months after operation.

**Cholecystotomy.**—Tait ("Lancet," April 14, 1888) presents an additional series of eleven cases of cholecystotomy, with one death. He is of the opinion that the inflammation tends toward suppuration more when the gall-stone is solitary than when a number are found. Suppurative inflammation makes the gall-bladder very friable, contracted, and adherent to the deep structures, so that the operation is often very difficult. He maintains that where there is an absence of cancerous complications and the age of the patient is such as to give a fair chance, recovery is almost certain, and that the relief obtained amply compensates for the small amount of risk.

Removal of the gall-bladder is impossible in the cases where it is most needed—*i. e.*, in suppurative cholecystitis; stitching the gall-bladder to the intestine he denominates a fanciful operation; hence he does not favor any operation except the simple one of cholecystotomy.

**Cholecystenterostomy.**—Kappeler ("Ctrlbl. f. Chir.," No. 1, 1888) relates the performance by himself of this novel operation. The ductus choledochus was found to be blocked by being involved in a large tumor of the pancreas, and the gall-bladder greatly distended with bile, which was drawn off with a trocar. The margins of this wound were then attached to the margins of a wound made in the nearest loop of small intestine for this purpose, with a double row of sutures in the serosa and one in the mucosa. The symptoms referable to obstruction of the biliary duct soon disappeared. No bad symptoms were noted as resulting from the operation.

**Enterectomy and Enterorrhaphy.**—Under this title McArdle ("Dub. Jour. of Med. Sci.," January and February, 1888) describes a very troublesome case of fæcal fistula upon which he successfully operated. The patient, a boy sixteen years of age, had a fistula leading into the right iliac fossa from which escaped a large amount of pus and solid particles of food. The trouble dated back fifteen months and was caused by jumping from a cart upon a pavement, when he was seized with severe pain in the right inguinal region. At the operation, the intestines were found matted together and adherent to the pelvic parietes. A number of perforations were present, and a very curious attempt on the part of nature to exclude this portion of the bowel by establishing a communication just above the ileo-cæcal valve with a loop of small intestine above the perforations was noteworthy. The fistulous portion of the intestine was resected. He uses this case as a basis for a general discussion of the subject. In acute obstruction with gangrene he does not consider immediate resection advisable, but reserves the operation for chronic fistula.

**Acute Intestinal Obstruction.**—McGill ("Brit. Med. Jour.," Jan. 14, 1888) records a case of acute intestinal obstruction due to the presence of a Meckel's diverticulum successfully treated by laparotomy. The diverticulum was found to pass from the small intestine downward and forward, and to be attached to the fundus of the bladder. A loop of intestine passed beneath this, the obstruction being caused by the twisting of the bowel at the point where the diverticulum was attached. The swollen intestine was with difficulty returned to the abdominal cavity, and, in sewing up the abdominal walls, the intestine was evi-

dently wounded by the suture, as on the tenth day a small amount of fecal matter escaped from the upper angle of the wound. This fistula healed in a fortnight. McGill condemns the use of opium after abdominal operations, unless indicated by severe pain, as seldom doing good to the patient and lulling the surgeon into a false feeling of security. In the case reported he administered a saline purge with apparent advantage.

**Acute Intestinal Obstruction caused by the twisting of an Ovarian Tumor on its Pedicle.**—Hochenegg ("Wien. med. Wochenschrift," April 12, 1888) gives complete notes of a case which presented symptoms of acute intestinal obstruction in a very marked degree. Laparotomy was performed, disclosing a multilocular cyst of the left ovary, which had become twisted on its pedicle. Similar cases have been reported only a few times. The ways in which occlusion of the intestine may be caused by torsion of the pedicle are: 1. The tumor may have become attached to the intestine or mesentery before the torsion occurs; then, when it happens, the intestine is wound about the pedicle and occluded. Such a case was reported by Rokitansky in 1865. 2. A portion of intestine may be involved in the torsion, and so be completely closed. 3. The torsion shortens the pedicle so that it may pull the tumor into the upper pelvic strait, where it will press upon and close the rectum. 4. After the torsion, but before the venous stasis, a portion of the tumor may be carried into the true pelvis and there swell so as to compress the flexure or the rectum between itself and the bony walls. In the case related the author is inclined to believe the cause to have been a combination of the second and the last.

**Intussusception during Pregnancy.**—Wylie ("Glasgow Med. Jour.," April, 1888) relates a case of intussusception in a pregnant woman, with recovery after the passage of a large slough of bowel *per rectum*.

On the morning after she first complained of pain her abdomen was tender only over the caput coli, where an abnormal prominence could be felt. Laxatives and enemata failed to produce a movement until the afternoon of the fourth day, when she passed a large amount of hard fæces. On the twelfth day she passed a piece of solid tissue resembling sloughed bowel. During the next three days she lost a considerable quantity of blood, and then began a rapid convalescence. Two months later she gave birth to a healthy male child.

**Inguinal Hernia.**—Wright ("Med. Chron.," March, 1888) gives some good points on the management of inguinal hernia. He deprecates the habit of sending patients with hernias to instrument-makers to be fitted with a truss. Each patient not operated on should be fitted with a truss as carefully by the surgeon as a pessary is fitted by a gynæcologist. "Gynæcologists do not send their patients to instrument-makers to be fitted with pessaries," and a hernia is quite as important as a flexion of the uterus.

He enumerates certain causes which conduce to inguinal hernia in infants: 1. Congenital or acquired weakness of the inguinal walls, sometimes with general deficiency of muscular development. 2. Premature birth, and consequent feebleness of texture. 3. Delayed descent of testis. 4. Congenital hydrocele. 5. Phimosis. 6. A small meatus urinarius. 7. Constant fretfulness and crying, often with vomiting, usually from dyspepsia, the result of bad feeding and management. 8. Constipation. 9. Other intestinal irritants—as worms, prolapsus recti, etc. 10. Cough. 11. Irritability of the bladder from abnormal condition of the urine, stone, etc. 12. Too tight a binder around the abdomen. In addition to these there are rarer and less remediable causes—as extroversion of the bladder and adhesion of the testis to the bowel. He calls special attention to phimosis, as it is very imperfectly recognized as a cause, while it is, in his opinion, a very efficient one.

For infants he prefers a truss of rubber, or covered with rubber, with an inflatable rubber pad. It should not be double unless there are indications of weakness on the opposite side. This truss, he insists, "must not be taken off under any pretext or for any purpose whatever, night or day, without the surgeon's orders," because, if it is taken off in bed or in the bath and the hernia descends, the treatment has amounted to nothing as regards a cure; but if the hernia can be kept up for three, six, or more months, it will probably never return.

In adults, the size and direction of the rings and canal, the tone of the structures about the canal, the presence of a cause—such as stricture, constipation, piles, enlarged prostate, or chronic cough—and the occupation of the patient, should be considered in determining whether it is a case for radical cure or for a truss, and, in the latter case, should guide in the selection. The truss should be applied by the surgeon while the patient is lying down, and the patient should test its efficiency by stooping forward, putting the hands on the knees, and coughing. If the hernia can be forced down in any way, the truss should be rejected.

**Inguinal Properitoneal Hernia.**—Torrey adds another to the short list of cases of this form of hernia ("Ann. of Surg.," March, 1888). The patient was a man, thirty years old, who had had for several years a hernia which he reduced, sometimes with considerable force and pain. Nine days before operation it became irreducible, and for five days there were symptoms of strangulation. The hernia was found to be of the congenital type, the testicle lying well down in the scrotum behind the hernia. In the vicinity of the internal abdominal ring an opening was found, leading into a pouch between the transversalis fascia and the overlying muscles, which contained a loop of intestine. The patient died three days after the operation, probably from his own imprudence in getting out of bed. It was not determined whether the pouch was a congenital diverticulum of peritonæum, or was caused by the violent efforts at taxis, but the operator favored the latter view. After a rather extensive consideration of the literature on the subject he finds on record only thirty-five cases, including his own, with twenty-eight deaths, since 1749.

**Strangulated Hernia with Absence of Local Pain.**—Attention has been called to the fact that strangulated hernia may exist without the existence of local pain to guide the surgeon to the actual condition by several articles lately in the "Lancet." In the issue for March 17, 1888, two cases are reported by Mr. Shaw and Mr. Simpson. One was a case of femoral, the other of inguinal, hernia. Attempts at taxis did not elicit any complaints of pain, although in each a portion of intestine was severely strangulated. The condition is one which needs to be borne in mind, as cases are on record where patients did not know that they were suffering from hernia, and the examinations which revealed the true condition were prompted by the general condition of the patients.

**Tumor of the Intestine with Symptoms of Biliary Colic.**—Lewtas ("Brit. Med. Jour.," Feb. 25, 1888) briefly records a case in which, after presenting symptoms which seemed to be characteristic of hepatic colic, the patient passed *per rectum* a lymphoma, square in shape, an inch and a half broad and a quarter of an inch thick. He had a dull pain in the right side of the abdomen for some days, and then regained his health.

**Lumbar Colotomy.**—Allingham ("Brit. Med. Jour.," April 28, 1888) considers that the ascending and descending colons are surrounded by firmly adherent peritonæum much more frequently than is popularly supposed. In his examinations of sixty subjects he found the posterior portion of the colon uncovered by peritonæum in only eleven on the right side and ten on the left. He insists upon the necessity of observing the longitudinal bands of the colon before opening the intestine in order to guard against mistake. Neglect of this precaution has resulted in opening the stomach, the descending portion of the duodenum, and the small intestine. While covered with peritonæum these bands are plainly discernible, but are often difficult to see after the peritonæum is stripped away. When the peritonæum covers one half or two thirds of the gut, it is reflected usually at the longitudinal bands, which are then not visible until the peritonæum is stripped away. When there is difficulty in demonstrating these bands he advocates incising the peritonæum for exploration. Incision of the peritonæum is necessary also whenever a mesocolon is present.

The best incision is, he holds, one with its center half an inch posterior to a point midway between the anterior and posterior superior spines of the ilium and midway between the last rib and the crest of the ilium. It should be only two or three inches long, as this compels the operator to cut precisely to the place where the colon generally lies. Other advantages of the small wound are that there will be no prolapse of the gut and that a considerable sphincteric power will be obtained. When the mesocolon is very long the wound has to be enlarged so as to admit the hand to search for the colon.

He does not advise lumbar colotomy where it is possible to perform

the inguinal operation, as it is more difficult, the risks are greater, and the results not so satisfactory.

**Floating Kidney.**—Niehans ("Ctrlbl. f. Chir.," No. 12, 1888) professes to have used with excellent result an apparatus for holding the kidney in place. This apparatus consists of a pad pressing upon the tissues in front of the kidney, attached by a ball-and-socket joint to a steel band fastened below to an ordinary double truss. It was also secured in position by an elastic band passing about the waist. It was applied while the patient was lying down, after the kidney had been placed in its normal position, and was worn during the day, but removed at night. The patient upon whom he tried it was in a state of constant suffering and could not stand or sit over ten minutes without being obliged to lie down on account of the pain. Her general condition also was poor. Relief was immediate and very marked. The pain completely disappeared and her general condition began to improve. Some months later she reported that she was free from pain while she wore the apparatus, but that when she removed it and went about the pain returned in about a quarter of an hour.

**Rupture of the Urethra.**—Erasme ("Ann. des mal. des org. gén.-urin.," March, 1888) advocates in complete rupture of the urethra the coaptation of the torn ends by means of catgut sutures not passing through the mucous membrane. He details a case operated on by him in this manner, a large catheter having first been introduced and the ends, which were quite widely separated, drawn together. The muscles and other superficial tissues were then brought together with sutures. A little urine escaped from the wound during the first day or two, none after the fifth day. The patient was discharged three weeks after operation quite well. No stricture could then be detected.

**Tubercular Joint Affections.**—Gerster ("Ann. of Surg.," April, 1888) calls attention to two therapeutical aids which do not in his opinion receive the attention they deserve.

The first is the prolonged, properly graduated, dry refrigeration of the joint, combined of course with rest. Koch has shown that if the cultivation material is cooled 2° C. below the normal temperature of the human body the growth of the *Bacillus tuberculosis* is checked. If its growth is thus checked time is afforded to strengthen the power of resistance of the organism by proper diet and medication and the healthy tissues can throw up protective walls about the focus of disease.

The second is the "early ferreting out and surgical evacuation of tuberculous cheesy foci located in the epiphyses of the bones entering into the formation of this or that joint." How to locate the deep-seated foci of tuberculous material is not very clear, but he is confident that surgical ingenuity will discover a safe and satisfactory method. The superficial foci can be diagnosticated and should be exposed and emptied at once.

Early operations are justified and indicated in tubercular diseases of the joints, especially of those of the lower extremity, of adults in poor circumstances. In children, however, general and orthopædic treatment should be first instituted and diligently persisted in as long as possible. In adults typical exsections are preferable, but in children only the parts actually diseased should be taken away. The employment of rough force with retractors, or blunt methods of preparation where clean work with the knife is admissible, is deprecated as tending to the "operative dissemination of tuberculosis." The injurious effects of passive motion after operations are emphasized strongly. "The greater the surgeon's energy the worse the result, and in many cases ankylosis is brought on by the very measures intended to prevent it."

**Tubercular Necrosis of Cranial Bones leading to Perforation.**—Barling ("Lancet," March 31, 1888) gives notes of two cases of tubercular necrosis of the cranium. One was in a girl seventeen years of age. Two years before coming under observation a swelling had appeared, without injury, and pus had been evacuated. A persistent ulcer was left over the right side of the frontal bone, a little above the orbit. Several sequestra were removed, leaving an aperture an inch in diameter. The patient also had strumous disease of the joints. There was nothing suggestive of congenital syphilis in her appearance or history.

In the other case several patches of necrosis of the cranial bones were found post mortem in a child, a year and a half old, who had been under treatment for vertebral caries.

**Scrofulous Neck and its Treatment.**—Gibb ("Glasgow Med. Jour.," Jan., 1888) draws the following conclusions from his observations and researches regarding scrofulous neck:

1. In scrofulous disease of the cervical glands we have a tubercular process of a mild type, seldom leading to generalized infection, but perhaps occasionally doing so; frequently concerned in predisposing to or even directly occasioning phthisis pulmonalis; and in the majority of cases deteriorating the general health.

2. Tubercular disease of the cervical glands is too often allowed to go on to a disastrous extent without any active steps being taken to arrest its course, largely from a prevalent indifferent and helpless feeling on the part of the medical profession.

3. Slight cases, being of course offered every possible advantage in the matter of constitutional treatment, should be carefully watched, and if, after the lapse of months, or it may be a year or two, we find the disease spreading, it is wise to extirpate the affected glands while they are yet movable. In such cases the operation will be easy and little or no deformity need result.

4. Surgical interference is demanded whenever a sinus resulting from a degenerated gland exists, whenever pus can be detected in connection with a gland, and whenever there are enlarged glands accessible to surgery in a patient in whom a caseous or suppurating gland has already been discovered.

**Scrofula and Tuberculosis.**—Eve ("Brit. Med. Jour.," April 14, 1888) details a number of experiments which he has performed for the purpose of demonstrating the relation between scrofula and tuberculosis. He professes to have shown that the virus of strumous gland disease produced visceral tuberculosis in rabbits as well as in guinea-pigs, but admits the disease in rabbits to be less acute and rapidly fatal than that which follows inoculation with acute miliary tubercle. This difference he maintains is only one of degree, caused, not by a specialized form of virus, but by the locality or soil in which the virus is planted. To admit that the virus producing the disease is *ab initio* specialized would be to infer that strumous disease could be produced by the virus of struma and no other. Finally, he objects to the use of the terms "scrofula" and "struma" for lesions resembling tuberculosis.

**The Communication of Tuberculosis by Ritual Circumcision.**—Eve ("Lancet," Jan. 28, 1888) relates a case which came under his observation where circumcision was performed in the Jewish manner by a phthisical rabbi. The child was circumcised when eight days old. Six weeks afterward the mother noticed a small swelling in each groin, and consulted a medical practitioner, who found that the circumcision had "broken out again," or had not healed. When the child was five months old he came under the care of Mr. Eve. At that time there was a superficial sore at the frenum and a large abscess in each groin. The caseous material in the abscesses, injected beneath the skin of a guinea-pig, induced general tuberculosis of the animal.

A child in another family, circumcised by the same rabbi, exhibited similar symptoms.

**Suppuration and Septic Diseases.**—Mr. W. W. Cheyne presents concisely the views at present held upon this subject ("Lancet," Feb. 25, March 3 and 10, 1888). First he describes the various pyogenic organisms—fourteen in number—their occurrence in disease, and the relations of certain varieties to each other. He believes that these pyogenic organisms are essential for the production of these diseases, but that in many cases much depends on other conditions, of which the chief are probably the dose or number of the organisms and their concentration, general and local depression of vitality, and seat of inoculation. The only factor to be reckoned on with certainty is the cocci. In man, mixture of species usually increases the pathogenic action of the organisms. Their virulence also differs at different times.

**Empyema of the Superior Maxillary Antrum with only Nasal Symptoms.**—Dr. McBride ("Edin. Med. Jour.," April, 1888) calls attention to the fact that suppuration of the lining membrane of the maxillary antrum is not always attended by pain, swelling, and distension of the osseous walls of the cavity. Sometimes the only symptom complained of is a constant or periodic discharge of pus from the nose, usually from only one nostril, but it may be from both. When the cases come under observation they have become chronic, and present neither pain nor discomfort, but careful questioning may elicit a history

of facecache, or at least a period of discomfort in the region of the cheek. In a few cases frontal headache is complained of, probably caused by closure of the frontal sinus by the tumefaction of the nasal mucous membrane about the openings of the antrum and the frontal sinus. To diagnosticate this condition the nostril is cleaned out and the absence of any foreign body, ulceration, inflammation of the bursa pharyngea, ozæna, or caries is determined; the discharge is seen to reappear at once in the middle meatus; the nostril is again cleaned out and the patient made to sit with his head bowed down, a position which renders drainage from the frontal sinus impossible. If, now, on re-examination, pus is found in the middle meatus, it must have come from the antrum.

McBride also calls attention to a condition which he does not know to have been hitherto observed—a marked redness of the gum corresponding to the affected antrum.

The usual cause is carious teeth, but a case is cited which shows this may not be the only one, the cause in this case seeming to be the use of the nasal douche.

Regarding treatment, he favors a counter-opening through the socket of a tooth, through the alveolar process, or through the outer wall of the nose, so as to obtain free drainage, and then systematic irrigation of the antrum.

**Carbuncle.**—Mr. Page, Mr. Owen, and Mr. Parker, in three separate articles on this subject in the "British Medical Journal" for March 24 and 31, 1888, advocate complete removal of all diseased tissue as far as possible. Parker recommends excision, but combines it with scraping, upon which the other gentlemen depend. The use of caustics is condemned. Unless the diseased tissue is removed it will have to be detached by nature by a slow and tedious gangrenous process, during which the patient is subjected to many risks which may be avoided by operation. Still, so high an authority as Sir James Paget recommends no operative interference.

This method seems very severe to Mr. Lowndes (*ibid.*, April 7th), who injects a solution of carbolic acid, of the strength of one to forty, three or four times a day into the carbuncle, and then applies warm linseed poultices. He professes to have had no case which has not yielded rapidly to this mode of treatment.

**Carcinoma of the Breast.**—Gross ("Am. Jour. of the Med. Sci.," March, April, 1888) presents an exhaustive clinical study of carcinoma of the female breast, based on 1,842 cases gathered from various sources.

It most frequently develops between forty-five and fifty, the extremes noted being twenty-one and eighty-four years. It has not been observed during the developmental state of the mamma, but is a disease of the obsolete or obsolescent breast. When the affection commences before the climacteric the breast is beginning to become useless in consequence of the greater proportion of connective-tissue stroma. Regarding heredity, he holds that there is no inheritance of a particulate body, virus, germ, or blood disease, but that there is of a peculiarity of the structure of the breast, particularly of its epithelial elements, which predisposes it to the occurrence of cancer. The connection between cancer and mastitis, either puerperal or not, is doubtful. Deep lesions of the nipple may exert an influence in favor of its development. Contusions are efficient causes by inciting an atypical growth of epithelium in the involuting breast. The social condition exerts no influence. The eczema of the nipple and areola is not a precancerous condition, but indicates the early stage of cancer occurring in an unusual situation.

It occurs a very little more frequently in the left breast than in the right, more often in the upper and outer quadrant than elsewhere, and is usually solitary, rarely multiple. The rate of growth is not influenced by the age of the patient, but when it appears during pregnancy or lactation it is excessively malignant.

Among the earliest symptoms he notes the dimpling or pitting of the skin over the tumor, independent of carcinomatous adhesion, but caused by shortening of fibrous bands which pass from the posterior surface of the skin into the interior of the breast. Retraction of the nipple he finds rarely referred to by writers, but has noted in 52 per cent. of his own cases, while in non-carcinomatous growths it occurs in only 5 per cent. In one third of the cases in which a spontaneous discharge from the nipple was noted it preceded the detection of the tumor. In 88 per cent. there is real pain, varying in intensity and character, in 8 per cent. there is simply a sensation of discomfort or weight, while in 4 per cent. there is no suffering whatever.

Invasion of the skin is the earliest perceptible sign of local malignity, and is marked by adhesion, discoloration, the formation of tubers, or ulceration. It appears on the average 15·8 months after the detection of the tumor, but has been known to appear as early as two weeks or to be delayed for several years. Then comes invasion of the glands, the muscles of the chest, the ribs, the pleura, the anterior mediastinum, and the opposite breast. These indicate local infection by extension or growth of young epithelial cells along the course of the lymphatics and circumvascular lymphatic sheaths, and the transfer of cells by the lymphatics to the lymphatic glands. Immobility of the tumor on the subjacent tissues occurs about twenty-two months after the appearance of the tumor—*i. e.*, six months after adhesion of the skin and two months after ulceration. Invasion of the opposite breast is noted in only 2·85 per cent.

The glands, when affected, delay metastatic deposits for a time, but constitute new foci of infection. How often they become enlarged simply as a result of irritation is uncertain. Several cases are on record where enlarged glands have subsided and the patient lived free from disease, showing that enlarged glands are not always carcinomatous. The axillary glands were found to be involved in 68 per cent. In addition to the axillary glands, the supraclavicular were involved in 5·44 per cent., the subclavicular in 1·34 per cent., and the cervical in $\frac{6}{10}$ of 1 per cent. The seat of the carcinoma exerts no influence on the frequency or the date of appearance of the lymphatic tumor. When the glands are infected the chances of removing the entire disease are greatly lessened, the recurrence is more rapid, and the patients succumb sooner.

Metastases occur without implication of the glands in one seventh of all cases with this complication. Hence it appears that infection may take place through the blood-vessels and that the absence of an enlarged gland is not an absolute guarantee that the viscera have not already been invaded. The date of their occurrence varies from five months to eight years after the appearance of the tumor, but averages 29·4 months. The lungs suffer rather more frequently than the liver.

The thickening of the upper end of the humerus with tenderness on pressure, described by Snow as "a neglected symptom in breast cancer," he has met with only once in one hundred and seven cases. Secondary deposits were found in the humerus in only five out of three hundred and thirty-six post-mortem examinations, and in two of these the bone had been fractured. Hence he does not consider the observations of Snow to be correct.

His conclusions regarding prognosis are that when left to itself carcinoma inevitably kills; that about 14 per cent. die from the operation, but ten months are added to the lives of the remainder; that operations definitely cure about 12 per cent. of all patients, nearly as many as they destroy; that the patient is safe from reproduction if three years have elapsed since operation; and that recurrence may be delayed, if not prevented, by cleaning out the axilla at the same time that the breast is removed.

Gross condemns the ordinary oval incision for amputation of the breast as apt to leave involved tissue. The plan which he has employed for some years, and which he advocates, is the most extensive, and involves the greatest loss of tissue of any operation yet advocated. A line is drawn with an aniline pencil around the entire circumference of the breast and, if the tumor is peripheral, at least an inch beyond its apparent limit. Along this line an incision is made down to the pectoral muscle and the breast is removed, together with the pectoral fascia. The fat around the line of incision and the pectoral muscle are carefully searched for nodules, which, if any are found, are freely removed. The axillary glands are then extirpated. After thorough irrigation with a 1-to-1,000 solution of bichloride of mercury, the edges of the wound are brought as nearly together as possible. This can be quite done in thin women with small breasts after loosening the skin flaps above and below from the subjacent tissues, but in fleshy women with large breasts a space must be left to granulate. He maintains that this operation affords better results than any other, that of Banks seeming to be nearest to it.

When the contents of the axilla form a large, nodular tumor, and

the disease has existed for some time, he advises attacking the axilla first, because, if it proves impossible to remove the entire disease, the amputation of the breast involves an unnecessary operation.

**Lipomata of the Sheaths of Tendons.**—Sprengel ("Ctrlbl. f. Chir.," 1888, No. 9) reports a unique case of lipomata occupying the sheaths of the tendons of the peronei and of the extensors of the toes about both ankles. The swellings had grown slowly, were not painful on pressure, were symmetrically arranged on each foot, and were shaped like hygromata, from which they were not diagnosticated previous to operation, although they had no fluctuation or crepitation. The tumors seemed to have grown in the synovial coverings of the tendons, without involving the tendons themselves, or the parietal layer of synovial membrane.

Haeckel (*ibid.*, No. 17) describes a case of lipoma arborescens of the sheaths of the extensor and flexor tendons of the hands which occurred in the clinic of Professor Braun. The swellings were painless, except those on the palmar surfaces of the first phalanx of the third and fifth digits of the left hand. The first symptom noticed was pain in the index-finger three years before, followed by the appearance of the swellings in the flexor tendons. The removal of the tumors was followed by complete disappearance of the pain and disability incident upon them.

Tumors of the synovial sheaths of the tendons, aside from hygromata, are rarely met with; so much so that these two writers are able to cite but one more case which they have found in literature—a case described in a dissertation by Haumann, closely resembling Haeckel's case.

**Ganglion in the Palm of the Hand as a Cause of Neuralgia.**—Witzel ("Ctrlbl. f. Chir.," 1888, No. 8) gives a detailed account of three cases in which cysts of the synovial sheaths of the flexor tendons in the palm or on the palmar surface of the fingers were removed. The tumors presented the appearance of small, hard knots beneath the skin, and seemed to cause neuralgia of the median or ulnar nerves by pressure on some of their branches. The neuralgia varied in intensity, extended from the hand to the shoulder, and was immediately relieved by the removal of the tumor.

A similar case is reported by Plenio (*ibid.*, No. 15).

**Surgical Dressings.**—Laplace ("Ctrlbl. f. Chir.," 1888, No. 7) examined dressings impregnated with two-and-a-half-, three-, and four-percent. solutions of corrosive sublimate in order to determine whether or not they were either aseptic or antiseptic. He found one hundred specimens of gauze to be free from germs, and found only seven which were not sterile out of three hundred specimens of wood-wool. But, as regards antisepsis, he found the dressings unreliable, and concluded that their value depended on their aseptic condition when applied. The plain sublimate solution was efficient to destroy germs in non-albuminous fluids, but in albuminous fluids a precipitate of albuminate of mercury was formed, which left the fluid inert. This precipitation could be prevented by the addition of tartaric acid to the solution in the proportion of five parts of tartaric acid to one of bichloride of mercury. The mercuric salt he found to dissolve more readily in a solution of tartaric acid than in water. The acid mixture remained incorporated in the dressings without destroying them, rendering them both aseptic and antiseptic. It is also inexpensive and easily made.

## Miscellany.

**The National Association of Railway Surgeons** held a preliminary meeting in Chicago on the 28th of June. Dr. C. B. Stemen, of Fort Wayne, Ind., was called to the chair, and briefly stated the objects and prospects of the organization. At present it includes about six hundred members, representing sixty-three railways. Officers for the ensuing year were elected as follows: President, Dr. J. W. Jackson, of Kansas City, Mo.; vice-presidents, Dr. J. H. Murphy, of St. Paul, Minn., Dr. J. B. Murdock, of Pittsburgh, Pa., Dr. A. W. Ridenour, of Massillon, O., and Dr. B. L. Hovey, of Rochester, N. Y.; secretary, Dr. C. B. Stemen, of Fort Wayne, Ind.; assistant secretary, Dr. J. H. Tressel, of Alliance, O.; corresponding secretary, Dr. E. R. Lewis, of Kansas City, Mo.; treasurer, Dr. J. Harvey Reed, of Mansfield, O. The next meeting will be held in St. Louis.

**Chlorosis and Heart Disease.**—The "Lancet" says: "Excessive anæmia being present, and the heart not being hypertrophied, the diagnosis of the cause of heart murmurs is frequently very difficult. M. Duclos has returned to this battle-field of clinicians, and sums up his conclusions in the following propositions: In true chlorosis, no matter the number and site of the cardiac murmurs, the basic murmur is never absent, and is most often systolic. In true chlorosis the carotid murmurs, varied and more or less marked, are always present. In genuine chlorosis the bruits are generally more intense and more extensive than in heart disease, and are markedly out of proportion to the circulatory disturbance; further, the cardio-pulmonary circulation remains free, and any disturbance in it indicates the persistence of a valvular lesion, and generally of the mitral valve. We do not join issue with M. Duclos in the general tone of his arguments, which are sound enough so far as they go; but the most frequent clinical difficulty is not so much the differential diagnosis of severe chlorosis from heart disease as it is the distinction or discovery of valvular lesion in the presence of less marked anæmia."

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending July 13th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 23d corresponded to an annual rate of 15·5 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Nottingham, viz., 9·9, and the highest in Preston, viz., 24·3 in a thousand. Small-pox caused 5 deaths in Sheffield, 2 in Preston, 1 in Manchester, and 1 in Leeds. Diphtheria caused 2 deaths in Leicester, 2 in Salford, and 2 in Leeds.

*London.*—One thousand one hundred and ninety deaths were registered during the week, including measles, 18; scarlet fever, 10; diphtheria, 15; whooping-cough, 33; enteric fever, 15; diarrhœa and dysentery, 18. The deaths from all causes corresponded to an annual rate of 14·5 in a thousand. Diseases of the respiratory organs caused 184 deaths; different forms of violence, 63, and 10 suicides were registered. In greater London 1,486 deaths were registered, corresponding to an annual rate of 14 in a thousand of the population. In the "outer ring" 11 deaths from whooping-cough and 9 from diphtheria were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending June 23d in the sixteen principal town districts of Ireland was 21 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 0, and the highest in Sligo, viz., 38·5 in a thousand. In Dublin 140 deaths were registered, including whooping-cough, 4; enteric fever, 1; scarlet fever, 2; and dysentery, 1.

*Catania, Italy.*—Two hundred and thirty-six deaths were registered during the month of April, including small-pox, 18, and enteric fever, 10.

*Ceara, Brazil.*—One hundred and forty-eight deaths were registered during the month of May, including 4 from yellow fever.

*Ruatan, Honduras.*—The following is the report of the United States consul, under date of June 30th: "Hæmorrhagic pernicious fever, dangerous to all persons not acclimated. Four deaths during this month."

*Havana, Cuba.*—Four hundred and ninety-eight deaths were registered during the month of June, 1888, including yellow fever, 38; enteric fever, 11; pernicious fever, 7; malarial fever, 6; small-pox, 13; diphtheria, 1; and croup, 2. The sanitary inspector states that "30 of the deaths from yellow fever occurred in the military hospital, and among persons belonging to the army, which is composed entirely of soldiers sent out from Spain. Small-pox continues to diminish. Up to the present time this season it is not known that any vessel of the merchant marine in this harbor has been invaded by yellow fever."

*Santiago de Cuba.*—Malarial fevers and diarrhœa are reported prevalent. The military hospital is free from yellow fever, and no small-pox has been reported.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Calcutta | May 19. | 433,219 | 223 | 30 | .... | .. | .... | .... | .... | .... |
| Amsterdam | June 23. | 389,916 | 156 | .. | .... | .... | .... | 1 | .... | 1 |
| Rome | May 5. | 388,300 | 173 | .. | .... | 2 | .... | 2 | .... | 1 |
| Munich | June 16. | 275,000 | 149 | .. | .... | .... | .... | 2 | 3 | 2 |
| Genoa | June 23. | 179,448 | 68 | .. | .... | .... | .... | .... | .... | 1 |
| Trieste | June 16. | 154,500 | 69 | .. | .. | 5 | .... | .. | .... | 1 |
| Toronto | June 30. | 130,000 | 27 | .. | .... | .... | .... | .... | .... | 1 |
| Stuttgart | June 23. | 125,510 | 38 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | June 16. | 122,000 | 32 | .. | .... | .... | .... | .... | .... | .... |
| Havre | June 16. | 112,074 | 60 | .. | .... | 2 | .... | 5 | .... | .... |
| Pernambuco | June 12. | 110,000 | 82 | .. | .... | .... | .... | 3 | .... | .... |
| Barmen | June 16. | 109,000 | 34 | .. | .... | .... | .... | .... | .... | 1 |
| Cienfuegos | June 25. | 10,573 | 20 | .. | .... | .... | .... | .... | .... | .... |
| Curaçoa | June 23. | 25,000 | 6 | .. | .... | .... | .... | .... | .... | .... |
| Vera Cruz | June 21. | 23,800 | 13 | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | June 17. | 23,631 | 7 | .. | .... | .... | .... | .... | .... | .... |
| Kingston, Can | June 29. | 16,216 | 3 | .. | .... | .... | .... | .... | .... | .... |
| Antigua | June 17. | 15,847 | 18 | .. | .... | .... | .... | .... | .... | .... |
| St. Thomas, W.I. | June 22. | 15,000 | 7 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | June 23. | 12,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | June 23. | 7,428 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Livingston | June 30. | 2,500 | 4 | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

*San Francisco, Cal.*—Eleven cases of small-pox were reported during the month of June, but no deaths. Two deaths were reported up to July 4th.

*Memphis, Tenn.*—The medical officer in charge of the Marine-Hospital Service reports one case of small-pox sent to the city pest-house July 9th. The patient came direct from St. Louis the day before.

*Plant City, Fla.—Yellow Fever.*—The following information was received under date of July 10th: "Only about thirty persons in the place who have not had fever. Five new cases reported to-day. Total population, 200. Most of the unacclimated moved out. Guard around place to prevent communication."

Mortality Table, Cities of the United States.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
|---|---|---|---|---|---|---|---|---|---|---|
| Philadelphia, Pa | July 7. | 1,016,758 | 423 | .. | .... | 3 | .... | 9 | 4 | 4 |
| Baltimore, Md. | July 7. | 431,879 | 241 | .. | .... | .... | .... | 1 | .... | .... |
| New Orleans, La. | June 30. | 248,000 | 140 | .. | .... | .... | .... | 2 | .... | 6 |
| Cleveland, Ohio. | June 9. | 225,000 | 73 | .. | .... | .... | .... | 1 | 1 | 5 |
| Cleveland, Ohio. | June 16. | 225,000 | 67 | .. | .... | .... | .... | 3 | .... | 5 |
| Charleston, S. C. | July 7. | 60,145 | 53 | .. | .... | .... | .... | .... | .... | .... |

## THERAPEUTICAL NOTES.

**An Application for Toothache.**—The "Progrès médical" credits Guild with a method of treating carious toothache by means of a mixture of equal parts of crystallized carbolic acid and flexible collodion, which is to be carried to the bottom of the cavity. The pain is said to disappear instantaneously.

**An Antiseptic Dentifrice.**—Le Gendre ("Concours méd."; "Gaz. hebdom. des sci. méd. de Montpellier") gives the following formula for an antiseptic tooth-powder, to be used for the prevention of dental caries:

| | | |
|---|---|---|
| Finely powdered boric acid | 375 | grains; |
| Chlorate of potassium | 300 | " |
| Powdered guaiacum | 225 | " |
| Prepared chalk, Powdered carbonate of magnesium, each | 600 | " |
| Essence of rose or of mint | 10 | drops. |

**The Influence of Temperature on Cocaine Convulsions.**—At a recent meeting of the *Académie des sciences* ("Gaz. hebd. de méd. et de chir."), a note by M. Langlois and M. Richet was read in which the authors announced their observation that elevation of temperature favored the occurrence of convulsions after the use of cocaine. Five times as much cocaine could be injected into a dog in a cold bath as into one in a warm bath without producing convulsions; if the dog was taken from the cold bath and warmed, violent convulsions took place without any fresh injection.

## ANSWERS TO CORRESPONDENTS.

*No. 203.*—Either of the two conditions you mention may be met with, according as the disease is situated in the tympanum or in the labyrinth. See Dr. Pomeroy's article in our issue for June 23d, page 676.

*No. 204.*—Kefir is the product of a fermentation of milk, said to be due to the *Bacillus caucasicus*, existing in the so-called kefir-grains. We know of no particular formula for its preparation. It may be ordered of the Dexia-Kefir Co., 1210 Third Avenue, New York.

*No. 205.*—In Washington, on the 18th, 19th, and 20th of September.

*No. 206.*—They are separate works. Both are published by Messrs. Lea Brothers & Co., of Philadelphia.

*No. 207.*—By using large electrodes, applying them before turning on the current, and holding them as motionless as possible.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### SUDDEN HEART-FAILURE.*

BY A. S. COE, M. D.,
OSWEGO, N. Y.

IT is the prevailing opinion of the profession that the origin of organic heart disease in nine cases in ten is rheumatism; the endocardium becomes inflamed, and plastic lymph is exuded in the duplicatures of the valves, which in time becomes organized into adventitious tissue, and contracts and shortens them, thereby impairing or destroying their functions. But to compensate, the muscular fibers of the heart, to meet the increased demand caused by impairment of the valves, increase and strengthen. These structural changes are gradual, and the growth of the muscular structure of the heart keeps pace with the increasing inefficiency of the valves, so that for a long time normal circulation is maintained. As long as the hypertrophy is compensatory no great inconvenience is felt, and persons so afflicted and otherwise healthy may pursue their usual vocations without suffering. In this form of the disease the valves are primarily affected, the physical signs are generally well marked, and the extent of the lesions and structural changes is easily ascertained. The physical signs are much more pronounced than the rational—the hypertrophy is generally concentric—hence the heart is able to maintain the normal circulation longer, and is less liable to sudden and violent disturbance of its regular and rhythmic action, than it is with other forms of hypertrophy having their origin in obstructions other than impairment of the valves.

My observation and experience are that the more frequent cause of organic disease of the heart is other than rheumatism, and the valves are not primarily affected in these cases. It is the custom to look for valvular lesions, and, not finding them, the conclusion is reached that there is no organic disease, and the disturbance of the heart's action is attributed to other causes, nervous or sympathetic, when in reality there are serious heart lesions threatening sudden heart-failure and immediate dissolution. In these cases too little importance is placed upon the rational signs and too much stress upon the physical signs; but there will be invariably found, if sufficient care is taken, an increase of cardiac dullness, indicating more or less hypertrophy. For a long time I was much puzzled at the sudden and distressing attacks of dyspnœa and orthopnœa in persons who had passed middle life and who had never suffered from rheumatism or any other serious illness, but had observed an increasing shortness of breath upon physical exertion, such as ascending a hill or a flight of stairs; otherwise they never had been conscious of illness of any sort. I was unable to find physical signs of heart disease at all commensurate with the rational signs which pointed unmistakably to heart disease. Several of these patients, with the slight warning of growing shortness of breath, were suddenly seized with a frightful paroxysm of dyspnœa and orthopnœa, soon after followed by general anasarca. Fortunately we succeeded in obtaining permission to make an autopsy on one of these cases.

CASE I.—William H. W., aged sixty-six, always had been temperate, never had been seriously ill, and never had had rheumatism up to the time when the shortness of breath became troublesome, save two or three severe attacks of angina pectoris recurring about once a year. As there were no well-marked physical signs of heart disease at the time, they were thought to be due to acute indigestion. The increasing shortness of breath and attending discomforts had finally compelled him to remain in his house much of the time. He was under the professional care of Dr. McF., and, as there was considerable obscurity as to the cause of his ill-health, he invited me to consult with him. I found no physical signs of valvular lesions, but considerable increase of cardiac dullness; the heart's action regular in rhythm. Soon after, the severe paroxysms of dyspnœa began, recurring once or twice in twenty-four hours and lasting from half an hour to an hour. As the disease progressed the paroxysms increased in frequency and severity, and his struggles for breath were distressing to behold. About the time the severe paroxysms began general anasarca set in, beginning in the lower extremities, rapidly extending from there to the body. The only remedy found which mitigated his sufferings was a half to three quarters of a grain of morphine administered hypodermically. Along toward the end there developed unmistakable evidence of disease of the semilunar valves. The autopsy revealed greater hypertrophy of the heart than was imagined before death. The enlargement was mainly in the long axis and antero-posteriorly, the lateral expansion was slight, and the hypertrophy was further masked by ossification of the costal cartilages, and the rounded contour of the heart prevented the usual impact of the apex against the chest-wall. Upon opening the cavities, the left auricle was found to be normal. The mitral valves, save atrophy of one of the muscular columns or supports of the chordæ tendineæ, were healthy. A bony plate or beginning of calcareous degeneration of the lining of the ventricle was found; the semilunar valves were thickened, corrugated, and somewhat contracted, leaving an opening of about the size of a goose-quill. The ventricle itself was enormously dilated, and its walls were very much thickened. There was no degeneration of its muscular fibers. The inner membrane of the aorta, extending down into the left ventricle, was thickened and had lost its transparency. About two inches above the aortic opening the lumen was surrounded with bony plates, with sharp projecting spiculæ. No further examination of the aorta was made, but I have no doubt that the calcareous degeneration extended much farther. The heart weighed, after being freed from every particle of blood, twenty-two ounces. We found sufficient to explain the obscurity of the physical signs and the pronounced rational signs at the beginning of the attack.

I have no doubt that this is a typical case of sudden heart-failure occurring after middle life in strong and vigorous people, who never had rheumatism or other serious illness, which is usually diagnosticated as sudden heart-failure due to fatty degeneration or some other cause than the right one, a diagnosis which is based upon pure conjecture and is guess-work. Fatty degeneration and malaria are two very useful terms; they save much trouble and cover much ignorance, and are useful in satisfying a popular demand.

* Read before the Medical Society of the County of Oswego, N. Y., June 12, 1888.

In my opinion, idiopathic fatty degeneration is the rarest of all diseases of the heart. There is necessarily much obscurity in these cases, which can not be fully cleared up without an autopsy. It is evident in this case, as in other cases mentioned further on—in which, unfortunately, there were no autopsies made to verify the diagnosis—that the structural changes had been progressing during many years without causing a particle of ill health or inconvenience, and it began as a chronic endarteritis in the aorta, progressing slowly and insidiously, followed by atheroma and calcareous degeneration; by continuity it had invaded the semilunar valves and left ventricle, in which the degeneration was well advanced. The elasticity of the aorta was slowly lessened and finally destroyed, and there was more or less arterial stenosis caused by the bony deposits, which increased the obstruction to the circulation. These obstructions were so gradual in their progress that the heart was able to maintain a normal circulation by an increase of its muscular fibers during many years before it had passed the boundary between the normal and abnormal. In cases of aortic obstruction the strain upon the left ventricle is much greater than that due to the inefficiency of the semilunar valves; hence the hypertrophy is more apt to be eccentric, and as soon as the hypertrophy ceases to be compensatory the disorders of the circulation rapidly increase, the right side becomes congested and the pulmonary arteries engorged with venous blood, and aeration impeded; hence the distressing paroxysms of dyspnœa.

Why the patient is unable to lie down during the paroxysms of dyspnœa I have never seen satisfactorily explained. The cause of these slow and insidious structural changes of the arteries is imperfectly understood. It is sometimes attributed to high living, the use of highly seasoned and stimulating food and vinous and alcoholic beverages; also to a gouty diathesis; but it often occurs in persons of temperate living and freedom from hereditary taint of any kind, of which the foregoing case is a noticeable instance. Many of our leading public men and generals of the late war who have recently passed suddenly away with heart-failure—such as, say, Stanton, Halleck, Thomas, Burnside, Meade, Warren, and McClellan, and the last to be stricken down in apparent health, General Sheridan—I have no doubt had this form of disease. From so many notable instances it is probable that intense strain from the excitements of public life, exposures of the field, mental anxiety, sense of tremendous responsibilities, and irregularities of living, are potent factors of its causation.

The prognosis is generally unfavorable, although it does not always imply an immediate fatal termination. Nature very frequently, in the apparently hopeless cases, threatening immediate dissolution, comes to the relief of the sufferer. The paroxysms of dyspnœa lessen in frequency and severity, the œdema gradually disappears, and the sufferer is granted a respite from his extreme distress, sometimes lasting years from the time of the initial paroxysm; but it is a life of apprehension and dread, physical incompetency, fruitless endeavor, and hope constantly deferred. Many of them die within a few weeks from the time of the first distressing paroxysm of dyspnœa and orthopnœa, followed by general anasarca. Acute delirium in the more sudden cases of dyspnœa is frequent, probably due to cerebral anæmia, and the result of the impeded pulmonary circulation and defective aeration. The delirium is peculiar in that the sufferer becomes suspicious of and acquires an antipathy to his nearest and dearest friends and attendants, and is often possessed of fantastic and grotesque fancies.

But little can be said relative to treatment in the more severe cases. As the physical signs are no measure of the extent of the organic lesions and the rational signs often exaggerate the immediate danger, the treatment is necessarily tentative. As the rational signs are altogether out of proportion to the physical signs, it is impossible to ascertain the extent of the organic lesions, and in some cases the paroxysm appears threatening and death imminent, but the attack soon passes off and the sufferer regains his usual appearance of health, vigor, and cheerfulness; on the other hand, all the vaunted heart stimulants, tonics, and restoratives equally fail. I have found morphine given hypodermically the most useful remedy on the whole. I try pretty regularly digitalis or digitalin, nitrite of amyl, nitro-glycerin, ether, and so on. As they all are apt to fail to give relief in the more severe cases, as a final resort I inject the morphine. Next to morphine, I have obtained the most decided relief from nitro-glycerin. I have given strophanthus only in one case; the result was negative. If the patient is robust, to relieve the overburdened circulation and anasarca I resort to the saline hydragogues. The old remedy, pulvis purgans, is very efficient for that purpose. The infusion of digitalis combined with acetate of potassium I find the most efficient heart tonic and diuretic, but it is apt to derange the stomach after a few doses are taken. In those cases in which the disease resists all remedies for any considerable length of time it is safe to consider that the organic lesions are of a grave character, and the prognosis should be very guarded. After an autopsy the wonder is not so much at the inefficiency of remedies as that a person could exist so long with the organic lesions found. In many of these cases disease of the kidneys co-exists with disease of the heart; in many of them albumin is found in the urine in small quantities without casts or other evidence of organic disease of the kidneys.

Case II.—Mrs. W. H. W., aged sixty-six, wife of the foregoing, about six months previous to his illness was suddenly seized with a most distressing paroxysm of dyspnœa with passive congestion of one of the lungs, soon followed by bloody sputa. She had never had rheumatism and had always enjoyed excellent health, and was a person of extraordinary energy and public spirit. Upon inquiring into the history of the case, she had not been aware of any particular ill feeling up to the time of the paroxysm, but recalled to memory that her breath had been growing shorter upon ascending a hill or a flight of stairs during the preceding six months. There were no valvular lesions, but there was considerable hypertrophy; the apex-beat was below the fifth space outside of the nipple-line. Soon after the paroxysm, general anasarca set in, beginning in the lower extremities and one hand and arm simultaneously, and followed by acute delirium, which continued until her death. Her illness lasted from the middle of February till the last of April, 1884. No autopsy was made. The pneumonia subsided in a few days and gave but little trouble; it was wholly passive.

Case III.—C. D., aged forty-eight, had had syphilis when a young man, which had passed into the tertiary stage. Occasional gummata made their appearance on various parts of the body and nodules on the scalp, which generally soon disappeared upon taking iodide of potassium; the nodules on the scalp occasionally suppurated, but soon healed. On October 28, 1883, he was seized suddenly while at his store with a distressing paroxysm of dyspnœa, with congestion at the base of one of the lungs, followed with bloody sputa. General anasarca with acute delirium immediately followed. The paroxysms of dyspnœa were frightful to behold, recurring two or three times a day and lasting from half an hour to an hour; finally the paroxysms were greatly mitigated by nitro-glycerin, $\frac{1}{100}$ grain, every hour or every second hour. There were no valvular lesions, but there was considerable hypertrophy of the heart; save during the paroxysms, the heart's action was apparently normal; during the paroxysms the pulse went in waves of alternate weakness and strength, the round being completed in about one minute. It would diminish steadily in strength until it was scarcely perceptible, then increase in strength as steadily until the summit of the wave was reached, and again recede. During the accession of strength he would doze off in a quiet sleep until the pulse began to recede, then begin to groan and gasp for breath until the recession was passed. This was after he began to take the nitro-glycerin; before that there was no remission, but a continuous struggle for breath until the paroxysm passed off. He was enabled to get perhaps two hours of quiet, free from distress of breathing, two or three times in twenty-four hours. The pneumonia passed off entirely in three or four days and gave no further trouble. He had an attack of pneumonia four years previous to his final illness, the dominant feature of which was distress of breathing. It passed through its stages regularly, the crisis occurring about the eighth day, and he made a rapid recovery, with no trace left behind in the lungs; but from that time the shortness of breath upon physical exertion increased, and he had occasional œdema of the ankles, sometimes extending for brief periods to the thighs. His final illness began October 28th, and he died February 15th following. No autopsy was made.

Case IV.—S., a veteran, who had for several months been a prisoner in the rebel prison at Andersonville, Ga., and suffered from chronic diarrhœa and scurvy when there, the scurvy leaving chronic ulcers on his legs, which never healed; had never had rheumatism. He was taken suddenly with a most distressing paroxysm of dyspnœa on November 26, 1884, which was immediately followed with œdema of the legs and thighs. There were no valvular lesions, but there was considerable hypertrophy of the heart. The dyspnœa continued until about the middle of December following; in the mean time he was unable to lie down. The œdema nearly disappeared for a time, but it now occasionally returns. He has had occasional paroxysms of dyspnœa since then, but they are not so severe as the first ones.

Case V.—D., aged about fifty, who had never been ill since childhood, was of robust health, and always had been a person of remarkable energy and physical endurance, consulted me in my office the last of April, 1885. He complained of shortness of breath and that he could not lie down at night. I found no valvular lesions, but hypertrophy of the heart, also slight enlargement of the left lobe of the liver and slight albuminuria. There were no casts or other evidence of disease of the kidneys. He consulted me in my office several times afterward; he had received no relief from treatment. The last time I saw him œdema of the legs had begun, and the enlargement of the liver had increased. I learned soon after that the anasarca shortly became general and the paroxysms of dyspnœa had become very distressing, and that he had acute delirium. He soon after died. He lived eight miles away in the country.

Case VI.—G., aged sixty-eight, who had never had rheumatism, and had always been healthy until quite recently, when he had observed an increasing shortness of breath, consulted me in my office February 12, 1886. I found considerable hypertrophy of the heart, but no valvular lesions. A few days afterward I was called to his house, and found him suffering from a very distressing paroxysm of dyspnœa and orthopnœa. General anasarca soon followed. His urine was loaded with sugar and had a specific gravity of 1·035, and he was voiding a very large quantity during the twenty-four hours. In the course of six weeks, under treatment, the sugar was very much diminished, also the quantity of urine voided during the twenty-four hours—the specific gravity was reduced to 1·018—but the paroxysms of dyspnœa continued with great severity, generally coming on in the night. He began to improve gradually along in the month of June following, and in the autumn was able to be out again. He has now partially regained his health, and was able to resume his duties as a commissioner of charity, which are very light, in the spring of 1887. He walks from his house to the office in the City Hall, about three hundred yards, but his steps are measured and his progression is slow. He still has paroxysms of dyspnœa coming on in the latter part of the night, waking him out of his sleep.

Case VII.—M. C., aged sixty-four, was examined by me in 1879 for an increase of pension for disabilities resulting from chronic diarrhœa and disease of lungs. The pension for chronic diarrhœa had been discontinued because the disease had ceased. I found no disease of the lungs, but hypertrophy of the heart; no valvular lesions: the least physical exertion caused great difficulty of breathing; the skin was dusky and the lips became livid, indicating imperfect aeration. I diagnosticated the case as one of hypertrophy of the heart and dilatation of the left ventricle, probably due to disease of arteries. He failed to prove his claim, and was examined by me, by order of the pension office, several times before his death. There was no variation of physical or rational signs, save in degree—they became more pronounced. In February, 1885, Dr. Dewitt requested me to visit him in consultation. I found him confined to his bed with a large left popliteal aneurysm of the size of an orange, and a small one of the right popliteal artery of the size of a horse-chestnut. We discussed the propriety of tying the left femoral artery, but found both the femoral arteries rigid and unyielding, indicating extensive degeneration of the arteries, and we concluded that it was unsafe, as secondary hæmorrhage would be inevitable. He died in the early part of March following, from exhaustion. There was no autopsy made, which I have always regretted, as it would be interesting to know if the larger arteries were involved. In this case there were no sudden paroxysms of dyspnœa or general anasarca until a short time before his death.

I could multiply cases of heart disease not due to rheumatism almost indefinitely. Autopsies are rarely made, and many cases of sudden death are attributed to sudden heart-failure without suspecting grave heart lesions. A normal heart is not apt to stop suddenly its beating without adequate cause. Nature, in her beneficence, struggles long to compensate for the ravages of disease by increasing its power, but the time must come when it can do no more. Extensive degeneration of arteries is not rare, especially in the aged, but it takes place remote from the center of circulation, and the obstruction is comparatively slight.

# ALBUMINURIA IN DIABETES MELLITUS.*

By HENRY C. COE, M. D.

My attention has been recently directed to this subject by observations made in a case of which the following is a brief history:

Mrs. B., aged forty, a large, fine-looking woman, came to the Polyclinic on February 11th complaining of backache and frequent micturition. Her general health was apparently perfect, and she herself stated that she had never been ill. The symptoms were readily explained by the presence of retroversion. The uterus was replaced, a pessary was inserted, and she went away feeling relieved. Four days later she sent for Dr. Hunter, and I saw her at his request. I found her sitting up, complaining of nausea and rather ill-defined pains in the lower part of the abdomen. The pulse was slow and full, the temperature a little over 99° F. Physical examination of the chest and abdomen was negative; vaginal examination the same. In order to be on the safe side, I removed the pessary, as her menstruation had just ceased. Ordered hot vaginal injections night and morning. She remarked incidentally that she was always very thirsty, and, on questioning her, I ascertained that she not only passed her urine frequently, but in considerable quantities. A specimen obtained on the following day had a specific gravity of 1·025, and contained one eighth of one per cent. of albumin by weight, and 3·8 grains of sugar to the ounce. Under the microscope a large number of granular casts of different calibers were visible.

I saw the patient on the 17th and found her in bed, breathing rapidly and complaining of pain under the right scapula. Percussion-sounds normal. On auscultation, I thought that I detected a friction-sound over the right base. Heart-sounds normal. Pulse and temperature normal. Tongue red and dry. The abdominal pain had disappeared. On telling her that I had found sugar in her urine, the patient admitted that she had been told four or five years before that she had diabetes, and had been placed on restricted diet, but, as she always felt well, she had forgotten all about the matter, being merely annoyed by the thirst and frequent micturition. Since my former visit she had become very restless, and could not sleep. I regulated her diet, and prescribed a simple sedative. During the two following days her symptoms disappeared, and she was up and about, so that I ceased my visits, telling her to call at the office in a few days with another specimen of her urine. On the 21st, three days later, she sent for Dr. Hunter in great haste. He found her in bed, presenting no definite symptoms, except insomnia and restlessness. Pulse and temperature normal. On the 25th I was sent for, and found her breathing rapidly, but without dyspnœa. She was extremely restless, and could not sleep. Tongue and throat dry and red. She had no pain, and the physical examination of the thorax and abdomen was negative. Although she took plenty of nourishment, she complained of feeling very weak. She was perfectly unmanageable, having drank two or three quarts of claret during the preceding day and night, besides an enormous quantity of Vichy. I took away from her a bottle of brandy, of which she was partaking freely, so that the mental dullness which I noted was doubtless due partly to the alcohol. I saw her again on the following day at 11.30 A. M., and found her condition much more alarming. The pulse was weak, but not rapid; the respirations were rapid and shallow. Temperature normal. The eyes presented a peculiar staring expression, the pupils being dilated. Mind perfectly clear. Slight dullness over both bases, with moist râles. I gave an unfavorable prognosis, but did not anticipate an immediate termination of the case. The patient expired suddenly (apparently of heart-failure) about an hour after I left her, without losing consciousness. During the twenty-four hours preceding her death she passed about 20,000 c. c. of urine, having a specific gravity of 1·010. It contained a trace of albumin, twenty grammes of urea in all, and 5·17 grains of sugar to the ounce. Not having the reagents at hand, I unfortunately did not test for acetone and diacetic acid. Casts were present, as at the first examination, but they were less numerous.

Although the patient was under observation for such a short time and her urine was examined only twice, I felt justified in assuming from the first that organic disease of the kidney was present, and therefore that the prognosis was grave, even though her general condition was not such as to awaken apprehension until just before her death. The closing phenomena strongly suggested the presence of a toxic element. I think that uræmia could be excluded, because a careful quantitative analysis showed only a moderate diminution in the relative amount of urea excreted. I believe that they were due to acetonæmia, and regret exceedingly that I did not confirm this opinion by the proper tests.

Since observing this case I have noted reports of two somewhat similar ones, which seem to bear on the point which I wish to make—that the glycosuria precedes the renal affection.

Case I.—Dr. Alonzo Clark presented to the New York Pathological Society in 1862 ("Am. Med. Times," March 29, 1862) the fatty kidneys removed from a child, who, after suffering for a year from diabetes, had an acute attack of uræmia, accompanied with marked œdema. The specific gravity of the urine before the attack was 1·036; at the time of the same, 1·020; it contained sugar, albumin, and granular casts. There were no complications in other organs, and the patient died in coma.

Case II.—The late Dr. W. M. Carpenter reported, under the heading "A Clinical Note on Albuminuria and Glycosuria" ("Med. Record," Feb. 6, 1886), the case of a woman, aged fifty-five, who had for the space of a year passed a large quantity of urine. The sudden appearance of œdema and dyspnœa led her attendant to examine the urine, which contained a considerable amount of albumin and numerous casts, the specific gravity being 1·010. A week later the albumin and casts disappeared entirely, and the urine remained apparently normal for three months, when it was found to contain sugar. For two years the case pursued the ordinary course of diabetes mellitus. The subsequent history is not given.

The latter writer advances the opinion that the glycosuria must have preceded the albuminuria, and that the patient undoubtedly had advanced renal disease.

As this is intended simply as a brief clinical report, I shall not enter into an exhaustive consideration of the pathology, and shall only glance at the rather scanty literature to which I have had access. It is commonly stated in text-books on medicine that the presence of albumin in diabetic urine should be regarded as a serious indication. Personally I have several times detected it in the urine of diabetic patients who were in good general condition, and were responding well to restricted diet. Its appearance was occasional, and it did not seem to bear any definite relation to

* Read before the New York Clinical Society, May 25, 1888.

the patient's health or to the quantity of sugar. Casts were never found in these cases of intermittent albuminuria. It seems to me that the subject may be simplified by regarding albuminuria, when complicating glycosuria, as of serious import only when it is accompanied by other evidences of organic disease of the kidneys.

This is a point on which sufficient stress is not always laid. Thus Roberts ("Urinary and Renal Diseases," p. 232) believes that "the presence of a small quantity of albumin . . . constitutes an untoward sign." Harley ("Diabetes," p. 64) agrees with him. Niemeyer ("Text-book of Practical Medicine," vol. ii, p. 778) is equally pessimistic, affirming: "Now and then albuminuria is associated with mellituria, thereby augmenting the exhaustion and accelerating the demise of the sufferer." Loomis ("Practical Medicine," p. 879) states that the presence of albumin "does not necessarily indicate that there are grave kidney changes in diabetic subjects." Flint ("Principles and Practice of Medicine," p. 928) is equally cautious, affirming that albuminuria "shows either the existence of coincident renal disease or those conditions which, under other circumstances, give rise to the presence of albumin in the urine." The latter alternative should not be forgotten, especially in the case of females, a trace of albumin in whose urine is often referable to transient inflammation of the mucosa of the genito-urinary tract, perhaps not noted by the patient herself. In a case of diabetes now under observation the patient returned from a long and fatiguing journey a week ago, and when I examined a specimen of her urine, passed on the following day, I found, in addition to a considerable increase in the amount of sugar (four and a half per cent.), one fiftieth of one per cent., by weight, of albumin. I naturally inferred that the presence of the latter was of evil import, since I had not observed it in former specimens of the same urine, but under the microscope numerous leucocytes were shown, while no casts could be found after a careful search. This is a small point, but it is of some interest, because as a rule practitioners who content themselves with chemical examinations of the urine are apt to be unnecessarily alarmed (and may alarm their patients, which is still more important) on finding albumin in the urine, especially if it also contains sugar. When the sources of error are so evident it is difficult to understand how Jaccoud ("Nouveau dict. de méd. et de chir. pratiques," vol. ii, art. "Diabète sucré") can affirm so positively that "albuminuria in the course of diabetes is a very serious accident, which denotes the addition of a grave complication to the original malady."

There is general unanimity among recent authorities as to the pathology of albuminuria in diabetes. That anatomical changes are frequently found in the kidneys is unquestioned. Straus ("Arch. de phys. norm. et path.," xvii, 1885; "Contributions à l'étude des lésions hist. du rein dans le diabète sucré") found glycogenous material deposited mainly in the epithelium of the straight tubes of Henle. Ehrlich and Frerichs agree with him; Ebstein, on the other hand, regards the process rather as a coagulation-necrosis. Blau (Schmidt's "Jahrbücher," 1887, p. 209, "Ueber Diabetes Mellitus") is inclined to doubt the direct connection between these changes and the presence of albumin in the urine. Stokvis believes that albuminuria is due not simply to renal irritation from long-continued polyuria, but to actual changes in the kidney, ranging in severity from cloudy swelling to advanced degeneration. Albuminuria, he says very properly, is due less to glycogenous infiltration of the epithelia than to distinct changes in the glomeruli, resulting from the circulation through them of diseased blood. This was demonstrated experimentally by Albertoni and Pisenti ("Das Aceton in Bezug auf die Nierenveränderungen beim Diabetes," "Centralblatt für die med. Wiss.," Aug. 8, 1885), who found that when acetone was administered to dogs and rabbits albuminuria resulted, and that, if the experiment was continued for some time, the epithelium of Henle's tubes underwent exactly the same changes as those described by Ebstein and other observers in the kidneys of diabetic patients dying in coma in whose urine acetone was found. They give to this condition the appropriate name *albuminuria*, or *nephritis, acetonica*, and conclude that acetone is excreted, not by the glomeruli, but by the epithelium, the same as urea. When grape-sugar is injected into the veins of animals glycosuria results, and subsequently albuminuria also. It is a curious fact in experimental pathology that there exists a spot in the fourth ventricle, near the sugar-center, puncture of which causes albumin to appear in the urine (Bernard). Griesinger ("Studien über Diabetes," "Arch. der phys. Heilkunde," 1859) found the kidneys affected in thirty-two out of sixty-four diabetic patients whose bodies he examined, fatty degeneration being noted in seventeen. Contracted kidney was not observed. Maguire, on the other hand ("Brit. Med. Jour.," Sept. 18, 1886, p. 543), found the kidneys in old cases of diabetes hard and atrophic, due to an overgrowth of the connective tissue around the vessels and glomeruli and between the tubes; this condition he ascribes to long-continued irritation, and does not regard it as true interstitial nephritis. Jaccoud (*loc. cit.*) admits that the changes in the tubular epithelium resulting from glycosuria are "in many cases the starting-point of true Bright's disease." This summarizes the statement already quoted with reference to the pathological anatomy, so that we need not dwell upon it further.

With regard to the frequency of albuminuria in diabetics I need only to quote the observations of Schmitz ("Deutsche med. Wochenschrift," 1881, Nos. 48–51), who in six hundred cases of diabetes found albumin in about two tenths of one per cent. It was often increased after severe bodily exertion. It is worth noting that with his enormous experience this writer states that he has usually found the specific gravity of the urine to vary between 1·025 and 1·035; he never examined a specimen the specific gravity of which was above 1·042 (!).

I have referred to the albuminuria as being transient or permanent; it may also be characterized as acute and chronic. The transient form sometimes alternates with glycosuria, the albumin increasing in amount as the sugar diminishes, so that they are inversely proportional. Of course in the later stages of diabetes albumin may be due to deficient circulation. Bäumler ("Centralblatt für klin. Med.," 1886, No. 25) calls attention to the appearance of

albumin in the urine of diabetics who have suddenly developed carbuncle or erysipelas. He regards the condition as "infectious nephritis." Acute albuminuria is sometimes observed in cases of diabetic coma; the relations which it bears to acetonuria have been referred to. When we seek to find the true proportion of cases of diabetes in which albuminuria is due to actual organic disease of the kidney, we meet with considerable difference of opinion. Thus, Ewald ("Real Encyclopädie der ges. Heilkunde," article "Diabetes"), while he finds that between ten and fifteen per cent. of diabetic patients have albumin in the urine, agrees with Senator that "true nephritis is the cause of the albuminuria of diabetics in very exceptional cases." Other observers, as we have seen, believe that Bright's disease develops not infrequently. Stokvis ("Centralblatt für klin. Med.," 1886, No. 25) divides these cases of persistent albuminuria into two classes. In one there is only a small quantity of albumin, which may increase after the disappearance of sugar from the urine, but subsequently disappears, no casts being found; here there are no organic changes in the kidneys. The second class includes cases in which a considerable amount of albumin appears constantly in the urine, and persists after the disappearance of sugar, being accompanied by casts. In one third of these the usual symptoms of chronic nephritis develop. There is little to add regarding the additional symptoms presented by diabetic patients with this complication. It is usually so insidious in its development as to escape the attention of the attendant who is not on the look-out for it. Increasing dyspnœa (in the absence of phthisis), weakness, and circulatory disturbances ought to awaken suspicion and lead to repeated and careful examinations of the urine for albumin and casts. Of course when œdema appears after disappearance of the sugar, there can be little doubt.

The prognosis should always be guarded, and should be based on the result of the urinary examination quite as much as on the general condition of the patient. In the case reported, the presence of numerous casts led me to take a serious view of it, when there was apparently no other cause for alarm. In my opinion, the *persistence* of the albumin and casts in glycosuria is the most important element. But there are other tests which ought not to be omitted—those for acetone and diacetic acid, since the presence of these substances in diabetic urine, in addition to albumin and casts, makes the prognosis extremely grave; this combination renders the patient liable at any moment to a sudden and fatal attack, which may take the form of heart failure, as in my case, or may assume the more prolonged convulsive type. That, in any case, uræmia is not the true explanation of this phenomenon is now pretty generally agreed.

No special change in the ordinary diabetic treatment is indicated on the discovery of a probable renal complication. Stokvis advises free catharsis with salines, and the cautious use of cardiac tonics. Heart-failure should be especially guarded against.

We may, then, summarize as follows:

1. Albuminuria occurring in diabetes has the same import as in ordinary cases.

2. A trace of albumin, appearing transiently or intermittently (when proved by exclusion to be of renal origin), and seldom or never associated with casts, may be regarded as due to irritation of the kidneys from the glycosuria. The immediate prognosis is good; but renal changes may subsequently result.

3. The occurrence of persistent albuminuria and numerous casts in a case of diabetes of long standing is of grave import, as pointing to the existence of chronic nephritis; if acetone and diacetic acid are also present, the patient may die in coma at any time.

4. Examination of the urine furnishes complete evidence of the patient's danger, even when the general condition is not such as to excite apprehension.

## TWO CASES OF ECTOPIC GESTATION.*

By W. D. HAMILTON, M. D.,
COLUMBUS, OHIO.

The subject of extra-uterine gestation possesses great interest for the practitioner of medicine. A desperate anomaly, usually insidious in its development, often fatal in its outcome, it challenges the attention of every thoughtful medical man. Of its pathology much has been written. Its causation and the conditions predisposing to it have given rise to much comment. The present tendency is toward simplification. Whereas it was formally considered under a tenfold classification, there are now those who assume that all varieties of it are originally tubal. Tait, Thomas, and other eminent gynæcologists entertain this view, and the impression is gaining ground among those who are giving the subject attention that such is the case. Parry cites three subdivisions—tubal, ovarian, and abdominal. Tait, whose large experience would seem to justify him in generalizing, maintains that all ectopic gestations are at first tubal, and that other forms date their peculiar character from the time of rupture of the tube and escape of the ovum. Interstitial pregnancy, then, means fecundation in the uterine end of the tube, while the ovarian probably traces its origin to the fimbriated extremity as the site of impregnation. "If," says Greig Smith, "rupture occurs on the *under* surface of the tube, where it is embraced by the broad ligaments, the ovum may develop in the inclosed cellular tissue and be extraperitoneal. If it takes place on the *free* surface of the tube, the ovum escapes into the abdominal cavity and may develop there." Unfortunately, there is great dissimilarity in the histories of these cases. Frequently all goes well until the woman is suddenly collapsed, and again it happens that men who have had abundant opportunity to study the symptoms have erred in diagnosis. Such mistakes are not so common now as formerly. Furthermore, the experience of the past few years has thrown much light upon the recognition and treatment of this condition.

Authors agree that anything serving to interfere with the progress of the ovule through the tube favors the occurrence

* Read before the Ohio State Medical Society at its fifty-third annual meeting.

of ectopic gestation. Women who have been sterile for several years are more liable to anomalous conception than others. Catarrhal salpingitis or actual occlusion of the oviduct predisposes to its occurrence. Certain congenital malformations of the internal genitalia might also be cited as contributing a proportion of the cases. Undoubtedly a great deal remains to be learned in this connection, and if the conjectural part of our literature were eliminated, the *quantity* of it would suffer greatly.

As for the modes of treatment which are worthy of consideration, practically only two are to be mentioned: 1. The employment of electricity to kill the fœtus, in the hope that nature will either cause the absorption of that which remains, or will accomplish its expulsion in some way or other. 2. Some form of cutting operation, having for its object the extraction of the products of conception through the wound thus inflicted. The first method is adapted to the early weeks of gestation, while the second is broadly applicable to the whole period during which the child, placenta, or portions of either, are carried by the mother. The brilliant operations of Mr. Tait tend to re-enforce the remark of Mr. Greig Smith, that "a dispassionate consideration of the natural terminations of the disease and of the effects of minor modes of treatment (electricity being the chief one) almost drives one to the conclusion that in all stages and under all circumstances abdominal section is the best *treatment*." From this it appears that abdominal section is not urged by him as a *last resort*, but as a mode of treatment.

Case I.—Mrs. E. S., aged thirty-one, married fourteen years, the mother of five children, the youngest three years old. Family history good. Two years ago she miscarried. Has been regularly unwell all her menstrual life until the middle of last June (1887), when she menstruated normally; every month following, at least once and sometimes twice, there was a discharge of blood from the vagina which never exceeded twenty-four hours in duration. In January, a few days after I first saw her, menstruation occurred and lasted a week. Just after its cessation she fell in her door-yard, and within a day or two was obliged to go to bed on account of fever and pain, which persisted for ten days. During this interval there were occasional chills; the average pulse was 90; the maximum temperature was 103° F. About August 10th there were several attacks of very severe pain in the abdomen, principally in the left side, lasting an hour or two and leaving intense soreness for several days. The physician in attendance supposed that it was renal colic. She walked in a stooping posture after each of these paroxysms. That which came from the vagina at such times looked like coffee-grounds, and probably consisted of small clots expelled by the uterus. The presumption is that rupture of the lower side of the tube took place during one of these painful experiences. On December 10th a discharge of water proceeded from the vagina and continued for some weeks. Varying in amount, it was at first colorless, afterward became offensive, and resembled blood more or less decomposed. Her general health was fair until the time of her fall, after which premature and spurious labor occurred, terminating toward the latter part of January with the death of the child. In the words of the patient, "I felt a twisting as if something was crowded up there and trying to pull itself loose." This, perhaps the death struggle of the child, occupied about two minutes. She was seen by the writer with Dr. Turney, of this city, on the following morning, February 1st. A peculiar sallow appearance gave her an ill-conditioned look. The abdominal tenderness was extreme and the enlargement had undergone a striking diminution since the first examination five weeks before. Temperature, 101°; pulse, 96. A lobulated, irregular, doughy mass filled the lower left part of the belly. The right side of the abdomen was not greatly encroached upon. Vaginal examination found the softened cervix rather inaccessible, it being behind and slightly to the right of the symphysis pubis. The uterus, about five inches long, could be clearly outlined in an oblique, right, lower, anterior relation to the tumor. A large boggy mass completely filled the *cul-de-sac*. On inspection in the knee-chest position, the vagina looked purplish and vascular, and a detached shred of supposed deciduous membrane was seen. She entered Mount Carmel Hospital on the same day. On February 3d, in the presence of several visiting physicians and the students of Columbus Medical College, abdominal section was performed. The adventitious womb was spherical in shape, very vascular, and looked like a fibroid. Having made an incision into it large enough to admit the finger, the diagnosis was promptly confirmed and a fœtus of seven and a half months was soon extracted through the enlarged opening. The walls of the new womb were thick and succulent. The placenta lay toward the left hypochondrium and was allowed to remain undisturbed. Thorough irrigation was employed, the peritoneal cavity shut off by silk stitches, the cord left protruding, inside and outside drains were inserted, and the operation was thus completed. Neither shock nor hæmorrhage was present in any degree. The temperature and pulse were practically normal throughout. Daily carbolized washing was used. The placenta was removed four weeks later, after which the opening would barely admit the finger, so completely had contraction taken place. She has been in perfect health ever since and has gained twenty pounds. Examination reveals nothing abnormal but a three-inch cicatrix. The case was clearly one of the ligamentous variety of ectopic gestation, having been primarily tubal.

Case II.—Mrs. W. T. F. was seen April 28th, with Dr. W. W. Carter, of Newark, and Dr. McCann, of Perryton. Twenty-eight years old, married six years, two children, youngest four years old. No miscarriages. For three years past a free leucorrhœal discharge had existed. In December, 1887, and January, 1888, faulty menstruation occurred. In February, at what should have been the time for the catamenial flow, the patient was taken suddenly ill with vomiting, and pains through the back, hips, and pelvis. She improved within a few days so as to be able to go out driving. Only a short time elapsed, however, when another violent attack of pelvic pain occurred, from which she was slow in rallying.

*April 4th.*—Temperature 103°, pulse 120; complained of constant pain in region of left ovary, where palpation elicited deep-seated tenderness. No suspicion of the exact nature of the disease was entertained until April 15th, when she passed, by the rectum, the pelvic bones and lower extremities of a fœtus, and two days later the left arm and a rib were seen; within a short time the other arm, a scapula, four ribs, and both clavicles were extruded.

She was first seen by the writer April 29th, when examination *per vaginam* showed the uterus to be somewhat fixed and crowded slightly to the right. A lump as large as a goose-egg occupied the *cul-de-sac* and groin, being formed by the head and placenta in their proper tubal investment. The finger, three inches and a half within the rectum, found a hole as large as a half-dollar on the right latero-anterior aspect of the rectum and extending through its wall. Nothing loose could be discerned. In view of the uncertainty of Nature's efforts, she was advised to enter the hospital, so that if at any time it became necessary

to interfere, it could be promptly done. She declined to leave her home, however, and, hoping that spontaneous discharge of the parts remaining would soon occur, waited for further developments. The bones of the head and face followed within a week of this examination. The fever temporarily abated. After May 5th no more osseous structures came away. Fever persisted for several weeks, however, and finally, on May 15th, a mass, including one ounce of placental tissue and eight ounces of clots, was similarly expelled. In the next three weeks this was repeated on two different occasions. After the hæmorrhages she was always much exhausted. Some transient febrile reaction occurred each time. The temperature invariably rebounded, reaching a maximum of 104·8°. There was progressive loss of flesh and strength after the first discharge of bones. She died of septicæmia and exhaustion, Friday, June 8th. Unfortunately, no autopsy was held. The specimens here presented are apparently the bones of a fœtus at about four and a half or five months. After its death took place, adhesive inflammation of the gravid tube to the rectum occurred, which was in turn followed by ulceration of the tube and bowel. In this case Nature made the diagnosis and devised the treatment, her method being so slow and exhausting the patient so greatly that death resulted.

Of the two cases which form the subject of this paper, the first bears upon Tait's theory that all ectopic conceptions are primarily tubal, and emphasizes what successes elsewhere are frequently demonstrating to-day that abdominal section is a *pre-eminently conservative and practical* mode of treatment for this condition, while the second case shows clearly that Nature can not always be relied on to expel the products of conception, even though she makes an apparently good beginning in this direction.

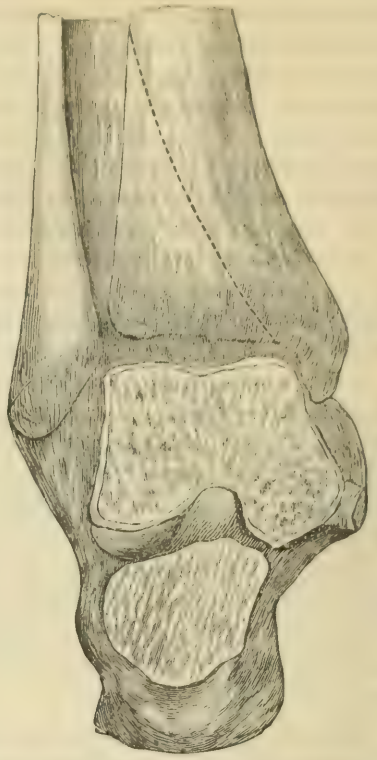
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## COMPOUND DISLOCATION OF THE TIBIA AND FIBULA AT THE RIGHT ANKLE; ALSO COMPOUND FRACTURE OF THE LEFT FOOT.*

By J. E. PRICHARD, M. D.,
BALTIMORE, MD.

L. D., aged twenty-seven, married, a resident of Philadelphia, employed as wharf-builder, was assisting in the erection of a pile-driver. The derrick was fifty-two feet high, and the hammer, which weighed one thousand eight hundred pounds, was being adjusted to its place; it lay on the ground thirty feet from the derrick. Ropes were run from the top in different directions to keep it in an upright position. D. was on the upper staging forty-eight feet from the ground. Two of the guys were too short, and as soon as the engine was started for the purpose of raising the hammer the derrick fell. When he found the derrick was falling, he jumped as far as he could away from it, and struck the ground about one foot from a pile of lumber. The derrick fell within two feet of him. He was in his stocking feet at the time. The ground was a mixture of clay and gravel hardened by the sun, and as inelastic as a rock.

About four o'clock, P. M., August 15, 1878, I was called to see him at his boarding-house. I found him in bed suffering greatly from the shock. He would not go to the hospital. I found a double compound dislocation of both tibia and fibula of the right ankle lacerating the annular ligament, I think splitting obliquely the tarsal surface of the tibia, or the surface which articulates with the astragalus, and driving the astragalus between the two bones of the leg. The ends of the fibula and tibia were driven through the soft tissues. The internal malleolus was covered with clay and gravel. The fibula did not extend quite so far. The joint was greatly distended and swollen; the foot was held firm and immovable.



The dotted line indicates the supposed line of fracture.

The left foot had sustained a compound compacted fracture of the os calcis, the os scaphoides, and a cuneiform bone; all three were injured and driven out through the sole of the foot. It presented a very distorted appearance. After making a careful examination of the lesion I anæsthetized the patient, and commenced with the right ankle by placing a strap, by half-hitches, on the foot, and a perineal belt for counter-traction. Then I placed two men at the foot and two others at the perineal belt, and directed them how to pull gradually and increase the pressure until the rigidity of the muscles could be overcome. It required considerable force to reduce the dislocation, but at last it yielded and the bones came back with a snap, leaving a large ragged wound under each malleolus and being followed by considerable hæmorrhage from the posterior tibial artery, which was ligated, and the wound closed with sutures and dressed with lint moistened with twenty drops of carbolic acid to an ounce of glycerin. The laceration under the external malleolus was an inch and three fourths in length and that under the internal three inches. We applied counter-extension by a strap to the foot and a perineal belt. This was continued for forty-eight hours.

The left foot was not so easily reduced. It was found necessary to remove a number of fragments of the crushed cuneiform and scaphoid bones before the foot could be manipulated into anything like a normal shape. After long manipulation, pushing back the cuneiform bone, it was necessary to remove some of the fragments entire. After all of the fragments were removed the foot was molded back to normal shape, leaving a gaping ragged laceration in or near the center of the sole, three inches and a half long and two inches wide.

* Read before the Baltimore Medical and Surgical Society, April 25, 1888.

Owing to the solution of continuity of both the soft and osseous tissues, it would not retain its normal shape. I therefore applied a splint, similar to the Dupuytren, by means of which the proper extension could be maintained. The first splint gave us some trouble by pressing on the external malleolus and produced a small abscess. This was soon remedied by removing the pressure. The dressing consisted of carbolized oil with lint and a bandage, also irrigation by carbolized water, 30 mm. of carbolic acid to one quart of water. The injury was dressed every twenty-four hours. About September 1st the nurse became careless and slept one night, allowing the irrigating fountain to run dry. On my visit next day all the dressing was dry, and the foot was very hot and much inflamed, showing strong symptoms of cellulitis. Destructive inflammation supervened and considerable pus was discharged. The wound was syringed out and cleaned daily with carbolized water, and filled with lint saturated with carbolized glycerin. On September 8th, eighteen days after the injury, another large piece of bone worked itself loose. I think it was part of the os calcis, half an inch by three fourths of an inch; altogether, twenty-five fragments of bone were removed from the foot.

The treatment was antiseptic through the whole course of the case. After using the carbolic-acid mixture for two weeks I changed the dressing, as I was afraid a toxic effect might be produced.

Dry calomel and lint with bandages were substituted. The wound improved faster by the change. In five days I changed back to the carbolic acid again.

About the 10th and 12th of September erysipelas (traumatic) made its appearance. A solution of chloride of ammonium was applied, which relieved the itching, and the inflammation soon disappeared.

About the same time the patient had an attack of malarial or remittent fever which was treated in the usual way—viz., with quinine gr. iij, powdered capsicum gr. j, every three hours; and bromide of potassium in gr. xv doses every five hours.

All the wounds healed kindly. The dislocation gave no trouble after the first week.

*October 20th.*—The patient put on his shoes and walked out with me half a mile.

*November 8th.*—He left for his home in Philadelphia. By that time he was able to walk with ease and could bear his full weight on his foot.

In January, 1879, he wrote to me saying that he had been sick with fever, but his feet were quite well. He had no trouble with his foot now, and could go about without the use of a cane. I heard again the last time in 1882. He then could walk without any lameness.

## A CASE OF UTERINE HYDATIDS.*

By JAMES P. MARSH, M. D.,
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Among the more uncommon anomalies of pregnancy there are few which, as regards their diagnosis, are more obscure than that of uterine hydatids. Authors who have written upon this subject have mentioned the expulsion of cysts as being pathognomonic, but a very superficial investigation of the literature of the subject has confirmed an opinion, which I had previously held, that the expulsion of separate cysts at irregular intervals during the period of gestation is the exception and not the rule. As the following case was faulty in diagnosis but most opportune and successful in its treatment, it was thought that it might not be uninteresting to briefly relate its salient points, leaving the theoretical consideration of the subject for some future gathering.

The patient in question was a young woman twenty-four years of age. She began to menstruate at fifteen, and before marriage had always been regular. Her sickness usually lasted from three to four days, being accompanied with the loss of an average quantity of blood and but little or no pain. Previous to her present illness her general health had been excellent. When I first saw her she had been married about four months. She menstruated once a few weeks after marriage, and then menstruation ceased, a vomiting of a most distressing and persistent character supervening. This condition obtained until she was, as she thought, about two months advanced in pregnancy, when she fell and went through what appeared to be a miscarriage. However, from this time on she steadily emaciated, the vomiting became almost uncontrollable, and the abdomen enlarged rapidly. She felt no signs of life, but occasionally there occurred a slight hæmorrhage from the genitalia. The foregoing facts were ascertained from the patient and her friends, and it was at this stage that the case came under my observation:

*March 19, 1888.*—The patient is of slight frame and build, and is very weak and emaciated. She vomits everything that she takes into the stomach, and is very anæmic. She suffers intense paroxysmal pains, running from side to side through the lower abdomen. There are no symptoms or signs pointing to disease in other parts than the sexual apparatus. On palpation and inspection, I find externally a tumor extending from the symphysis to the umbilicus, and very decidedly to the left of the median line. It has the shape and form of the uterus at about the sixth month; however, it does not feel so dense as that organ, and there is an indistinct sense of fluctuation through it. It has also a shallow line of constriction running down its central meridian. It is movable, and on the left side very painful to pressure. No fœtal heart-sounds can be heard. Internally I find the cervix very dense and long, the external os being firmly contracted. The tumor, noticed externally, seems to be the uterus, but to the left and posteriorly the limiting walls are very thin, and it seems as if in this region there could be obtained a faint ballottement.

I considered the exclusion to rest between uterine pregnancy with placenta prævia, extra-uterine gestation, and pelvic tumor. Tumors other than those arising from pregnancy were readily excluded; but the differentiation between intra-uterine and extra-uterine gestation was impossible without sounding. As the patient was in a very anæmic and emaciated condition, and as I inclined to the opinion that I had to deal with an extra-uterine pregnancy of the interstitial variety, I advised an exploration of the uterine cavity. From ecclesiastical reasons this was refused by the family.

I did not see the patient again until the evening of the 20th, when I was hastily summoned on account of an alarming hæmorrhage, which had taken place about an hour and a half previously. I found the patient exsanguinated, with a rapid pulse, yawning, and great restlessness. On digital examination, the external os was found firmly contracted, and it was also plain that there were no uterine contractions. I removed a mass of clots from the vagina and tamponed, leaving fluid extract of ergot and morphine to be given during the night. In all the blood which came from the patient during this hæmorrhage

* Read before the Second District Branch of the New York State Medical Association, June 26, 1888.

there were no cysts, as I examined it carefully. The next morning at 11 o'clock the patient began to bleed slightly, and the pulse ran up to 145, with extreme restlessness and weakness. I now insisted upon an exploration of the uterine cavity. The patient was placed crosswise of the bed, the buttocks being brought to the edge of the same. I then washed out the vagina with a solution of mercuric bichloride (1 to 1,000). The sound indicated that I had to deal with an intra-uterine condition. The os was low in the pelvis and firmly contracted, but, by prolonged and persistent efforts with the fingers, I succeeded in dilating it sufficiently to introduce three fingers as far as the second phalangeal articulation. The hæmorrhage now became quite severe and my hand came in contact with a mass which felt somewhat like placental tissue. Gradually, by holding the womb well down in the pelvis by means of the right hand placed externally and by introducing the whole of the left hand into the vagina, I succeeded in passing the fingers of the engaged hand through the entire mass in the uterus, thus satisfying myself of the absence of a fœtus. As I withdrew my hand it was followed by a mass of chorionic hydatids and the diagnosis became apparent. As soon as the mass had been penetrated and broken up all hæmorrhage ceased. I now introduced Thomas's dull curette, first having dipped it in pure phenol, and thoroughly emptied the uterine cavity. I think that in this way I must have removed nearly three pints of cysts of various sizes. The uterine walls were exceedingly thin; so much so that by placing the hand on the abdominal walls I could feel the shape of the curette when applied to the fundus. As the growth was broken up and removed, the uterus contracted down without any hesitancy. After curetting as thoroughly as was deemed prudent, the uterine cavity was washed out with a solution of carbolic acid (1 to 40) and the obstetric toilet completed as has been described by me in an article published in the "New York Medical Journal" for November 26, 1887.

*22d.*—The patient is resting very comfortably, has considerable thirst, and vomited once after drinking milk. Pulse 138, temperature 98·5° F.

*23d, 9.30 A. M.*—Has passed a sleepless night, and had a slight chill this morning. Has had three offensive stools. There is some headache, but no abdominal tenderness. Pulse 136, temperature 101·5°. Whisky, quinine, and rest were prescribed.

*12 Noon.*—More comfortable, with less headache. Urination not painful. Pulse 120, temperature 98·5°. A vaginal douche of solution of mercuric bichloride (1 to 2,000) was given, followed by boiled water.

*24th, 10 A. M.*—She slept well last night, and is bright and cheerful this morning, with a slight tendency toward a return of appetite. There is no abdominal tenderness. Pulse 126, temperature 102°. Vaginal douche of mercuric bichloride.

*5 P. M.*—Very comfortable. Pulse 120, temperature 101°.

*25th.*—Slept well all night, and took a substantial breakfast this morning. There is but little vaginal discharge, and no odor to it. Pulse 120, temperature 98·5°. Iron tonic. From this time the convalescence became fully established, and she resumed her household duties about two weeks from the time of the operation.

I would call attention to the rigid, contracted condition of the external os in this case as being an exception to the rule of Goodell that, "when the cervix is as soft as one's lips, the woman is probably pregnant; when it is as hard as the tip of one's nose, the womb is more likely empty."*

* William Goodell, "Lessons in Gynæcology," Philadelphia, 1887, p. 26.

It is also noteworthy that, had due attention been paid to the discrepancy between the probable length of the gestation and the size of the uterus, I might have been led to a line of evidence which would have resulted in an accurate diagnosis. Again, most authors mention the absence of ballottement as a point of negative evidence of great value in diagnosticating this condition, but I can assure you that, in a uterus widely distended by hydatid cysts, there is an impulse transmitted to the finger wonderfully like ballottement.

The several symptoms, when taken together, were very misleading. The supposed labor, the side-to-side pains, the lengthened cervix, the localized tenderness on the left side, the tenuity of the limiting walls—all pointed to extra-uterine pregnancy, and I have little doubt that, had this patient fallen into the hands of an enthusiastic laparotomist, a needless and useless operation would have been performed. As Hamlet said of the state of Denmark, so can it be said of much of the abdominal surgery of the present day. I hope to see the day in which a more humane profession will permit those of their fellow-beings who are destined for death to pass away in peace, undisturbed by surgeons' knives or antiseptic solutions.

It may, with a considerable show of justice, be asserted that the method of treatment followed in this case was not exactly orthodox. It might be urged that I could have more properly resorted to Barnes's dilators for dilatation instead of using my fingers; and there are those who would have urged an expectant treatment. Had I used any mechanical method of dilatation, I feel confident that my patient would have bled to death. I wish to particularly emphasize the fact that the hæmorrhage was very sharp from the time of dilatation until I had thoroughly broken up the hydatid mass, and, furthermore, that the hand acts as a most admirable tampon to the cervix while the fingers are engaged in the uterine cavity. Hence I am led to urge that for the removal of large masses of hydatids from the uterus there is no means so applicable as the hand and fingers; but when, however, the mass has been broken up and hæmorrhage in a measure controlled, I would insist upon the utility of Thomas's curette. Nevertheless, I think the use of this instrument fraught with great danger to the uterine walls. Indeed, so great is the liability of their perforation that the operation should not be undertaken by one who has not had an extended acquaintance with this instrument and its application in ordinary obstetric and gynæcological cases.

My patient was reduced to an extreme condition by reasons ecclesiastic, and, although not germane to the subject, I would call attention to the fact that, while we are picking bones with each other as to whether electricity or laparotomy shall be resorted to in the early stages of ectopic gestation, neither of these methods will be open, by reason of ecclesiastical prohibition, to a large contingent of our patients. At no distant time the teachings of obstetric surgery must clash with theological dogma, and, as obstetric surgeons, we must be prepared to place the matter squarely and completely before the State tribunals, that the odium of public and legal opinion may not be directed against our

honorable profession. As Christians by reason of our dwelling in a Christian country, and as gentlemen by reason of our high calling, we are bound by all that is honorable to respect the religious convictions of our patients; but, if those convictions result in the death of our patients by reason of their relatives and friends refusing the operative measures which we offer, are we or are we not responsible under the law of the land?

## Correspondence.

### LETTER FROM VIENNA.

*A Case of Hemianopsia Superior.—The Treatment of Whooping-cough by Nasal Insufflations and by the Internal Use of Antipyrine.—Osteotomy for the Correction of Genu Valgum.—A Gunshot Wound of the Brain followed by Recovery*

VIENNA, *June 29, 1888.*

PROFESSOR NOTHNAGEL brought forward before a recent meeting of the Imperial Royal Society of Physicians of Vienna a very interesting case of sudden blindness. It had a special physiological interest, and its history was short. The patient, a tailor, stated that he had always been in good health, except for occasional temporary headache. Some weeks before, he had suddenly lost his power of sight; but he was not able to tell under what particular conditions this had occurred, as his intellectual faculties were somewhat impaired. The ophthalmoscopic examination showed quite normal conditions present. The pupils of the two eyes differed in size, and did not react promptly or fully to changes of light. On further examination of the patient, it became evident that he was not totally blind, but that he presented the symptoms of so-called hemianopsia superior, only the upper part of the field of vision being affected. When he lay in his bed and wished to see the objects which were presented to him, he tried to get them into the lower part of the field of vision by bending his head backward and lifting his eyes upward. With this lower part of the field of vision he could distinguish only red and white colors. Other colors all appeared to him to be gray. The question now arose as to where the seat of the affection was; for, as was also discovered, the patient did not form correct conceptions of the size of objects that were presented to him. The speaker had met with only three cases of hemianopsia superior in literature—viz., one cited by Mauthner, and two observed by Schweigger. Neither of these cases was followed by a post-mortem examination. Mauthner had suggested that in his case the hemianopsia superior was due to compression on the optic chiasm by a tumor. Such a supposition could be excluded absolutely in the case before the meeting. In all probability, in this case, there was a lesion of the visual center in the cortex of the occipital lobe. The speaker had pronounced his opinion on this subject in the last Congress for Internal Medicine at Wiesbaden, where he had said that, before all, from a clinical point of view, we had to distinguish between the centers of optic perception and the centers in which the optic images were reproduced. When we started from the anatomical point of view, these centers could be distinguished from each other as the cuneus and the first (and perhaps also the second) occipital convolution, which were the centers for the perception of the impressions of light, whereas in the other parts of the occipital lobes were probably situated the centers for the recollection of the optic impressions which had been received. As to the case under consideration, the whole course of the disease was opposed to the localization of the cause of the affection at the base of the brain. The speaker could not imagine any process having its seat at the base of the brain and resulting in a sudden blindness. Hæmorrhage at the base of the brain would be attended with other cerebral symptoms also, such as coma, etc. The pronounced impairment of the patient's faculties also pointed to a disease of the cerebral cortex. The fact that the process was bilateral made the explanation somewhat difficult; a unilateral disease would only have resulted in hemianopsia lateralis. The simultaneous sudden affection of both occipital lobes, however, not only was possible, but had on one occasion been observed by the speaker. A patient at his clinic, suffering from emphysema, who had always enjoyed good powers of vision, suddenly became blind during the night. A post mortem examination showed that there had been a softening process in the superficial parts of the cortex of both the occipital lobes, due to a bilateral occlusion of the cerebral blood-vessels by thrombi. Similar processes might also be present in the case under consideration, and they were probably produced by the early stages of atheroma of the cerebral arteries. The fact that the reflex irritability of the pupils was tolerably intact had to be looked upon as an evidence against the supposition that the optic thalami or the corpora quadrigemina were the seat of the disease, as those parts of the brain were the centers for these reflexes.

Dr. von Genser lately read a paper on the pathology and treatment of whooping-cough before the same society. He first discussed the ætiology of this frequent disease, and particularly recent investigations going to show that it was a parasitic affection. Speaking of the recent work of Afanssiew on the *Bacillus tussis convulsivæ*, the author of the paper said that a permanent value must be accorded it. As to the treatment of this affection, he had availed himself of two methods on 200 children. The first method was that recommended by Michael, of Hamburg, viz., the insufflation of medicaments into the nose, and the second was the internal use of antipyrine. Michael, who considered whooping-cough as a reflex neurosis, was accustomed to order the insufflation, during a period of twenty-four hours, of a powder composed of one part each of powdered gum benzoin, sulphate of quinine, and nitrate of silver, and thirty parts of calcined magnesia. He had stated that he had obtained very favorable results in the great majority of his cases; that in 7 per cent. the disease had disappeared in from two to three days. The author of the paper had employed this method in thirty-six cases, and had insufflated the benzoin powder into the nose by means of a curved glass tube. The number of paroxysms daily was shown by means of curve-tables. The spasmodic stage was considered as the beginning of the disease. His curves had never been quite satisfactory, and he had never observed any such surprising successes as had been obtained from this treatment by Michael. The duration of the treatment had varied from nineteen to eighty days, the average having been forty-three days. The sole advantage of the method consisted in the fact that severe vomiting could immediately be stopped. On one occasion he had insufflated with quinine, but the child thus treated had instantly been seized with vomiting. The insufflation of antipyrine irritated children very severely; they were seized with severe cough, and the results were by no means favorable, nor the successes numerous.

In the employment of the second method, he had prescribed the internal use of antipyrine to about one hundred and twenty children, a grain and a half of the drug daily being ordered for each year of age, so that a child of the age of five years was ordered to take fifteen grains of antipyrine, in three ounces of water and syrup, in the course of two days. Sonnenberger had

recently reported favorable results from the internal use of antipyrine, and the author was able to confirm this statement quite emphatically. The paroxysms diminished considerably in number, and the individual attacks became shorter in duration and less intense. The duration of treatment had varied between fifteen and forty-five days; hence the average had been twenty-four days and a half. In five cases where the lungs were implicated the antipyrine had proved ineffectual. The drug was very useful and worthy of recommendation in cases of whooping cough, and children took it willingly enough, as its bitter taste could easily be disguised. Its effect was either an antimycotic one—that is, destroying fungi that were present—or else a sedative one—it diminished the reflex irritability. It was indeed no specific against whooping-cough, but, on the other hand, it was quite harmless. General hygienic measures, of course, also needed to be observed as a part of this course of treatment. As to the experiments with acetanilide, which the author had also carried out in the treatment of whooping-cough, they had not proved satisfactory; the drug was not so efficient as antipyrine.

Dr. Brenner, house-surgeon in Professor von Dittel's clinic, showed some patients on whom he had performed osteotomy for genu valgum. He first reported on the progress of this method since its introduction into practice by Macewen, and then gave an account of his own experiments, by which he had ascertained that the bone could be cut through by means of a chisel (from without inward) without even injuring the periosteum, and, what was still more important, without injuring in any way the popliteal blood-vessels. He had succeeded on every occasion in performing such an operation in one or two minutes' time. In most of his cases a complete *redressement* had been performed immediately, the wound closed, and a plaster-of-Paris bandage applied. The latter was replaced by a new one after the lapse of a week, the second dressing being removed after eight weeks. The first patient shown was a joiner, nineteen years old, in whom no indications of a coming deformity had appeared until three years before, when he began to have severe pains in both the tibio-tarsal joints. The left leg had become four centimetres longer than the right one. *Redressement* was tried in vain. The femur was cut through at a point about five centimetres above the external condyle, and *redressement* was immediately performed. Healing was complete in about eight weeks. The operation on the other thigh was followed by as little reaction as that on the first one. The difference in length between the two extremities, however, now became visible, and the patient was becoming affected with scoliosis to a slight degree.

The second case was that of a man, twenty years of age, who was very poorly developed. In a similar manner, about three years previously, he had been seized with severe pains in the knee and in the tibio-tarsal joints, and at the same time became affected with genu valgum, developed to a high degree, so that he could walk only by means of crutches. Osteotomy was resorted to, but the operator did not at once succeed in performing *redressement*. However, after the lapse of eight days the dressing was changed for the first time, and *redressement* was then performed. The second dressing was removed after eight weeks, and since that time the patient had been able to walk without suffering any pain. As to the left leg, *redressement* had not yet been performed.

A third case, one of bilateral genu valgum, developed to a considerable extent (the external angle on the right side being 160° and on the left side 165°), had also been treated by osteotomy, and the patient had been dismissed from the clinic as cured some time since. There had been no fever after the operation, and the callus was solid.

Professor von Mosetig showed to the same society a very interesting case of intracranial bullet-wound. The patient, twenty-five years old, had shot himself with a pistol, with the intention of committing suicide. The bullet was seven millimetres in diameter, and had penetrated the skull in the right temporal region. The speaker saw the patient on the second day, and found above the right zygoma a wound of about the size of a pea, from which blood was constantly discharged. The bandage, which was saturated with blood, was immediately exchanged for a fresh one. The patient's consciousness was intact, and had been so from the first. Complete hemiplegia of the left side had supervened instantly upon the reception of the injury. This point was of importance, as such hemiplegias were usually established a considerable time after the lesion, and were due to subdural hæmorrhage giving rise to pressure on the brain. The patient, moreover, presented paralysis of the two lower branches of the left facial nerve, and there was also paralysis of the hypoglossus. The power of speech had entirely disappeared. In the right leg there was dorsal clonus. The speaker had decided against any surgical interference, and applied a moist dressing (iodoform gauze and gutta-percha). Bloody serum was discharged from the wound for five weeks, and the dressing was changed every second day. If a dressing of another kind had been used, retention of the secretions would have been the result. There were no disturbances in other organs: the functions of the bladder and intestines were performed normally, and there were neither disturbances of sensation nor impairment of nutrition. The patient's general condition became better day by day, without other aid than that of this so-called "expectant treatment." The paresis of the facial nerve first disappeared, power beginning to return after about the third week; the paralysis of the hypoglossus nerve also disappeared a short time later, and the patient could speak again. However, in the course of the sixth week the use of electricity was begun. The hemiplegia also became considerably better, leaving behind it a condition of hemiparesis. It was still to be remarked that on the second day after the lesion epileptic cramps had supervened on the hemiplegic side; but they had soon disappeared. Symptoms of contraction were still present in the left arm, and, besides this, there was also a reflex athetosis, or "chorea hemiplegica," which came on only when the patient yawned. It was therefore a reflex phenomenon, in the production of which the afferent impulse came to the brain by way of the fifth nerve. The left lower extremity was paretic; the sensibility was a little impaired. The tendon reflexes were augmented; dorsal clonus was still present: there was also a slight degree of dysarthria present. When the secretions of the wound had disappeared and granulations begun to develop, the wound was for a few times treated with nitrate of silver. Respecting the questions as to what kind of a lesion there had been in this case, and as to where the bullet had lodged, it was to be supposed that there had been a lesion in the cortex of the central lobe. The bullet must have done more or less injury to the centers of the hypoglossus and facial nerves, and those of the muscles of the upper and lower extremities. The paralysis in the hypoglossus and facial nerves had probably not been due to a direct lesion in their brain-centers, as, with time, this paralysis had entirely disappeared. Another supposition might be that the bullet had penetrated into the deep parts of the brain and had injured the corpus striatum. The contractions and the chorea, however, indicated a lesion of the cortex. The site of the bullet might be in the precentral and postcentral convolutions. The paretic symptoms had been ameliorated by the electrical treatment. The speaker was of the opinion that no surgical intervention would ever be necessary.

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## THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THE first triennial session of this body must prove of considerable interest from more than one point of view. In its constitution it is unlike all other organizations of medical men, being a confederation of several special societies, each of which preserves its individuality and continues to hold its annual meetings as before. Indeed, at this triennial gathering itself the various constituent bodies will meet by themselves as usual, and conduct their own exercises quite after their ordinary manner. A common point of contact will be found each evening, when the component societies will be fused for the time being. It is understood that the proceedings at these evening sessions will be limited to scientific discourses and debates, together, we presume, with such necessary business as the choice of officers and committees and the decision, in a general way, of matters pertaining to the management of the affairs of the congress. We understand that there is to be a presidential address, and that there will also be debates on one or more subjects to be announced. Festivities have wisely been limited and social entertainments discouraged. Nevertheless, there is to be a dinner on the evening preceding the opening day of the session.

The advantages of the scheme are for the most part obvious. Perhaps the one that was uppermost in the minds of those who have taken part in promoting the movement is the facility afforded by such a gathering for bringing the members of the different participating societies face to face with each other—an occurrence that, repeated every three years, must be of service in blotting out whatever remnants of antipathy or lack of esteem there may be on the part of general practitioners for specialists, and *vice versa*, and of specialists for those of other specialties; and, besides, must tend to the dissemination of precise knowledge of the climatic characteristics of the various parts of the country in their bearing on medical questions. Its influence in the promotion of personal attachments between men who otherwise might never meet goes without saying. Moreover, at the evening meetings it ought to be possible, men of all specialties being present, to avoid in the discussions such situations as have occasionally come about in the meetings of special societies—for example, one characterized by rambling and inconclusive talk on a collateral, but essential, point that almost any man fairly conversant with a different specialty could have settled at once to the satisfaction of everybody present. An additional advantage to individuals suggests itself to us. Specialties overlap each other, as is well recognized, and all of them converge to the field of the general practitioner; but some of them seem to go in pairs and are so intimately connected that the followers of one can not afford to neglect the other. The laryngologist, for example, would like to know how his brother, the otologist, manages certain details in the manipulation of the Eustachian tube; and the strict dermatologist may have something to learn from the syphilographer. It will readily be understood that but few of the members of the American Laryngological Association or of the American Dermatological Association could conveniently attend the ordinary meetings of the American Otological Society or the American Association of Genito-urinary Surgeons; but, when they can leave their own meeting for a short time and, by walking a few blocks in Washington, find themselves in the hall where something in which they are specially interested is about to be expounded, their convenience is found to go hand in hand with their inclination, and they are enabled to satisfy a real need without material sacrifice. Among the lesser advantages of this general gathering, too, is the fact that many an overworked man who has hitherto felt constrained to put off his departure for Europe or some other distant part, in order not to miss the meeting of his society—for the various societies have usually met at different times during the summer—may now allow himself more time away.

Whatever disadvantages may be found to attend the plan will probably prove to be of a minor character and perhaps to a great degree remediable. We should say that the chief of them would be the imposition upon the much-enduring physicians of Washington of the task of attending every three years to the arrangements necessary for the meetings; and the intention, as we understand, is to hold all the meetings in that city. Our brethren of the capital are energetic, public-spirited, and hospitable, and it is very sure that we shall never hear from them even the most roundabout hint to this effect, if, indeed, in their generosity they themselves recognize that they are bearing an undue burden; yet, we think that they ought not to be called upon to bear it, however willingly. Although the American Medical Association has recently deviated from its practice of holding its meeting in Washington every other year, it may at any time return to it, and, if it does, and if the triennial meetings of the Congress of American Physicians and Surgeons continue to be held there, four times in every six years will a load of anxiety and work, to say nothing of expense, be thrown upon the Washington profession. This is not just, and we trust that means may be found to change it.

As is well known, nearly all the national special societies have made their preparations to take part in the congress—all the important ones, so far as we know, except the American Gynæcological Society. At its last meeting that society voted unfavorably on a motion to enter into the confederation, and resolved to hold its next meeting in Boston. Subsequently, however, at the suggestion of its Washington and Boston members, and with the approval of most if not all of its other members, it was arranged that its meeting for this year should be held in Washington and on the same days as those of the meeting of the congress. Practically, therefore, if not with due

formality, the gynæcologists will take part in the congress, and the probability is, we presume, that the society will be formally constituted one of its constituent bodies. As the new American Association of Obstetricians and Gynæcologists is to hold its first meeting in Washington at the same time, it is reasonably certain that gynæcology will at all events be represented by a large number. It is to be remarked concerning two of the participating societies, the American Ophthalmological and the American Otological, that they have shown considerable energy and abundant confidence in their own resources by holding their meetings last week as usual, notwithstanding their prospective session in Washington. If, after very creditable proceedings in New London in July, as will be seen by our reports, they are able to acquit themselves commendably in Washington in September—and it is not to be doubted that they will—the devotion of our American ophthalmologists and otologists will be attested to a most notable degree.

All things considered, it seems to us that the first meeting of the congress is likely to be of a far more satisfactory character than most men would have foretold for it at the outset of the scheme. Much of its success will, we are persuaded, be due to the experience, discretion, energy, and social and professional standing of the chairman of the Committee of Arrangements, Dr. Busey.

## *MINOR PARAGRAPHS.*

### THE TRIBULATION OF A MESMERIST.

The "Buffalo Sunday Morning News" gives an account of a mishap that is said to have overtaken a mesmerist lately. He was traveling about the country, giving public exhibitions in mesmerism, and, while in Sault Ste.-Marie, was asked to show his powers at an evening party to which he was invited. Among the persons whom he succeeded in mesmerizing was a young woman who is said to have come under the mesmeric influence very readily. Unfortunately, however, the exhibitionist found himself unable to dispel the mesmeric state in her case, do what he might. She insisted on following him about whithersoever he went. Medical men were called in, but nothing was of any avail. The man was advised, and indeed it seems to have been his own conviction, that he ought to make the only reparation possible, that of marrying the girl. This, accordingly, he is said to have done, although he was already under engagement to another woman. Whatever may be thought of the alleged facts in this case, there can be no question regarding the propriety of forbidding exhibitions of the sort, as has already been urged in Paris and elsewhere.

### THE INCREASE OF THE MEDICAL AND PHARMACEUTICAL PROFESSIONS IN PARIS.

According to the "Progrès médical," one of the newspapers of Paris has discovered that the *corps médical*, including medical men and pharmacists, has undergone a terrible increase since the year 1866. Then it numbered 6,506 persons, but now it contains 10,360. Paris, therefore, is not far behind New York in the proportion of its physicians and apothecaries.

### RITUAL CIRCUMCISION IN PARIS.

The "Revue générale de clinique et de thérapeutique" and the "Progrès médical" comment on a notable occurrence that lately took place in Paris, the Israelitish consistory of which is regarded as the normal school of peritomy. The occurrence was a meeting of surgeons called together by the consistory and presided over by the chief Rabbi, to consider what changes should be made in the regulation concerning ritual circumcision to bring the operation more into accord with the surgical ideas of the day. It was concluded that suction of the wound was inefficacious and dangerous, and should be given up; certain rules of cleanliness were laid down; the re-establishment of the office of inspector of peritomy was proposed; and M. Duplay was charged with the preparation of a manual of circumcision and the after-treatment. All this is very creditable to the consistory.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 24, 1888:

| DISEASES. | Week ending July 17. | | Week ending July 24. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhus | 0 | 0 | 1 | 0 |
| Typhoid fever | 18 | 2 | 32 | 9 |
| Scarlet fever | 103 | 15 | 116 | 22 |
| Cerebro-spinal meningitis | 5 | 4 | 3 | 4 |
| Measles | 244 | 16 | 208 | 13 |
| Diphtheria | 137 | 41 | 109 | 31 |
| Small-pox | 3 | 0 | 9 | 0 |

**The Congress of American Physicians and Surgeons.**—The Committee of Arrangements announces to the members and invited guests of the special societies taking part in the congress that the arrangements are sufficiently advanced to assure the success of the first triennial session of the Congress of American Physicians and Surgeons, which will be held in Washington, on the 18th, 19th, and 20th of September. A number of distinguished physicians and surgeons have signified their acceptance of the invitation to attend, among whom are named Sir Spencer Wells, Sir Andrew Clark, Sir William McCormac, Dr. W. O. Priestley, Dr. William Ord, Dr. Grainger Stewart, Mr. Lawson Tait, Mr. Victor Horsley, Mr. Thomas Bryant, Mr. Thomas Annandale, Professor Ferrier, Professor Esmarch, Professor Gerhardt, Dr. Rafael Lavista, of Mexico, Dr. J. L. Reverdin, of Geneva, Dr. O. W. Holmes and Dr. H. I. Bowditch, of Boston, Dr. Joseph Leidy, of Philadelphia, and Dr. W. Hingston and Dr. Eccles, of Canada. The preliminary programmes of the participating societies have been published. It is hoped that the classified and final programmes will be forwarded to the committee without delay. Several are already in its possession. As soon as all are received the final programme of the congress will be printed and distributed. Places of meeting for the congress and each of the societies have been secured, conveniently located, so that members may interchange attendance without annoyance. The meetings of the congress will be held in the evenings, beginning at eight o'clock; on the evenings of the 18th and 19th the meetings will be held in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and on the last (Thursday) evening in the hall of the National Museum. During that evening the Army Medical Museum and Library building, alongside of the Museum building, will be lighted and opened for the inspection of the members and invited guests. The meetings of the societies will be held during the day, according to the programme each may respectively provide. The sessions will be open to the profession. On Monday evening, September 17th, a dinner will be given by members of the congress to the guests of the participating societies.

Invitations to this dinner will be sent only to the specially invited guests who have indicated their acceptance. The contributing members will receive cards of admission. It will be limited exclusively to members of the congress and invited guests. An informal collation will be served at Willard's Hotel on Tuesday evening, after the adjournment of the meeting of the congress, to the guests and those members who may choose to attend. A similar entertainment will be served in the National Museum building on Thursday night, after the final adjournment of the congress. Guests are requested to notify the chairman of the Committee of Arrangements immediately after their arrival in Washington, giving their address and stating whether they have ladies with them. Special arrangements will be made for the entertainment of the wives and daughters of the guests. Hotel accommodations are ample, and conveniently located to the places of meeting. The secretaries of the special societies are requested to forward to the chairman the names and addresses of their foreign guests. Members of the congress and the guests are expected to register. A parlor in Willard's Hotel will be provided for that purpose, from which the mail of the members and guests will be distributed, and at which the city residence of each member or guest can be ascertained. All communications should be addressed to the chairman of the Committee of Arrangements, Dr. Samuel C. Busey, 1545 I Street, N. W., Washington.

The places of meeting of the several societies are announced as follows: American Surgical Association, Main Hall, Grand Army Building, 1412 and 1414 Pennsylvania Avenue; Association of American Physicians, Hall No. 1, Grand Army Building, 1412 and 1414 Pennsylvania Avenue; American Climatological Association, Hall No. 2, Grand Army Building, 1412 and 1414 Pennsylvania Avenue; American Laryngological Association, Hall No. 3, Grand Army Building, 1412 and 1414 Pennsylvania Avenue; American Dermatological Association, Parlor in Willard's Hotel; American Association of Genito-urinary Surgeons, Parlor in Willard's Hotel; American Neurological Association, Parlor in Willard's Hotel; American Orthopædic Association, Welcker's Hotel, Fifteenth Street, N. W.; American Otological Society, Arlington Hotel, Vermont Avenue; American Physiological Society, Army Medical Museum; American Ophthalmological Society, Arlington Hotel, Vermont Avenue and H Street; American Gynæcological Society, Columbian University, Fifteenth and H Streets, N. W.; American Association of Obstetricians and Gynæcologists, National Medical College Building, H Street, N. W.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 22 to July 28, 1888:*

De Witt, Calvin, Major and Surgeon. Leave of absence extended one month. S. O. 159, A. G. O., July 11, 1888.

Banister, William B., Lieutenant and Assistant Surgeon. Leave of absence extended twenty-seven days. S. O. 157, A. G. O., July 9, 1888.

McParlin, Thomas A., Surgeon. Leave of absence extended one month. Par. 10, S. O. 160, Department of the Platte.

Wolverton, William D., Surgeon. Leave of absence extended twenty days. S. O. 142, Headquarters Division of the Atlantic.

Vickery, Richard S., Major and Surgeon. Leave of absence extended two months. S. O. 166, A. G. O., July 19, 1888.

Corson, Joseph K., Assistant Surgeon. Leave of absence for one month, with permission to apply for an extension of one month. S. O. 78, Headquarters Department of the Columbia, Vancouver Barracks, Washington Territory, July 13, 1888.

Davis, William B., Captain and Assistant Surgeon, will proceed to Fort Niagara, New York, for the purpose of completing his target practice for this year with Co. "C," 23d Infantry. Upon completion of this duty, Captain Davis will return to Fort Porter, New York. S. O. 145, Headquarters Division of the Atlantic, Governor's Island, New York city, July 17, 1888.

Wood, Leonard, First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Huachuca, Arizona Territory, to take effect at the expiration of his present leave of absence, and will report to the commanding officer at Fort McDowell, Arizona Territory. Par. 14, S. O. 162, A. G. O., July 14, 1888.

**Society Meetings for the Coming Week:**

Wednesday, *August 1st:* Medical Society of the County of Richmond (Stapleton), N. Y.; Bridgeport, Conn., Medical Association.

Thursday, *August 2d:* Society of Physicians of the Village of Canandaigua, N. Y.

Saturday, *August 4th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Miller's River, Mass., Medical Society.

## Proceedings of Societies.

### AMERICAN OPHTHALMOLOGICAL SOCIETY.

*Twenty-fourth Annual Meeting, held at New London, Conn., July 18 and 19, 1888.*

The President, Dr. W. F. Norris, in the Chair.

**A Memorial of Dr. C. R. Agnew** was read by Dr. H. D. Noyes. Committees were appointed to draw up resolutions concerning the death of Dr. E. G. Loring and that of Dr. Joseph Aub.

**A Contribution to the Treatment of Membranous Opacities of the Vitreous.**—Dr. Charles S. Bull, of New York, read a paper which contained histories of fifteen cases of membranous opacities of the vitreous in which he had resorted to the operation first performed by von Graefe, an account of which was published in 1863. Internal treatment and local applications had no effect on those opacities of the vitreous demanding this operation. According to the nature of the case, he employed the discission needle, the sharp-pointed cataract knife, or a needle with a broader point. The instrument was inserted in front of the equator of the eye, just below the insertion of the external rectus. The likelihood of success from the operation was greater when the membranous opacity was situated well back in the vitreous, and when it was so situated it involved less danger to the lens. If pressure on the eye was avoided there would be little risk from hæmorrhage or escape of the vitreous. The operation should not be performed during the existence of inflammation or irritation. A sawing motion of the knife was avoided, lest the opening in the sclerotic should be enlarged so as to permit of the escape of the vitreous. The ophthalmoscope was not employed during the operation. Of the seventeen operations, on fifteen patients, there had been decided improvement of vision in fourteen, in three no benefit had followed, but in none had the operation caused any loss of vision.

Dr. W. F. Mittendorf, of New York, thought that even vascularity of the vitreous membrane would indicate an unfavorable prognosis from an operation.

**Pulsating Exophthalmia Cured by Ligation of the Common Carotid.**—Dr. F. Buller, of Montreal, gave the history of a patient who fell from a railroad bridge, striking the right side of his head upon a block. Great swelling of the head and face resulted, closing the right eye completely. When it subsided there was diplopia in that eye, one image being seen above the other. A loud sound was heard in the right ear. After some weeks the patient consulted Dr. Buller on account of pain. There was marked prominence of the right eye, with swelling of the lids. There were a thrill and a bruit, which were diminished by pressure upon the carotid. Irreparable injury to the sight being threatened, and the patient demanding some radical treatment, it was decided to tie the right carotid artery. The effect was immediate in a softer condition of the eye, a lessened size, and a diminution in the bruit and thrill. No cerebral symptoms were produced. The patient insisted on leaving the hospital after about seventeen days. During his stay there was uninterrupted improvement until he considered himself well; but the eye remained slightly displaced forward still. The speaker thought that the case was one of arterio-venous aneurysm, and not purely arterial.

Dr. J. O. Tansley, of New York, referred to a case of pulsating exophthalmia due to traumatism in a woman who had been advised by several specialists to have the carotid tied. He thought this was unnecessary, and gave iodide and bromide of potassium, and in six weeks the pulsating tumor entirely passed away.

Dr. C. J. Kipp, of Newark, related the case of a woman who sustained an injury of the head by falling down-stairs. She afterward heard a great noise in the ears, and soon the right eyeball became prominent, and the left one also, but in a less degree. When he saw her, the right eye protruded about four tenths of an inch, and the left about two tenths. Mobility was impaired in the right eye, as there was paralysis of the external rectus. A bruit was heard over the entire front of the head, increasing with the cardiac pulsations. The noise could be arrested completely by compression of the right carotid. Only an irregular compression of the carotid was practiced, iodide of potassium was administered, and after about three months the patient reported that one day the noise had completely disappeared, and that then the exophthalmia in both eyes had also gradually disappeared. The power of the external rectus had returned. A peculiar feature in the case had been the development of a projection over the right subclavian artery, but aneurysm could not be made out. On separate occasions, during the course of the affection, the anterior chamber of each eye had been completely effaced, but had subsequently resumed its normal state. The patient had used cocaine, and it was a question whether the effacement of the anterior chamber had been due to its effects upon the circulation, or to pressure.

Dr. Risley related a case which led him to make the statement that in aneurysm of the orbit the surgeon should first try pressure upon the carotid before resorting to ligation. In the case cited, the exophthalmia had disappeared almost completely after pressure, ligation not having been practiced.

**An Analysis of the Refraction of 576 Healthy Human Corneæ examined with the Ophthalmometer of Joval and Schiotz.**—Dr. Swan M. Burnett, of Washington, read a paper with this title. The 576 corneæ belonged to 301 persons examined by him within a little over a year. Pathological states of the cornea were excluded for consideration at another time. The corneal refraction was found in 110 persons to be the same in both eyes to within 0·251. The horizontal meridian (to within 5°) was the least refractive (astigmatism according to the rule) in 420 eyes. The vertical meridian was the least refractive (astigmatism against the rule) in 420 eyes. In 88 eyes the meridians were oblique. In 58 eyes the difference in the refraction of the two meridians was less than 0·251. In 101 eyes there was emmetropia. The largest number was a corneal refraction of from 441 to 451, the next largest from 431 to 441. The strongest corneal refraction was 471, the weakest 391. In 55 eyes there was simple myopia. The strongest refraction in the weakest meridian was 47·251; the weakest, 391. The corneal refraction did not in any considerable number of cases bear a close relation to the degree of the myopia. Simple hypermetropia was present in 59 eyes.

The weakest refraction in the weakest meridian was 40·51. The corneal refraction was no indication as to the degree of the general hypermetropia. Myopic astigmatism was present in 140 eyes. In 4 eyes the general astigmatism was greater and in 11 it was less than the corneal. In 14 eyes the difference between the axis of the corneal meridian and that of the prescribed glasses was greater than 5°. Hypermetropic astigmatism was present in 96 eyes. In 4 eyes the corneal astigmatism was greater and in 2 eyes it was less than the general. The axes corresponded in all but 9 eyes. Compound myopic astigmatism was found in 63 eyes. In all but 7 eyes the corneal and general astigmatism corresponded, and in 44 eyes the axes corresponded. Compound hypermetropic astigmatism was present in 55 eyes. In 31 the corneal and general astigmatic meridians corresponded, and the corneal and general astigmatism were the same in all but 4 eyes. Mixed astigmatism was present in 8 eyes. In 4 eyes the corneal and general astigmatism was the same. In 2 the corneal was less, in 1 greater. The corneal and general astigmatic meridians were the same in 5 eyes. In 42 eyes the general astigmatism was against the rule, while in only 18 of these eyes was the corneal astigmatism against the rule. From his examination under a mydriatic, the author felt warranted in thinking that many cases of lenticular astigmatism were due to an oblique position of the lens. Corneal astigmatism was, with very few exceptions, according to the rule (the vertical meridian the stronger). From a study of these statistics, the author felt warranted in concluding that, while the corneal refraction gave no indication of the general refraction of the eye, the astigmatism in the vast majority of cases expressed the general astigmatism, as to both degree and direction of its axis, and he therefore considered the instrument of Joval and Schiotz one of the most, if not the most, important means for the diagnosis of the anomaly. He did not think astigmatism more productive of progressive myopia than of any other form of ametropia.

Dr. H. D. Noyes had found the ophthalmometer a most valuable and time-saving instrument.

**Progressive Hypermetropic Astigmatism.**—Dr. J. B. Emerson, of New York, read the history of a case the records of which extended from 1879 to 1888.

**Œdema of the Chorioid and Retina.**—Dr. E. Jackson, of Philadelphia, reported the case of a young man who had been struck in the eye with a marble or a small stone, causing a bruise of the left eyeball. The ophthalmoscope showed localized swellings of the chorioid and retina at the posterior pole of the eye, the chorioidal spots having the usual grouping of ruptures in this region. These spots disappeared in about a week. There was also at first some (0·75 D.) myopic astigmatism, which gradually diminished and entirely disappeared in three weeks, leaving the sight perfect.

**A New Form of Cataract Knife.**—Dr. Jackson also exhibited a knife designed to combine the advantages of the Graefe and Beer knives. The point, resembling that of a Graefe knife, allowed the puncture and counter-puncture to be made in the same way as with the Graefe knife, while the rest of the

blade, having the shape of Beer's knife, enabled one to complete the incision as with that instrument. With it the puncture and counter-puncture were wholly under control, the flap was completed at a single thrust, the aqueous was not lost until the incision was nearly finished, and the counter-pressure by the back of the knife assisted in steadying the eye.

**New Instruments** were presented by Dr. TANSLEY, consisting of a lacrymal syringe; modified probes for enlarging the lacrymal canal; a clamp to close the entrance to the lacrymal duct, and prevent the passage of atropine solution into the nose and throat; and an improved style.

**Aluminium Lacrymal Probes** were shown by Dr. THEOBALD. Being very smooth and slippery, they gave less pain than silver probes, and did not oxidize.

Dr. RISLEY, Dr. THEOBALD, and Dr. NOYES gave the results of some examinations as to the size of the lacrymal canal in the dry skull, and the lesson drawn was that, inasmuch as the size of the canal varied much in different subjects, and perhaps also on the two sides in the same subject, one could be governed in the use of probes only by actual trial in each case.

**Symptomatic Myopia.**—Dr. MITTENDORF said that the fact that myopia as a symptom of certain affections of the eye was so little appreciated had led him to prepare this paper. Traumatism might give rise to symptomatic myopia, but the condition occurred more commonly with some disease. In some rare cases it had been caused by dislocation of the lens forward. Of greater frequency was a myopic condition due to swelling of the lens in the initial stage of cataract. Myopia could be demonstrated only when the lens remained sufficiently clear. The vision might be relieved temporarily with concave glasses. Myopia was present in infiltration of the vitreous and during the course of glaucoma, serous chorioiditis, and iritis. It probably occurred most frequently in iritis. It disappeared when the eye was restored to health. Illustrative cases were mentioned to show that a myopic condition was brought on by the diseases enumerated, and that it disappeared with their cure.

Dr. KOLER, recently of Vienna, thought that the myopia in iritis might be due to spasmodic action of the muscle, as it was possible only partially to overcome the irritation present and produce paralysis of accommodation.

Dr. GREEN, of St. Louis, said that since the time, twenty years previously, when he had first observed transient myopia in iritis in his own case, he had found the condition to be not uncommon, and while he was not prepared to advance any theory for its explanation entirely satisfactory to his own mind, yet he was loath to admit that it was due to spasm of accommodation.

**Hysterical Blindness in the Male.** — Dr. W. OLIVER MOORE, of New York, stated in this paper that Briquet had found, out of one thousand cases of hysteria, fifty in males, while other authors had found the proportion of males to females suffering from the disease as one to fifteen. From 1875 to 1885, in France, no fewer than five theses on hysteria in the male had appeared. In males the symptoms lasted longer than in females, and they were more likely to occur in weak and effeminate subjects. Lasègue had been led to employ the term peripheral hysteria, from the fact that any form of irritation in a patient predisposed to hysteria might act as the exciting cause. For instance, a foreign body on the cornea might prove sufficient to set up the full train of nervous symptoms. A simulated one-sided blindness was not uncommon among those who sought to avoid military service. In each of his three cases, the author of the paper stated, some shock had been produced, incidentally, in the treatment; in the first by electricity, in the second by etherization and canthoplasty, and in the third by ether alone. In all, an assurance to the patient that the cause had been discovered, but without his being informed that he had hysteria, had acted as an important factor in the cure. It was a mistake to tell the patients that there was nothing the matter, that they simply had hysteria, for they were all anxious to be cured, but had not sufficient power of will to overcome their fault of themselves. Any operation or any shock was sufficient to cure them.

**A Series of Tests for the Detection and Determination of Subnormal Color-perception (Color-blindness), designed for Use in Railroad Service.** — Dr. CHARLES A. OLIVER, of Philadelphia, said that it was a well-known fact that many persons affected with color-blindness, especially of the medium grades, had the power of distinguishing even the most difficult colors when the ordinary wool tests were placed at the usual distance employed in the detection and determination of the degree of the affection. With the hope of overcoming the dangers that might arise from having men who had passed such imperfect tests, but were really color-blind for greater distances, in situations where the safety of lives often depended solely upon an accurate recognition of colors at great distances, he had arranged two modifications of the test, by which the candidate should be placed in the actual position and under circumstances exactly similar to those of his employment. His method was divided into three parts: First, the selection and registry of a definite number of loose wools from twenty-three pure and confusion match-skeins, thrown upon a dead-black surface at a distance of 1 metre. Second, the selection and registry of the same number of similar reflected colors, under various intensities of diffused daylight, requiring the candidates to recognize and enumerate them at the same distances as it was necessary they should be able to tell them apart when engaged in actual service on railroads or at sea. Third, the selection and registry of a set of transmitted colors, under various intensities of diffuse daylight stimulus, placed at the distances requisite for safety. Among a number of marked advantages which the method had were: It was much more rapid than any other method; it provided for the selection of loose wools at distances; it employed the same character of signals as was in use in daily routine; it did not call for an expert, except in doubtful cases; it allowed such distances and conditions of weather to be introduced as would actually be met with by the candidates when on duty.

**Embolism of the Central Retinal Artery.**—Dr. OLIVER also gave the history of a case of embolism of the central retinal artery in which complete blindness had developed suddenly and continued.

Dr. MITTENDORF had seen several cases, and in them considerable improvement in vision had followed. However, in these, he thought, only several of the arterial branches had been affected. When the whole caliber of the artery was involved the prognosis was much less favorable.

Dr. NOYES thought that most cases reported as embolism of the central retinal artery were cases of thrombosis. Only two of those in which autopsies had been held had proved to be cases of embolism.

*(To be concluded.)*

## AMERICAN OTOLOGICAL SOCIETY.

*Twenty-first Annual Meeting, held at New London, Conn., July 17, 1888.*

The President, Dr. J. S. PROUT, in the Chair.

**A Case of Aural Vertigo (Meniere's Disease) relieved by Excision of the Membrana Tympani and the Malleus.**—Dr. CHARLES H. BURNETT, of Philadelphia, read a paper with

this title. The operation was performed upon the left ear of a woman thirty-six years old. The ear had been affected for many years with chronic aural catarrh of the sclerotic form, accompanied by hypertrophic naso-pharyngeal catarrh. Ordinary treatment of the aural catarrh had failed to relieve the tinnitus and deafness. Within the past two years she had also suffered from vertigo. The malleus was found, on inspection, to be adherent to the promontory, but the membrane was movable. Believing that the vertigo and the tinnitus were due to retraction of the chain of auditory ossicles, and the consequent inward pressure of the stapes on the labyrinthine fluid and immediately on the semicircular canals, the author had considered that excision of the drum membrane and the removal of the malleus and incus from their attachment to the stapes would be likely to relieve the tinnitus and vertigo by permitting the stapes to move freely in the oval window, and thus take off the pressure from the labyrinthine fluid. This was therefore done under ether anæsthesia, illumination being obtained by the electric head-lamp. The relief from the sense of pressure in the ear and the tinnitus was almost immediate, and at the present time was entire, and there had been no return of the vertigo in the two months since the operation. As the hearing had not been improved by the removal of the membrana tympani, when a new membrane had begun to form no attempt had been made to prevent the growth of this new dermoid diaphragm, which was now nearly complete. Its formation had not been followed by any return of tinnitus, nor of vertigo, because there was no ossicular connection between it and the internal ear, and hence no pressure on the labyrinth.

Dr. J. O. Tansley, of New York, thought the operation was a serious one, as being apt to set up a worse condition than the one it was intended to relieve. He had under his care a girl who had been thus operated upon a year and a half ago by another physician. After removing a large number of polypi, he had found a necrosis which extended up fully an inch in the direction of the atticus tympanicus. The girl had been suffering from serious brain symptoms, which, however, he had much relieved by treatment.

Dr. Burnett suggested that the necrosis and brain symptoms in this case were probably due to an improperly performed operation. In the case he had related and in another one alluded to there had been some discharge after the operation, which had nearly disappeared as the drum membrane healed.

Dr. C. J. Kipp, of Newark, remarked that one surgeon had done the operation about thirty-five times for tinnitus and had abandoned it as unsatisfactory, although it had been followed by no injurious results. Schwartz performed it only for necrosis of the hammer.

Dr. Samuel Sexton, of New York, had resorted to the operation over fifty times for tinnitus and other subjective symptoms, in many cases with very decided benefit, and in none with any aggravation of the symptoms.

**A New Portable Battery for the Storage of Electromotive Force.**—Dr. Sexton exhibited a small, light storage battery, of three cells, which was capable of maintaining a light of six-candle power for several hours. It would remain charged a number of weeks. In connection with the battery he presented a new head-lantern for the employment of the electric light in aural surgery. The light was stronger than that of the Argand gas-burner. Non-conducting material was used in the construction of the lamp, so that the heat, ordinarily an objection to the employment of the electric light, would not trouble the operator.

**Reflex Influences in the Production of Naso-pharyngeal Catarrh.**—Dr. Albert H. Buck, of New York, in a paper so entitled, called attention briefly to those comparatively remote causes of naso-pharyngeal catarrh which acted probably through the vaso-motor fibers of the sympathetic nerve. Of the direct exciting causes of naso-pharyngeal catarrh we knew little. Of these the commonest was chilling of the surface of the body; the next in frequency, according to certain American and English authorities, though not in his own experience, were affections of the teeth. He had found irritations of the gastro-intestinal tract, in not a few instances, a strong exciting cause of naso-pharyngeal catarrh and of the aural troubles growing out of such a catarrh. This relationship was easily traceable in only a minority of the cases. In one of his patients the naso-pharyngeal catarrh and tinnitus aurium had been markedly increased after the ingestion of certain articles of food and their passage downward from the stomach. The attacks were accompanied by the escape of large amounts of gas from the stomach. The author also gave the history of a case of naso-pharyngeal catarrh and tinnitus aurium in a woman who, after some time, was found to have retroversion of the uterus associated with chronic and subacute parametritis. Exacerbations of the uterine trouble caused exacerbations of the naso-pharyngeal catarrh and ear symptoms. Since the treatment of the pelvic affections, the naso-pharyngeal catarrh and the distressing subjective noises had been so slight as to require no further use of the nitrate-of-silver solution. The author knew of no reason why the conditions mentioned might not be direct causes also of naso-pharyngeal catarrh.

Dr. Tansley thought it would be difficult to trace the exact connection between naso-pharyngeal catarrh and diseases of the uterus, since both were so commonly present in the same person, and from independent causes. Catarrh was certainly often aggravated by faulty assimilation of food. He recognized a constipated habit as a marked cause of anæmia and chlorosis and their associated naso-pharyngeal and aural troubles.

Dr. Risley thought the symptoms in Dr. Buck's first case pointed to disturbance of the liver as the cause of the naso-pharyngeal condition. He was himself affected in a somewhat similar manner.

The further discussion turned largely on the treatment of naso-pharyngeal catarrhs and other affections. Dr. Tansley and Dr. Burnett thought that not a few cases of aural disease were due to treatment of nasal affections by those who gave too little attention to the ear.

Dr. Theobald spoke of the virtues of nitrate-of-silver solutions, while Dr. Tansley, Dr. Burnett, and others cautioned against the danger of a sclerotic condition following their use.

Dr. Kipp had seen no harm result from a solution not stronger than 20 per cent., followed immediately by the use of salt water.

Dr. H. D. Noyes, of New York, said the gouty diathesis or lithæmic state was common along with naso-pharyngeal catarrh with ear symptoms.

**A Contribution to the Anatomy of the Elephant's Ear.**—Dr. Buck presented the bony part of the ear of an elephant, together with the Eustachian tube. The drum membrane was situated about seven inches from the external meatus. The canal was filled with desquamated material. The cavity was surrounded by large air-chambers, two extending nearly to the external meatus. The Eustachian tube was seven or eight inches long. The labyrinth had not been dissected.

**Polypoid Angeioma of the Ear.**—Dr. Huntington Richards, of New York, presented, through Dr. Buck, a paper giving the history of a case. Micro-photographs of the specimens had been made by Dr. Freeborn. The patient, a girl, aged six years, had been brought to his clinic in May last on account of a profuse foul discharge from the ear. It dated from February,

and was unaccompanied by pain. The hearing was good. There had been no bleeding from the ear. A polypoid mass was seen almost occluding the lumen of the canal, of a deep purplish-red color. The tumor was removed with a snare, leaving a small pedicle attached apparently to the outer surface of the drum membrane. The stump was cauterized with chromic acid. A day or two later the drum membrane appeared to have a minute perforation two millimetres distant from the cauterized stump. The discharge ceased completely after the removal of the polypus, and the perforation, if there had been one, was never subsequently detected. The hæmorrhage on the removal of the growth had been profuse. Dr. Freeborn had pronounced the specimen one of angeioma.

**False Drum Membrane.**—Dr. Buck also read this paper for Dr. Richards. The patient, a young man, was totally deaf in one ear, and vaguely recalled an attack of otitis media in childhood. In the other ear there was otitis media purulenta chronica. On examining the ear which was not discharging, the author had been struck by the very unusual appearance of a membrane occluding the canal at a depth of far less than the usual situation of the drum membrane. It was about five millimetres and a half in the vertical diameter and about five in the transverse. At all points of the periphery it merged without break into the skin lining the external canal, yet it differed from the normal membrane in respect to color, shape, the relation of the plane to the long axis of the canal, its smooth surface, its apparent thickness, and its depth from the external meatus. The color was dead-white at the periphery and a dark-gray at the center. The inflation of the ear had no effect on the hearing nor upon the appearance of the membrane. Thinking there was a true drum membrane back of it, and hoping to improve the patient's hearing, he made an opening about four square millimetres in area through the false membrane. There was no true drum membrane. The depth to the tympanic cavity was fifteen millimetres. The hearing was only slightly improved by the operation. No discharge had been established when the patient was seen a few days later, although it had been feared when it was learned that the true drum membrane was largely perforated.

Dr. Sexton, Dr. Sutphen, Dr. Tansley, Dr. Kipp, Dr. Capron, and others related similar cases, and regarded the condition as being the presence of a dermoid diaphragm the development of which had been due to some irritation.

Dr. Randall cited the case of a child whose ear became partially detached from the scalp during delivery, and was replaced the following day. The plug inserted to keep the canal patent had to be removed on account of pain. A discharge appeared and continued during twelve years, when he discovered and broke through a false membrane, which contained a small perforation; the drum membrane was also perforated. The operation on the false membrane had been followed by a cessation of the discharge.

**The Use of the Flexible Catheter for Drainage in Diseases of the Ear.**—Dr. J. B. Emerson, of New York, thought the flexible catheter the best means of establishing drainage in certain aural and mastoid affections. By this means the canal or opening was kept patent and drainage was satisfactory. It had so proved in one case of exostosis from the bony canal, one of necrosis of the canal, and two of disease of the mastoid cells, all of which had been operated on.

Dr. O. D. Pomeroy, of New York, said that some years ago he had described before the society a method of using the flexible tube for drainage in cases of ear disease in children where there was such a swelling of the lining membrane as to interfere with natural drainage. He stretched a soft elastic tube over a small probe, which could then be introduced into the nearly closed canal, and on withdrawing the probe the tube retracted, thereby increasing in size and so enlarging the channel.

**Three Cases of Transient Bilateral Horizontal Nystagmus in Connection with Purulent Inflammation of the Middle Ear.**—Dr. Kipp reported the cases. They had all had certain features in common. The history of the second was as follows: A young man, whom he had successfully treated six years previously for acute otitis media purulenta, had recently returned to him, again suffering with ear trouble. He had found that the drum membrane was punctured and was discharging a large quantity of purulent matter. But the otorrhœa and pain continued, in spite of his treatment, a long time. At last a swelling formed behind the mastoid, and with its appearance the patient had several epileptoid attacks. One day, when pressing on the swelling, the speaker noticed pus escaping from the auditory canal, and with it marked nystagmus developed, which lasted ten minutes. In this patient the nystagmus could be produced at will by pressing upon the mastoid. He subsequently opened the mastoid and evacuated pus, and the patient's condition had improved. In the third case the jerking of the head, the dilatation of the pupils, and the rapid movements of the eyelids were brought on during irrigation of a mastoid abscess, the injection being made with considerable force. The nystagmus could thus be produced at will until the abscess closed. All the cases had occurred in young men, and in all the hearing was greatly diminished when tested by the watch or the voice, yet the tuning-fork could be heard quite distinctly in the diseased ear. These cases were not altogether novel; some had been reported in Europe in which increased pressure in the vestibule had caused nystagmus and vertigo. He supposed the pressure was transmitted or reflected from the ear to the motor center for the eye muscles.

Dr. Pomeroy thought that neurologists had not given sufficient attention to suppurative disease of the ear as a cause of epileptoid attacks.

**An Improved Aural Snare.**—Dr. Tansley presented the instrument, which was intended to avoid the snap or jerk which occurred on cutting through polypi with the ordinary snare, to which he thought the pain was mostly due.

**Foreign Bodies in the External Auditory Canal.**—This paper, by Dr. Sexton, was read by title.

**Teratoid Tumor of the Auricle.**—Dr. L. E. Holt related the further history of a case of tumor of the auricle which he had first mentioned five years before. On its recent removal, the pathologist had found it to be a teratoid tumor. About eighteen years ago Dr. Ripley had removed a simple fibroma from the same locality.

**Officers for the Ensuing Year** were elected as follows: Dr. J. S. Prout, president; Dr. Gorham Bacon, vice-president; Dr. J. J. B. Vermyne, secretary and treasurer. The next meeting will be held in Washington on September 18, 1888.

## NEW YORK CLINICAL SOCIETY.

*Meeting of May 25, 1888.*

Dr. J. H. Emerson, afterward the President, Dr. J. West Roosevelt, in the Chair.

**Grouped Cells in Ascitic Fluid as Diagnostic of Malignant Disease of the Peritonæum.**—Dr. H. C. Coe demonstrated the presence of the sprouting cell-groups of Foulis in a drop of ascitic fluid withdrawn the day previous from the abdomen of a patient with undoubted secondary cancer of the peritonæum, who had been under observation for some time at the Cancer Hospital. His attention had been directed to these cells by Dr. Welch seven years before, and since then he had sought

for them in every specimen of ascitic fluid submitted to him. Although he had found them but once in cases of cancer of the liver, even where the omentum had been affected, he could recall several cases in which the presence of numerous cell-groups had led him to diagnosticate malignant disease of the ovaries and peritoneum, and in which diagnosis had been fully confirmed by a subsequent exploratory incision or autopsy. He thought that every pathologist who had given this question careful consideration must disagree with Tait, who, in the last edition of his work on "Diseases of the Ovaries," had said that he placed no reliance on the presence or absence of these cells in fluid removed by tapping. At the same time that author was correct in affirming that these elements were not always found. The speaker believed that, when they were found in the free fluid, they denoted the presence of an exuberant malignant growth, either carcinoma or sarcoma; they might also indicate the outgrowth of papillomatous material through the wall of an ovarian cyst, with extension of the disease to the peritonæum. He had always deprecated a resort to exploratory incision in cases in which advanced malignant disease was strongly suspected, since, so far as his own observation extended, little additional information was gained, and the patient frequently either succumbed to the shock of the operation, or, if she recovered from it, grew rapidly worse. He thought that a careful examination of the fluid withdrawn with an aspirating-needle would often render the diagnosis so clear that the patient would be spared such operative interference.

**Salol as an Internal Antiseptic.**—Dr. E. H. Peaslee read a paper on this subject.

Dr. Emerson inquired whether any other treatment had been employed during the use of salol in the two cases of suppurative disease of the ear.

Dr. Peaslee replied that nothing else was done than to wash out the ear with clear water, as had been done for some time before he saw the patients.

The President asked Dr. R. J. Hall what he thought of any internal antiseptic as such.

Dr. Hall replied that he had been skeptical to the last degree as to the value of so called internal antiseptics for theoretical reasons. He was still more skeptical since trying sulphide of calcium, which some had recommended so highly in suppurative diseases. He had employed it extensively, but with absolutely negative results. He had also tried other drugs recommended as internal antiseptics, such as minute doses of bichloride of mercury, but also with negative results. Therefore, when a new one was brought forward it required much clinical evidence to convince him of its value.

Dr. L. Emmett Holt thought that a drug might have some effect in cutting short inflammations, as in amygdalitis, without acting as an antiseptic. He had not employed salol, but he had used salicylate of sodium, the action of which he supposed to be very similar, in amygdalitis, and he thought the results had been beneficial. The drug was administered in large doses, and the cases had been only those of ordinary follicular amygdalitis with more than usual constitutional symptoms.

Dr. Hall also had used salicylate of sodium in amygdalitis with very good results, which he was disposed to attribute to the local effect upon the mucous membrane and upon the rheumatic diathesis rather than to any direct germicidal influence. His cases had also been those of follicular and not of phlegmonous amygdalitis.

Dr. Walter Medelson believed that salol, and in fact all the salicylates, were good internal antiseptics, although not in the sense, perhaps, in which Dr. Peaslee had employed that term. After being administered, they split up into phenol and other components, which were in their nature antiseptic, and in that form passed away with the excreta. Thus, he had given salol in cystitis with good results, and he believed its action had been at least partly local in that it passed out of the body with the urine. The same was true of its use in gonorrhœa, the urethra being washed out with the antiseptic fluid. He did not think it produced its results by killing germs in the blood. He also had used it in amygdalitis with good results, due, he thought, to its influence upon the gouty or rheumatic diathesis, probably the gouty. Recently our empirical knowledge of the benefit derived from this group of drugs in rheumatic and gouty patients had been supported by the observations of Haig, of London, who had shown that salicylic acid, contrary to most acids, facilitated the elimination of uric acid. The speaker believed that in patients who were accustomed to having one or two attacks of amygdalitis yearly there was usually a rheumatic or, as he believed, a gouty diathesis, and for that reason salicylic acid, salol, etc., acted beneficially on the tonsillar inflammation. He had never used salol in other forms of suppuration than those of the bladder and urethra.

Dr. W. Gilman Thompson had used salol in some cases of rheumatism, and had found it no better and no more prompt in its action than salicylic acid or salicin, and some patients had not borne it so well. He believed that those who could not retain salicylic acid or salicin would also vomit salol. He had recently used it in suppurative amygdalitis with rheumatism, but he did not think it preferable to other remedies which he had been accustomed to employ.

Dr. W. H. Katzenbach had used salol very little, but he had found salicylate of sodium almost a specific in follicular amygdalitis. The more acute the case, the more efficient the drug.

The President had the records of six cases of follicular amygdalitis in all of which the inflammation of the tonsil had disappeared with the occurrence of articular rheumatism. If he remembered correctly, Dr. Kinnicut had reported a case in the "Archives of Medicine" in which the amygdalitis was replaced by gout. In all of his own cases a salicylate had been given, with the immediate effect of lessening the severity of the amygdalitis, but when this disappeared it was replaced by rheumatism, which ran a course influenced more or less by the drug.

Dr. Peaslee remarked that his cases had been selected from among those of patients in whom previous attacks had ended in suppuration.

**Multiple Neuritis.**—Dr. H. M. Biggs presented a man who, when he first saw him, had what he believed to be hypertrophic spinal pachymeningitis. There was more marked extension of the hand and flexion of the fingers than at present. After examining the patient more carefully, he had come to the conclusion that the case was one of multiple neuritis. The patient, as fireman on a steamboat, had become overheated about three years before, and was seized with fever and severe pain in the head. His fever continued five or six days, and on the sixth or seventh day there suddenly developed paralysis of the upper and lower extremities, a little later affecting the back. After this, severe pain developed in the paralyzed parts, particularly in the joints, with tenderness. The pain lasted about ten months. This, the speaker thought, was an unusual feature in the case, as ordinarily the pain did not last so long. It had been more than two years before the patient was able to walk at all. He now had a good deal of weakness in the anterior group of muscles of the leg and some inco-ordination. There was an alcoholic history, which had probably been an ætiological factor in the case.

**Albuminuria in Diabetes.**—Dr. Coe read a paper with this title (see page 88).

Dr. Mendelson fully agreed with Dr. Coe on the general

points made in the paper. He had not gone over the statistics of his examinations, but he thought that in the great majority of his cases of diabetes albumin also had been found in the urine. Recently some one in Germany had gone over the cases of a Carlsbad druggist who made most of the urinary examinations for the doctors there, and had found that in about thirty per cent. of all the cases of diabetes the urine contained albumin. The speaker had found that as a rule the albumin diminished as the amount of sugar diminished, but in some cases it became increased in quantity. In the latter instances he thought there was a nephritis complicated by diabetes rather than diabetes complicated by nephritis; that is, the nephritis was the more important disease of the two, for usually the diabetes could be controlled by diet, while nothing would control the disease of the kidneys. In diabetic cases albumin was usually present in the urine only in small amount, and it was commonly due, he thought, to circulatory changes in the kidneys or such lesions of the epithelium as occurred with the presence of sugar in the blood. He had usually found a few hyaline casts, but they came and went. Sometimes the albumin almost entirely disappeared and again reappeared. He did not think albuminuria of itself was a grave complication in diabetes, but, when there were granular casts, or a large quantity of albumin, or other indications of nephritis, the prognosis became very grave, although he had seen patients live with this condition much longer than he had expected. There was a class of cases of glycosuria in which there was only a trace of sugar in the urine, with a trace of albumin and a few hyaline casts, which usually ended in granular nephritis. Two cases which he then recalled had been in patients who gave a gouty family history, some of the members having died of granular nephritis, and his impression was that these two would finally die of that affection.

The PRESIDENT inquired regarding the tension of the pulse in the two cases referred to.

Dr. MENDELSON had not studied the tension of the pulse specially, but the patient's condition had improved rapidly under treatment.

Dr. THOMPSON's experience had been much like that of Dr. Mendelson. He had examined a good many specimens of diabetic urine, and had very commonly found some albumin, to which he had not attached much importance. He believed that traces of albumin were often overlooked, and that it was only when considerable quantities were present that it was detected. It was exceptional in diabetes of long standing not to find some albumin at some time. Regarding the condition acetonæmia, he doubted whether it was capable of accounting for diabetic coma. In fact, diabetic coma was not yet understood. Certainly uræmia would not account for it in all cases. It was true, albumin appeared in the urine after giving dogs acetone, but it was also true that it had been given them in large doses without producing symptoms of coma. A German had taken as much as two drachms of acetone without feeling any effects whatever. That amount, it seemed, should cause coma if the drug were capable of producing that state.

Dr. KATZENBACH had a female patient who had come under his observation recently with glycosuria. He had examined the urine but once. It contained eight grains of sugar to the ounce, and had a specific gravity of 1·040. He had expected to find albumin, but there was not a trace of it.

Dr. GEORGE B. FOWLER had recently read a paper in Brooklyn, in which he had given expression to the view that often symptoms regarded as indicative of kidney disease were simply the evidence of a condition leading to general decay; that the same state existing in the arteries and kidneys would be found in other organs of the body. Albumin and sugar appeared and disappeared in the urine in various cases which physicians were accustomed to see every day. When the albuminuria or the glycosuria became more permanent, it was evidence to him that the general decay was becoming more marked. There were conditions, such as that known as lithæmia, in which there was likely to occur either albuminuria or glycosuria, or both. If that condition continued long enough to produce pathological changes, the symptoms referable to the organs most disturbed would predominate. If albuminuria followed glycosuria, and afterward there appeared granular casts, etc., in the urine, the prognosis would, of course, become more grave. He agreed with Dr. Coe and the other speakers that albumin frequently existed in the urine of diabetic patients, but was not found, because of the great dilution. Sugar might also escape detection because of the presence of other elements in unusual quantity. In a well-established case of diabetes the urine was practically a watery solution of sugar, and when albumin was present in very small quantity it was difficult to detect. In women its presence might be attributed to disease of the kidneys when it came from the genital organs.

The PRESIDENT remarked that he had always regarded acetonæmia as an incident in diabetic coma, and not at all as being an explanation of it; just as he thought that the occurrence of uræmic coma was often accompanied by an increase of urea in the blood, but not caused by it.

Dr. COE asked the president in what manner he would account for the relative increase in the amount of urea.

The PRESIDENT said there was no definite relation between the quantity of urea and the occurrence in cases of uræmic or diabetic coma. One might also be unable to demonstrate acetone in a case of diabetic coma.

Dr. FOWLER had seen two of that class of patients in whom urine containing sugar was loaded with phosphates. The sugar in these two instances had disappeared under strict diet, but would return.

Dr. THOMPSON inquired of the members what their experience had been with bromarsine, for which some of the Germans alleged excellent results in diabetes.

The PRESIDENT said that in the cases in which he had employed it the patients had reacted so well to diet that he could not say how much influence could be attributed to the drug.

## Book Notices.

*Inebriety:* its Ætiology, Pathology, Treatment, and Jurisprudence. By NORMAN KERR, M. D., F. L. S., Fellow of the Medical Society of London, etc. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xxx–415. [Price, $3.]

IT is notoriously extremely difficult for a "total abstainer" to write temperately on the subject of temperance; but Dr. Kerr, in the present work as in his many previous publications, has manifested a conscientious purpose to deal judicially and objectively with a question of grave social import, and, despite occasional indications of an unintentionally myopic view of pathology and statistics, the results of his long observation of the phenomena of inebriety are of interest and value, not alone to medical readers, but to the public.

While admitting that in some instances drunkenness is a voluntary vice, unexcused by any constitutional craving for alcohol or other narcotics, the author holds that the existence of such craving is evidence of a physical disease which may often be diagnosticated before it leads to oinomania or narco-

mania. His definition of inebriety includes addiction, not only to alcohol, but to opium, chloral, chlorodyne, chloroform, cocaine, or gelseminum, and he discusses at much length the etiology (in which heredity is made to play a prominent part) and pathology of the neurosis which underlies these habits. As regards morbid anatomy, it might be objected that many of the post mortem appearances ascribed to alcoholism are common in other conditions among abstemious persons, and there is the usual fallacy of arguing from excessive doses of alcohol to small ones—a course which, if applied to our materia medica, would leave us scanty means of therapeusis. It is curious to find an avowed advocate of vegetarianism rehearsing the trite assertion that alcohol must in all circumstances be condemned as a poison because it does not enter into the composition of the living tissues, as the same indictment might be brought against starch and sugar. It will also be a surprise to most American readers to learn that, even in moderate quantities, the daily imbibition of lager beer "tends to melancholy, ending occasionally in self-destruction." A similar repetition of unsubstantiated hypotheses is exemplified in the allegation that alcohol induces special forms of phthisis and pneumonia, and in the author's estimates of the shortening of life by even "moderate drinking"; whereas the recent report of the Collective Investigation Committee of the British Medical Association indicates rather that total abstainers are as a class shorter lived than those who use alcoholic beverages temperately, and that neither phthisis nor pneumonia is materially affected by alcoholic excess. In thus criticising, we have no intention to antagonize the author's laudable motive, in which all physicians would gladly aid, but we are convinced that exaggeration, however honest in its origin, does more harm than good to the cause of reform. The chapters on treatment add little to the measures with which almost every practitioner of large experience is disheartenedly familiar, the conclusion commonly reached being that for inebriety the sole cure is abstinence, which, with the weakened will of the inebriate, must in the vast majority of cases be compulsory.

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*Differential Diagnosis.* A Manual of the Comparative Semiology of the more Important Diseases. By F. de Havilland Hall, M. D., Assistant Physician to the Westminster Hospital, London. Third American Edition, thoroughly revised and greatly enlarged. Edited by Frank Woodbury, M. D., Professor of Therapeutics and Materia Medica and of Clinical Medicine in the Medico-chirurgical College of Philadelphia, etc. Philadelphia: D. G. Brinton, 1887. Pp. xi–17 to 255.

This work, it is stated in the publisher's note to the third American edition, is founded upon Dr. Hall's "Synopsis of the Diseases of the Larynx, Lungs, and Heart," but has been made to embrace also all the more frequent and important diseases. The object of the book in presenting, side by side, the more prominent and reliable symptoms of diseases which have some resemblance to each other, has been fairly well carried out. But we must make some exceptions; for instance, we think that the diagnosis of varioloid from varicella is much more valuable than that of rötheln from variola, and should not have been omitted in a book of this kind. As regards the sequelæ of scarlatina, an important omission occurs—that of rheumatism. It is stated that the papular eruption of variola becomes vesicular in the course of twenty-four hours. This is an error, for it takes at least from two to three days for the change to take place. The section devoted to the differential diagnosis of the diseases of the respiratory apparatus is very thorough and leaves nothing to be desired. The index is meager and defective and detracts materially from the book as one of ready reference. Still, the book may be recommended on the whole as one likely to assist the practitioner in the diagnosis of the various diseases. Those engaged in teaching will find in it many valuable hints in imparting to the student the points of difference of kindred affections.

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*Ueber Atonie des Magens.* Von Dr. R. Freiherr v. Pfungen. [Klinische Zeit- und Streitfragen.]

This monograph forms one of a series which appear periodically in Vienna and deal with questions of the day. It discusses very fully the subject of which it treats. The author seems well up in the literature of gastric ailments, but his method of citation is very confusing and detracts from the value of the article. On reading it one is reminded of Burton's "Anatomy of Melancholy," where quotations and authorities crop up from everywhere and evoke a feeling of admiration for the author's varied learning and ready memory. According to the author, atony of the stomach may exist as an idiopathic affection, and is chiefly to be recognized on percussion by increase of the area of the gastric note, which may reach to within an inch of the umbilical line. The subjective symptoms are a fullness and a sense of oppression after eating, which reach their climax in from two to three hours; anorexia; lassitude, etc. There is usually considerable emaciation. The treatment, though simple, would appear from the cases narrated to be attended with marked success. It consists chiefly in the administration of small doses of bicarbonate of sodium two hours after the principal meal of the day, a smaller dose to be repeated within an hour if the subjective symptoms continue. Hydrochloric acid in water may be given with the meals. The amount of nourishment is to be increased by taking from two to three pints of milk a day between meals. Meat should enter into the fare of at least two meals of the day.

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*Manual of Clinical Diagnosis.* By Dr. Otto Seifert, Privat Docent in Würzburg, and Dr. Friedrich Müller, Assistent der ii. med. Klinik in Berlin. Third Edition, revised and corrected by Dr. Friedrich Müller. Translated, with the permission of the Authors, by William Buckingham Canfield, A. M., M. D. (Berlin), Fellow of the American Academy of Medicine; Member of the Medical and Chirurgical Faculty of Maryland, etc. With Sixty Illustrations. New York and London: G. P. Putnam's Sons, 1887. Pp. xi–173.

This is a valuable little manual, embodying all the more recent and practical methods of clinical investigation of disease. It may be very highly recommended to the general practitioner, who will find it of considerable service in his daily labors. The translator has done his work well, as has also the publishing house.

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*A Synopsis of the Physiological Action of Medicines*, prepared for the Use of Students of the Medical Department of the University of Pennsylvania, with the Approval of the Professor of Materia Medica. By Louis Starr, M. D. Third Edition, enlarged. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–9 to 72. [Price, 75 c.]

This seems to be a very good synopsis, and can not fail to be of service for those for whom it is intended. The arrangement is excellent.

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*The Year-book of Treatment for 1887.* A Critical Review for Practitioners of Medicine and Surgery. Philadelphia: Lea Brothers & Co., 1888. Pp. viii–336. [Price, $1.25.]

This valuable little year-book is equal to its predecessors. The matter seems to have been well culled and is concisely stated. It is pleasant to note that American writers receive a fair share of attention. Special consideration is accorded to

intubation, which the reviewer recommends should be given a fair trial, although he thinks that it can not rival tracheotomy. The criticisms of some of the reviewers on their respective texts enhance the value of the book.

## GENERAL LITERARY NOTES.

Among recent foreign publications we note the following:

F. Alcan, Paris.—L. Jacques, "Intubation du larynx dans le croup." (2*fr.* 50.)

J. B. Baillière & fils, Paris.—E. Duval, "Traité pratique et clinique d'hydrothérapie." (10*fr.*)

O. Berthier, Paris.—F. Bosselut, "De la méningite tuberculeuse chez les jeunes enfants âgés de moins de deux ans." (4*fr.*)

A. Delahaye & E. Lecrosnier, Paris.—J. Maricourt, "Manuel de métallothérapie et de métalloscopie appliquées au traitement des maladies épidémiques, burquisme et magnétisme animal." (3*fr.* 50.)

O. Doin, Paris.—V. Parant, "La raison dans la folie." (7*fr.*) —— G. Treille, "De l'acclimatation des Européens dans les pays chauds." (2*fr.*) —— E. Lecorché and C. Talamon, "Traité de l'albuminurie et du mal de Bright." (14*fr.*) —— C. Masson, "Des troubles moteurs post-épileptiques."

G. Masson, Paris.—G. Bernutz, "Conférences cliniques sur les maladies des femmes." (12*fr.*) —— D. Mollière, "Leçons de clinique chirurgicale professées à l'Hôtel-Dieu de Lyon." (8*fr.*)

Bureaux du "Paris médical," Paris.—E. Bouchut, "Tubage du larynx ou intubation. Comprenant: 1° Mémoire de M. Bouchut, communiqué en 1858 à l'Académie de médecine de Paris et les observations du croup guéri par le tubage du larynx; 2° Mémoires lus à l'Académie de médecine de New York, par A. Jacobi, J. O'Dwyer, *et al.*; 3° Une introduction par E. Bouchut."

Bureaux du "Progrès médical," Paris.—A. Perret, "Traité du glaucome." (4*fr.*)

P. Savy, Paris.—E. Verrier, "Du traitement des métrites chroniques par les eaux minérales de France." (1*fr.*)

G. Steinheil, Paris.—Le Gendre, Barette, and Lepage, "Traité pratique d'antisepsie appliquée à la thérapeutique et à l'hygiène." (10*fr.*) —— L. Gioux, "Contribution à l'étude de l'insuffisance des muscles de l'œil et de son traitement par la téno-myotomie partielle." —— A. Cordes, "Un utéro-sédatif; un utéro-moteur."

H. Lamertin, Brussels.—G. Tournay, "Du mécanisme de la délivrance et de l'intervention du praticien dans cette période de l'accouchement."

F. Vallardi, Milan.—S. Plevani, "Manuale pratico di farmacia e dei nuovi rimedi." 2d ed. (15*l.*) —— G. Cesari, "Il ferro e suoi preparati. 2d ed. (4*l.*) —— P. Schivardi, "Manuale teorico pratico di elettroterapia." 2d ed. (7*l.* 50.) —— G. Turazza, "Antisepsi ed antisettici nelle medicazioni chirurgiche." (4*l.*)

## BOOKS AND PAMPHLETS RECEIVED.

Partial Syllabic Lists of the Clinical Morphologies of the Blood, Sputum, Fæces, Skin, Urine, Vomitus, Foods, including Potable Waters, Ice and the Air, and the Clothing (after Salisbury). By Ephraim Cutter, M. D., LL. D., etc. New York: Published by the Author, 1888. Pp. xviii–81. [Price, $1.]

Sixth Annual Announcement of the Medical Department of Niagara University, Buffalo, N. Y. Session of 1888–'89.

Suggestions toward a More Rational Procedure in Wasting Diseases. By Samuel S. Wallian, A. M., M. D., New York. [Reprinted from "Gaillard's Medical Journal."]

The Treatment of Hæmorrhoids. By Hunter P. Cooper, M. D., etc., Atlanta, Ga.

The Early Diagnosis of Spinal Caries, with Remarks on Treatment. By Hunter P. Cooper, M. D., etc., Atlanta, Ga. [Reprinted from the "Atlanta Medical and Surgical Journal."]

Conservatism in Gynæcology. By A. Reeves Jackson, A. M., M. D., etc., Chicago. [Reprinted from the "Chicago Medical Journal and Examiner."]

Fourteenth Annual Announcement of the Medical Department, University of Tennessee. Nashville Medical College, Session of 1888–'89.

Proceedings of the Sanitary Convention held at Owosso, November 22 and 23, 1887. [Supplement to the "Report of the Michigan State Board of Health" for the Year 1888.]

A Practical Text-book of the Diseases of Women. By Arthur H. N. Lewers, M. D. Lond., M. R. C. P. Lond., Assistant Obstetric Physician to the London Hospital, etc. With Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi–400. [Price, $2.25.]

Anæsthetics; their Uses and Administration. By Dudley Wilmot Buxton, M. D., B. S., Member of the Royal College of Physicians, London. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xii–164. [Price, $1.25.]

Ptomaines and Leucomaines, or the Putrefactive and Physiological Alkaloids. By Victor C. Vaughan, Ph. D., M. D., Professor of Hygiene and Physiological Chemistry in the University of Michigan, and Frederick G. Novy, M. S., Instructor in Hygiene and Physiological Chemistry in the University of Michigan. Philadelphia: Lea Brothers & Co., 1888. Pp. viii–13 to 316. [Price, $1.75.]

Transactions of the Medical Society of the State of West Virginia. Twenty-first Annual Session, held at Huntington, May 16 and 17, 1888.

Un cas de cancer du larynx. Considérations sur la laryngectomie. Par le Dr. J. Charazac, de Toulouse (Communication faite à la Société francaise d'Otologie et de Laryngologie, seánce du 26 avril 1888).

Operatiunea lui Alexander in prolapsul si retroversiunea uterului. Tesa penten Doctorat in Medicine si Chirurgie. Dr. Leonida Varnaly, Baccalaureat in litero si sciinte, etc. Bucuresci, 1888.

The Prophylactic and Therapeutic Resources of Mankind. A Paper read before the International Congress of Anthropology, held at Columbia College, New York, June 4 to 7, 1888. By Henry C. Hanchett, M. D., etc. [Reprinted from the "New York Medical Times."]

Twenty-fourth Report of the Trustees of the City Hospital, Boston, with Reports of the Superintendent and Medical and Surgical Staff, Rules for Admissions and Discharges, Prospectus of Training-School for Nurses, etc., 1887.

The Male Urethra, its Diseases and Reflexes. By Fessenden N. Otis, M. D., Clinical Professor of Genito-urinary Diseases in the College of Physicians and Surgeons, New York. Detroit: George S. Davis, 1888. Pp. viii–86. [The Physicians' Leisure Library.]

# Reports on the Progress of Medicine.

## CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

**Anthrarobin** is the latest addition to our dermatological therapeutical resources ("Vierteljahr. f. Derm. und Syph.," 1888, Heft 2). It is introduced to us by Liebermann, of Berlin, who describes it as derived from certain coloring matters (alizarin and flavo- and anthrapurpurin) by chemical reduction. He believes that its action, as well as that of chrysarobin, is due to its oxidizing properties. It occcurs as a yellowish-white, odorless, granular powder, which is permanent in dry air. It is insoluble in cold water and acids diluted with water; very soluble in cold, watery solutions of alkalies, ammonia and earthy alkalies, assuming a brownish-yellow color. But these solutions are not permanent, as they readily absorb oxygen from the air, their color changes through a green into a blue, and finally an alizarin-violet. It is soluble with difficulty in benzol and chloroform, and in acetic acid and alcohol to a much greater extent than chrysarobin. It is also soluble in glycerin and in borax solutions. This new product has been tested by Behrend, and found to be very useful. It may be used in the form of an ointment, or dissolved in glycerin, or as a tincture, and in the strength of from ten to twenty per cent. The tincture proved itself most useful, and was prepared according to the following formula: Anthrarobin, 5; alcohol, 45. Dissolve on a water-bath. It may also be made with double the strength of anthrarobin. In any form the drug is well borne by the skin, never producing irritation like chrysarobin, so that it can be used on the face and scalp without danger. It

stains the skin and the under-clothing yellow, and causes sometimes the sensation of burning, which is not severe. It was tried in 15 cases of psoriasis, 17 cases of ringworm, 2 cases of erythrasma, and 1 case of pityriasis versicolor. Its action is not so rapid as is that of chrysarobin, but quite as sure. It is more active when applied to the skin after washing with green soap. It is about one third cheaper than chrysarobin or pyrogallol.

**The Poisonous Action of Petroleum upon the Organism in General and upon the Skin.**—Lewin (Virchow's "Archiv," 1888, Heft 1) has made a study of this subject. The latter part alone interests us at present. Many observers have reported various skin lesions resulting from the use of petroleum in the treatment of the itch—such as wheals, small ulcers upon erysipelatous bases, and an eruption of acuminate vesicles upon a red base. Lewin has invaded this country and observed the effects of petroleum upon the operatives in Pennsylvania. He found that the heavy oil was very different in its effects from the light oil. The workers upon the oil-pumps are affected with an eruption of hazel-nut sized, transparent, white boils. These affect both young and old, and last in some cases a year or more, in others but a few weeks. The common form of eruption is an outbreak of equal-sized pimples and boils, which do not itch, and are located upon the arms and hands. In some laborers the disease relapses frequently. Some escape the disease entirely. Frequent washings of the skin with soap seemed to lessen the tendency to the production of these boils. Sometimes nearly the whole of the skin is affected. Those laborers who were not in constant contact with the raw product escaped the eruption. In the refining works, those who handled the light oil and the kerosene were not affected, while those who handled the heavy products left after refining were so, especially when they neglected frequent washing of their hands and face. Some skins become accustomed to the irritation in a few weeks or months and react no more, while some skins never become habituated. The disease produced is essentially an acne; red, hard papules with a central black point upon an indurated reddened base. Furuncles also were scattered about. Some papules were surmounted by a vesicle; if located about a hair follicle, the hair was frequently wanting, and a gaping opening was left. These were seen most frequently on the arms and legs. All this disturbance was caused by the irritation of the follicles of the skin by the petroleum.

**Medicinal Eruptions.**—Lesser reports ("Deutsch med. Wochnshrft.," April 5, 1888) a case of erythema following a hypodermic injection of calomel. The erythema was general, and of a scarlatina red, paled rapidly away, and ended by scaling off of epidermis. The erythema appeared eleven hours after the injection of the calomel.

**The Treatment of Acne.**—Fournier ("Gaz. des hôp.," Jan. 10, 1888) recommends for the treatment of acne the use of ignipuncture by means of a fine malleable platinum rod, heated in the alcohol flame, and introduced perpendicularly into the diseased follicle. Some ten glands are treated at a sitting, the part is then dressed with cold water, and afterward with mercurial plaster. He regards this procedure as being safe, and by far the surest mode of treatment. Together with the use of ignipuncture, the habits of life are to be regulated, and sulphur mineral-waters drank.

**The Treatment of Acne with Comedones.**—Besnier ("Jour. de méd.," April, 1888) advises for this affection, when the comedones are very profuse, the application every night during eight days of a pomade made as follows: Salicylic acid, two parts; precipitated sulphur and potash (soft) soap, each fifty parts. After eight days an emollient dressing is to be used, and it will be seen that many of the comedones are destroyed.

**Comedones in Children.**—T. Colcott Fox ("Lancet," April 7, 1888, p. 665) has seen over forty cases of comedones in children. Unlike what obtains in adults, these comedones usually occur in well-defined groups or aggregations, all the follicles of a certain part being plugged up. Their most common location is close to the hair along the forehead over the center of the eyebrows. They may extend clear across the forehead and down each side onto the cheeks in front of the ear. They may also affect the hairy scalp over its anterior one third or quarter, or upon the occiput, or behind the ears. Inflammation now and again occurs, and acne-like lesions may appear, which usually are slight in extent and merely secondary to the comedones. They seem to be slightly contagious, as they occur more frequently in some parts of London than in other parts, and it is not uncommon to see several members of the same family affected at the same time. In twenty-five out of thirty-six cases the disease appeared between the fifth and ninth year, in sixteen cases between the fifth and seventh year. The youngest patient was one year and ten months old. It is rather more frequent in males than in females. The spring-time, especially March, is the most common time of their appearing, and in winter they tend to disappear. They often come and go in a surprisingly rapid and unaccountable manner. They are not associated with any one condition of health, though it is worthy of note that they occurred with four different cases of alopecia areata. The plugs consist of epithelial matter, and not of imperfectly formed sebum.

**Seborrhœa** is believed by Gamberini ("Giorn. ital. delle mal. ven. e della pelle," 1887, No. 5) to be due to a parasite, especially on the scalp, and he has observed that treatment directed to the destruction of the saccharomyces so often found in seborrhœa capitis suffices to cure obstinate cases of seborrhœa. Pityriasis is for him a seborrhœa to which a slight superficial hyperæmia of the skin has been added, sufficient to raise up the corneous layer of the epidermis.

**The Treatment of Carbuncles and Boils.**—According to Eade ("Lancet," May 19, 1888), carbuncles can be cut short at almost any stage of their course. When they begin as pimples, continuous soaking with a solution of a mild antiseptic, such as boric acid or salicylic acid, will almost certainly destroy them. At a little later period they may be aborted by thrusting freely into their central or cribriform openings a strong solution of carbolic acid in water or glycerin. When they become large and solid they must be partially or entirely excised or else incised, and the boggy material scraped away. If surgical proceedings are refused, the continuous application of carbolic solutions in oil or glycerin, with or without poulticing, will do much to improve their condition. Boils may be treated on the same principle, but the heroic surgical procedure is not necessary.

**The Treatment of Erysipelas.**—During eighteen months, Polotebnow, of St. Petersburg, tried various methods of treating erysipelas, and now ("Monatshft. f. p. Dermat.," 1888, No. 5 *et seq.*) reports the results of his experiments. Some cases he treated on an abortive plan, and some on the expectant plan. For the first, he used a solution of nitrate of silver, a half-drachm to the ounce; for the second, cold-water compresses. Sixty patients were treated, one half of them by one method and one half by the other. The disease in those treated with the silver solution lasted, on an average, seven days and a half, while in those treated with compresses it lasted eight and a third days. Albuminuria was present in seventeen of those treated by nitrate of silver and lasted an average of three days, while in those treated by compresses it was found eighteen times and lasted three and a third days. The death-rate was the same under both methods of treatment—that is, one for each. Forty out of the sixty cases took their beginning at the nose, the mucous membrane of which was inflamed, often excoriated and covered with crusts. Of the sixty patients, six were treated while in the permanent bath, and of these one was at the same time under the silver-nitrate treatment, and five were under that of compresses. The indications for the use of the permanent bath were a temperature of over 40° R., a weak, quick pulse, the presence of considerable albumin in the urine, pulmonary catarrh, pneumonia, marked cerebral disturbances, or any grave complication. They served to reduce the temperature and strengthen the heart. From a study of these cases, Polotebnow has been led to rely upon the use of simple compresses exclusively, and discards all other applications, such as ointments and powders. The compresses may be used warm or cold, but patients generally prefer them warm.

**Sycosis.**—Unna ("Monatsheft. f. prkt. Dermat.," 1888, Nos. 5 and 7) discards the generally accepted division of sycosis into the parasitic and non-parasitic forms, and regards both as parasitic, though due to different parasites. The first, or the one usually termed parasitic sycosis, he names *hyphogenous sycosis*, and the second, or the one usually termed non-parasitic sycosis, he names the *coccogenous sycosis*. He recognizes the occurrence of the first under two forms: a superficial one, like ordinary ringworm, and a deeper process with the formation of tubercles. When pustulation or abscess occurs in the deeper form, he believes it to be due

to the entrance of the pus cocci. The hope is held out that at some future day a different fungus may be demonstrated for these two forms of ringworm of the beard just as Quincke has demonstrated his α, β, and γ fungi of favus. The second, or the *coccogenous sycosis*, he regards as due to the entrance of pus cocci into the hair follicles. It may arise from an antecedent eczema, or a nasal catarrh, or other causes. Special stress is laid upon the use of the microscope and upon cultivations in the diagnosis of sycosis, though a correct diagnosis can usually be made by the clinical appearances alone.

*Treatment.*—When ringworm of the beard occurs in superficial rings and the beard is not shaven, the following ointment should be applied night and morning after washing with an antiseptic soap, viz.: ℞ Ungt. pomadin., 20; resorcin, 2. M. To this may be added hydrarg. bichlor., 0·05. If the beard is shaved, a zinc paste may be substituted for the ungt. pomad. This paste is composed of 90 parts of ungt. zinc. benzoat. and 10 parts of terra silicea. This is best applied with the moistened finger upon the moistened skin. When dry the part may be lightly rubbed over with a dry towel, and thus there will be left a fine white powder on the skin. If the disease is very superficial and the face shaved, it will be sufficient to touch the part daily with the sublimate or resorcin pencil (see "N. Y. Med. Jour.," July 10, 1886) or to use a spray of resorcin, 5; hydrarg. bichlor., 0·01–0·05; aq. colognensis, spiritus, āā 50; ol. ricini, 1. M.; and powder the part subsequently. When the disease has gone deeper and nodes are formed, the beard must be shaved or cut short and one of the following plaster mulls applied and closely bound down: (1) Hydrarg., 20; ac. carbolici, 7·5. (2) Hydrarg., 10; ac. carbol., 10; sublimate, 1. (3) Hydrarg., 10; ac. carbol., 10; sublimat., 2; zinci oxid., 10. If there is no pustulation, epilation need not be practiced. When the nodes have gone, the above-mentioned resorcin paste may be used.

**The Ætiology and Symptomatology of Alopecia Areata.**—Joseph has already demonstrated the connection between this disease and nerve lesions, and now ("Berlin. klin. Wochnschft.," Jan. 20, 1888) adduces further arguments in support of his belief of its dependence upon disturbances of the nutrition of the parts affected. It is a known fact that dogs soon become bald when deprived of nitrogenous food, and Remy ("Jour. f. Anat. u. Phys.," 1880) has reported a case of entire fall of the hair from the body of a man suffering from cirrhosis of the liver. Moleschott ("Atti. della real. acad. delle sci. di Torino," 1878) observed the decrease in the growth of hair and nails in a case of catarrh of the bladder. But in these cases the connection between the hair-fall and the disease is by no means clear. On the other hand, most cases of alopecia areata are preceded by headache which lessens or ceases when the hair falls. Sometimes this headache is in the form of a pricking sensation which may be closely limited to the soon-to-be-affected spot. Many cases occur at puberty and at the age of dentition. There is nothing pathognomonic in the appearance of the affected hairs. The affection has its seat in the matrix, and is due neither to micro-organisms nor to alterations of the blood-vessels, but simply to the action of the trophic nerves. In the experiments upon cats the hair fell out on the fifth to the twenty-seventh day. In a patient Joseph was able to determine the lapse of two days between a nervous shock and the fall of hair, and its continuance for fourteen days. The hair grew in in six months and a relapse took place in three years. The manner of distribution of the bald places and their characteristics are strikingly similar in man and in the animals operated on. In cats, in a number of places the hair first became thin, and after a time complete baldness set in. The contour of these places was always quite regular, sometimes circular, sometimes oval, sometimes oblong, constantly sharply defined. These places sometimes remained discrete, sometimes two or more ran together. Further, both in clinical cases and experimental ones, there was marked symmetry in the arrangement of the patches. This is an argument for the nervous origin of the disease. The sensibility of the skin is not altered, nor should we expect it to be, as by disturbances of sensation fall of hair does not take place. That depends upon trophic disturbances. It is probable that other causes than tropho-neuroses may give rise to alopecia areata, though so far they are unproved.

**Treatment of Alopecia Pityriodes.**—A six-per-cent. pomade of resorcin is recommended editorially in the "Monatshft. f. p. Dermat.," 1888, No. 6, for the treatment of this affection. It is to be applied at night and a cap of oiled silk to be then put on and worn until the next morning. Once a week the scalp is to be washed with tinct. sapo. viridis.

**Urticaria** is regarded by Fournier ("Gaz. des hôp.," Feb. 23, 1888, *et seq.*) not as a disease in itself, but a simple dermatological type of eruption. This view he bases upon the fact that the wheals appear under a great variety of circumstances, arising from both internal and external irritation. It presents itself under a great variety of forms: sometimes as distinct round wheals; sometimes as linear wheals; sometimes as gyrate lines; sometimes it takes on a hæmorrhagic character; sometimes it has no white center, but is a congestive papule approaching an erythema. Of the congestive form there are five varieties, viz.: 1. Erythematous, roseolous, or macular urticaria, consisting simply of rosy spots, slightly raised, without central discoloration, but otherwise presenting the characteristics of urticaria. 2. Scarlatinous urticaria, resembling scarlatina in the smallness of the spots and in their color. 3. Papular urticaria, met with in badly-cared-for infants, and seated upon the backs of the hands and feet and sometimes on the face. 4. Urticaria taking the aspect of a furuncular swelling, met with, for instance, upon the lips and the result simply of location. It presents a large red, hard swelling, greatly deforming the lip. 5. Urticaria nodosum, which exactly resembles erythema nodosum, the lumps varying in size from that of a small nut to that of a turkey-egg. The skin is intensely red, and the part is tender upon pressure, but not very itchy. The lesions are discrete, and leave ecchymotic macules on fading. Sometimes we meet with urticaria in the form of a local œdema without redness or efflorescence, which comes and goes suddenly, often relapsing upon the same region. It may also occur upon mucous membranes; probably sometimes upon those of the stomach, intestines, and lungs, giving rise to sudden and evanescent disturbances of digestion or respiration. It may be also a symptom of malarial disease, or septicæmia, as well as quite frequently arising from digestive disturbances, uterine disorders, nervous diseases, rheumatism, and gout. It may be hereditary in some cases. In any case a certain predisposition on the part of the individual is necessary for its production.

The treatment must be directed to overcoming the cause where discoverable. There can be no specific for the disease. For local treatment we must use something to relieve the itching, such as cold cream, vaseline, hot water, solutions of alcohol or vinegar, chloroform, chloral water, powders of rice or starch, or some such lotion as this: Hydrate of chloral, 3 parts; aquæ laurocerasi, 50 parts; distilled water, 200 parts.

**Acute Circumscribed Œdema Cutis.**—A study of this affection by G. Riehl will be found in the "Wien. med. Presse," 1888, Nos. 11 to 13. This disease is known also as giant urticaria, acute angeio-neurotic œdema, and *urticaire massive*. It is marked by disturbances of the general health and of the bowels, and by peculiar manifestations upon the skin, all of which are dependent upon a common cause. The most prominent symptom, and sometimes the only one, is the acute appearance and rapid disappearance of œdema of the skin, subcutaneous tissues, and certain mucous membranes. The eruption appears without cause or prodromes, and reaches its height in from one to three hours. It consists in an œdematous swelling without any inflammation, which shades off into the sound skin, is hard or firm to the touch, preserves for a time the finger print, is of normal color or transparent white or red, and may attain the size of the hand or larger. The epidermis is stretched and glistening. The temperature of the part is normal; the sensibility is somewhat reduced; there is no pain. There is some burning and tickling, but seldom itching. The average duration of a single efflorescence is twenty-four hours. There is usually a single lesion to each attack, though there may be a number of lesions, or a single lesion may spread, creeping slowly along. The pharynx, larynx, or nose may be similarly attacked, and so much dyspnœa caused as to require tracheotomy. The trunk is seldom attacked. The disease relapses from time to time, lesions at first appearing in different places, but afterward tending to recur in the same place. The frequency of the attacks is variable; sometimes the patient will remain free for a time, to have new attacks at intervals of eight to fourteen days, or even every three

or four weeks. The duration of the disease may be weeks or years. The oft-repeated œdema may lead to permanent stretching of the skin, or to a slight thickening of the same. In some cases vomiting, somnolence, constipation, suppression of urine, or albuminuria may be prominent symptoms. It occurs at all ages and may be inherited. The cause of the disease is unknown. It is probably a vaso-motor disturbance originating in the central nervous system. It differs from ordinary urticaria in the marked absence of itching. Treatment has thus far been in vain.

**Pruritus Pudendi** may be successfully treated, according to Routh ("Brit. Med. Jour.," April 14, 1888), by bathing with a solution made by putting a teaspoonful of borax into a pint of hot water, shaking thoroughly, and adding five drops of oil of peppermint. If there are any excoriations, or if eczema is present, this will cause too much smarting, and it is better to substitute for it olive-oil, with five grains of iodoform to the ounce.

**Senile Pruritus.**—Besnier ("Jour. de méd.," April, 1888) recommends for this troublesome affection starch baths, and sponging the whole body every evening with a spoonful of a mixture of aromatic vinegar, 250 grammes, and carbolic acid, 5 grammes, to a bowl of hot water. Then the body is to be powdered with a powder of starch, 90 grammes, and salicylate of bismuth, 10 grammes. Salicylic acid may be substituted for the bismuth.

**The Treatment of Lupus.**—In the treatment of lupus erythematosus Heller advocates ("Wien. med. Presse," 1888, No. 16, *et seq.*) the use of antiphlogistics, especially cold stupes, either with simple water or with solutions of Goulard's extract, bichloride of mercury, or lime-water, at the same time administering cooling acidulated drinks. He objects very strongly to the use of caustics, multiple punctures, or scarifications, and the curette. He believes that the eruption is but the expression of a diseased condition of the blood and an anomalous nervous action. It may depend upon anæmia or digestive disturbances, and demand attention to the diet and the exhibition of alkalies and mineral waters. If the digestion is in good order, then iron and arsenic will do good service. Attention must be given to the nerves, and bromides or chloral administered *p. r. n.* He has used carbolic acid by the mouth, sometimes with good result. Ergotin has also been of excellent service where congestion of the head has been a prominent symptom. Iodoform by the mouth has proved useful when the disease shows a disposition to spread. If the disease does not yield to simple antiphlogistics, then recourse must be had to spt. sapo. viridis; ung. hyd. oxid. rubri (2 per cent.); emplast. hydrarg. to small spots; Fowler's solution of arsenic, which, outwardly applied, speedily cures, applied once daily until inflammatory symptoms appear, when cold stupes are to be used; lactic acid, in 30- to 50-per-cent. solution. For obstinate patches it is recommended that they be rubbed with a coarse piece of linen until they bleed, and then painted with Fowler's solution.

In the treatment of lupus vulgaris we are likewise advised not to use caustics, scarifications, or the curette, but to employ daily applications of solutio Fowleri. If reaction is set up, or when the infiltration and swelling have disappeared, or the ulcers are already granulating normally, the solutio Fowleri is to be stopped, and a solution of carbonate of sodium (one in eight) is to be used. Cicatrization of the ulcers is to be hastened by the use of either Goulard's extract or a mixture of bichloride of mercury, 0·15, and lime-water, 150. Internally, iron and arsenic are of use, while cod-liver oil and phosphorus are without value. Ergotin is sometimes useful.

**Hypodermic Injections of Iodoform in Tuberculosis Cutis** (Lupus).—Morel-Lavallée ("Ann. de derm. et de syph.," 1888, tome ix, No. 2) commends the use of hypodermics of iodoform in the treatment of lupus vulgaris. The dose has not been fully determined, but 2 centigrammes a day have been used for an adult, and half that dose for a child. The excipient may be any solvent of iodoform that is not irritant to the tissues, such as liquid vaseline. Under its use the lupus tissue pales, and the tubercles sink down. Improvement has been decided in a number of cases treated by this method, but no cures are reported.

**Mycosis Fungoides.**—Kaposi ("Wien. med. Wochshrft.," 1888, May 12) reports a case of this disease which ended fatally. The post-mortem examination revealed a large number of nodes in the internal organs of similar form and histological peculiarities to those in the skin. From this metastasis he draws support to his view of the disease as "sarcomatosis cutis."

**The Treatment of Abnormal Epidermal Growths, such as Warts, Corns, and Callosities.**—Roesen ("München. med. Woch.," Feb. 28, 1888) has found the following procedure very efficacious in the removal of these trivial but annoying affections, viz.: The part is dampened with a solution of boric acid or salicylic acid, then covered with a thick layer of salicylic acid in crystals. This in turn is covered with a four-fold layer of borated lint, over which is placed a piece of thick gutta percha, and the whole is confined by a bandage. This is left on five days, and when removed discloses the growth shrunken, raised entirely from its base, the skin underneath being soft and showing no sign of cauterization. In very thick callosities it may be necessary either to leave the dressing on for ten days, or else renew it at the end of five days. This treatment is also applicable to onychogryphosis.

**The Treatment of Keloid.**—Barduzzi ("Monatshft. f. p. Dermat.," 1888, No. 8, p. 391) is skeptical of curing keloid by means of any therapeutical procedure, and has but little faith in its treatment by electrolysis. He believes that the best method is to cut the growth out by an incision far beyond its boundaries, and allow the wound to heal by granulation, without any attempt at drawing its edges together.

**The Treatment of Suppurating Venereal Buboes.**—During the last five years Szadek ("Vierteljshr. f. Derm. und Syph., 1888, Heft 2, p. 209) has met with 1,084 cases of soft chancre in the military hospital of Kiew, and among these there were 274 buboes, or about one bubo to every four chancroids. The seat and virulence of the sore determined chiefly the inflammation of the glands, and this was noticed particularly with sores located on the frenum and on the inner side of the prepuce. The right inguinal glands were affected one hundred and five times, the left one hundred and thirty times, and both sides thirty-eight times. The double bubo came most frequently with the sore on the frenum; otherwise the location of the sore seemed to have little influence on the site of the bubo. The sore seemed to heal very quickly after the development of the adenitis. The following is the author's plan of treatment: If there is only swelling of the glands without fluctuation or redness of the skin, rest, and antiseptic treatment of the ulcer; if only redness, compresses of carbolic-acid solution until the abscess is ready to open. Attempts at causing the resorption of the bubo by such means as painting with iodine are of no use, the only effect being a quieting of the pain and a slower development of the abscess. Under chloroform the bubo, when ripe, is to be opened parallel to Poupart's ligament the whole of its length, strict antiseptic precautions being employed, the pus removed, and the diseased glands dug out with the finger, the remnants being scraped out with the curette. The cavity is then to be washed out with sublimate solution, powdered with iodoform, filled with iodoform gauze, and put up in impermeable dressing. The latter consists of a few layers of sublimate gauze and salicylated or sublimated wadding, then a ball of jute, then rubber (Macintosh) sheeting, and a spica bandage. This is left from two to five days as a rule, then removed, the wound edges washed out with sublimate solution, powdered with iodoform, and dressed dry. This dressing is left on from five to ten days. Usually after the second to the fifth dressing, or from the tenth to the forty-fifth day, on an average the thirtieth day, the wound is healed. Complications, excepting slight erysipelas in five cases, were not encountered in the 274 cases treated, and this was of little influence upon the course of the healing. The scars were always linear, smooth, and, after a short time, hardly perceptible.

**The Use of Calomel Oil and Oleum Cinereum Hypodermically in the Treatment of Syphilis.**—Bender has employed both these preparations for the hypodermic treatment of syphilis, and now ("Vrtljschr. f. Derm. u. Syph.," 1888, Heft 1, p. 55) compares their relative action. He has seen stomatitis follow the use of oleum cinereum quite as often as that of calomel oil. The duration of treatment was about the same for each. The pain caused by the oleum cinereum seemed somewhat the more severe of the two, and more or less marked infiltration always occurred. The injections were made every third day or twice a week, and only a part of a syringeful was injected at a time. But in private practice we are recommended to inject a whole syringeful every eight to fourteen days. (The strength of the mercury in the oil is twenty per cent.—that is, a cubic centimetre of the oleum cinereum contains

0·23 gramme of mercury.) Abscess occurred in one case treated by oleum cinereum, but was never met with from the calomel oil. The effect of both was prompt, and Bender has a very high opinion of the hypodermic treatment of syphilis.

**Salicylate of Mercury.**—Szadek ("Montshft. f. prakt. Derm.," 1888, No. 10) has been experimenting with this comparatively new preparation of mercury in the treatment of gonorrhœa and syphilis. He believes that it is no less efficacious in syphilis than the other preparations of mercury, and that when given by the mouth it is well fitted to cure mild cases. It is an excellent and active salt of mercury for intermuscular injections. Neither by the mouth nor hypodermically does it cause the least disagreeable local disturbance. It is useful as a local application to various syphilitic infiltrations and ulcerations, bringing them to absorption and cicatrization. In urethritis it acts well and promptly, but will not abort the disease. Szadek made use of the following formulas:

℞ Hydrarg. salicylici..... 1·0;
Extr. et pulv. glycyrrhizæ..... q. s.
Ut ft. pil. No. 60.
Sig.: From 3 to 6 pills a day soon after meals.

℞ Hydrarg. salicylici..... 0·2;
Mucilag. gummi arabici..... 0·3;
Aquæ destil..... 60 M.

This is for deep injections, preferably into the buttocks. Before injecting, the chosen spot is to be washed with bichloride solution. The injections are to be repeated every second or third day.

℞ Hydrarg. salicylici..... 0·10;
Aquæ destil..... 250;
Natri bicarbonici..... 1·0 to 1·3. M.

This is for urethral injections in gonorrhœa, to be used, in recent cases, four to five times a day.

**The Abortive Treatment of Syphilis.**—Jonathan Hutchinson has found that by giving small doses of mercury, preferably one grain of gray powder three times a day or oftener for six or nine months, during the time of induration of the initial lesion of syphilis, the secondary symptoms are entirely aborted, or appear in a very mild form ("Med. Press," July 29, 1888). He, therefore, is a strong believer in the specific action of the drug, but at the same time does not maintain that the tertiary stage of the disease may not appear.

**Myositis Syphilitica** has been found by Neumann ("Vrtljschr. f. Dermat.," 1888, Heft 1) to affect the sphincter ani more frequently than any other muscle and at an earlier stage of the disease, and to give rise to much greater pain and disturbance of function. Its symptoms are pain and tenesmus during and after defecation, which may in severe cases last for hours. The pain is aggravated by pressure from without. Women are more often subjects of the disease than men. The whole muscle is not affected; sound bundles of fibers may be found among the diseased ones. Both the blood-vessels of the perimysium and the nuclei of the sarcolemma are involved in the inflammatory process. As the affection of the sphincter may last long after the other symptoms of syphilis have disappeared, we may have to treat the contraction of the muscle and the consequent pain by sphincterotomy. In the tertiary stage of syphilis, symptoms of paralysis of the muscle are more prominent, the sphincter being incompletely closed.

**The Earliest Symptoms of Hereditary Syphilis.**—Based upon the statistics of the Moscow Foundling Hospital, Miller has made a study of hereditary syphilis, and now ("Jahrbch. der Kindrheil.," 1888, xxvii, Heft 4) gives us the deductions from his observations. Among 1,000 cases of congenital syphilis the various symptoms were met with in the following proportions: Papules of the skin or mucous membranes, 74 per cent.; rhagades of the lips and anus, 70 per cent.; rhinitis, 58 per cent.; ulcers of the hard palate, 52 per cent.; macules, 45 per cent.; chronic lymphadenitis, 29 per cent.; ulcers of the tongue, 27 per cent.; pemphigus, 25 per cent.; onychia and paronychia, 23 per cent.; excoriations, 20 per cent.; laryngitis, 17 per cent.; pseudoparalysis of the extremities, 7 per cent.; ulcers of the skin, 4 per cent.; gingivitis ulcerosa, 4 per cent. Most of the children were extraordinarily thin and atrophic. The umbilical stump, instead of falling off, as in healthy children, on the fourth or fifth day, does not fall till the second or third week, and inflammation of the navel is proportionally more common. The disease makes its appearance in the first month in 64 per cent. of the cases, and in the second month in 22 per cent.; most often in the third week, then in the second and fourth week. The earliest symptoms of hereditary syphilis are rhinitis and pemphigus.

# Miscellany.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality" for the month of June, the whole number of deaths reported was 479, including 2 from cholera morbus, 17 from cholera infantum, 8 from croup and diphtheria, 2 from cerebro-spinal meningitis, 3 from dysentery, 2 from diarrhœa, 16 from typhoid fever, 2 from malarial fever, 3 from pyæmia, 4 from whooping-cough, 5 from septicæmia, and 3 from scarlet fever.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending July 20th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending June 30th corresponded to an annual rate of 15·9 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Huddersfield, viz., 12·6, and the highest in Preston, viz., 27·8 in a thousand. Small-pox caused 3 deaths in Sheffield, 11 in Preston, and 1 in Hull. Diphtheria caused 3 deaths in Leeds.

*London.*—One thousand two hundred and thirty-eight deaths were registered during the week, including measles, 20; scarlet fever, 19; diphtheria, 28; whooping-cough, 27; enteric fever, 10; diarrhœa and dysentery, 36; cholera and choleraic diarrhœa, 2. The deaths from all causes corresponded to an annual rate of 15·1 in a thousand. Diseases of the respiratory organs caused 156 deaths; different forms of violence, 64; and 9 suicides were registered. In greater London 1,530 deaths were registered, corresponding to an annual rate of 14·4 in a thousand of the population. In the "outer ring" 4 deaths from whooping-cough, 3 from diphtheria, and 4 from scarlet fever were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending June 30th in the sixteen principal town districts of Ireland was 23 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4·8, and the highest in Limerick, viz., 49·9 in a thousand. In Dublin 168 deaths were registered, including measles, 1; typhus, 1; whooping-cough, 4; enteric fever, 2; scarlet fever, 2; diarrhœa, 2; and dysentery, 1.

*Marseilles, France.*—Eight hundred and thirty-one deaths were registered during the month of June, including small-pox, 8; enteric fever, 19; scarlet fever, 2; diphtheria and croup, 36; and measles, 43.

*Preston, England.*—The United States consul at Liverpool, in a dispatch dated June 23d, states that "the number of cases of small-pox reported at Preston since the 10th is 72, and the number of deaths 10, making a total of 255 cases, 17 of which were fatal."

*Martinique.*—The United States consul, in his dispatch dated June 23d, states that "in the last fortnight there have been no cases and no deaths from small-pox at Port de France, and in the previous week there has been only 1 case of small-pox in St. Pierre. During the past week there have been no cases and no deaths at either of the above-mentioned ports, and in the whole island there have been in the past week only 282 cases and 33 deaths. The indications are that the epidemic that has prevailed here since last October will speedily die out for lack of fuel to feed on, since almost all the cases now reported are from small hamlets in the interior of the island, which are just being visited by the scourge."

*Havana, Cuba.*—Seventeen deaths from yellow fever are reported for the week ending July 7, 1888.

*Hong-Kong, China.*—The health officer at San Francisco, Cal., telegraphed under date of July 18th: "Cholera reported epidemic at Hong-

Kong." The State Department has cabled the consul at Hong Kong to report the facts.

Mortality Table, Foreign Cities.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | |
| Paris | June 30. | 2,260,945 | 841 | .. | .... | 1 | .... | 8 | 4 | 24 | |
| Glasgow | June 30. | 515,678 | 219 | .. | .... | .... | .... | 2 | 3 | 1 | |
| Warsaw | June 23. | 111,844 | 223 | .. | .... | 8 | .... | .... | 3 | 3 | |
| Calcutta | June 2. | 423,219 | 188 | 37 | .... | .... | .... | .... | .... | .... | |
| Copenhagen | June 19. | 300,000 | 122 | .. | .... | .... | .... | 3 | 5 | 1 | |
| Palermo | June 30. | 250,000 | 88 | .. | .... | .... | .... | 1 | 1 | 5 | |
| Genoa | June 30. | 179,519 | 63 | .. | .... | 1 | .... | .... | .... | 2 | |
| Toronto | July 7. | 130,000 | 27 | .. | .... | .... | .... | 2 | .... | 1 | |
| Stuttgart | June 30. | 125,510 | 46 | .. | .... | .... | .... | .... | .... | .... | |
| Bremen | June 23. | 122,000 | 40 | .. | .... | .... | .... | .... | .... | .... | |
| Havre | June 30. | 112,074 | 56 | .. | .... | 1 | .... | 3 | 1 | 1 | |
| Barmen | June 23. | 109,000 | 47 | .. | .... | .... | .... | .... | .... | 2 | |
| Leghorn | June 24. | 101,718 | 19 | .. | .... | .... | .... | .... | 1 | .... | |
| Mayence | June 16. | 65,892 | 31 | .. | .... | .... | .... | .... | 1 | .... | |
| Cadiz | June 30. | 65,028 | 47 | .. | .... | .... | .... | .... | .... | .... | |
| Santiago de Cuba | June 30. | 40,000 | 27 | .. | .... | .... | .... | .... | .... | .... | |
| Guayaquil | May 12. | 35,000 | 61 | .. | 2 | 3 | .... | 31 | .... | .... | |
| Guayaquil | May 19. | 35,000 | 67 | .. | 6 | 1 | .... | 30 | .... | .... | |
| Guayaquil | May 26. | 35,000 | 54 | .. | 1 | 1 | .... | 24 | .... | .... | |
| Callao | June 16. | 34,000 | .... | .. | .... | .... | .... | .... | .... | .... | |
| Vera Cruz | July 5. | 23,800 | 18 | .. | .... | .... | .... | .... | .... | .... | |
| Sagua la Grande | June 30. | 15,615 | 10 | .. | .... | 1 | .... | .... | .... | .... | |
| Bermuda | July 10. | 15,262 | .... | .. | .... | .... | .... | .... | .... | .... | |
| Matamoras | June 30. | 12,000 | 5 | .. | .... | .... | .... | .... | .... | .... | |

UNITED STATES.

*Ship Island Quarantine Station, Miss.*—The medical officer in charge of the Marine-Hospital Service reports that the captain and 4 men died of yellow fever on the Norwegian bark Magnolia, on the voyage from Rio Janeiro. The vessel was bound for Pensacola, Fla., and is now undergoing quarantine at Ship Island, having been sent to that station by the Pensacola health authorities.

*Buffalo, N. Y., July 17th.*—The medical officer in charge of the Marine-Hospital Service reports that "small-pox has made its appearance in the Polish quarter of this city. In all, 8 cases are reported. They have been removed to the city pest-house, and measures have been taken by the health officers to prevent a spread of the disease."

*Tampa, Fla., July 16th.*—Two cases of yellow fever are reported, one convalescent and the other probably fatal. There are several cases at Manatee. On July 19th the Governor of Florida made application to the Secretary of the Treasury for aid to the local health authorities in suppressing the disease, and the Secretary informed the Governor that aid would be furnished through the Marine Hospital Bureau. A house inspection at the villages named will be immediately commenced.

Mortality Table, Cities of the United States.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Dip theria. |
| Philadelphia, Pa | July 14. | 1,016,758 | 449 | .. | .... | 7 | .... | 13 | 1 | 6 |
| Baltimore, Md. | July 14. | 431,879 | 246 | .. | .... | .... | .... | 1 | 1 | 1 |
| S'n Francisco, C'l | July 6. | 300,000 | 127 | .. | .... | 2 | .... | 3 | .... | 3 |
| New Orleans, La. | July 7. | 248,000 | 120 | .. | .... | .... | .... | .... | .... | 6 |
| Pittsburgh, Pa. | July 14. | 230,000 | 97 | .. | .... | .... | .... | 1 | .... | 1 |
| Cleveland, Ohio. | June 23. | 225,000 | 70 | .. | .... | .... | .... | .... | .... | 4 |
| Cleveland, Ohio. | June 30. | 225,000 | 71 | .. | .... | .... | .... | .... | .... | 1 |
| Wash'gton, D.C. | July 14. | 218,000 | 120 | .. | .... | .... | .... | 1 | .... | 1 |
| Richmond, Va. | July 14. | 63,600 | 42 | .. | .... | .... | .... | .... | .... | .... |
| Charleston, S. C. | July 14. | 60,145 | 50 | .. | .... | .... | .... | 1 | .... | 1 |
| Mobile, Ala. | July 7. | 29,132 | 22 | .. | .... | .... | .... | .... | .... | .... |
| Mobile, Ala. | July 14. | 29,132 | 24 | .. | .... | .... | .... | .... | .... | .... |

**California Wines.**—In a letter, dated July 18, 1888, addressed to the California Vintage Company, of No. 21 Park Place, New York, Dr. L. Wolff, demonstrator of chemistry at the Jefferson Medical College, of Philadelphia, says:

"The case of your wines, sent to me for analysis by Dr. A. L. Hummel, of the 'Annals of Hygiene,' containing specimens of your La Rosa Zinfandel, Mataro, Riesling, Royal Tokay, and Royal Grape Brandy, has been duly received, and I have examined them for the common contaminants of wine—to wit, sulphurous acid and sulphites, salicylic acid, fuchsin, lead salts, etc.—none of which I found present therein. I have also examined their alcoholic strength, extractives, and ashes, and found them to correspond strictly in this respect with the standard of pure and natural wines, which can not be said of many of the imported wines. As a native of a wine-producing country I consider myself somewhat of a judge of wines, and regard your products as comparing more than favorably with most of the wines from abroad, which are sold for higher prices, so much so that I inclose within my order for fifty bottles of La Rosa Zinfandel, which I expect to use hereafter exclusively at my table."

Some months ago we wrote in commendation of the California Vintage Company's Royal Grape Brandy, and we are glad to record Dr. Wolff's account of his analyses of that product and of the wines mentioned.

## ANSWERS TO CORRESPONDENTS.

*No. 208.*—The *médecine blanche* is a mixture of 8 parts of calcined magnesia, 40 parts of water, 50 of powdered sugar, and 20 of orange-flower water.

*No. 209.*—The account is undoubtedly trustworthy.

*No. 210.*—Chewing the leaves is said to annul the sense of taste temporarily.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### THE RELATION OF THE ANIMAL ALKALOIDS TO DISEASE.*

BY E. D. FERGUSON, M.D.,
TROY, N. Y.

THE full significance or the main utility of a discovery is not realized at once; in fact, the first conceptions often are notably at variance with the later conclusions. That the discoveries of Franklin, Galvani, and their contemporaries should have been followed by the belief that the main advantages to be derived from their labors were protection from lightning and some marvelous benefits in the treatment of disease was quite natural, but electricity in more modern harness does its great work in a multitude of ways of which the scientists of the last century could form no conception. Much that was then deemed possible or valuable has proved impossible or of no value. Electricity is not the *vital force*, nor can it be made to give or restore life, as was once hoped; nevertheless it has, in a multitude of ways, become of great use to us in our living.

The rapid survey that is now possible of the probable applications and utility of any discovery has in a measure changed the slow development and application of discoveries or new processes, but so much—probably the greater part—of science being yet unknown should make us modest still in our statements as to the probable value of our novel notions or new facts.

The domain of biology and organic chemistry has been so often and so recently widened and lengthened that of necessity there is a certain indefiniteness in the boundaries between the earlier territory and the more recent acquisitions, and it is not unnatural that a certain amount of contention should arise as to the size and value of some of these additions to the domain.

For some time the views of the bacteriologists relative to the causation of disease were regarded with contempt, with amusement, with curiosity, or with incredulity, until finally the evidence on certain lines became so overwhelming as to demonstrate the importance and even necessity of the presence of certain micro-organisms in the development of some diseases.

When doubt and disbelief had been thus overcome by proof, it was but natural that instances of credulous confidence in the new faith should arise, and the new champions were sometimes hardly prepared for a philosophical consideration of the problems constantly arising.

When the discovery of substances known as ptomaines was made, a changed line of thought was possible, and therefore the banner of a new camp was soon floating, bearing the statement that the animal alkaloids were the more direct causes of diseased action, and that bacteria were only operative in being factors in the genesis of these poisons. The course of any controversy at all protracted is, sooner or later, marked by a *personal* element, and the battle between the *bacteria* and *ptomaines* is no exception to the general rule. This seems to have been notably true in France, though it may be hardly fair to express opinions as to the motives of acts which occur at such a distance where the participants are not personally known by the critic, but some of the recent discussions in the *Académie de médecine* have been characterized by a degree of warmth greater than naturally belongs to the statement of the results of experimental and clinical observation. The novelty as well as the definiteness of the statements made challenges our attention, and, since such recognized authorities as Aitken, Lauder Brunton, and others, have seriously considered and apparently accepted the conclusions of the new school of solidists, we can overlook the enthusiasm of some of the advocates, and pause to see whether it is true that in this new department of organic chemistry "investigating minds may very profitably bestow on it a share of the attention they have hitherto directed so exclusively to bacterial and bacillar biologies."

The purpose of my paper is a review of the evidence relating to these recently discovered sources of disease, and I hope to discharge that purpose without partisan enthusiasm or bias, with a feeling that the subject deserves a respectful hearing and careful consideration at our hands, though it may not prove true that "pangermism has been exhausting its energies in sensational demonstrations of bacterial surprises and bacillar blunderings."

When, in 1817, Sertürner, of Eimbeck, in Hannover, succeeded in calling the attention of the profession to morphine, which had been discovered by him (and by at least one other person some years previous to that date), a new era was marked in practical medicine. This first alkaloid was followed by others, until at the present time the list of those for sale by Merck is confusing by reason of their number, and each year—almost each week—is adding to the length of the list.

For some time it was supposed that these substances held a special position in the chemical world, and that their elaboration could only occur in the changes wrought upon proteid substances in the cells of plants; but, while the wit of man bids fair to compete in the production of vegetable alkaloids by means of synthetical chemistry, a new line of analogous substances has recently been discovered in the bodies of animals, including man. As these new alkaloids were at first supposed to result from changes connected with putrefaction, the name ptomaine—from πτῶμα, a dead body—was applied to them as a class. The general and probably necessary association of bacterial life with the development and progress of putrefaction might render it questionable as to whether, after all, the ptomaines were not virtually of the same origin as the vegetable alkaloids in being the result of the cell activities of these minute vegetable organisms; but the discovery of similar substances in the secretions of living animals, and in the tissues of healthy animals recently killed, renders it extremely probable that the unorganized ferments, ptyalin, pepsin, and pancreatin,

* Read at the fourth annual meeting of the Second District Branch of the New York State Medical Association, held at Troy, June 26, 1888.

or the processes of disassimilation connected with the discharge of the functions of the animal organism, were competent to generate these compounds without the intervention of micro-organisms. The alkaloids found in the secretions of living animals, or in the tissues (such as the muscles) of animals recently killed, were denominated leucomaines—from λευκωμα, the white of an egg—probably in recognition of an essential relationship to the proteid substances.

To those of us who learned the old chemistry, and have been unable from sundry reasons to follow closely the progress made in that department of science, the chemical terminology and symbols of recent date are bewildering, the words being of German complexity in structure and Russian unpronounceability of form. When we find a ptomaine defined as "the cyclical nucleus of a proteid molecule that has undergone complete destruction in the process of putrefaction," we are confused; though we may form a conception of a "cyclical nucleus" as the constant quantity in the structure of a group of related substances, it is difficult to understand how even a ptomaine can remain when the proteid molecule has undergone complete destruction.

The discovery of the animal alkaloids is a matter of comparatively recent history. Alexander Marcet, of London and Geneva, discovered xanthine in 1819. This was followed in due time by the discovery of other bases, such as that of creatinine by Liebig in 1849, but their alkaloidal nature was not prominently recognized. The poisonous properties of dead bodies undergoing putrefaction was a fact of very ancient observation, but it was not till this century that a rational effort was possible to detect the special toxic substances. In 1822 Gaspard and Stick detected a poisonous principle in extracts from cadavers, and in 1856 Panum found in putrid matters an active poison which was neither an albuminoid (?) nor an alkaloid. A considerable amount of work was then given to the question of toxic agents of animal origin, but no basis for a scientific pursuit of the subject existed. It is probably true, as stated by Brown in his recent treatise on the subject, that until within a few years the detection of alkaloidal reactions would have been considered as conclusive evidence of the presence of a vegetable alkaloid, but the time came for a positive advance, and this finally occurred in a way that at once attracted the attention of those in the profession interested in chemical or medico-legal researches. About 1870 or 1871 an Italian physician, Selmi, of Bologna, in examining a body supposed to contain poison, found alkaloidal reactions which he could not ascribe to any of the known alkaloids, and he finally suspected that the changes following death might result in the production of such substances. He then undertook a systematic investigation, which resulted in the discovery of the cadaveric alkaloids, which were consequently named by him ptomaines. His discoveries became the subject of an investigation by a special commission, appointed by the Italian Government, but the main idea so far had relation to the medico-legal aspect of the question, that injustice might not be done in the conclusion that poison had been administered because the reaction of alkaloids had been found.

Contemporaneously with the work of Selmi, Arnaud Gautier, of Paris, had undertaken quite a full investigation of the subject from a chemical and physiological standpoint, and to his labors, together with those of Brieger, of Berlin, we owe much of the positive knowledge we possess relative to ptomaines and leucomaines, the latter being discovered and named by Gautier. The literature of the subject is already quite large, but it is mainly in the German or French languages, or scattered notes in the medical journals.

It would be of no value to present a list of all the alkaloids so far discovered in living animals and cadavers, for they are not all toxic. I will therefore select those which have been shown to possess poisonous properties, and after their enumeration it will be my object to consider their probable relation to disease.

First, we must note the classification into

1. Ptomaines or cadaveric alkaloids, the result of bacterial life.

2. Leucomaines or vital alkaloids, which are in some way the product of tissue metamorphosis, during the functional activities of the body.

The ptomaines and leucomaines are definite chemical compounds, and can be isolated and studied in their chemical relations, individual properties, and physiological effects. It was found that toxic effects could be produced when no alkaloids could be isolated; hence the class

3. Extractives, which are now the unknown quantity in the chemistry of these poisons; and from the fact that extremely poisonous effects can be obtained from these extractives, it is to be hoped that their chemistry may become more tractable.

It is proper to note that the processes for the isolation of the alkaloids are somewhat tedious, and occasionally moderately complex, but it is fair to assume that the bases pre-exist in the substances examined and are not the creatures of the chemical manipulations.

The solvents mainly used for the separation are ether, chloroform, and alcohol, and the respective solubility of the alkaloids in these agents has served as a basis for a classification.

An important question relates to the finding of leucomaines in the flesh of healthy animals recently killed—as to whether these alkaloids are the products of the ordinary processes of the body, or whether they result from a bacterial agency which may constantly be present in the body, notably in the intestinal tract. The problem does not seem to be demonstrable on either side, but, in view of the fact that albuminoid substances are constantly undergoing change in the body, and that analogous products, such as urea, do not require the idea of an intervention of micro-organisms in their production, it is not unfair to assume that the ordinary bio-chemical forces of the living animal are competent for the formation of leucomaines. It is even possible that some of the alkaloids found after death had an existence during life, and that some of the ptomaines are in reality leucomaines. As a matter of fact, some of the alkaloids are quite permanent—so much so that they endure through the entire process of putrefaction, and have been termed by Gautier pyridic bases.

The ptomaines have been classified as oxygenous and

non-oxygenous, according as oxygen enters or does not enter into their composition. The leucomaines have been divided into the uric group, the creatinine group, and the unclassified group. The *poisonous* ptomaines, so far as I have been able to ascertain, are:

| | |
|---|---|
| Hydrocollidine, | Choline, |
| Methylguanidine, | Muscarine, |
| Mydaleine, | Several unnamed bases, |
| Neurine, | The ptomaine extractives. |
| Mydatoxine. | |

The leucomaines, irrespective of their poisonous properties, are:

| | |
|---|---|
| Betaine, | Pseudoxanthine, |
| Kamine, | Creatinine, |
| Adenine, | Crusocreatinine, |
| Guanine, | Xanthocreatinine, |
| Sarkine, or hypoxanthine, | Amphicreatinine. |
| Xanthine, | |

The foregoing belong to the uric and creatinine groups of leucomaines. Other alkaloids, known as the unclassified group, are found in the urine, the blood, the spleen, the intestines, the saliva, the milk, the venom of certain snakes and batrachians, and in mollusks and fishes. The tyrotoxicon found in milk and cheese by our countryman, Vaughan, of Ann Arbor, Mich., is specially interesting. Mytilotoxine, found in mollusks, is also of special interest. Another alkaloid of the leucomaine series, obtained from patients afflicted with tetanus, and therefore named tetanine, has recently been added to the list, and I presume there are others of which I have no information.

We come now to a consideration of the physiological, or rather the toxic, effects of these substances, and for that purpose we will take them up in the order just given, with the preface that the effects noted were generally the result of experiments on animals. Hydrocollidine in a bird produced "vomiting, inco-ordination, paralysis, convulsions, death." Methylguanidine is highly poisonous, its symptoms being similar to the effects of atropine and curara. Mydaleine "excites profuse diarrhœa, vomiting, enteritis—death with the heart in diastole." Its effects on the pupil and the circulation are similar to those of atropine. Neurine poisoning is manifested by "abundant secretions, diarrhœa, accelerated respirations, and convulsions before death." Brieger, in his demonstrations of the action of some of the ptomaines before the German Surgical Congress in Berlin on April 5, 1888, showed that after the injection of neurine in a rabbit there occurred "first a flow of thick mucus from the nose, then profuse salivation appeared, and later the animal suffered from dyspnœa, became paralyzed, and died in convulsions." Mydatoxine has a similar train of symptoms to those of neurine. Choline: I have been unable to find statements concerning the symptoms of poisoning by this agent, except that it can be administered in large (?) doses, when its effects are similar to those of muscarine. Muscarine is highly toxic and causes a "loss of muscular contractility to the electrical stimulus," but salivation, vomiting, and purging are also among its effects. This alkaloid is taken as the type of a group in which the symptoms of poisoning have a certain similarity to the effects of the poisonous mushrooms, or the calabar bean, and in contrast with those alkaloids having an atropine-like influence.

There remain a few ptomaines of moderate toxic power that I have not named, and some unnamed bases of decided poisonous qualities; and then there still remain the "extractives"—substances that elude the efforts of the chemist to isolate or crystallize, and yet, from their intensely poisonous properties, they are of great importance. As individual properties can not be assigned to them, they remain a great "danger in the dark"—the *x*, *y*, and *z*'*s* of some of our ætiological problems.

The toxic effects of the leucomaines can not be considered in the same manner that we have reviewed those of the ptomaines, for the evidence is still quite incomplete. This is owing to their recent discovery and the limited supply to be secured for experimental purposes.

Some of the creatinine group are asserted by Gautier to be toxic, even in small amounts. This is notably the case with xanthocreatinine. The more prominent effects observed are lassitude, sleepiness, vomiting, and purgation.

Xanthine, in the uric group, is said to be toxic, but I can find no authentic statements relative to its symptomatology.

Mytilotoxine, found in diseased mussels, was discovered by Brieger, and he recently demonstrated its effects before the congress of German surgeons. An animal poisoned by it had head-drop, dyspnœa, convulsions, and paralysis. When given to a man ill with tetanus it caused a relaxation of the clonic spasms, but did not so act in animals. The analogy of this agent to curara is manifest, and its administration in disease is the first use of the animal alkaloids in practical medicine of which I am cognizant.

Other members of the non-seriate group, including the extractives, are poisonous. That from the spleen produces collapse and death with the heart in systole. It is difficult to decide whether to classify the intestinal products with the ptomaines or the leucomaines, for, micro-organisms being invariably present in the intestinal canal from a period soon after birth, it is impossible to assume or exclude bacillary influence in the production of these alkaloids or extractives. The subject is under investigation, but it can only be stated that poisonous products are to be found in the intestines.

A curious observation by Bouchard indicates that "the day urine affords a narcotic, sedative principle; the night urine, on the contrary, is marked by a stimulant, convulsivant principle." This is suggestive of an influence on the animal organism through excretion or retention of material elaborated in the body, analogous to what are termed medicinal effects, such as the production of sleep. Is the hypnotic of the future to come from the dissecting-room rather than the field or the chemical laboratory? Gautier found that an extract with alkaloidal reactions, taken from the saliva of a man, produced an intense stupor in a bird, the stupor lasting for several hours.

The venom of snakes has a certain analogy to the salivary secretion of mammals, but the chemistry is yet undetermined. The probability at present lies in favor of the toxic principle being extractive rather than alkaloidal, but the fact that a temperature of 125° C. (257° F.) will not

destroy the venom is evidence that the toxicity does not depend on an organic ferment or bacterium.

We will now consider the animal alkaloids as causes of disease, it being understood for the present that the term alkaloids may, for convenience, include the extractives. This inquiry may be pursued under three divisions, viz.:

1. The facts relative to the proved causative action.

2. The classes of diseases in which it is fair to assume that a causative relation exists.

3. Diseases in which the evidence to date would render it improbable that a causative relation exists.

It is necessary to define our idea of causation in this connection in order to avoid confusion. It is now an accepted conclusion that the cadaveric or putrefactive alkaloids are the result of bacterial life, and, in view of the fact that there is no conceivable process by which a ptomaine can add to its own quantity, it is not probable that a ptomaine could be the sole cause of a protracted and uniformly progressive malady.

This progressive or developmental character would favor the idea that the cause continued to generate its kind or to develop new properties, and this being possible through the presence of bacteria in a proper cultivation medium, we can then consider the bacteria the *cause* and the alkaloids the *agent* in the production of the disease.

It seems to me proper and natural to regard bacteria as *the* cause in case the alkaloid is the result of microbal action, *and this action is continuous or protracted and occurs within the body of the patient.* On the other hand, if the alkaloid is received into the body from a source of production existing without, and received either in a single dose or in repeated doses, then the ptomaine becomes the cause of the disease.

If poisonous leucomaines can be generated within the living organism by ordinary bio-chemical processes, either in unusual quantity or the quantity becoming relatively great through defective elimination, then leucomaines may become the cause of disease. If, on the other hand, the development of the leucomaines should be shown to depend upon bacteria existing and operating within the body, then bacteria should be considered as the causative agents.

There may be, and doubtless are, many cases in which bacteria and their resulting ptomaines are simultaneously introduced, and then neither can be assumed to be the special cause of the resulting disease, unless one is shown to be competent to produce the morbid phenomena without the coincident presence of the other at the time of the infection.

Dr. William H. Welch, in his recent "Cartwright Lectures on the General Pathology of Fevers," relates experiments where he injected *sterilized* cultivations of the typhoid bacillus into rabbits and found that "small quantities . . . produce no effects; somewhat larger amounts cause a rise in temperature without other marked symptoms; still larger quantities produce increased temperature, diarrhœa, and other manifest symptoms of severe illness, but the animal may recover; relatively large amounts are followed by fall of temperature, grave illness, and death."

This subnormal temperature may receive a note here. It seems to me that rather hasty generalizations have been made relative to the effect of the alkaloids on bodily temperature.

It has been asserted that "poisoning by the extractives is attended by hyperthermia; poisoning by the animal alkaloids is accompanied by hypothermia; a combination or succession of hyperthermic and hypothermic phenomena may become manifest according to the combination or alternation of poisoning by the deleterious physiological products or their antagonistic action" (Aitken "On the Animal Alkaloids," p. 15).

Dr. Welch's experiments, as well as other evidence, indicate that these conclusions are not warranted. He says: "I have also obtained results similar to those of Sirotinin, who inoculated two rabbits with the same amount of a typhoid culture. In one rabbit fever developed, and the animal recovered; in the other the temperature fell after the injection, and the animal died." Speculation as to the cause of this varying effect where like identical experiments are made on similar animals is so far without practical value. To ascribe it to idiosyncrasy is as far as we can go. We certainly are not warranted in ascribing hyperthermia or hypothermia to a class of substances having a certain relationship in origin or chemical constitution.

To recur to our threefold division of the relation of the alkaloids to disease.

First, the instances in which there has been a demonstrated causative relationship are not numerous, at least so far as individual diseases are concerned. In some cases, however, the presumption is so strong as to leave no reasonable ground for doubt.

The substance known as tyrotoxicon or cheese poison is undoubtedly the cause of a sickness which had been known long prior to the discovery of the alkaloid. The symptoms following its administration—dryness and constriction of the throat, nausea, vomiting, and diarrhœa—correspond to the symptoms of "cheese sickness."

Tetanine and an analogous alkaloid were discovered by Brieger in cultivations of an anaerobic bacillus found in the soil, and in cultivations of a bacillus from the wound of a man who died of tetanus. There is now no doubt that tetanine will produce tetanus in animals. Brieger recently demonstrated it in a rabbit before the German Surgical Congress.

It does not seem to me that the evidence so far presented will justify the opinion that either cholera or typhoid fever depends on an animal alkaloid rather than on bacteria, though it is contended that such is the case.

There can be no reasonable doubt that mytilotoxine is the cause of "mollusk poisoning," and the fact that Brieger obtained this alkaloid from fresh mussels is an important fact relating to the question of the production of leucomaines as contrasted with ptomaines.

Salamandrine, extracted from the poisonous secretion of the salamander, has the same effect as the secretion—*i. e.*, anxiety, trembling, convulsions, opisthotonus, and death—as was demonstrated by its discoverer, Zalesky.

The poisonous properties of certain sausages is undoubtedly due to a ptomaine, though the evidence is not conclusive as to its alkaloidal nature.

As to the second division of cases—those in which it is probable that an alkaloid has an ætiological relationship—there is a large field for investigation and legitimate speculation. Leaving aside the problem presented by typhoid fever, cholera, etc., the idea of poisoning by leucomaines gives a simpler and more probable explanation of the origin of such diseases as rheumatism, gout, some neuralgias, etc. The condition known as uræmia may readily be ascribed to such a causation, and the same may be said of diabetic coma and probably sunstroke.

The languor often associated with the process of digestion and those symptoms known as "biliousness" may yet find their explanation in the development of a leucomaine in the intestinal tract or in accessory organs, and the *eliminating* effect of a purgative would therefore have a more rational basis, and might even justify the use of cathartics in so grave a disorder as peritonitis when that disease presumably depended on the presence of alkaloids in the intestines.

This division of the subject is pregnant with great possibilities and even probabilities connected with "the medicine of the future."

The third division, in which we were to consider the diseases that did not owe their origin to animal alkaloids, needs only a brief consideration. While some alkaloidal diseases, such as "sausage poisoning," may have a considerable duration, it is probable that protracted maladies—diseases that have a developmental period, a period of gradual rise, a stationary period, and then a gradual decline—owe their origin to some specific and *reproductive* agency. The only exception to this lies in the possibility of a disturbance in the physiological processes whereby the body will generate within itself the leucomaines, and that this generative process may be continued for a considerable period of time.

A great deal has been alleged for the ptomaines, but the enthusiasm of scientists is often like that of the soldier—it only sees the city to be captured, and victory is the object of the campaign. The desire to have the cause we champion prevail is a quite general and natural feeling.

Our present, and probably our future, classification of diseases will contain many, probably a large majority, not directly resulting from animal alkaloids, but a review of the work already done shows that an important field has been opened, and the harvest already gathered surpasses in value that indicated at the dramatic heralding of the work in the Court at Rome, when it was proved by Selmi that the death of General Gibbone was probably not due to poisoning by his servant, who was charged with the crime and liable to be convicted by the testimony of two chemists, who professed to have found *delphinine*, but Selmi demonstrated their error by showing the same reactions with ptomaines which he had discovered.

While the discovery of the animal alkaloids has added somewhat to the difficulties of the chemico-medical expert, there is a compensation in making clearer some of the problems of practical medicine, but, as a cause of disease in any true sense of the term, the discovery of these substances can not as yet be considered so important an advance as the recent demonstrations of *contagia viva*.

# RECENT ADVANCES IN THE DISINFECTION OF DWELLINGS

## AS ILLUSTRATED BY THE BERLIN RULES.

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Since the beginning of the present decade the practical study of infectious agents, with a view to their control and destruction, has taken two different directions. Pasteur and his pupils have been preoccupied with investigations concerning preventive inoculation which is to protect the animal body in the event of an invasion of pathogenetic micro-organisms against their multiplication, and consequently against the outbreak of the disease. Koch and his school, on the other hand, heeding but slightly the experiments of the French, and placing little value upon the practical results obtained, have directed their attention toward the successful extermination of disease-germs outside of the body. Their laborious researches have placed the whole matter of disinfection on a basis more secure than it has ever been on before, from which, most probably, it will not be shaken by whatever information future researches may bring to light. More recently there has been manifested great activity on the part of the French also, and in fact among most European states, concerning the subject of disinfection, not only as applied to hospitals, but also to infectious diseases occurring among the inhabitants of cities, towns, and smaller communities.

In the disinfection of sick-rooms in private dwellings, as well as in hospitals, we have to deal not only with the walls of the room, but with its contents, usually of such a varied character. This problem, therefore, requires the application of different modes of disinfection, since manifestly all the objects can not be exposed to the same treatment. The ripe fruit of the painstaking work of R. Koch and others in this field is now before us in the shape of a small pamphlet,* issued by the authorities of the city of Berlin, and known as the ordinance of February 7, 1887. This gives directions with reference to disinfection during and after infectious diseases as it is to be carried out in the infected dwellings of the city. As the contents of this pamphlet have not yet been brought prominently into notice in this country, it seems desirable to give them very briefly, together with a few remarks illustrating the gradual crystallization of the rules there laid down.

The ordinance divides infectious diseases into two classes (given below, § 2). For the first, disinfection is made obligatory. For the second, it may be enforced at the discretion of the police authorities. Failure to obey the rules laid down is punishable by a fine of thirty marks or less and the cost of disinfection. The directions for disinfection are given clearly and explicitly. The most important are translated literally in the following summary:

* "Anweisung zum Desinfectionsverfahren bei Volkskrankheiten." Amtliche Ausgabe. Berlin, 1887. A. W. Hayns Erben. Pp. 14. See, also, "Deutsche Vierteljahrschrift f. öffentliche Gesundheitspflege," xix, 1887, 144, for the same rules, with explanatory remarks by M. Pistor.

§ 1. The object of disinfection is to prevent the spread of infectious diseases by destroying or making innocuous infectious germs.

§ 2. Infectious diseases are divided for this purpose into two classes:

*a*. Those which absolutely require disinfection: 1, Asiatic cholera; 2, small-pox (genuine and modified); 3, typhus and relapsing fever; 4, diphtheria.

*b*. Those for which disinfection may be made obligatory upon a special order, but for which it is urgently recommended: 5, Typhoid fever; 6, scarlatina; 7, epidemic dysentery; 8, measles; 9, whooping-cough; 10, phthisis (*Lungenschwindsucht*).

§ 3. Disinfection consists in

1. Scrupulous cleanliness of the patient, his living and dead surroundings, the sick-room and its entire contents.

2. Abundant and frequent renewal of air in the sick-room.

3. Immediate removal and destruction of infectious matter and useless articles.

*Process of Disinfection.*—§ 5. 1. For the maintenance of cleanliness, the patient must undergo daily ablution; there should be frequent—daily, if possible—change of clothing and bedding; immediate removal of soiled linen and daily cleansing of the sick-chamber with moist cloths, which should be placed immediately after use in boiling water for half an hour.

2. Ventilation of the occupied chamber is accomplished by the frequent and prolonged opening of windows and of the stove, heated *from within;* when the weather is cold, the open window should be covered by a curtain.

3. For the destruction of infectious matter are used:

*a*. Streaming, superheated steam in the disinfection establishments erected by the city of Berlin.

*b*. Boiling in water for half an hour.

*c*. A 5-per-cent. solution of carbolic acid.

*d*. A 2-per-cent. solution of carbolic acid (the method of preparation is also given).

*e*. Burning of worthless articles.

§ 6. Recommends the isolation of the sick-room and forbids the subsequent removal of any articles therefrom, unless disinfected. All linen, cloths used to wipe objects in the room, should not be shaken, but placed immediately in a 2-per-cent. solution of carbolic acid for twenty-four hours, then boiled for half an hour in water, and washed in a solution of soap containing twenty grammes of potash (black or green) soap to ten litres of water.

§ 7. All excretions in cholera, typhoid, diphtheria, scarlatina, and dysentery are received into vessels one fourth full of 5-per-cent. carbolic acid. These are emptied into (water) closets.

Under this section are included:

In cholera, vomited matter, dejections, and urine.

In diphtheria and scarlatina, expectoration, nasal mucus, and urine.

In all forms of typhus fevers and in epidemic dysentery, the stools.

Water-closets should not be used by the sick. Should they have been used, however, the seats and hoppers should be scrubbed with a 5-per-cent. solution of carbolic acid, and the latter rinsed with three to four litres of the same solution.

§ 8. Food and drink must not be kept in the sick-room, nor consumed there by any one save the patient.

§ 9. Soiled bandages must be burned immediately; instruments cleaned in a 5-per-cent. solution of carbolic acid.

§ 10. Bad odors should be removed solely by removing their source and by frequent airing. Perfumes simply conceal, but neither remove odors nor disinfect.

§ 11. At the close of the disease, all articles which can not be washed—such as clothing, bedding, pillows, spreads, silk goods, carpets, furs, upholstered articles without external veneering—are *very cautiously* (*i. e.*, without shaking or beating them) tied up in a linen cloth moistened with a 2-per-cent. solution of carbolic acid, and sent to one of the municipal disinfecting stations in their wagons. Soiled leather (shoes) must be disinfected with 5-per-cent. solution of carbolic acid.

§ 12. Refers to the burning of worthless material (bedstraw, clothing, etc.) in the kitchen stove, upon which there must be no food at the time. More bulky material is to be disposed of by the disinfecting station.*

§ 13. Polished and carved furniture, pictures, metallic articles, and works of art are to be rubbed carefully with dry cloths, papered as well as painted walls carefully with dry bread after the floor has been thoroughly moistened with a 5-per-cent. solution of carbolic acid.

Those places on the walls which have been soiled by expectoration, etc., are to be moistened with a 5-per-cent. solution of carbolic acid and carefully scraped.

All floors, without exception, doors, windows, as well as all wood-work without polish, are to be thoroughly scrubbed with a 5-per-cent. solution of carbolic acid after cholera, small-pox, diphtheria, typhus, and relapsing fever. The disinfectant should be allowed to penetrate the cracks in the floor, and the whole finally washed with clear water.

The bread used in rubbing off the walls, and the cloths, are burned; or, if still useful, they are treated according to § 6.

§ 14. Prescribes, lastly, the airing of the disinfected rooms for twenty-four hours after cholera, diphtheria, small-pox, typhus and relapsing fever.

§ 15. Forbids the use of public conveyances for those infected with any of the eight first diseases of § 2, and calls attention to conveyances specially set apart for such patients.

§ 16. Convalescents before associating with others must first take a warm soap bath, or, if this is impossible, the whole body must be thoroughly cleansed with soap and water, and only those garments put on which have not been used during the illness, or which have been disinfected.

§ 17. The bodies of those who have died of cholera, small-pox, diphtheria, dysentery, or typhus fever must be wrapped, *without being washed*, in a cloth saturated with a 5-per-cent. solution of carbolic acid before being placed in the coffin, and speedily removed to some building for the reception of the dead previous to their interment (*Leichenhalle*).

§ 18. Prescribes that all who have come in contact with patients affected with cholera, small-pox, diphtheria, scarlatina, typhus and relapsing fever should immediately after wash their hands in a 2-per-cent. solution of carbolic acid. Nurses should carefully cleanse face, beard, and hair. It also prescribes that disinfectors must wear a special suit of clothing during their work, and that they, as well as nurses, must, when the work is done, change their entire dress.

§ 19. The directions included in §§ 13 to 18 are carried out in those cases also (§ 2, *b*) in which disinfection is conducted under a special order of the authorities.

§ 20. If disinfection has not been prescribed in typhoid, scarlatina, or dysentery, it is to take place, as with measles, whooping-cough, and phthisis, at the discretion of the physician.

To these instructions is appended an announcement with reference to their execution by specially appointed disin-

* This rule seems to me an objectionable one, as it permits infected articles to be dragged through the house, and very likely more or less scattered before they are burnt up. All useless, suspected material should be disposed of by the stations.

fectors. It regulates their compensation, and prescribes the penalty in case of neglect or carelessness.

These rules are of interest to us in formulating for the first time the most advanced methods of disinfection as applied to dwelling-places which had hitherto not received very much attention in this respect. It is not left in the hands and at the discretion of the attending physician, but is made compulsory. The attention of the public is thus forcibly directed to them, and they become common property. The whole subject in this aspect must, nevertheless, be considered an experiment, for the carrying out of which we must be thankful to the sanitary authorities of Berlin. There are some paragraphs in these rules which may seem quite superfluous to us. But we must bear in mind that they are intended to reach the lower classes, and therefore the simplest methods are not only stated in the simplest language, but certain facts concerning cleanliness, presumably familiar to all intelligentpeople, are inserted as of the utmost importance, being in themselves measures of disinfection.

It is of interest to trace in the various publications of experiments on disinfectants since 1881 the gradual development of these rules through their numerous intermediate stages, which have had their day, and to note how slowly but surely the reliable means of disinfection have been narrowed down to a few.

First, as to the room itself. Naturally a gaseous agent suggested itself to the earlier investigators *—one that might penetrate into all the minute hidden recesses and crevices not readily accessible to liquids. Sulphur dioxide or burning sulphur was found inadequate, owing to its very feeble germicide properties. Chlorine, also employed for a time, was found unsatisfactory, in spite of its high disinfectant power in combination with moisture, on account of its feeble penetrating capacity. It was unable to kill bacteria loosely wrapped in a coat-pocket. It also ruined wearing apparel. Finally, it was difficult to make a room sufficiently tight to prevent the premature dissipation of the gas. Gaseous substances have, therefore, been given up entirely.

Subsequent investigations † aimed at the utilization of some powerful disinfectant in solution which was to be sprayed upon the bounding surfaces of the room. Mercuric chloride in a $\frac{1}{10}$-per-cent. solution was tried and found effective. But it was impossible for sanitarians to shut their eyes to the fact that there was a large quantity of a highly poisonous substance left in the room. Efforts were made to rid the walls of the mercuric chloride by spraying them subsequently with sodium carbonate, which forms an insoluble oxychloride of mercury. This is readily swept from the walls as a crystalline powder. But the poisonous nature of the corrosive sublimate has prevented its extended application, and carbolic acid, as we have seen, has superseded it in the Berlin rules. Esmarch, ‡ in a painstaking investigation, determined the curious fact that if walls were simply rubbed with bread, all the adherent germs were caught on the bread. This simple procedure was found even superior to washing the walls with a 5-per-cent. solution of carbolic acid or a $\frac{1}{10}$-per-cent. solution of mercuric chloride, and has therefore been recommended in the rules.

There are other objections to the use of mercuric chloride, such as the formation of precipitates with albuminous substances, rendering it partly inert. Where such objections may be disregarded, it still holds an important place as one of the most powerful germicides. In the disinfection of the holds of vessels it has been recommended by the Prussian Government on the basis of experiments made by Koch,* and its application carefully formulated.†

Perhaps the so-called crude carbolic acid—a dark, thick liquid said to contain about 25 per cent. of phenol—may in part replace the expensive pure acid now in use. Laplace, ‡ in endeavoring to utilize this liquid, found that it failed to dissolve in water. When, however, an equal volume of sulphuric acid was added to it, the mixture became soluble, and a 4-per-cent. solution was found superior to a 5-per-cent. solution of pure carbolic acid in its action on anthrax spores. Before its true place can be determined it will require testing in various directions. In using it, it is well to bear in mind that on the one hand sulphuric acid is in itself a powerful germicide, and on the other it may be corrosive with reference to certain articles. The cheapness of crude carbolic acid # will make it a welcome addition to the list of available disinfectants.

In a recent order the Prussian Government has recognized its value in recommending it together with ordinary lime as a disinfectant in combating the unsanitary condition produced in dwellings by floods in the eastern provinces. Liborius ‖ had demonstrated the efficiency of slaked or powdered lime in destroying typhoid and cholera bacilli, the amount required depending upon the quantity of albuminous and other organic matter present. I have been able to fully confirm his results upon another microbe not producing spores. When organic matter is absent these bacteria are destroyed in lime-water diluted to one fourth its strength (about ·03 per cent.). When large quantities of albuminous matter are present, as much as from 4 to 5 per cent. may be necessary. Whitewash as ordinarily used is much more concentrated than this, however. Lime will therefore prove a very valuable agent in disinfecting the surface of the soil, and in the form of whitewash for the poorer classes. That it will not destroy spores does not materially diminish its value, since a pathogenetic spore incrusted with carbonate of calcium and fixed to the walls of a room is not likely to create further mischief. More attention should, therefore, be paid by sanitarians to the use of lime in preference to wall-paper for the poorer classes, owing to this very germicide and fixing power.

* See "Mittheilungen a. d. kaiserlichen Gesundheitsamte," i, ii, *passim*.

† Guttmann, P., "Ueber Desinfection von Wohnungen," "Arch. f. path. Anatomie," etc., cvii, 1887, p. 459. Krupin, "Ueber Desinfection von Wohnräumen," "Zeitschr. f. Hygiene," iii, 1887, p. 219.

‡ "Der Keimgehalt d. Wände u. ihre Desinfection," "Zeitschr. f. Hygiene," ii, 1887, p. 491.

* "Arbeiten a. d. kaiserlichen Gesundheitsamte," i, 1886, p. 199.

† "Anleitung z. Desinfection u. z. Desodorisation S. M. Schiffe u. Fahrzeuge." Berlin: Mittler u. Sohn.

‡ "Deutsche medicinische Wochenschrift," 1888, p. 121.

# Quoted at ninety cents a gallon.

‖ "Zeitschrift f. Hygiene," ii, 1887, p. 15.

Passing from the room to its contents, the objects needing sterilization most urgently are bedding and clothing, since they are most liable to contain the infectious elements. The discussion as to the best means of destroying them brings up the very important problem of disinfection by heat. It has been shown by Koch and others that dry, hot air is to be rejected, since it penetrates very slowly into large bundles. The high temperature (140° C.) required, together with the long exposure (several hours), is apt to permanently injure the exposed objects. Moist heat was next tried and found very efficient in the form of steam at 100° C., such as escapes from boiling water under the ordinary atmospheric pressure. Steam under increased pressure in a closed boiler was found to suffer in part under the same disadvantage which had been observed in connection with dry heated air—that is, the slowness with which the heat penetrates into the interior of large bundles.

Disinfecting boilers are now being constructed * which utilize the principle of streaming, slightly superheated steam freely escaping from a small opening in the upper portion of the disinfecting boiler. An exposure varying from one to two hours is usually sufficient for complete disinfection. In these the steam is formed, in a separate boiler, under a pressure of about three atmospheres. Geneste Herscher & Co., of Paris, have constructed a slightly different disinfecting apparatus which bids fair to outrank the former. It is used throughout France, as well as in other European states. It utilizes steam under pressure, thereby giving an internal temperature of 110° to 115° C. In order to obviate the objections which have been made to the use of steam under pressure, the latter is discharged once or twice during the process of disinfection until the temperature falls to 100° C. All the residual air inclosed in the interior of bundles, mattresses, etc., is thereby driven out and replaced by steam. Salomonsen † and Levison have recently subjected this apparatus to a very rigorous test, making use of the spores of *Bacillus subtilis* and various earth bacilli as test objects. They found a period of twenty minutes sufficient for the destruction of all spores, provided the steam was exhausted twice. There are thus in active use three forms of apparatus: 1. The simplest ‡ using streaming steam from boiling water. 2. Those using streaming superheated steam from a separate boiler (Berlin). 3. Those using steam under pressure with the means of exhausting (Paris).

There has also been a slight change in views as to what should constitute thorough disinfection. In the earlier experiments Koch suggested that disinfection should not be considered complete unless the most resistant spore-forms known had been destroyed. Since then several species of bacilli have been studied whose spores display such a remarkable power of resistance to boiling water that they are only destroyed after an immersion lasting from three to five hours.# It is now coming to be accepted that an exposure which destroys the most resistant pathogenetic forms known, such as anthrax spores, is sufficient. This modification is timely in view of the fact that the great resistance of the earth-bacilli spores would make disinfection on a large scale practically impossible. Moreover, none of the many pathogenetic bacteria which have been described within the past few years exceed the resisting power of anthrax spores, while very few may be considered equal to it, such as the spores of malignant œdema and *charbon symptomatique* among animal diseases, and tuberculosis.

* By O. Schimmel & Co., Chemnitz, Saxony, and used in the disinfection establishments of the city of Berlin.

† "Versuche mit verschiedenen Desinfectionsapparaten," "Zeitschrift f. Hygiene," iv, 1888, p. 94.

‡ Esmarch, "Der Henneberg'sche Desinfector," *l. c.*, ii, 1887, p. 342.

# Globig, "Zeitschrift f. Hygiene," iii, 1887, p. 322.

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## ON THE ANATOMY AND PHYSIOLOGY OF GLANDS.

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### I.

Morphologic anatomy has not demonstrated the union in a metameric chain—for instance, like that of the forty-three pairs of nerves—of the eleven pairs of great glands of the body, the ceruminous, lacrymal, thymus, thyreoid, pulmonary, salivary, hepatico-pancreatic, urinary, spermatic, ovaric, and mammary; yet comparative anatomy and comparative embryology,* by proving that the liver and pancreas form a pair and that the lungs are glands, have given us the missing links for such a chain.

General physiology, which shows that the function of the muscular system is motion, has not yet clearly exhibited the one great function of this glandular chain in the acts of production and egestion—acts opposed to those of construction and ingestion,† which acts constitute the function of the intestinal and circulatory systems, yet histology and comparative physiology have furnished us with ample data for making this generalization. ‡

Glands are pouches or inversions formed either in the external or the intestinal skin, exoderm or endoderm. Wiedersheim has demonstrated and shows in a schema very clearly a complete chain of intestinal glands all of which appear to be homologous and all of which are inversions of the vertebrate intestine. These are the salivaries, the thymus and thyreoid glands, the lungs, and the liver and pancreas, which are exhibited as two halves of a whole, two antimers of a pair, like the pair of lungs or the pair of kidneys. This is the intestinal glandular system. The spleen does not come into the scheme, as it is not an intestinal development, but belongs to the lymphatic system. The stomach is, of course, not a gland, being an enlargement of the intestine and not an inversion.

In the works of Gegenbaur, Wiedersheim, Jeffrey Bell, Balfour, and Haeckel we find gathered from many sources the long and curious history of another glandular system, the urogenital.#

* Wiedersheim, "Comparative Anatomy of Vertebrates." Balfour, "Comparative Embryology."

† "Egestion is as necessary as ingestion."—Marshall Hall.

‡ Jeffrey Bell, "Comparative Anatomy and Physiology." The lungs and kidneys are classed as purifying organs.

# The "Urogenital System," Gegenbaur, "Anatomie des Menschen."

This can not be called an intestinal system, nor yet is it cutaneous, but of mixed, double, perhaps of triple or quadruple origin. The kidneys are cutaneous inversions, being formed at an early embryonic stage by inpushings of the epiblast. The testes originate in low forms from the exoderm, the ovaries from the endoderm. In the vertebrate embryo they appear to rise from the mesoblast, from the parietal and visceral cœloma epithelium.* The whole urogenital system in higher forms in the completed stage seems to be located centrally between the "vascular plate" and the "flesh-plate"—that is, between the muscular system and the sanguiniferous system—thus suggesting to the mind a central glandular system much as the cerebro-spinal axis suggests a central nervous system.

This central glandular chain of three links—kidneys, testes, ovaries—is in the completed stage anatomically united to the intestinal chain of five links—the salivary, thymus, thyreoid, pulmonary, and hepatico-pancreatic pairs—by that great epithelial expanse, the mucous membrane. Over this expanse are disseminated the thousand and one smaller glands, follicles, or glandules, œsophageal, bronchial, gastric, intestinal, uterine, vaginal glands of Brunner, Lieberkühn, Tyson, Cowper, Bartholin, Littre—all so insignificant as only to be borne in mind by the names of their discoverers, yet all being parts of this effusive intestinal whole.

There remain the glands of the exterior. Here the skin is the substratum, as the mucous membrane is for the interior. It is covered, like the mucous membrane, with crypts, follicles, or glandules innumerable, sudoriparous and sebaceous. At three points they become exaggerated into large glands—at the aural and orbital cavities and in the pectoral region. The lacrymal glands are sunk deepest, and have become united to the mucous tract and to the intestinal chain of Wiedersheim. Embryology shows their cutaneous origin. The ceruminous glands seem attempting the same inward path, but they fail to make the connection; being separated from the mucous membrane by the tympanum, they remain cutaneous. The mammæ, which are merely enlarged sebaceous glands, also remain true to their cutaneous origin, and in function may be regarded as an annex of the urogenital or central glandular system.

Whatever their origin, whatever their difference of form, whatever their special function, the visible fact remains that the eleven pairs of glands form a long connected chain, connected for the most part by the mucous tissue, entirely connected by epithelial tissue, either mucous or cutaneous. This whole glandular chain—formed by the intestinal glandular system shown by Wiedersheim and the central glandular system or urogenital system of Gegenbaur, together with the ceruminous and mammary glands, which are cutaneous, and the lacrymal gland of mucous connection, but of cutaneous origin—is placed in and upon the body, hung upon the body, as it were, in a circle, passing from the vertex downward and inward, then outward and upward again toward the vertex. It passes from the exterior to the deepest interior, then out again to the very exterior. The ceruminous pair is exterior and exodermic; the lacrymal of exodermic origin, endodermic function; the next five, endodermic; the next three (kidneys, testes, ovaries), still deeper, are mesodermic or central; then the chain emerges again, and the mammæ, which in function are an extension of the urogenital system, are exodermic, similar to the ceruminous; and it may be remembered that these terminal glands of the chain, the mammæ, are enlarged sebaceous glands, and the ceruminous, the initiative link of the chain, are enlarged sudoriparous glands. Thus one might imagine that both kinds of small skin glands had been developed and attached, one at each end of the mucous chain.

* For the bibliography, etc., upon this point, see Balfour, "Comparative Embryology."

## II.

It is proper for special physiology, looking at the concrete phenomena, to describe successively the five functions of the vegetative life—digestion, circulation, respiration, excretion, and reproduction; but it is also proper for general physiology to note that all processes of the vegetative life may be reduced to two: ingestion and egestion—a putting something into the organism, and a drawing or thrusting something out of it.

Throughout the interminable series of complicated apparatus and chains of systems composing the vegetative-life structure two forms of organs may be discerned and two only: fibrous and cellular vessels and glands. A set of long fibrous tubes, of a caliber growing ever smaller and smaller, beginning with the mouth, pharynx, and gullet, and ending only with the capillaries, are forever injecting nourishment into the tissues, pouring into them the life-stream. A set of cell-lined pouches or dermal inversions are forever drawing off matter from the life-stream, generating in their cellular meshes products foreign to the organism, and by their ejaculatory ducts tending to cast forth these products.

In this whirlpool of ingestion and egestion, of infusion and effusion, not all the products are thrown out; some few, notably the saliva, the gastric juice, and portions of the bile are again drawn into the vortex, but the amount of secretion is insignificant as compared to the amount of excretion, if under the latter term are included all products that leave the body.

Digestion is partly ingestive and partly egestive, respiration is ingestive and egestive, circulation is ingestive by the arteries; excretion and reproduction are egestive.

This seems to be the general truth: the intestinal system (mouth cavity, gullet, stomach, and small intestine), together with the lymphatic system and the circulatory system, form a complete ingestive organization, the end of which is the growth or construction of the body. On the other hand, the salivary glands, the lungs, the liver, the kidneys, the ovaries and testes, together with the large intestine as an egestive duct, work all in one direction and with one result—production—the forming of the various substances or products. The glands form an egestive or effusive organization.

We may easily trace out the course of the constructive or ingestive line. The intestinal cavities constitute the first section; the mouth, pharynx, gullet, stomach, and small intestine, or aliment, chyme, and chyle vessels. The lacteals

and the thoracic duct form the second, the lymph vessels; the third portion being made up of the blood-vessels—all this forms an interminable line of fibrous and elastic injection-tubes, a system of working in nutriment. On the other hand, diametrically opposed to this tubular or vascular system, we have the pouched, or invaginated, glandular system. The salivaries and the liver with its pancreas form an upper and lower pair of intestinal inversions and secrete ferments. The lungs above and the kidneys below form another set of pairs—the purifying glands.*

The lungs are intestinal inversions and excrete carboniferous matter; the kidneys are of cutaneous origin and excrete nitrogenous matter. One is said to purify the blood, the other takes off the effete products of muscle, etc.; thus the one tends to purify the vegetative life, the other to purify the animal life. An important pair of glands above—the lacrymal—are sense-accessory and moved to excessive secretion by painful sensation or emotion. An important set of glands below—the reproductive—generate or secrete germs, and are excited to extraordinary action by voluptuous sensation and by the tender emotion. Of the two remaining pairs—ceruminous at one end of the chain, mammæ at the other—the first is insignificant; the other, morphologically opposed to the uterus,† bears its part in the genital mechanism, the special functions of which are ovulation, menstruation, fertilization, gestation, parturition, lactation, all of which are a part of the one general function of secretion, or production and effusion.

The existence of a glandular "organ-system," if fairly demonstrated, as now seems likely, will be a truth of importance to gynæcologists, neurologists, dermatologists, alienists, and all who are interested in the finer portions of the human anatomy. Bain and the psychologists have long maintained that there is such a thing as a temperament or constitution "emotional on the whole," and that the physical basis of emotion is gland. That there is a glandular temperament or constitution, as there is a nervous and a muscular, appears certain, and recent anatomy seems to give the doctrine a lasting foundation in the intestinal and urogenital glandular systems.

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## ABDOMINAL SECTION IN EXTRA-UTERINE PREGNANCY.‡

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About ten years ago I read a paper to the Kentucky State Medical Society on Cæsarean section, in which I incidentally alluded to extra-uterine pregnancy, suggesting that the sac might be separated from its attachments and safely removed by the proper application of ligatures. I had not then seen a similar suggestion, though probably the operation had been recommended many years before, by Kiwisch in 1857, and by Stephen Rogers in 1867. In the criticism by my colleagues the operation was severely condemned, because it was not believed that the sac could be safely removed after this or any other fashion. But experience has demonstrated that the sac of an extra-uterine tubal pregnancy in the early months may be removed about as easily as an ovarian, tubal, or any other form of pelvic cyst. In fact, in nearly every instance the sac may be removed, and hæmorrhage controlled by the proper use of the ligature. The same may usually be done in advanced pregnancy, where the tube has ruptured and allowed the conception to develop in the folds of a broad ligament, if we separate adhesions carefully and ligate large bleeding surfaces, or the broad ligaments *en masse*, instead of attempting to ligate separate bleeding points on the placental site. By this means we control primary hæmorrhage and avoid the danger of secondary hæmorrhage when the placenta is finally separated in those cases where it is left *in situ*; we also avoid decomposition in the peritoneal cavity of the placenta and sac, which would probably result in peritonitis, septicæmia, hectic, exhaustion, etc. The objection that the placenta may be so attached to the abdominal walls, uterus, intestines, or other structures as to prevent its removal, is more theoretical than practical, for such attachments are by no means common in operations or in post-mortem examinations. However, if the sac and its contents can not be removed without incurring the risk of fatal hæmorrhage, they may be left behind, and the sac partially resected and stitched in the abdominal wound, with a drainage-tube in the lower angle of the incision. Or, after resecting part of the sac, we may stitch the edges together, and drain its cavity by a tube passed to the vagina through the retro-uterine pouch, thus shutting off a large portion of the sac from the peritoneal cavity. This gives drainage from the most dependent part of the sac, and admits of the entire closure of the abdominal wound, so as to get union by first intention. We may also drain through both abdomen and vagina, thereby being permitted to wash out the cavity of the sac.

The former results of efforts to remove the placenta in operations in advanced pregnancy have been so discouraging as to induce many writers, including Thomas, Barnes, Hicks, Kœberlé, and others to urge that it be left behind, lest the woman die of hæmorrhage. But, if the placenta is left attached, the patient may have secondary hæmorrhage, for the organ may retain its blood relations with the maternal structures, and continue to grow. Depaul reports a case of fatal hæmorrhage where he removed a placenta four months after the death of the fœtus, while Schröder removed a placenta, without the use of ligatures, three weeks after the death of the fœtus, with no untoward symptoms. It will certainly not be questioned that the placenta should be removed where it is possible to do so without incurring the imminent risk of fatal hæmorrhage, which it now seems is possible to do; for, if the placenta is retained, the woman's life is in jeopardy, and she may die of secondary hæmorrhage and shock, or from suppuration of the membranes, septicæmia, peritonitis, or exhaustion. The relative frequency of secondary hæmor-

* Jeffrey Bell. † Burdach's "Physiology."

‡ Read in the Section in Obstetrics and Diseases of Women, American Medical Association, at Cincinnati, May, 1888.

rhage after spontaneous separation of the placenta, compared with that caused by forcible separation, is as one to five where ligatures are not used. Were the diagnosis possible in the early weeks of pregnancy, before rupture of the sac, or before hæmorrhage into the peritoneal cavity from rupture of superficial vessels of the sac, the tube and its contents could so easily be removed that the propriety of doing so would be conceded by any one who prefers abdominal section to electricity. The results should be excellent, for the woman could be more carefully prepared for the operation, and, in the absence of the hæmorrhage and shock which usually follow rupture of the cyst, the prognosis should be as favorable as after the removal of a small ovarian or tubal cyst.

I find but one case on record where the operation was performed before rupture, or partial rupture, of the tube, and before the fourth month of gestation. In this case the patient was successfully operated upon by Dr. Joseph Price, September 11, 1887, but he was not positive in his diagnosis until he opened the abdomen. Nearly all American gynæcologists recommend destroying the fœtus by electricity if the diagnosis can be made before the fifth month of gestation and before hæmorrhage from rupture of vessels of the sac. The special advocates of this treatment are Thomas, Mundé, Lusk, and Garrigues, of New York, and Mann, of Buffalo, all of whom report excellent results; but all the cases treated may not have been tubal pregnancy, for there are few, if any, cases recorded where the diagnosis was positive before the end of the third month, with the sac and its superficial vessels intact; nor do I believe such a case can be diagnosticated with absolute certainty unless the membranes expelled are proved to be decidual by a microscopical examination, which can not be done except by an experienced microscopist. Neither the subjective nor the objective symptoms are pathognomonic; the same rational and physical signs are observed in other cysts, tumors, or deposits in the pelvis. At best we can only come to a probable conclusion of extra-uterine pregnancy; and I believe that in some of the reported successful cases following the use of electricity the women were suffering with some other form of pelvic trouble. Lawson Tait, who has operated for extra-uterine pregnancy more than any one else, has never seen a case until the sac had ruptured. So, if this difficulty in diagnosis is usual with the experienced gynæcologist, it is hardly probable that the average general practitioner or surgeon could make a correct diagnosis. The use of electricity in other forms of pelvic tumors or deposits may be followed by a rapid decrease in the size of such tumors or deposits, and a decided improvement in the local and general symptoms, the result of a healthful stimulation or of the electrolytic effect of the galvanic current.

But, conceding that we may sometimes diagnosticate tubal pregnancy in the early months, before rupture of the sac or rupture of vessels on the surface of the sac, then I maintain that abdominal section is preferable to electricity. If the child is killed, the sac, with its contents, is left in the pelvis as a foreign body, and may cause serious, or even fatal, complications. The placenta may continue to grow, and the woman may have secondary hæmorrhage or peritonitis, or fall into a state of chronic invalidism, so that finally an abdominal section will be necessary after the formation of adhesions, which will complicate the operation. Until recently the results of the surgical treatment in extra-uterine pregnancy were not encouraging; neither were the results in ovariotomy for many years; but Tait has reported thirty-six operations for rupture of the cyst within the last three years, with but two deaths, and Martin has operated nine times consecutively, with but one death. Tait's first death occurred before he had perfected the technique of the operation, and in his last case the patient was in such profound shock when he operated that she was unable to rally.

I will not consume your time in discussing the thirty-three cases where the fœtus was removed through the vagina, for the operation is so unsurgical and the results are so bad that I can hardly imagine a case where it would be preferable to abdominal section.

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## LACTIC ACID AND DIET IN INFANTILE DIARRHŒA.

By FRANK WHITFIELD SHAW, M. D.,
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Less than two years ago Hayem, of Paris, presented to the Academy of Medicine in that city a report on the use of lactic acid in the green diarrhœa of children. In the preparation of this work he had been assisted by his interne, Lesage, whose particular share in it had been the development of some pure gelatin cultivations of a germ which Hayem had discovered as being present in the vomited and rectal discharges of this variety of diarrhœa. He said he had established beyond the possibility of a doubt, by clinical experiment, the direct relation of this germ to the green color, and as such he claimed for it the right of discovery.

However, soon after his report was published this claim was contested by Damaschino, who said that, three years before, he had discovered this same microbe, had shown its relation to green diarrhœa, and had presented to the Biological Society some micro-photographs of it.

Hayem admitted his priority to the microscopical discovery, but still claimed as his own the credit for showing the proper relation of the bacillus to the particular form of diarrhœa. He stated that Damaschino had gone no further than merely to recognize the germ, and then cited the experiments which Lesage had made of introducing into the intestinal tract of healthy animals some pure cultivations, and producing by them a characteristic green diarrhœa. He also showed that the discharges were contagious.

The microbes, which are rod-shaped and can exist only in an alkaline medium, show a disposition to bunch themselves into groups, and their number is in direct relation to the severity of the attack.

These are, therefore, the first successful attempts to establish the parasitic origin of at least one form of diarrhœa, as probably also they are the first efforts to treat the disorder according to germicidal methods. Since then, in this coun-

try, that attention has not been given to the experiments which the conclusions would seem to warrant.

It was my privilege, soon after the report of Hayem was published, to have an opportunity of testing clinically in dispensary work the statements made by him. After using the acid in the green form of diarrhœa for a short time the suggestion presented itself of trying the effect of it in all the varieties of diarrhœa without reference to the color of the stools. This idea of the universal application of germicides to diarrhœa was strengthened by the paper, a few months later, of Dr. William D. Booker, read before the International Medical Congress at Washington, on the different forms of bacteria found in the discharges of summer diarrhœa. He stated that twelve varieties had been isolated, eleven being bacilli and one belonging to the variety cocci. He gave their action on milk as follows: "Some coagulated milk with acid reaction and evolution of gas; one caused coagulation with alkaline reaction; one gave the milk a peptonized appearance; and other varieties caused no perceptible change."

On account of its simplicity as well as its elegance, the employment of this universal acid treatment was a very easy one, and the results were such as to leave no doubt as to its usefulness. The trial began during the summer of 1887 and has been continued during the present summer, over one hundred patients receiving the treatment.

The age of the patients varied from ten weeks to twenty-four months, and there was great variety in the severity. The stools, which ranged from three to twenty daily, presented all the varieties found in the different forms of diarrhœa. They were the watery-mucous, the yellow with coagulated casein, the slightly greenish with mucus, casein, and sometimes blood, and the distinctly green. In very few cases of the green diarrhœa so treated was there failure to afford some relief, and many of the recoveries were certainly remarkable. But, while the trial confirmed the conclusions of Hayem as to green diarrhœa, it also established the usefulness of the acid in the other varieties.

The significant features in support of lactic acid are these: It not only relieves the diarrhœa, but it also acts beneficially for the vomiting, fever, and restlessness. It changes also the very offensive odor of the stools.

The vomiting is controlled within a few hours so completely that the child can begin to take nourishment, and, although it may subsequently occur at intervals, a continuance of the treatment soon stops it. Again, the fever which attends every case of any severity is reduced by it. To not a single child in the one hundred cases was any antipyretic given, the fever usually subsiding before the diarrhœa had fully stopped. Attending the reduction of temperature there was shown a disposition to sleep, and the intestinal pain, which was often severe, received no other medication than the acid. To none of them was opium given in any form.

Within a period varying from twelve to seventy-two hours the discharges would begin to change, the greenish becoming less watery and assuming a yellow color, while the watery-yellow and sometimes bloody had a greater consistence without the unpleasant odor.

The general results have been so satisfactory that all astringent and alkaline remedies have been abandoned, lactic acid alone now being given, no matter what variety of diarrhœa presents itself.

But, as the children so treated came largely from the tenement-houses, where crowding, heat, poor ventilation, and improper food are important factors, it was found advisable to adopt some form of dietetic measures in connection with the acid. In a monograph on the treatment of the diseases of children, read by Dr. Jacobi in 1879, a valuable suggestion is given concerning the feeding of children. The frequency of diarrhœa in children fed wholly on breast milk had already presented itself, and for a considerable time it had seemed contrary to reason to so continue feeding, although good authorities advised, whenever possible, to insist upon a diet wholly of breast milk. This was done, and the results were no better, while in children somewhat older, who had begun to take other foods, there was usually a benefit when these were alternated with mother's milk. An exclusive diet, either of breast milk or prepared food, did not seem to give good results, and the question was not satisfactorily answered until the method employed by Dr. Jacobi was tried. In his monograph he states that even normal mother's milk contains fat that is not digested, and that when diarrhœa occurs, if lumps are found in the passages, they are not wholly undigested casein, but, on the contrary, are mostly fat, and probably remnants of intestinal epithelium. These fats are olein, margarin, and stearin. Fatty acid in abundance is a common cause of derangement of digestion and assimilation, and it impedes the normal secretion of other digestive fluids.

He then quotes the conclusions of Wegscheider concerning the fat in breast milk: "Fat can not be completely absorbed; one part leaves the intestines in a saponified condition; a second part as free fatty acid; a third as fat in an unchanged condition." From this he concludes that one precaution to observe is to guard against food too rich in fat. As the mother's milk is best when it can be tolerated, he endeavors to make this possible by diluting it with some liquid farinaceous food. To do this, he suggests preceding the nursing by one or two teaspoonfuls of barley-water. Instead, however, of the barley-water, some of the prepared foods were tried according to this principle and the results were beneficial, due, probably, to the small percentage of fat which they have been shown to contain. There was less troublesome casein to act as an intestinal irritant, and, when they were taken in connection with the lactic acid, recovery was usually speedy. This dietetic precaution has been adopted, and is recommended, whenever practicable, in either variety of exclusive diet.

The size and frequency of the dose of lactic acid varies entirely with the age of the patient and with the number of discharges. A two-per-cent. solution is usually ordered. The following is the formula advised by Dr. Hayem:

℞ Pure lactic acid..... ℥ ss.;
Syrup..... ℥ j;
Water..... ℥ iij. M.

Each drachm of the solution contains about one drop of pure lactic acid.

For a child under twelve months, half a teaspoonful every hour is sufficient. If the discharges are very frequent, a teaspoonful may be given every hour for six doses, changing then to half a teaspoonful. For over twelve months a teaspoonful every hour is the ordinary dose. Dr. Hayem recommends its use one day after the diarrhœa has stopped. The large doses at first suggested in the report do not appear to be necessary, and there is danger, if it is given in larger quantities, of causing irritation of the buccal mucous membrane. It is best to dilute even these small doses, as otherwise there is a decided acid taste, not unpleasant, however.

Other germicides have been suggested and tried, such as salicylate of sodium and naphthaline, but lactic acid, while possessing all the curative properties of the others, has additional advantages:

1. It is more palatable than salicylate of sodium or naphthaline, more readily tolerated, and simpler to administer.

2. It controls vomiting and permits the earlier use of food.

3. Under it, temperature is reduced and intestinal pain quieted.

4. Restlessness is overcome and sleep rendered possible without the use of opiates.

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# Correspondence.

## LETTER FROM PARIS.

*Saccharin.—The Influence of the Tunica Vaginalis Testis on the Formation of Spermatozooids.—Tobacco as a Cause of Abortion.—A Point in the Hypodermic Use of Alkaloids.—The Carduus Marianus in the Treatment of Hæmorrhoidal Affections.—The Operation of Trephining.—Reverdin's Antiseptic Soap.—An American Lady Doctor to Marry an Agrégé.*

Paris, *July 20, 1888.*

Saccharin has come into considerable notice in Paris of late. M. Dujardin-Beaumetz has condemned it as a food, stating that it passes through the body unchanged; and the city authorities are taking action, by raising the tax upon the product, to prevent confectioners, syrup manufacturers, and others from using its sweetening power to aid in imposing innutritious substances on the public as articles of food. M. Constantin Paul, the well-known physician to the Lariboisière Hospital, has lately studied the substance, and concludes that it is not toxic; at least seventy-five grains of it were given daily for a month, without the slightest bad effects being noticed. As to its action in diabetes, M. Paul has given it for five months at a time and seen no dyspeptic troubles arise. A number of experiments were made with digestive mixtures, and it was found that on adding saccharin to the mass, in the case of pork-fibrin and white of egg, digestion, to a certain extent, was prevented, but it did not entirely stop it. It was also seen that it favored other fermentations, such as that in milk. In any case, there seems to be no good reason for stopping its use by such diabetics as bear it well, and therefore they need not be deprived of a means of making their drinks palatable, such as this drug affords. Saccharin is also an excellent antiputrefactive agent: in the proportion of 1 to 200 it will prevent the ammoniacal fermentation of urine; and, finally, it would appear to be a good antiseptic, stopping the development of *Bacterium termo* in solutions of 1 to 200, and at 1 to 500 arresting the growth of *Staphylococcus pyogenes aureus.* At 1 to 300 it hinders the growth of the streptococcus of puerperal fever, but it does not entirely prevent it. It is also an excellent antiseptic dentifrice. M. Paul prepared six-per-cent. alkaline solutions of saccharin, which could be colored and flavored as desired, a teaspoonful of which to half a glass of water is enough to destroy the *Bacterium termo* of the mouth. The same excellent qualities make it useful in cancer of the stomach and in other stomach affections when *lavage* is indicated. In all the putrefactive dyspepsias, in dilatation of the stomach, and whenever it may be desired to give an antiseptic drink, it can be ordered in the agreeable form of the saccharin solutions. The only defect it seems to have as an antiseptic is that it does not act on the typhoid-fever bacillus, and can not replace naphthol for intestinal antisepsis; but, on the other hand, as it is eliminated by the kidneys, its antiseptic properties can be made use of in pyelonephritis and in chronic purulent cystitis, also, in place of boric acid, for washing out the bladder. So that, in some respects, the recent outcry against this substance is without reason, as it seems to possess some excellent qualities which will retain it in use, even if it is found necessary to limit its use in alimentation.

The Paris Surgical Society has been discussing the effect of obliteration of the tunica vaginalis on the production of spermatozoa. Dr. Reclus said that, in regard to spermatogenesis, different opinions had been held. Gosselin had written that the seminiferous substance would no longer produce spermatozooids if the vaginal coat of the testicle was obliterated. But M. Reclus, after a careful examination of over three hundred testicles, had found that this was not true, as he had found the spermatozooids present in nearly all cases. In some of these cases the sheath was not completely gone. Practically, there does not seem to be any risk of a loss of sexual power, or rather of procreative ability, when the serous membrane of the testicle is injured or partly destroyed. This has an important practical bearing, owing to the frequent performance of Volkmann's operation for hydrocele, in which an antiseptic incision is made and part or all of the vaginal sheath is resected. The constant and rapid success with this operation has brought it into great favor. While it appears from M. Reclus's researches that obliteration of the cavity of the tunica vaginalis has no effect on spermatogenesis, still any wound of the epididymis would seem to result in a default of healthy sperm; and here again the operation by incision has advantages over the old method of puncture and injection, which often causes inflammation of the epididymis and puts an end to the production of spermatozooids.

Fresh evidence of the fact that working in tobacco may cause abortion has just been seen here in the case of a woman employed in the great government cigar factory. She had been engaged there for some eleven years, and during the last three years had had one abortion and two deliveries, before the eighth month, of infants that presented signs of maceration of some weeks' duration. There was no syphilis in either herself or her husband, and nicotine must have been the cause, as she had healthy children after leaving the tobacco factory. Dr. Quinquaud has reported a case of the same kind.

The rapidity of the absorption of alkaloids by the subcutaneous tissue is not at all well known, and M. Chouppe has been making some interesting studies in regard to this matter. It is of the utmost importance that we should know the exact

dose of drugs that we use by hypodermic methods. From the experiments made it is certain that, when the usual doses of the different alkaloids, dissolved in equal amounts of liquid, are injected, they act with quite a difference as to the time it takes to produce an effect on the general circulation. Morphine, for instance, takes as much as from six to seven minutes to produce its sedative action, while apomorphine acts in four minutes. Some of these facts are well known, but it is very important that we should know more exactly than we do the precise time it takes to produce the therapeutic effect of all the alkaloids given hypodermically; so that we may not fall into the rather common error of giving fresh doses before the one first given has had time to act.

Dr. Tripier has published an interesting study of visceral varices. He has found that quite a number of patients who had varicose veins and hæmorrhoids, as well as varicocele, had also visceral troubles, of the uterus, ovary, liver, bladder, etc. His clinical analyses have led him to think that there was a state of fluxion of these organs similar to that shown in hæmorrhoidal attacks. Dr. Tripier's treatment in such states includes the use of a remedy which, while it has long been known, has hardly ever been used in just this way. It is the *Carduus marianus*, or the common milk-thistle or lady's-thistle, an herb that was formerly used as a bitter tonic. It is not the same plant as the *Carduus altilis*, which was known in ancient medicine as the *Cynara hæmorrhoidalis*, and was supposed to prevent hæmorrhoids because certain insects by biting the plant caused a red tumor to appear on it. Rademacker advised the *Carduus marianus* in congestive states of the liver some time ago; and this led M. Tripier to try it in these painful hæmorrhoidal lesions of the viscera. He uses an alcoholic tincture, and gives from twenty to twenty-five drops, in a glass of water, to be drank during the day, a part before each meal. He also uses it in ointments and suppositories, and adds it to aloetic pills in the same cases.

Trephining is again much in vogue, after its long retirement, owing to two causes: First, the great aid obtained from the antiseptic method, which deprives the operation of all its previous dangers; and, second, our increased knowledge of cerebral localization, which serves as a guide in the operation and gives it exactness. M. Lucas-Championnière and other French surgeons have been getting some excellent results from the operation as now performed. From the discussions at different surgical societies it would seem that it is well, however, to abstain from this operation when dealing with a gunshot wound; for, while one may succeed in getting the ball out, there may be left behind quite a series of lesions. But when there is a neoplasm giving rise to all the phenomena necessary for an exact localization, and showing that the lesion has its seat in a limited portion of the cerebral substance only, one may operate with a good chance of complete success.

Professor Reverdin gives the following formula of an antiseptic soap that is quite soft to the hands, cleansing and disinfecting them without causing any irritation:

| | | |
|---|---|---|
| Sweet-almond-oil | 72 | parts; |
| Soda lye | 24 | " |
| Potash lye | 12 | " |
| Sulphocarbolate of zinc | 2 | " |
| Essence of rose | 9 | " |

I spoke in a former letter of the fact that the only lady who had ever succeeded in reaching the position of house surgeon (*interne*), that much-coveted place, in France, was an American lady, Miss Augusta Klumpke, of San Francisco. I have now to announce that she is about to be married to Professor (*agrégé*) J. Jules Déjérine, of the Faculty of Paris. They are both practicing medicine in Paris.

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## THE BLOOD-PLATES AND THEIR RELATION TO THROMBOSIS.

Much time has been devoted during the last few years to the study of the blood-plates, their nature and function and their relation to thrombosis. As a part of the study, the structure of thrombi, especially white thrombi, and the method of their formation, have received much attention. The researches of Zahn, Bizzozero, Hayem, Lubnitzky, Weigert, Eberth and Schimmelbusch, Löwit, Hanau, Welch, and many others have done much to advance our knowledge on this subject. In an address entitled "The Structure of White Thrombi," delivered before the Pathological Society of Philadelphia in 1887, Dr. Welch, of Baltimore, gave an excellent *résumé* of the investigations made up to that time, and reported the results of some original observations. At the beginning of this year Eberth and Schimmelbusch published a monograph entitled "Die Thrombosis nach Versuchen und Leichenbefunden," and in a recent number of the "Fortschritte der Medicin" there is an article by Löwit concerning "Blutplättchen und Thrombose." The views of Virchow were generally accepted in regard to the structure of thrombi until Zahn's investigation published in 1876. Zahn emphasized the differences existing between red and white thrombi, the former, he said, not differing from an ordinary coagulum, while the latter originated from clumps of white corpuscles. He thought that the white corpuscles which accumulated at points in the vessels where the walls had been subjected to injury rapidly disintegrated into a mass of granular matter, which he considered to be granular fibrin. The first opposition to Zahn's views came from Hayem. He attempted to prove that the hæmatoblasts, or blood-plates, were the cause of the coagulation of fibrin. Arterial thrombi, according to Hayem, were composed of blood-plates. Bizzozero subsequently confirmed and extended Hayem's observations. Lubnitzky, in 1885, reported some investigations from which it was argued that arterial thrombi were composed primarily of blood-plates. In 1885 Eberth and Schimmelbusch detailed some very careful observations on the structure of thrombi and the method of their formation. They denied that the plates played any part in the coagulation of fibrin, and maintained that when the plates were placed under unnatural conditions they rapidly underwent a viscous metamorphosis. The peculiarity in this change consisted in an increase in the adhesiveness of the plates, shown by their sticking to each other and to foreign matters. These writers observed the formation of thrombi in living animals, chiefly in the mesenteric vessels of dogs, produced by various mechanical and chemical injuries. In many instances they observed the blood-plates collecting at the point of injury, where the plates, because of this viscous metamorphosis, became ad-

herent to each other and to the wall of the vessel. In this way plugs were formed, which sometimes were washed away, but sometimes resulted in completely obstructing the vessel. Occasionally red and white corpuscles were included in the mass of plates, but this was to be considered as accidental. From these observations Eberth and Schimmelbusch concluded that white thrombi were at first composed of blood-plates, and the chief factors in their formation were an injury to the wall of the vessel, or a slowing of the current, and then the viscous metamorphosis of the blood-plates. These observers further found in the microscopical investigation of thrombi produced mechanically that there was no fibrin present, but in those formed around a foreign body introduced into the lumen of a blood-vessel, and in those produced by cauterization of the vessel-walls, they detected some fibrin. In some later observations on the formation of thrombi in the mesenteric vessels of frogs they found that fusiform corpuscles, which they regarded as corresponding to the mammalian blood-plates, were the main constituents of thrombi produced artificially in those animals. They regarded this form of thrombosis as a conglutination of plates that pre-existed in the blood, and not as a coagulation. They denied that the formation of fibrin was in any way dependent on these blood-plates, or that they were transformed into a substance resembling fibrin. They therefore denied that a white thrombus was primarily a coagulum, as had before been generally believed. In this their investigations were opposed to those of Hayem, Bizzozero, and Lubnitzky.

Numerous writers have already opposed these views of Eberth and Schimmelbusch's, considering the process of thrombosis as a conglutination of blood-plates that have undergone viscous metamorphosis. Hanau maintains that thrombi never have a viscid consistence, and Weigert points out that human white thrombi are very rich in fibrillated fibrin. He is unable to identify these anatomical thrombi with the experimental thrombi of Eberth and Schimmelbusch, and argues that, till some reconciliation is effected between the two, we should continue to base our conception of the nature of thrombi on the study of the anatomical thrombi. Eberth and Schimmelbusch reply that their studies have been directed to the earliest stages, whereas the thrombi examined by Weigert belonged to a subsequent metamorphosis.

Welch has shown that in the formation of a thrombus the first elements to accumulate are the blood-plates, but that, although the plates collect in a large number and more rapidly, the leucocytes do not long remain absent, and are finally present in such numbers that they must be considered as essential constituents. At first the conditions for coagulation are not present, but with the increasing accumulation of leucocytes these conditions appear and fibrillated fibrin is deposited. The final result, according to Welch, is a plug composed of plates, leucocytes, fibrin, and included red blood-corpuscles. These observations harmonize the seemingly antagonistic observations of Weigert and those of Eberth and Schimmelbusch. The very recent thrombi, as shown by the latter, are composed of blood-plates, but as they become older, leucocytes and fibrin are added to them as essential constituents.

In a recent article in the "Fortschritte der Medicin," Löwit reports the results of some investigations opposed in many respects to those of Eberth and Schimmelbusch. He agrees with these writers that the blood-plates do not play the important part in the coagulation of the blood assigned to them by Bizzozero, but he thinks that they do constitute an important factor in the formation of thrombosis in the warm-blooded animals. But here begins the difference in their views. Eberth and Schimmelbusch believe that the blood-plates are normally present in the blood-current, because they have always demonstrated them in blood outside the vessels treated by the most varied methods, and also seen them, under conditions they regarded as normal, inside the blood-current. Löwit maintains that the blood-plates are not present under normal conditions in the blood-current, but that they appear after influences very slightly abnormal acting upon the blood or the blood-current. He professes to have shown by chemical investigation that the blood-plates consist of degenerated and, in a certain way, morphologically as well as chemically altered globulin. Löwit shows that under normal or nearly normal conditions the blood-plates are not present in the blood-current, but that upon altering the conditions of the experiment they appear in great numbers.

A second important difference between Eberth and Schimmelbusch's results and Löwit's relates to the so-called blood-plates of the cold-blooded animals and birds. The former writers regarded the spindle-cells found in the blood of birds and cold-blooded animals as corresponding to the mammalian blood-plates. Löwit has shown by careful and detailed investigations that these spindle-cells are quite different from the blood-plates of mammals, and that they are free cells composed of a peculiar form of hæmoglobin, out of which, either in or out of the circulation, under different conditions the well-known round cells may be formed. After the injection of a concentrated solution of common salt into the vessels of frogs, in some instances, Löwit has repeatedly observed isolated spindle-cells that were adherent to the vessel-walls transformed into the round cells. Under other conditions he has also observed the same change outside the vessels, and when any confusion was impossible. Löwit believes that there are no blood-plates in frogs' blood, because the degenerating globulin does not find the conditions necessary for the formation of plates, and so only produces a finely granular detritus, which he says can be artificially transformed into the disc or plate form.

As these blood-plates, then, are only degenerated globulin, it is not possible to separate so sharply as Eberth and Schimmelbusch have done blood-plate thrombosis from the true coagulation of fibrin thrombosis. The blood-plates, it is true, are not fibrin, and the deposition of the blood-plates on the vessel-wall is not a process of coagulation, but, in the course of the chemical alterations which the globulin readily undergoes, there is formed from it a substance similar to fibrin, which Löwit would call plate-fibrin to distinguish it from fibrillated fibrin.

Their formation and morphological appearance justify the sharp distinction made by Eberth and Schimmelbusch between plate-thrombosis and coagulation-thrombosis, but their chemical nature closely associates them, since the blood-plate thrombus is composed of a body closely related to fibrin.

## EMMET'S OPERATION IN SCOTLAND.

At a recent meeting of the Glasgow Obstetrical and Gynæcological Society, a report of the proceedings of which is given in the July number of the "Glasgow Medical Journal," Dr. Robert Park introduced the subject of uterine trachelorrhaphy, and the remarks made by that gentleman and by several of the others who took part in the discussion showed a more judicial frame of mind than that in which the subject is usually considered abroad. Dr. Park took Noeggerath's conclusions as his text. It was remarkable, he thought, that fifty bilateral lacerations reaching up to beyond the vaginal insertion could have occurred in one man's practice, and those, moreover, selected cases, suitable for comparison with fifty cases in which there had been no laceration at all. He inferred that such cases must be more common in Germany than in Scotland. As to this point, Dr. Park had perhaps erroneously concluded that the deliveries of the fifty women alluded to had all occurred in the Wiesbaden writer's practice, whereas they may simply have been observed by Dr. Noeggerath as a gynæcologist in the conventional acceptation of the term. He agreed with Noeggerath that cervical laceration was no barrier to conception, even when extensive, and that it did not necessarily cause miscarriage; but he considered that fuller investigation would be needed to bear out the proposition that women with lacerations were more prone to conceive than those without them, and less apt to miscarry.

Although the position of the uterus might not be affected directly by lacerations, he thought that, nevertheless, the sure tendency of such injuries was to induce changes that would ultimately have that effect. He was satisfied that elongation of the uterus was both a direct and a remote consequence of cervical laceration; in this he agreed with the advocates of trachelorrhaphy, but, when they maintained that the operation was the only means of cure, he disagreed with them, considering that there were various methods of treatment whereby the morbid conditions could be remedied and all the concomitant phenomena overcome. Among the means of treatment he would include lactation, and its influence had to be taken into account in estimating the remote effects. In the matter of the comparative frequency of erosions, etc., of the neck and body of the uterus, it would take a much more extended series of observations to convince him that deep lacerations of the cervix did not *per se* predispose to morbid action, as well as excite dormant diatheses to activity. He would positively contradict the assertion that "eversion of the lips was never the direct result of a laceration," and cited a case in point, one carefully observed case being, he added, for the purpose in view, as good as a dozen. The case in question showed, however, that trachelorrhaphy need be resorted to only in cases of exceptional degree or when other means of relief had been tried in vain. He forbore to comment on Noeggerath's final contention that the restoration of the shape of the cervix could have no influence on the uterus, for he had never performed the operation himself nor had it done.

Dr. Samuel Sloan thought that the importance of cervical lacerations was mainly, if not wholly, confined to their promoting septic absorption during the puerperium; mechanically, they did no harm, and their repair was not likely to do much good. When they caused septic absorption, they led to uterine subinvolution, an unhealthy raw surface was left at the apex of the cleft, and there was some induration along the broad ligament of the affected side. To avoid the risk of septic absorption, if the tear was a severe one, the performance of trachelorrhaphy within a few hours after labor was, he thought, justifiable.

Some of our readers will doubtless remember that this procedure has been advocated by Dr. Pallen, of New York. Dr. Oliphant thought that lacerations were more common than Dr. Park supposed, and both he and Dr. Turner mentioned cases in which Emmet's operation had brought about a complete cure after other measures had failed; the latter gentleman conceded, however, that lacerations did not prevent conception.

Dr. Nigel Stark had often wondered why trachelorrhaphy was so seldom performed in Scotland as compared with America; it appeared to him that the eminent American gynæcologists, Emmet, Thomas, Sims, and Mundé, must have produced good results with it, and that their opinions were entitled to respect. He had not been able to determine whether or not cervical lacerations and uterine subinvolution stood in the relation of cause and effect. He thought that ectropion and erosion were the most common results of the injury, and that they, in turn, led to leucorrhœa and menorrhagia. It was not unnatural to suppose that the erosion, when severe, intractable, and persistent, might at least predispose to the development of carcinoma at the menopause, as long-continued irritation of any part might cause cancer. Perhaps trachelorrhaphy had suffered from the excessive enthusiasm of its advocates. It should not be done in every case, but where treatment with douches, tampons, etc., had failed; where leucorrhœa, menorrhagia, or dyspareunia was an urgent and distressing symptom; and where, on account of hereditary predisposition, cancer was to be apprehended. With reference to the comparison between splitting the cervix for sterility and accidental laceration of the cervix during labor, the two things were in no wise comparable —the one made a clean cut, one that healed only too readily; the other was frequently a bruised and ragged tear that healed with difficulty.

Mr. Nairne had done Emmet's operation frequently, and perhaps unnecessarily, but he thought that it should be done in all cases of severe simple lacerations, while in compound lacerations it was better to amputate the cervix or use Paquelin's cautery.

# MINOR PARAGRAPHS.

## MEDICAL BULLETINS AND INTERVIEWS AS ADVERTISEMENTS.

The newspaper clipping sent us by a correspondent whose letter appears in this issue, signed "Ethical," is an example of the way in which medical men too often figure in the newspapers, to their own immediate advantage, but highly to their discredit and to the detriment of the profession as a body. The practice of issuing bulletins in the cases of distinguished patients, although not necessarily reprehensible, has been much abused of late, and the "Nation's" question is no more than a natural intimation of disgust. We doubt, however, if what is known as discipline will do much to correct the evil; indeed, the very practitioner to whom our correspondent's inclosure refers is said to have received censure from a medical society, in consequence of which "he resigned, and his conduct has been more disgusting ever since." Public opinion is much more potent to check such practices, and the mere fact that a journal of the standing of the "Nation" has been moved to take the matter up will go far to restrain the offenses in question. The same may be said also of the answer attributed by one of the comic papers to a physician who, having been asked by the patient to hand him a dose of medicine, begged to be excused on the ground that his connection with the case was confined to the "bulletin department," adding that one of the other doctors would be in presently. The practice of covert and unmanly advertising—for that is what it amounts to—needs only to be made as distasteful to the public as it has always been to the better portion of the medical profession to insure its being dropped. Let it once be generally recognized that he who resorts to it is trying to achieve reputation by trick and device, and it will lose its charm—a result that censure from any number of medical societies could never bring about.

## A FRENCH NOBLEMAN'S PUNISHMENT FOR ADULTERATING WINE.

In our issue for July 14th we alluded to an epidemic that occurred last winter in Hyères, the cause of which was traced to sophisticated wine. It now appears, according to the London "Truth," that the adulterant was arsenic, by which five hundred persons were poisoned, of whom twenty died. The maker of the wine, *i. e.*, the poisoner, was a count, and the court "let him off with the absurdly inadequate sentence of twenty days' imprisonment and a fine of 100 francs." The writer in "Truth" adds: "I am aware that in England, where poisonous adulteration is looked upon as perfectly legitimate trade, he would probably have escaped with even a less severe penalty, but I was under the impression that they managed these things better in France." And yet the British Parliament will not tolerate the addition of saccharin to beer.

## ITEMS, ETC.

**The Congress of American Physicians and Surgeons.**—According to the preliminary programme, the proceedings in the general sessions will be as follows: *Tuesday evening, September 18th.*—"Intestinal Obstruction in its Medical and Surgical Relations" (papers by Dr. Reginald H. Fitz, of Boston, and Dr. Nicholas Senn, of Milwaukee, followed by a discussion).—*Wednesday evening, September 19th.*—"Cerebral Localization in its Practical Relations" (papers by Dr. Charles K. Mills, of Philadelphia, and Dr. Roswell Park, of Buffalo, followed by a discussion).—*Thursday evening, September 20th.*—The address of the president, Dr. John S. Billings, of the army, to be followed by a reception.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending July 31, 1888:

| DISEASES. | Week ending July 24. | | Week ending July 31. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhus | 1 | 0 | 0 | 0 |
| Typhoid fever | 32 | 9 | 31 | 11 |
| Scarlet fever | 116 | 22 | 111 | 14 |
| Cerebro-spinal meningitis | 3 | 4 | 1 | 0 |
| Measles | 208 | 13 | 200 | 19 |
| Diphtheria | 109 | 31 | 94 | 38 |
| Small-pox | 9 | 0 | 0 | 0 |

**Dr. Burnett on Corneal Refraction.**—In our abstract of a paper on this subject, read before the American Ophthalmological Society at its recent meeting by Dr. Swan M. Burnett, of Washington, published in the Journal for July 28th, on page 100, the following corrections should be made: Fourth line from bottom, for "0·251" read *0·25 D*, and in all similar expressions in the same paragraph, for the final "1" read *D;* in the last line of the first column, for "420" read *20.*

**The Quarantine Bill** is now a law, having been signed by President Cleveland on Thursday, the 2d inst.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from July 29 to August 4, 1888:*

Magruder, D. L., Surgeon, is granted one month's leave of absence, to take effect on or about August 13, 1888. Par. 11, S. O. 171, A. G. O., July 25, 1888.

White, Robert H., Surgeon, is relieved from duty with Battalion 1st Infantry, at Santa Barbara, California, and will proceed to Angel Island, California, on public business, on the completion of which he will stand relieved from duty in this Department. Par. 4, S. O. 43, Headquarters Department of California, July 17, 1888.

Munn, Curtis E., Assistant Surgeon, will proceed to Santa Barbara, California, and report to commanding officer of the 1st Battalion of Infantry for duty. Par. 3, S. O. 43, Headquarters Department of California, July 17, 1888.

Cochran, John J., Assistant Surgeon, will proceed to Benicia Barracks, California, on public duty, on completion of which he will return to these headquarters. Par. 1, S. O. 44, Headquarters Department of California, San Francisco, California, July 20, 1888.

Robertson, Reuben L., Assistant Surgeon, is relieved from duty at Fort Keogh, Montana Territory, and will report to the commanding officer at Fort Buford, Dakota, for duty at that post, and by letter to the commanding general. Department of Dakota, S. O. 167, A. G. O., July 20, 1888.

Jarvis, N. S., Assistant Surgeon, is granted one month's leave of absence, on surgeon's certificate of disability, with permission to go beyond the limits of the Department. Par. 1, S. O. 90, Headquarters Department of the Missouri.

Johnson, Henry, Captain and Medical Storekeeper. Leave of absence granted for one month and fourteen days from August 1, 1888. S. O. 170, Headquarters of the Army, A. G. O., July 24, 1888.

Wolverton, William D., Major and Surgeon, is relieved from duty at Washington Barracks, District of Columbia, and ordered to duty at Fort D. A. Russell, Wyoming. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Gardner, William H., Major and Surgeon, is relieved from duty at Fort McHenry, Maryland, and ordered to duty at Washington Barracks, District of Columbia. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Caldwell, Daniel G., Major and Surgeon, is relieved from duty at Fort D. A. Russell, Wyoming, and ordered to duty at Jefferson Barracks, Missouri. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Byrne, Charles B., Captain and Assistant Surgeon, is relieved from duty at Washington Barracks, District of Columbia, and ordered to duty at Fort McHenry, Maryland. Par. 13, S. O. 173, A. G. O., July 27, 1888.

Ewing, Charles B., First Lieutenant and Assistant Surgeon, is relieved from duty at Fort Lewis, Colorado, and ordered to duty at Washington Barracks, District of Columbia. Par. 13, S. O. 173, A. G. O., July 27, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending July 28, 1888:*

Penrose, Thomas N., Surgeon. Detached from the Navy-Yard, Boston.

Parker, J. B., Surgeon. Ordered to the Navy-Yard, Boston.

McCormick, Albert McD. Commissioned an Assistant Surgeon in the Navy.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the three weeks ending July 23, 1888:*

Baillache, P. H., Surgeon. To proceed to Delaware Breakwater Quarantine Station as inspector. July 6, 1888.

Fessenden, C. S. D., Surgeon. Leave of absence extended thirty days on account of sickness. July 14, 1888.

Purviance, George, Surgeon. To proceed to Chattanooga, Tenn., as inspector. July 6, 1888.

Sawtelle, H. W., Surgeon. Granted leave of absence for twenty-three days. July 9, 1888.

McIntosh, W. P., Assistant Surgeon. To proceed to Galveston, Texas, for temporary duty. July 14, 1888.

Pettus, W. J., Assistant Surgeon. Granted leave of absence for thirty days. July 16, 1888.

Murray, R. D., Surgeon. To proceed to Manatee, Florida, on special duty. July 21, 1888.

Wasdin, Eugene, Passed Assistant Surgeon. To proceed to Key West, Fla., for temporary duty. July 21, 1888.

Fattic, J. B., Assistant Surgeon. To proceed to Memphis, Tenn., for temporary duty. July 28, 1888.

Woodward, R. M., Assistant Surgeon. When relieved, to proceed to Boston, Mass., for duty. July 24, 1888.

Goodwin, H. T., Assistant Surgeon. When relieved, to proceed to Cincinnati, Ohio, for duty. July 24, 1888.

Guiteras, G. M., Assistant Surgeon. Appointed an Assistant Surgeon, July 23, 1888. Assigned to duty at Marine Hospital, New Orleans, La. July 24, 1888.

Hussey, S. H., Assistant Surgeon. Appointed an Assistant Surgeon, July 23, 1888. Assigned to duty at Marine Hospital, Baltimore, Md. July 24, 1888.

**Society Meetings for the Coming Week:**

Monday, *August 6th:* Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association.

Tuesday, *August 7th:* Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Hampden, Mass., District Medical Society (Springfield); Androscoggin, Me., County Medical Association (Lewiston).

Wednesday, *August 8th:* Medical Society of the County of Albany, N. Y.

Thursday, *August 9th:* South Boston, Mass., Medical Club (private); Medical Society of the County of Cayuga, N. Y.

Friday, *August 10th:* Medical Society of the Town of Saugerties, N. Y.

# Letters to the Editor.

## MEDICAL BULLETINS AND INTERVIEWS AS ADVERTISEMENTS.

*July 24, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: The "Nation" of July 19, 1888, contains an article touching medical bulletins, and concludes by asking, "Has not the question an ethical side which deserves the attention of the medical associations?"

In nearly every community the medical profession has its advertiser who manages to keep his name before the people in some way or other. The "Nation's" remarks call to mind an article which appeared in one of the daily papers of this city a few days ago, which I herewith inclose. This illustrates the cunning of one of our local practitioners, who has resorted to all manner of means of keeping his name conspicuously before the public for over thirty years. Now I would just like to inquire if foisting such bosh upon the public for science is not only a violation of all rules of ethics, but exhibits a depravity from which honest medical men would recoil with instinctive abhorrence.

Ethical.

# Proceedings of Societies.

## AMERICAN OPHTHALMOLOGICAL SOCIETY.

*Twenty-fourth Annual Meeting, held at New London, Conn., July 18 and 19, 1888.*

The President, Dr. W. F. Norris, in the Chair.

(*Concluded from page 101.*)

**Double Congenital Irideremia in a Child whose Mother had a Congenital Coloboma of each Iris.**—Dr. Samuel Theobald, of Baltimore, reported the case, and stated that it was probable, from the mother's description of the eyes of another of her children, that it also had been born without an iris. The coloboma did not involve the chorioid in either eye of the mother. In one eye it was directed upward.

Dr. Webster had never seen a congenital coloboma upward; it was nearly always downward.

Dr. Randall had searched the literature on this subject, and had not been able to find the record of any case of congenital coloboma directed upward.

**Puncture of the Retina for Detachment.**—Dr. T. T. Sutphen, of Newark, reported three cases. The first operation was De Wecker's; the others were von Graefe's. The first was successful, the others were failures; in all, the conditions were similar, the detachment (from chorioiditis) was recent, but only in the successful case was there escape of the fluid outwardly. The author felt encouraged to try the operation in cases otherwise incurable.

Dr. Webster had never done the operation, nor had the late Dr. Agnew, having been deterred from it by the loss of the eye

which, many years before, had followed it in the case of a patient of Dr. Noyes's. The speaker thought that at present, with antiseptic precautions, and where the detachment of the retina was recent, the operation was perfectly justifiable. But in cases of long detachment it must not be expected that the sight would be restored.

**Glioma of the Retina.**—Dr. F. P. Capron, of Providence, showed photographs of a case of glioma of the eye in a child of three years. The eye and tumor had been removed recently, and the child was still living, but a growth was going on outward toward the zygoma.

Dr. Webster had not been able to detect increased tension in the eyeball in cases of glioma of the retina until the inflammatory stage had set in. He asked whether, in cases of cure of supposed glioma of the retina, there was a retrogressive metamorphosis.

The President replied that he should rather doubt the correctness of the diagnosis in such cases.

Dr. Mittendorf thought that glioma of the retina must be more frequent in some localities than in others, and suggested also an investigation regarding hereditary tendency.

**Refraction by Cylinders.**—Dr. Swan M. Burnett exhibited some models showing refraction by cylinders. It was shown how the refractive and focal lines changed with the variation in the strength of the lenses and with an alteration of the angle of crossing of their axes. The models had been made at his suggestion by Mr. C. F. Prentice, of New York. Diagrams were exhibited showing by geometrical construction how it was possible to tell the course of any given ray after its refraction by any two cylinders of differing power, and at any angle of the crossing of their axes. A formula applicable to any case of crossed cylinders, calculated by Mr. Prentice, was also shown.

**Anomalous Outgrowths upon the Optic Disc.**—Dr. B. A. Randall, of Philadelphia, gave illustrations: 1. Of two cases of tiny cysts upon the optic disc, congenital in origin. 2. Of three cases of congenital dense white connective-tissue outgrowths upon the discs. 3. Of a large prominent outgrowth which was believed to be congenital. He also described some cases of anomalies of the retinal vessels.

**Extraction of a Partially Absorbed Calcareous Lens.**—Dr. David Webster, of New York, reported the case of a girl, aged twenty-three, who consulted the late Dr. Agnew and himself on March 15, 1888. There was phthisis bulbi of the left eye, and in the right eye there were the calcified remains of a lens that had been mostly absorbed, with a discolored, atrophic-looking iris, attached to a membranous mass behind it by numerous adhesions. The visual field was good, V = counting fingers at two feet. The patient gave a history of loss of sight in the left eye from a blow at the age of two years. Some time afterward a cataract developed in the right eye. Violent painful inflammation had followed one or more of several operations on both eyes by a Cincinnati surgeon. On March 16th Dr. Agnew removed the left, atrophic, eyeball, and did iridectomy on the right eye, and on April 27th the speaker divided two or three of the adhesions which were markedly on the stretch. After three separate trials he succeeded in seizing and pulling out the mass obstructing the pupil, and cut it off close to the cornea. Some pain was present after the operation.

**The Designation of Prisms by their Refracting Power.**—Dr. Edward Jackson, of Philadelphia, suggested this method of designating prisms, instead of by their refracting angle, since the angle of refraction varied in different samples of glass, and it was the refracting power which determined what prism was to be used. A committee, consisting of Dr. Noyes, Dr. Jackson, and Dr. Swan M. Burnett, was appointed to report on the designation of prisms, at the meeting in Washington.

**Officers for the Ensuing Year.**—Dr. W. F. Norris was re-elected president, Dr. Hasket Derby was elected vice-president, and Dr. S. B. St. John secretary. The society will meet at the Arlington Hotel, Washington, on September 19, 1888; and at the Pequot House, New London, on the third Wednesday in July, 1889.

## Book Notices.

*Ophthalmic Surgery.* By Robert Brudenell Carter, F. R. C. S., Ophthalmic Surgeon to St. George's Hospital, etc., and William Adams Frost, F. R. C. S., Assistant Ophthalmic Surgeon to St. George's Hospital, etc. Illustrated with a Chromograph and Ninety-one Engravings. Philadelphia: Lea Brothers & Co., 1888. Pp. 554.

This little volume presents a concise account of the present state of ophthalmic therapeutics and surgery, but of necessity has its limitations. The first two chapters are devoted to a consideration of the anatomy and physiology of the eye, and the methods of examination usually employed. As might naturally be supposed, there are some points susceptible of improvement. We note in the third chapter a very imperfect description of diphtheritic conjunctivitis, in which the points in diagnosis are not adequately brought out. Moreover, in the same chapter the authors do not sufficiently distinguish between ordinary purulent conjunctivitis and the gonorrhœal form of the disease. In the same chapter, in describing the treatment of stricture of the nasal duct, no mention is made of Theobald's probes, which on this side of the ocean have been found so useful. In the chapter on diseases of the cornea the method of surgical treatment of corneal leucoma by means of transplantation of a flap of cornea from some of the lower animals, which has been exciting much attention during the past year or two, receives no mention; an oversight which is difficult of explanation. The same may be said of the simple extraction of cataract without iridectomy, a revival of an old operation which has been done extensively in France, Germany, and this country, and which has excited great interest in the ophthalmological world. Furthermore, it seems unfortunate, at this period in the development of ophthalmic science, to head a chapter "Amblyopia and Amaurosis," which are merely symptoms, so that the heading is likely to be misleading. It would seem more in consonance with modern knowledge to have incorporated what has been said on these subjects with the chapter on diseases of the retina and optic nerve. Chapter XIII, on errors of refraction, is a good epitome of the subject, though we think that more space is given to the "shadow test" than its real importance warrants. Chapter XV, on diseases of the orbit, is an excellent presentation of the subject—perhaps the best chapter in the book. The book contains also Snellen's and Jaeger's test-types, some prescription formulæ, and a satisfactory index. The volume is very compact and offers a mass of information which has been fairly well digested.

*Essentials of Chemistry and Toxicology*, for the Use of Students of Medicine. By R. A. Witthaus, A. M., M. D., Professor of Chemistry and Physics in the University of New York, etc. Second Edition. New York: William Wood & Co., 1888. Pp. vi–294. [Wood's Pocket Manuals.]

This little volume is a veritable *multum in parvo*, and must certainly prove a valuable aid to the student in chemistry. It contains the essentials of the subject in the fewest possible

words, and in this edition—a revision of the original work—everything is given that is required to bring the subject fully abreast of the latest facts and theories known to science. It must prove of great value to the student of medicine in attendance on a course of lectures, which necessarily occupy so much of his time as to make the systematic study of more detailed works almost an impossibility. In the appendices will be found lists of chemical elements, their symbols, and their equivalents, together with a table of the metric system of weights and measures, and a simple formula for the conversion of the centigrade thermometric scale into the Fahrenheit, and *vice versa*, which will be found very convenient. The book is printed from handsome, legible type, and is bound in a durable manner.

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*The Hygiene of the Skin*, or the Art of preventing Skin Diseases. By A. Ravogli, M. D. Cincinnati: Central Medical Publishing Company, 1888. Pp. xii–13 to 399. [Price, $3.]

This is one of the most extraordinary books that we have ever been called upon to review. From the title-page to the word "finis" it is full of surprises. In regard to hygiene, as usually understood, we find nothing about it till we come to page 204. The book thus far has been devoted to an account of the anatomy and physiology of the skin, to a classification of races by the character of the skin, and to a description of the symptoms and treatment of syphilis, scrofula, prurigo, ichthyosis, the exanthemata, and a score of other diseases. This is certainly a surprise. We would note that in the treatment of these diseases very little is said about either hygiene or diet. But perhaps we get a more correct idea of our author's purpose in writing the book by reference to the first paragraph of its preface: "I have often thought of publishing a few observations on the ætiology of the diseases of the skin, since I find the books do not sufficiently reflect our present knowledge of the conditions of dermatology." This is another surprise, as well as the statement, on page 45, that "It is a matter of surprise that in all treatises upon skin diseases ætiology is almost entirely neglected, and the influence of sex, race, age, etc., as morbid causes is made so unimportant." And yet in the book now before us we fail to find anything of importance relating to these matters that is not to be found in the standard treatises upon dermatology. Many of the author's propositions seem to us erroneous. Eczema is classed among the diseases due to the influence of diet. Fatty food is denied to patients with acne, but we know that many of them are benefited by such fatty food as butter, oils, and glycerin. Coffee is said never to have caused skin diseases, but we know that coffee will often cause or aggravate pruritus. Tea is commended as a drink, but we know that it will disturb digestion when taken too freely, and will cause rosacea. The skin is said to be so absorptive that it is capable of absorbing malarial and other poisonous emanations. This is not supported by any authority. The use of soap is commended as a preventive of wrinkles, and it is said never to "irritate even the delicate skin of an infant." This is contrary to experience. The following sentence is worthy to be quoted in full: "Many times the linen or cotton undergarments are put away in a drawer or closet soon after having been ironed, still saturated with moisture. This is very often the cause of herpes or tinea tonsurans of the body." The dampness and warmth, he explains, favor the development of the mold fungus, *Mucor mucedo*, which changes into the *Trichophyton*. This is another surprise, and we wonder upon what experiments the statement is based.

The subject of the hair seems to affect some authors in a remarkable manner, and not a few men have wasted much time and space in writing long descriptions of how the hair was dressed in ancient times. Our author has yielded to the spell and devoted eight pages to head-dresses and defunct fashions. Shaving is regarded as the best means of getting rid of superfluous hair, regardless of the fact that in time it will cause the skin to assume that color which is readily recognizable in all who shave. Electrolysis is allowed to be efficacious for hirsuties, but for the author its use is "a waste of time." When we consider his method of operating, we no longer wonder that he considers the operation as "a waste of time." The deformity is said by him to occur especially in "unmarried maids with a male appearance." Of the present writer's first fifty cases treated by electrolysis, twenty-four were in married women and twenty-six in unmarried women, and in only eight cases was the masculine type pronounced.

The book is carelessly put together, though this may not be altogether the author's fault. We find under the heading "Sclæroderma neonatorum" seborrhœa, erythema, and some half a dozen other diseases; and under parasitic diseases molluscum contagiosum is placed. The title "Atrophy of the Hair" is given on pages 314 and 328. Typographical errors are not infrequent. We note on page 178 "Connheim" for Cohnheim. "Parville," on page 234, should be, we think, Prudden, as we do not remember Parville as having made investigations in regard to the bacteria in ice. "Phtyriasis," on page 257, should be phtheiriasis. On page 258, Trichophyton is twice misspelled, once as "Trychophiton," and once as "Trychophyton." On the same page, also, stands "Erytrasma," for Erythrasma. To make these criticisms of an author's first book is painful, but we trust that they will be helpful. If the book were only revised, and all that does not belong to the hygiene of the skin remorselessly cut out, it might be called a commendable effort. As it is, Milton's book on the same subject need not fear this one as a rival.

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*Obstetric Synopsis.* By John S. Stewart, M. D., Demonstrator of Obstetrics and Chief Assistant in the Gynæcological Clinic of the Medico-chirurgical College of Philadelphia. Illustrated. Philadelphia: F. A. Davis, 1888. Pp. x–202. [Physicians' and Students' Ready Reference Series.]

The author has not alleged too much for this little volume when he asserts in his introduction that by its aid the undergraduate will be able to inform himself at a glance upon any essential point in the study of the obstetrical science not made clear by lectures, which must engross so much of his time as to make the study of more exhaustive text-books a matter of impossibility. The subject is treated with clearness, though in few words, and the facts and theories advanced are in accord with the views held by the recognized authorities.

In an Appendix will be found the report, as accepted by the Obstetrical Section of the Ninth International Medical Congress, relative to the desirability of uniformity in obstetrical nomenclature, and the definitions and designations recommended for adoption by obstetric teachers and authors, which it is at least well to know. The book is a good specimen of printing, forming a neat, handy volume, likely to fulfill well the object for which it was intended.

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*Abdominal Surgery.* By J. Greig Smith, M. A., F. R. S. E., Surgeon to the Bristol Royal Infirmary, etc. Second Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi–776. [Price, $7.]

A year has not passed since the appearance of this book was hailed with encomiums by the medical press. It was then considered to be a compendium of our knowledge in the subjects of which it treated, and it is very indicative of how imper-

fect that knowledge is that the author declares that the advance which has been made in this short time is astounding. That much has been accomplished in abdominal surgery during the past year is attested by the addition of about ninety titles to the bibliography at the end of the work; also by the facts that some improvement has had to be chronicled for every operation, and that several new operations have been added. A new section on suprapubic cystotomy has been introduced, and the section on reparative surgery of the abdomen is comparatively new. The praise accorded the first edition is even better deserved by the second. The arrangement is good, the descriptions are clear, and the language is so well chosen as to make very pleasant reading. It is a work to be recommended to every practitioner.

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*The Medical Annual and Practitioner's Index.* A Work of Reference for Medical Practitioners. 1888, Sixth Year. Bristol: John Wright & Co. Pp. xv–558.

The main object of this work is to present in the most convenient form for reference the progress which has been made in medicine and surgery during the past year. The "Dictionary of New Remedies" includes not only the additions which have been made to the materia medica, but also the results of investigations regarding old and well-known drugs, arranged alphabetically. The "Dictionary of New Treatment" is a similarly arranged condensed account of the advances made in the treatment of diseases, both surgical and medical. These notes, though brief, are sufficiently copious to enable one to feel "abreast of the times," if familiar with them. Aside from these there is in the book little of value to any one who is not a resident of the United Kingdom. It contains a list of the principal medical works published during the year—that is, the English ones mostly—notes on new inventions and improvements in pharmacy, a list of the asylums in Great Britain and Ireland, a trade directory, and a list of medical and scientific newspapers. At the end of the book blank leaves are inserted for manuscript notes.

## BOOKS AND PAMPHLETS RECEIVED.

Intracranial Tumors. By Byrom Bramwell, M. D., F. R. C. P. E., F. R. S. E., Lecturer on the Principles and Practice of Medicine in the Extra-academical School of Medicine, Edinburgh, etc. With One Hundred and Sixteen Illustrations. Philadelphia: J. B. Lippincott Company, 1888. Pp. xiv–270. [Price, $4.50.]

Atlas of Venereal and Skin Diseases, comprising Original Illustrations and Selections from Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerrier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus vi. New York: William Wood & Company, 1888.

A Clinical Atlas of Venereal and Skin Diseases, including Diagnosis, Prognosis, and Treatment. By Robert W. Taylor, A. M., M. D., Surgeon to Charity Hospital, New York, etc. Illustrated with One Hundred and Ninety-two Figures, many of them Life-size, on Fifty-eight beautifully colored Plates. Also many large and carefully executed Engravings through the Text. Parts I and II. Venereal Diseases. Philadelphia: Lea Brothers & Co., 1888.

The Best Surgical Dressing: how to prepare it and how to use it, with a Consideration of Beach's Principle of Bullet-wound Treatment. By Otis K. Newell, M. D., Assistant Demonstrator of Anatomy at the Harvard Medical School, etc. Boston: Cupples and Hurd, 1888. Pp. 9 to 179. [Price, $1.]

The Morbid Anatomy of Congenital Talipes Equino-varus. By J. B. Bissell, M. D., etc. [Reprinted for the "Archives of Pædiatrics."]

A New Way of training Nurses. By A. Worcester, A. M., M. D., Physician to the Waltham Hospital. Boston: Cupples and Hurd, 1888. Pp. 11 to 118. [Price, 50 cents.]

Report of Proceedings of the Illinois State Board of Health. Quarterly Meeting, Chicago, June 28–29, 1888. Small-pox—Sanitary Work—Water Supplies—Conference of State Boards of Health—National Quarantine—Conference of Local Health Officers—Medical Education and Statistics.

The Formation and Excretion of Uric Acid considered with Reference to Gout and Allied Diseases. By A. Haig, M. A., Oxon., M. R. C. P., etc. Being a Thesis for the Degree of M. D. in the University of Oxford. London: John Bale & Sons, 1888.

New York Post-graduate Medical School and Hospital. Seventh Annual Announcement. Sessions of 1888–'89.

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# Reports on the Progress of Medicine.

## ANATOMY.

By MATTHIAS L. FOSTER, M. D.

Dr. Dwight records observations of the following muscular abnormities ("Jour. of Anat. and Phys.," Oct., 1887):

**Absence of the Flexor Carpi Radialis.**—This abnormity occurred on the right side of the body of a muscular young man. Nothing could be found which might be said to represent it except a small, pale, muscular belly which arose from the anterior border of the tendon of the supinator longus, one inch above the styloid process, became tendinous, passed through a separate sheath near the surface of the annular ligament, with the radial artery lying between it and the supinator longus, and was inserted into the abductor pollicis. The only reasons for considering this muscular slip to represent the flexor carpi radialis were its position and relation to the artery just above the wrist, while the more important consideration of its origin and insertion are opposed to such a view. No trace of anything representing the muscle could be found at the places of insertion into the metacarpus. The palmaris longus was very strong, its muscular portion extending more than half-way down the forearm.

**Duplicity of the Vastus Externus.**—Of this two cases were observed. In the first case "a tendinous band about one third of an inch broad and four inches long arose from the anterior surface of the capsule of the hip joint, a little below the inferior spinous process of the ilium, and joined the deep fasciæ of the tensor vaginæ femoris near the lower end of the muscular fibers. An inch and a half from its origin it gave off a slender tendon which, two inches and a half lower down, became muscular and joined the anterior surface of the vastus externus at about the middle of the thigh." In the second case the origin from the linea aspera was shorter than usual. The important peculiarity was that a part of the muscle sprang from a tendinous band attached to the anterior inferior spine of the ilium, and seemed to represent the inner limb of the Y-ligament. The lower part of this was muscular and joined the anterior edge of the vastus externus. It occurred to the observer that in the earlier part of life the muscle might have a higher origin, but he found nothing to confirm this on examination of several infants and fœtuses.

**The Interclavicularis Anticus Digastricus Muscle.**—The greater part of the clavicular portion of the pectoralis major was wanting on both sides, only a narrow slip arising at the junction of the outer and middle thirds of the clavicle, so that a space three inches wide was left between it and the sternal portion. This deficiency and the two halves of the abnormal muscle were very symmetrical. The latter arose from the front of each clavicle by an origin an inch and a half broad, the outer end of which was covered by the clavicular portion of the pectoralis major. The outer muscular parts were united by a median tendon two inches long, which crossed the sterno-clavicular joints and lay in front of the sternum. Some of the superior fibers of the sternal portion of the pectoralis major sprang from this tendon.

**The Sternalis Muscle.**—Of this anomaly Dr. Dwight has observed seven cases. The first was in a female anencephalous fœtus. There was a deficiency in each pectoralis major. On the left the upper part arose from the clavicle in front of the manubrium and the cartilages of the first two ribs, on the right from the clavicle and cartilages of the first three ribs, but not from the sternum, except near the sterno-clavicular articulation. The lower part arose from the third, fourth, and fifth costal cartilages on the left side, from the fourth and fifth on the right. The sternalis was present on both sides. On the right it ran along the inner border of the upper division of the pectoralis major from the fourth costal cartilage to near the top of the manubrium. On the left the muscle was divided into two parts, the lower of which ran upward and slightly inward from the fourth costal cartilage to the third, the upper from the third to the second, its lower part being external to the upper end of the lower one. Both slips on the left side appeared to overlap the pectoral fibers.

In the second case the sternalis arose from the sheath of the rectus opposite the fifth or sixth costal cartilage, about two inches from the median line, and passed upward and inward to end in the fascia covering the pectoralis at the level of the second cartilage. It was three fourths of an inch broad.

In the third case it was a triangular muscle arising by small tendinous bands from the sheath of the rectus opposite the sixth cartilage, an inch from the median line. The inner border was vertical and slightly concave, the other extended obliquely outward. Its greatest breadth was two inches and a half opposite the second rib. At this level the outer part became fibrous and ended in the pectoral fascia, while the inner part joined the sternal head of the sterno-mastoid. The nerve-supply was from the intercostals.

In the fourth case it arose from the sheath of the rectus as in the second case, and by fibers from the lower portion of the pectoralis, and was inserted over the manubrium in the middle line. Its greatest breadth was three fourths of an inch.

In the fifth case it was double. The right muscle arose by tendinous fibers from the fifth, sixth, and seventh cartilages and the sternum. Opposite the third cartilage it divided into two parts, the outer one spreading out over the pectoralis and becoming lost in the fascia over it. The inner portion received a small muscular belly from the fourth cartilage, soon became tendinous, and ran to the middle line, where it divided into a slender tendon, which joined the right sterno-mastoid, and several bands which passed under the pectoralis major of the opposite side, where they became attached to the second cartilage, or gave origin to a deep head of the left pectoralis major. The left sternalis arose from the pectoral fascia at the lower border of the muscle, and was inserted into the sternum at the level of the second cartilage under cover of the right sternalis. The nerve-supply was probably from one of the anterior thoracic nerves.

In the sixth case it arose from the pectoral fascia over the fifth cartilage, and was inserted into the sterno-mastoid. Its greatest breadth was less than half an inch.

In the seventh case it was double. It arose on the right side from the pectoral fascia over the fifth rib, the fourth cartilage, and the sternum, and was inserted into the right sterno-mastoid. It was supplied by the third intercostal nerve. On the left side it originated from the pectoral fascia at the level of the sixth cartilage, and was inserted into the left sterno-mastoid. It was supplied by the second and third intercostal nerves.

**A Right Subclavian Artery passing in Front of the Scalenus Anticus.**—Curnow (*ibid.*) presented a specimen of this rare anomaly to the Anatomical Society of Great Britain and Ireland last July. It was taken from a male subject twenty-eight years old. The vein passed in front of the artery as usual. The artery was in its normal position on the first rib, but the scalenus-anticus muscle and the tubercle for its insertion were placed more posteriorly than normal. The cords of the brachial plexus passed behind the scalenus anticus. On the left side the artery and the muscle were in their normal positions. Only eight similar cases have been reported. Quain did not meet with this variation in 296 cases.

**The Suspensory Ligaments of the Thyreoid Gland.**—Berry (*ibid.*) calls attention to a pair of ligaments connected with the capsule of the thyreoid gland which pass from the inner and back part of each lobe of the gland upward to the sides of the cricoid cartilage, and form on each side the upper end of a kind of sling in which the organ is suspended, and by which it is firmly fixed to the larynx. The ligament has no definite or abrupt margins, but is continuous with the thin layers of fascia on either side, the inner attached to the whole of the anterior surface of the cricoid cartilage, while the other passes to the posterior surface of the trachea. These ligaments have to be divided before the gland can be removed, and a careful study of their position may result in the separation being effected with much less dissection. The recurrent laryngeal nerve lies in immediate contact with the ligament on its posterior and outer surface.

**The Circle of Willis.**—Dr. Windle ("Jour. of Anat. and Phys.," Jan., 1888) found in 76 out of 200 cases the arrangement of the arteries at the base of the brain forming the circle of Willis strictly that described in the text-books as normal. In 43 of the others the only deviation was a more or less marked disproportion between the posterior communicating arteries of the two sides, so, if this be disregarded, the normal number and arrangement was present in 119 out of 200 cases. The anterior communicating was normal in 159 cases. Its usual variation was duplicity, which was complete in 14 cases, incomplete in 6. In 1 case three were found. In 8 cases it was absent. Twice it was associated with union of the anterior cerebrals. In 9 cases it formed the origin of a third anterior cerebral artery, called the arteria cerebralis anterior media, which passed forward in the longitudinal fissure for two thirds of the length of the corpus callosum, and divided into branches supplying the opposed surfaces of the hemispheres. The anterior cerebral arteries were normal in 181 cases. In 2 cases the right artery was absent; in one its place was supplied, to a certain extent, by twigs from the right middle cerebral; in the other by a small branch which sprang from the right internal carotid. In 1 case the right vessel was double the size of the left; in another the two anterior cerebrals united to form a single trunk, and in 8 they united for a short distance, six times replacing and twice accompanying the anterior communicating. The posterior cerebral arteries were normal in 173 cases. The most common variety was derivation of one or both from the internal carotid, instead of the basilar. This occurred eleven times on the right side, nine on the left, and four on both sides. There were two posterior cerebral arteries on the same side in three cases, once on the right, twice on the left. In each the smaller was derived from the basilar, the larger from the internal carotid. In 1 case a twig from the posterior cerebral divided the third nerve into two portions, which afterward reunited. Aside from disparity in size, the posterior communicating arteries were normal in 175 cases. Both were absent in 3 cases, the right in 9, the left in 13. In the majority of these cases there was a slight anastomosis in the interpeduncular space between twigs from the basilar and the internal carotid. In 7 cases both arteries were very small, in 28 the right was much larger than the left, in 15 the left was larger than the right. These variations of the posterior communicating are particularized: 1. Both arteries springing from the internal carotid, in the position normally occupied by the posterior communicating, and passing to the under surface of the temporo-sphenoidal lobe, where a few twigs anastomosed with twigs from the posterior cerebral. 2. The left artery similar to the above; the right normal in position, but small. 3. No artery on the left side. 4. The left artery a mere thread. 5. The left artery commenced at the carotid as a trunk of normal size, but gave off numerous branches, and was reduced to a thread before it inosculated with the posterior cerebral. 6. The artery which represented the left posterior communicating, which was absent, passed backward beside the posterior cerebral, shared its distribution, and slightly anastomosed with it.

It may be noticed that when one of the posterior communicating arteries was smaller than the other, or absent, it was usually the left side which suffered. Hence it may be inferred that in these cases the supply of blood to the left side of the brain was less complete than that to the right. If this is true, it negatives the theory that right-handedness is due to a more complete vascular supply of the left half of the brain. The same fact may in some cases explain the lodgment of emboli in the left middle cerebral arteries rather than in the right.

A vessel of unknown origin, as not examined at the time of the removal of the brain from the cranium, ran along the right side of the pons to the right crus, along which it coursed, crossed to the right optic tract, and terminated in the right Sylvian fissure by inosculation with the middle cerebral artery. It communicated with the right superior cerebellar artery, and, by a branch running across the middle of the crus, with a branch from the end of the basilar, which probably represented the posterior communicating, which otherwise was wanting. Before turning into the Sylvian fissure it gave off a branch which passed in front of the optic commissure, and terminated in the anterior fissure. The right posterior cerebral arose from the internal carotid.

**Riders' Bone.**—The development of bone in the tendons of the adductor muscle has been occasionally noticed in men habitually accustomed to horseback riding, and has been attributed to injury in the region of the adductors during violent action on horseback. That this is not the only cause is shown by a case recorded by Dr. Struthers (*ibid.*), in which this bone developed on each side in the tendon of the adductor longus of a man who had been a foot-soldier for twenty-one years and had never been to any great amount in the saddle.

The bone on each side was an inch and a half long, three quarters of an inch to one inch thick, and for the most part triangular. The right bone articulated with a projecting platform at the angle of the pubes by a diarthrodial joint. It was felt to be movable during life. The left bone was fixed immovably to the pubes. The adductor longus tendon was directly prolonged from the end of the bone, which was flattened toward the tendon; the fascia lata was attached to its inner surface, the fore part of the gracilis to the inner posterior border, the inner part of the pectinæus to the outer side, and a large part of the adductor brevis to the posterior surface.

**Variations in the Shape and Position of the Liver.**—Symington ("Edinb. Med. Jour.," Feb., 1888) draws the following conclusions after a careful investigation by means of frozen sections: Distension of the stomach causes certain definite alterations in the shape and position of the liver. The movement is complicated, but may be roughly described as a rotation around a vertical axis passing through the inferior vena cava. The left lobe and the anterior part of the right lobe undergo the greatest displacement. The relations of the peritonæum facilitate this movement. Thus the anterior surface of the liver and the corresponding part of the abdominal wall are covered by peritonæum, while the left lateral and suspensory ligaments of the liver are long, mesentery-like folds. When the stomach is empty the suspensory ligament is relaxed and thrown into a number of folds; as it fills, the anterior surface of the liver glides over toward the right, and the ligament becomes tense and tends to check excessive movement of the organ. The round ligament and the left lateral ligament assist in confining its movements. The vena cava and the Spigelian lobe are moved but little if at all. The posterior surface is so bound down by firm connective tissue and by the coronary ligaments as to preclude any appreciable movement. Probably the gliding of the anterior surface to the right is associated with a backward movement of the right surface. The liver always keeps its general form—that of a triangular prism—but the transverse diameter is diminished and the vertical extent on the right side increased by distension of the stomach.

**The Peritoneal Covering of the Colon.**—Mr. H. W. Allingham, Jr. ("Brit. Med. Jour.," April 28, 1888), gives the result of an examination of the peritoneal covering of the ascending and descending colons in sixty cases in a very instructive article. His observations seem to indicate the existence of a mesocolon much more frequently than is ordinarily supposed, for he found the intestine bound down to the loin, the peritonæum covering only one half or two thirds of its circumference, leaving the posterior part uncovered, in eleven cases on the right side and in ten on the left. A mesocolon of varying length was present in forty-nine cases on the right side and in fifty on the left.

**Fistulæ Fissurarum Branchialium with Defective Membranæ Tympani.**—Ole Bull ("Arch. of Otol.," March, 1888) reports a case in which traces of the first branchial cleft seemed to be left in the form of fistulæ. On each side, at the beginning of the helix, a depression like that left by a small pin-head was to be seen; below these, in the skin over the sterno-mastoid muscle, were the openings of sinuses which admitted a probe to the depth of five millimetres. The drum-heads were defective, the membranæ flaccidæ being absent, the remaining part occupying the under half of the space visible by means of the otoscope. The boundaries of the drums in the upper and posterior part were not well defined. The malleus handle was much retracted. No alteration of the membrane could be seen after inflation. The respiration of the patient could be distinctly heard through the diagnostic tube. Frequently when the ear was syringed the water issued from the corresponding nostril. Attempts to pass probes through the Eustachian tube failed, as they caused pain when introduced six millimetres beyond the beak of the catheter. Whether this defective state of the drum-heads and the free opening of the Eustachian tube are to be regarded as a consequence of a retarded closure of the first branchial cleft in the same manner as the fistulæ, or not, is doubtful.

**The Hymen.**—Krysinkski describes the following anomaly of the hymen ("Archiv f. path. Anat. u. Physiol. u. f. klin. Med," Feb., 1888): In the lower part of the hymen was a small irregular opening which admitted a sound 5 mm. in circumference. In the median line above this was a rather large protuberance which was at first mistaken for the meatus urinarius. Closer examination showed it to be formed by a duplicature of the mucous membrane of the hymen resembling a semilunar fold. This fold was split from the upper free border so as to form a pocket with no opening in its lower, posterior, or lateral walls. The urethra discharged 2½ to 3 ctm. behind the hymen into the vagina, and the urine escaped through the small opening in the lower part of the hymen.

Sutton declares that the hymen is simply a septum which results from the imperfect fusion of the proctodæum with the uro-genital section of the cloaca ("Ctrlbl. f. Gynäkol."; "Am. Jour. of the Med. Sci.," May, 1888). When this septum is complete, imperforate hymen is present, and other forms are due to defects in the septum. Rarely the septum is absent at birth. Abnormities of the vulvo-vaginal orifice are apt to be associated with defects elsewhere, particularly in the alimentary tract, the commencement of which is developed in a similar manner. The mouth and pharynx are developed from the stomodæum, or involution of the epiblast, which meets the anterior end of the fore gut at about the position occupied subsequently by the cricoid cartilage, where a membrane similar to the hymen is formed. Usually, when in the embryo two *culs-de-sac* come together and press upon each other, a hymen-like septum is formed which may afterward disappear.

**An Infant with Two Mouths.**—Lendon ("Australasian Med. Gazette," March, 1888) describes an infant born with two mouths, separated by a fleshy partition extending from the lips to the fauces, where they opened into a common pharyngeal cavity. Faint indications could be seen of separate chins and lower lips, but there was no well-defined sulcus. The alveolar processes of both jaws could be traced in both mouths, but they were in places distorted. The width between the rami on the left side was about one half that on the right. The two jaws were united so closely that no movement could be obtained between them. The common lower lip had a well-marked frenum. Each mouth had a tongue, the left much the smaller. The nose was large and wide, and presented at the junction of the columella with the lip a third, central nostril. The larynx and trachea were very wide, and it was thought that a groove dividing two tracheæ could be felt. Two hyoid bones could not be demonstrated.

The child died after a few months, but the body could not be obtained for examination.

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## MATERIA MEDICA AND THERAPEUTICS.

By H. N. VINEBERG, M. D.

**Delphinium Staphisagria.**—Debiarre ("Nouveaux remèdes," No. 1, 1888) says that the seeds have a disagreeable odor and contain four different kinds of alkaloids, the most important of which is delphinine. This is an amorphous yellowish powder of resinous appearance. Its toxic qualities were first studied by Orfila.

*Action of Delphinine.*—On the digestive apparatus it acts as an irritant, causing salivation, vomiting, diarrhœa, and abdominal pains. It

diminishes the number of the respiratory movements and renders respiration short and difficult. It also diminishes the frequency of the heart's action, and gradually the pulsations grow less powerful. Its effect upon temperature is not very well known, but in a few cases there was elevation of the body heat. Some observers have noticed congestion of the kidneys and the presence of sugar in the urine after its administration. It paralyzes the motor and sensory apparatus of the nervous system.

The therapeutic uses of delphinine resemble those of veratrine, but it is not so likely to cause vomiting as that drug. It is of value in facial neuralgia, chronic rheumatism, and convulsive affections. It may be given in palpitations, whether of nervous or organic origin. The best form of administering it is in granules or pills. The maximum dose is from $\frac{1}{60}$ to $\frac{1}{10}$ of a grain. Externally it produces a slight caustic effect and may be employed in tic-douloureux, paralysis, and rheumatism.

**Hyoscine.**—Erb ("Ctrlbl. für die ges. Ther.," Jan., 1888) relates his experience at some length with this alkaloid. Different from Kobert, he found that the hydrochloride was as powerful as the two other salts, the hydriodide and the hydrobromid. The dosage must be very small, from two to four decimilligrammes ($\frac{1}{300}$ to $\frac{1}{170}$ grain), and the drug is usually administered subcutaneously. The tolerance of the drug varies much with different individuals. The untoward effects commonly noticed were a feeling of general weakness, sleepiness, heat in the face, dryness of the throat, dizziness, confusion, imperfect vision, and difficulty in articulation. Its hypnotic effect was observed in a great number of patients, and some actually fell into a sleep after the injection. It produced sleep in some instances when all other means had failed. Erb paid special attention to the value of the drug in irritable conditions of the motor system. He found it especially useful in the tremor of paralysis agitans. Of course it had only a palliative effect. In some cases of severe and obstinate spasm of single or groups of muscles, hyoscine afforded relief for a few hours; in others it proved of no service. In one case of severe recurring tetany a single injection of the drug cured the attack, but in subsequent attacks it was of no avail. In a case of severe hemiplegic chorea it had a calmative effect, which, however, was only temporary.

**Inhalations of Hydrofluoric Acid in Tuberculosis.**—Bardet ("Nouveaux remèdes," Nos. 2 and 3, 1888) discusses the value of hydrofluoric acid as an antimicrobic in tuberculosis. He expresses the belief that it is more efficacious than sulphureted hydrogen, and has an advantage over this agent in being administrated by inhalation. He describes at some length an apparatus for this purpose, two different drawings of which appear in the paper. Full instructions are given as to the method of diluting the acid with carbonic acid, and also as to the duration of the séances.

In a preceding number of this Journal occurs a *résumé* of Dr. Herard's communication to the Academy of Medicine on the same subject. This author gives the following statistics of the therapeutical results of this method of treatment as furnished by M. Garcin: Of 100 patients with phthisis, 35 were cured and 41 underwent improvement; 14 remained stationary and 10 died. Herard remarks that hydrofluoric acid has an undoubted therapeutic effect in phthisis which is not too far advanced. Its administration, he says, is simple, and need not interfere with other forms of treatment.

**Inhalations of Sulphurous Acid in Catarrhal Affections and in Phthisis.**—Ley ("Nouveaux remèdes," 1887, No. 23) states that in the Cherbourg Hospital the method is as follows: In a room of a known capacity to each cubic metre from 5 to 20 grammes (gr. lxxv–℥ vj) of sulphur is burned. The patient is not allowed to enter until ten or twelve hours have elapsed, and he then remains in the chamber for from three to six hours. The article does not give any clinical results, but is simply occupied in figuring out the quantity of gas to each litre of air.

**Modern Cardiac Therapeutics.**—Eichhorst ("Ctrlbl. für die ges. Ther.," March, 1888), in a very practical paper, gives some valuable hints regarding the more modern remedies in affections of the heart. Digitalis, he says, still holds the first place among these. It is of great practical importance that the remedy be given in conjunction with or immediately after alcoholic stimulants and excitants. Especially is this the case when marked cyanosis exists. Digitalis in those cases has no effect until the vagus center is stimulated by the administration of alcohol. When a quick effect is desired, the drug in the form of powder should be employed. In certain forms of kidney disease the powder may prevent threatened attacks of anæmia. The powdered digitalis-leaves are very much increased in potency by the addition of calomel, not only in the dropsies of heart affections, but also in that occurring in emphysema, marasmus, and in liver disease. The author thinks that the cumulative effect of the remedy is exaggerated. He has given it for months without noticing any such effect.

Next to digitalis, according to the author, stands strophanthus. Comparing the two, he says that digitalis is quicker and more certain in its action, but that strophanthus has the advantage in showing no tendency to cumulation, and does not seem to lose its effect by long-continued use. Eichhorst has found strophanthus more efficacious in some cases than digitalis, especially in a case of exophthalmic goitre and in one of long-standing ascites. Sulphate of sparteine stands low in the list after the two foregoing drugs. It seems particularly applicable in cases of cardiac asthma. Next come preparations of caffeine, which have the advantage over the last-named drug from their diuretic properties. *Adonis vernalis* and *Convallaria maialis* have but very slight effect on the heart, and are uncertain diuretics. In addition, they are likely to cause nausea and vomiting.

Regarding Oertel's method the author expresses himself as follows: In all forms of cardiac weakness it is advantageous to diminish the quantity of fluid ingested; the amount of fluid allowed should always be in proportion to the quantity of urine excreted. In reference to bodily exercise one should observe the greatest caution. Violent exercise may cause overdistension of the heart, and consequent sudden death. This is especially likely to happen in cases of fatty degeneration of the heart muscle. On the other hand, in cases of retarded action of the heart, from the accumulation of subpericardial fat, methodical exercise is advantageous in freeing the heart from its mechanical burden.

**Uses of Cannabis Indica.**—Dr. McConnell, Surgeon-Major, Bengal Medical Service ("Practitioner," Feb., 1888), draws attention to the well-known fact that *Cannabis indica* is likely to deteriorate by keeping or storage, and hence the contradictory results often experienced with the drug. He has found it of great value in anorexia consequent upon exhausting diseases—such as prolonged fevers, diarrhœa, dysentery, phthisis, etc. In such cases he has found small doses (♏ v–x of the tincture, or gr. ¼–½ of the extract) very useful. He speaks highly of it also in dyspeptic and tropical diarrhœa. In these cases the function of the liver is disturbed, the stools are of a clay color, and, in addition to this, there is usually an induced irritability of the intestine. An occasional dose of blue pill or calomel should be given in conjunction with the cannabis, which may be prescribed according to the following formula: ℞ Tinct. cannab. indic., ♏ x–xx; bismuth. subnit., gr. x; mucil. acac., ʒ ss.; spt. chloroformi co., ♏ xx; aqua cinnamomi, ℥ j. This mixture may be given before or after food, preferably the latter. In cases of chronic cardiac disease and in chronic Bright's disease the drug has proved a valuable hypnotic in the author's hands.

**A Substitute for Cod-liver Oil.**—Mering, of Strassburg ("Therap. Monatsbl.," Feb., 1888), thinks he has found a valuable substitute for cod-liver oil in olive oil which contains 6 per cent. of oleic acid and is partially saponified. To this mixture he has given the name of lipanin, and he says it can be given in large quantities without deranging the digestive organs. He has given the remedy to forty patients, thirty of whom were children, to whom it seems particularly adapted, on account of its not disagreeable taste. Children were given as much as from one to four teaspoonfuls daily, and adults from two to four tablespoonfuls.

**The Use of Strychnine as a Hypnotic.**—Brunton ("Practitioner," Jan., 1888) has had excellent results with strychnine in cases of insomnia due to overwork and worry, especially in that due to overwork. He argues very plausibly that the reason such persons can not go to sleep is that they are overtired. Now, if we can make them less tired, natural sleep will occur. This may be accomplished in many instances by giving a little alcoholic stimulant or some warm beef-tea. But these simple measures frequently fail, and it is well then to try strychnine in doses of $\frac{1}{100}$ of a grain or more, or the remedy may be given in

the form of nux vomica, in doses of from five to ten minims of the tincture.

**Antipyrine in Pertussis.**—Sonneberg ("Dtsch. med. Woch.") speaks very highly of antipyrine in whooping-cough. He gave it in seventy cases, and asserts that it proved more efficacious than any other remedy. He administered 0·01 gramme (gr. $\frac{1}{6}$) to very young infants, and increased the dose according to age. Adults were given one gramme (gr. xv) at a dose. The remedy was given four times daily, the last dose before going to bed. The infants took the medicine very readily dissolved in some raspberry syrup. Under this treatment the affection lasted usually from three to five weeks, and very rarely did more than six or seven attacks occur within the twenty-four hours. The appetite and nutrition improved when antipyrine was given in the later stages, the attacks became less violent, and the expectoration was easier. In a few cases the good effects were not noticeable until two or three days had elapsed after the treatment had been begun. The author had never observed collapse as a result of the treatment. Five cases of the seventy were attended with complications, two of which were pneumonia, and one patient succumbed. [The dose as stated seems rather small. We have given as much as half a grain at a dose to infants of six months of age, and the results have been satisfactory. So many remedies have been vaunted as specifics in pertussis and have been found wanting, that an author who speaks of a new remedy in that affection in language of moderation inspires confidence.]

**Inhalations and Hypodermic Injections of Sulphurous Acid in Tuberculosis.**—Davies ("Bull. gén. de thér.," Feb., 1888) discusses at some length the method of preparation and inhalation of sulphurous acid in phthisis. He alleges the usual good results for this form of treatment. The cough, expectoration, and night-sweats cease, the patient gains in flesh, and the physical signs show that the lesion is undergoing improvement.

M. Deschiens (*ibid.*) has introduced sulphur candles which, on being burned, generate a certain amount of sulphurous-acid gas. He has invented also an ingenious lamp for the combustion of sulphur, and which indicates the quantity of gas given off.

**A Study of Hydrastis Canadensis.**—Givopiszew (*ibid.*), on the grounds of an extensive experience with the drug, makes the following deductions: (1) The aqueous extract, even in very large quantities, does not give rise to toxic effects in warm-blooded animals. (2) It always produces a lowering of the blood-pressure without any previous augmentation. (3) It always excites contractions of the uterus, which are most intense in advanced pregnancy and shortly after parturition. (4) A larger quantity of the drug may provoke premature labor in advanced pregnancy.

The author makes the following clinical *résumé:*

(1) *Hydrastis canadensis* is an excellent remedy in uterine hæmorrhage due to inflammation and malpositions of the uterus. (2) The contractions evoked by hydrastis are less intense than those caused by ergot. (3) The employment of the drug is not attended with any inconvenience; it may be given for a long time without giving rise to any gastro-intestinal trouble.

[From a considerable experience with the drug, we may say that we have found hydrastis of very little value in uterine hæmorrhage due to malpositions of the uterus or to circumuterine inflammation. We have found it most efficacious in the hæmorrhage due to chronic endometritis or subinvolution, and in those cases where by the method of exclusion the diagnosis was made of granular degeneration of the endometrium. In the latter condition, however, we prefer using the curette.]

**The Internal Use of Ichthyol.**—Nussbaum, of Munich ("Zeit. für Therapie," Jan. 15, 1888; "Ther. Gaz."), has been making a study of the internal uses of ichthyol. He states that he has found it efficacious in all diseases in which there is hyperæmia and an enlargement of the capillaries. As the drug contracts these enlarged capillaries it can easily be understood why it acts so beneficially upon asthmatic complaints, digestive troubles, and those neuralgias of the pelvis which are undoubtedly more or less due to circulatory anomalies and vascular enlargements. This explains also why ichthyol is at times used without avail in similar diseases. The author's experience shows that the drug is most efficient in that class of painful neuralgias of the bones, joints, and muscles which is accompanied by difficulty in moving and which for months had been treated by other remedies. In cases of gouty inflammation, where the motion of the limb or joint had been greatly impaired and every movement was accompanied by a cracking sound, as soon as the ichthyol treatment was commenced the pain first subsided, and soon afterward the stiffness gradually disappeared and movements became both possible and painless. He gave the remedy night and morning in doses of gr. vijss. in pill-form. As soon as the desired effect has been obtained the use of the drug should at once be discontinued, in order that the patient may not become accustomed to it. No harmful action of the drug was ever observed to follow even the largest doses.

## Miscellany.

**The Autopsy in the Case of the late German Emperor.**—The "British Medical Journal" publishes the following translation of a medical protocol concerning the result of the examination of the body of his Majesty the late Emperor and King Frederick the Third:

"Schloss Friedrichskron, June 16, 1888.—In the neck there is a stitched-up linear wound 6½ centimetres long, with rather dry edges, on the right side of which is situated a flat, pale protuberance, 2 centimetres high, 1·5 wide, and 0·5 thick. Inside the wound is a large quantity of cotton-wool with bismuth, after the removal of which a cavity is left measuring 5 centimetres in depth and almost as much in length, the opening of which, after removal of the stitch, gapes to the extent of about 2½ centimetres. Moreover, the edges of the wound are tolerably hard, rather raised, and moderately tense. An incision was next made in the middle of the sternum and from thence carried subcutaneously upward on the right by the side of the wound in the neck up to the incision made over the carotid artery on the occasion of the injection.* An incision made through the nodule above mentioned revealed a faintly reddish and, in the deeper parts, rather whitish, moderately compact tissue, from which a whitish juice escaped on scraping. The nodule was situated in the skin and partly in the subcutaneous tissue, but the underlying muscles were entirely free.

"A similar incision was next made on the left side. Here also the muscles on the lateral parts were normal, but in the upper parts they were very tense. Immediately in front of the larynx there was a large tumor on the left side, in the deeper parts of which a medullary-looking infiltration was seen.

"On more extensive exposure of the thorax considerable ossification of the first rib on the left side became visible. On opening the chest, the lungs, which were pale gray, filled the pleural sacs almost completely and covered the heart. On the left side could be seen several small prominences, beneath which could be felt hard nodules covered with layers of loose connective tissue. Only at one place, near the anterior border, there was a fairly well defined lobular polygonal area, with dull, rather uneven surface. The left lung, on being pulled out, appeared outwardly quite healthy at its posterior, lower, and upper aspects; it was everywhere full of air, down to the lowest fringes of the lower lobe, close above the diaphragm.

"Very slight hypostatic congestion; the collapsed patches in the base contained dilated bronchial tubes, partly surrounding which were layers of extravasated blood. On section, a large number of foci were found in the interior of the lobe, most of which showed much hæmorrhagic infiltration round about, and presented a granular surface on section, while in the center were a large number of smaller yellowish-white nodules arranged in groups. In some places the foci were of the size of a pea, and contained material resembling pus; in others the whole mass was still solid. Scattered throughout the upper lobe were found similar very pale foci, in which a large number of small yellowish nodules were closely packed together.

"In the foci in the anterior border, which have already been mentioned, very thick discolored clots were found inside the much-dilated bronchial tubes, while the neighboring parts showed thickening of the connective tissue. On slitting up the bronchial tubes in the lower

* For embalming purposes.

lobe, they were found dilated throughout, with thickened walls, the mucous membrane lying in longitudinal folds; inside were discolored *débris*.

"On the right side precisely similar conditions existed. The apex was perfectly free, but at the posterior and lower part of the lung almost the same conditions of collapse, together with numerous small foci, were found, and similar bronchiectases. In the pleural sacs there were no further contents. In taking out the larynx the incision was carried immediately in front of the vertebral column and just behind the œsophagus. In the anterior mediastinum a fair amount of fatty tissue was found; the glands were slightly reddened, but otherwise unchanged. The larynx and œsophagus were exposed and ligatured. On the left side of the neck close to the jugular vein was a lymphatic gland about as large as a pigeon's egg, which in its interior showed a medullary-looking, partly yellowish spot. On slitting up the œsophagus there was found, immediately behind the cricoid cartilage, a collection of brownish and whitish membranes; on pushing these aside, no trace of perforation was found. Epiglottis large, smooth; edge normal.

"The ary-epiglottic ligaments, especially the left, somewhat swollen, œdematous, but without ulceration. The space at the back between the arytenoid cartilages rather deep, but also free from ulceration. Just at the base of the epiglottis on the left side there was a medullary nodule as large as a cherry; near it was a smoother one, and still more externally some smaller (younger) ones. In addition to this there was a large surface, nine centimetres in length, covered throughout with gangrenous shreds. The lower edge was formed by the trachea. From that point to the thyreoid cartilage no cartilaginous structure was found nor other tissue of the trachea.

"Of the thyreoid cartilage itself only the upper portions of the wings, together with the cornua, were found. The distance of the lower end of the tracheal wound from the lower end of the ulcer measured two centimetres and a quarter. This lower edge was moderately clean-cut, extending through the mucous membrane, and presenting below small gray granulations, which covered an area of about half a centimetre. Then followed normal mucous membrane over the still existing tracheal rings. In the tissue of the still existing part of the trachea there was no evidence of cicatrization, but purely normal conditions. Herewith the examination of the body ended, and the latter was sewn up in the most careful manner.

"The macroscopic changes observed were summed up by Dr. Waldeyer and Virchow as follows: Cancerous destruction of the larynx, with secondary disease of a rather large lymphatic gland at the lower part of the left side of the neck, and a cutaneous nodule on the right side near the wound. Œsophagus unaffected. Inflammatory destruction of the upper portion of the windpipe and the neighboring parts. Numerous bronchiectases, with putrid contents. Near these, bronchopneumonic suppurating gangrenous patches."

| | | |
|---|---|---|
| | Count Stolberg-Wernigerode, | Leuthold, |
| | Morell Mackenzie, | von Bergmann, |
| (Signed) | T. Mark Hovell, | Virchow, |
| | von Wegner, | Waldeyer, |
| | Bardeleben, | Bramann. |

The same journal gives the following report of Professor Virchow and Professor Waldeyer on the microscopic examination of particular sections from the body of the late Emperor Frederick:

"1. The larger nodule at the base of the epiglottis shows, on the outside, still unchanged mucous membrane with cylinder epithelium, but in the interior an alveolar structure, with epidermoidal contents. The cells of the latter are large and highly developed; concentrically arranged cell-groups were not observed.

"2. The cutaneous nodule on the right side of the wound in the neck is covered with extremely attenuated, but otherwise unchanged, epidermis; the cancerous proliferation reaches close to the surface; its chief development is situated in the deeper parts, where also, here and there, 'nests,' with a concentric arrangement of cells, occur. Some normal constituents, such as sweat-glands, are to be seen between the cancerous masses.

"3. The lymphatic gland on the left side of the neck shows the highest degree of change. The normal structure has disappeared, and is replaced by a loose alveolar tissue, the spaces of which are closely filled with epidermoidal cells having large nuclei; many of these cells possess small, bristle-like fringes (*Bürstensäume*).

"4. The contents of the bronchial tubes correspond exactly in their composition with the description given by the undersigned Professor Virchow (in his report of May 19th of the present year) on the solid particles found in the expectoration. Moreover, in certain places, a more abundant collection of small, bright fat-globules, like the globules in milk, was observed.

"5. In the foci in the lungs were found thick clusters of pus-cells, but no cancer-cells. The natural alveolar structure was still perfectly distinct."

(Signed) Rudolph Virchow,
Wilhelm Waldeyer.

**Anthropological Notes.**—At various recent meetings of the *Société d'anthropologie*, of Paris, the following were among the subjects presented:

*Causes of Error in Anthropology.*—M. Fauvelle, in a communication on this topic, said that, through the influence of classic philosophy and of religious ideas imposed upon the brain cells in infancy and youth, an impulse was given to the mental industry of mankind which carried it inevitably into error. Thus, the place assigned to men under the name *règne humain* was a striking proof in point—an example from several mentioned in the speaker's remarks. Concerning the physiological multiplication of cells, it was very natural, when we were acquainted with the operation of gravity, to suppose, to admit even, that, when a cell had acquired a volume by nutrition which is beyond the attractive force of the nucleolus, it should divide to form two new centers of attraction for the surrounding protoplasm. Why adduce other forces than gravity, such as the so-called nervous or vital? This repugnance to bringing in physico-chemical forces to explain vital phenomena had resulted in delaying the solution of the problems of the limit of growth, of the nature and mechanism of sleep, and many others, for an explanation of which we vainly searched in the most advanced works of science in general or of physiology proper. What happened then? The "philosophers" seized upon the question, and, to show the inferiority of "science," explained everything by the light of their superstitious conjectures. "This is beyond reason," they said. But, indeed, did we know anything save by reason, by the mind of man? There was nothing hereditary but the anatomical characters of the constituent cellular elements and their various properties; those characters and properties were transmitted from generation to generation by the reproductive cells, which contained all the principles of heredity. The form oftenest resulted from the action of external agents. If medicine were not closely related to anthropology, there might be occasion to show how many incorrect views had been introduced into therapeusis by mere superstitions and prejudices—from bread pills to rabbits' spinal cords. But medicine was an art, and the arts lived by fictions only. The study of human races should give two chief results: Their origin and their classification according to the degree of evolution. To attain this double end, anthropometry alone was not enough; it must be aided by the study of languages on the one hand, and of the degree of intellectual development on the other. Of the latter, industrial pursuits (the mechanical arts, trades, etc.) were the most important manifestations. The question of embryogeny was fundamental in such researches. Remembering such "errors" as the foregoing, we might learn, in our studies, to cast aside every kind of prejudice, religious, philosophic, or other, and hold fast to the method of investigation and reasoning formulated by Bacon—observe, experiment, then deduce if possible.

In the discussion ensuing on this communication, it was stated that, if there were physiologists (such as His) who admitted as a principle that everything was mechanical in the human body, there were others who observed, and, finding only chemical, physical, and mechanical phenomena, waited, in order to see more, until observation and experimentation had shown it to them. Bacon designates such illogical reasonings as phantasms of the imagination, of tribe, and of race. They arose from prejudices of education, traditional or hereditary beliefs, received passively by the human mind during the early ages of its development. The adult intelligence freed itself from them with great effort only, by the hard work of logical examination, hard in proportion

as evidences of fact in the present were found to contradict ideas accepted in the past. Often, indeed, under the name of "philosophy," the schools gave us only a codification of time-honored ignorances, misconceptions about matter or ideas inevitable during the first phases of man's evolution. Many of the "verities" of "universal consent" were "universal" mistakes, which accorded the better with public opinion as they were the more opposed to "common sense."

*Anthropology and Political Science.*—Under this title M. De Lapange presented a paper which had appeared in "Revue d'anthropologie." Such a review of the subject caused expectation of something practical from a field where the work had been rather strictly scientific.

"*L'Homme.*"—The first five numbers of this publication were presented to the society. It is to be hoped that its philosophico-moral excellence may be commensurate with the breadth of view suggested by the name.

*Congenital Aphasia.*—Apropos of a case of this disease in a child of four years, reported to the society, reference was made to various similar instances recorded in the literature of the subject. In one of them, a lad, dumb from birth until the age of six years, being much moved by an accident to one of his toys, suddenly cried out "What a pity!" From this time on he spoke.

*The Anthropology of the Fuegians.*—M. Hyades presented a "Summary of Answers to Questions, from an Ethnographical Standpoint, put to the Fuegians." He stated that detailed data would doubtless be found in the volume on the tribes of Tierra del Fuego soon to be published by the "Cape Horn Commission."

**The late Dr. Garnett, of Washington.**—At a recent meeting of the Medical Society of the District of Columbia, Dr. John B. Hamilton, the Surgeon-General of the Marine-Hospital Service, spoke as follows: "A giant among medical workers has fallen; a dauntless soul has left our midst. A gentleman, without fear and without reproach; a physician with a spotless record; a practitioner most able; a consultant, clever, courteous, and conscientious; a scholar of high repute; a medical officer skilled in the exigencies of military and naval warfare; a man of the utmost energy; a devoted friend. All these attributes were possessed by our late colleague, the fact of whose future absence from our meetings falls on more than one here to-night as a personal loss. Many of us had been accustomed to look for sympathy, support, and counsel to our departed colleague, whose wide knowledge of the world, great learning, and vast experience made it a pleasure to be associated with him. Dr. Garnett, leaving us at the age of sixty-eight, has left us the record of a life singularly complete in all that makes a gentleman and high-class professional man. Having graduated with honor, he entered the United States navy, and in due course was promoted to the rank of passed assistant surgeon. It was at this time that he made the voyage round Cape Horn and visited the Chilian coast. He wrote an interesting account of some cases observed in the service, which was published in the 'American Journal of the Medical Sciences.' He was ordered to Washington, and after marriage resigned and settled in this capital. He was engaged in active practice when the war of the rebellion came. Who shall censure him now that he followed the fortunes of his State, rather than those of the old flag? Dr. Garnett always acted true to his convictions of right, as the needle to the pole. Others might scold, sulk, and backbite if they wished, and remain under the protection of the flag while in enmity to its defenders; but not he! Business, property, peace, and comfort were exchanged for the hardships of the camp, the battle-field, and the retreat, because his convictions of the righteousness of the Southern cause forced him into the front. Brave, honest, and true Dr. Garnett! No Northern soldier but honors his hatred of hypocrisy and his courage. The war ended, his antagonisms died, and his practice was resumed with success and the reward which none envied, and all approved. He has lived as a gentleman and physician should live, and he has gone full of years and covered with honors; but, while our tears mingle with those of his immediate family, let us reflect with some satisfaction that we loved him while he lived, and honored him while he was yet in the flesh, and that he was spared the bitterness, so often accorded our great men, of meeting only envy, hatred, and detraction during life. And so, while our colleague has passed beyond our ken to the realms of the unknown shore, the comforting thought comes to us that, while with us, he knew of our devotion and repaid us with his esteem."

**The New York State Medical Association.**—The sixth special meeting of the Fifth District Branch was held at Babylon on Tuesday, July 31st. The programme included the following papers: "Heart Lesions and Albuminuria," by Dr. J. G. Truax; "The Removal of a Tumor from the Internal Os, inclosed in a Membranous Sac," by Dr. William Govan.

**The Health of the State of New York.**—According to the State Board of Health's "Monthly Bulletin" for June, the whole number of deaths reported was 8,368, including 40 from cerebro-spinal fever, 1 from typhus, 45 from typhoid fever, 56 from malarial diseases, 11 from small-pox, 233 from scarlet fever, 130 from measles, 25 from erysipelas, 61 from whooping-cough, 490 from croup and diphtheria, 811 from diarrhœal diseases, and 94 from puerperal diseases.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending July 27th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending July 7th corresponded to an annual rate of 15 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 9·1, and the highest in Preston, viz., 22·2 in a thousand. Small-pox caused 7 deaths in Preston and 1 in Bradford.

*London.*—One thousand two hundred and eleven deaths were registered during the week, including measles, 23; scarlet fever, 10; diphtheria, 29; whooping-cough, 31; enteric fever, 7; diarrhœa and dysentery, 51; simple cholera and choleraic diarrhœa, 3. The deaths from all causes corresponded to an annual rate of 14·8 in a thousand. In greater London 1,502 deaths were registered, corresponding to an annual rate of 14·2 in a thousand of the population. In the "outer ring" 6 deaths from whooping-cough and 6 from diphtheria were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending July 7th in the sixteen principal town districts of Ireland was 19·2 in a thousand of the population. The lowest rate was recorded in Drogheda, viz., 0, and the highest in Wexford, viz., 29·9 in a thousand. In Dublin 137 deaths were registered, including measles, 3; whooping-cough, 6; enteric fever, 6; scarlet fever, 2; and erysipelas, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending July 7th corresponded to an annual rate of 16·2 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 9·5, and the highest in Glasgow, viz., 18·9 in a thousand. The aggregate number of deaths registered from all causes was 410, including measles, 7; scarlet fever, 3; diphtheria, 7; whooping-cough, 5; fever, 5; and diarrhœa, 10.

*Netherlands.*—The deaths registered in twelve principal cities of the Netherlands during the month of May, 1888, having an aggregate population of 1,129,676, corresponded to an annual rate of 22·3 in a thousand of the population. The lowest rate was recorded in Leeuwarden, 11·7, and the highest in Arnhem, 29·1.

*Preston, England.*—The United States consul at Liverpool, in his dispatch dated July 5, 1888, states that "the number of cases of small-pox reported since the 23d ult. is 105, and the number of deaths 7, making a total of 360 cases, 24 of which were fatal."

*Santiago de Cuba.*—The sanitary inspector reports for the week ending July 14, 1888, 10 cases and 9 deaths from yellow fever at the military hospital. The cases are of newly arrived soldiers from Spain.

*Havana, Cuba.*—Sixteen deaths from yellow fever and one from small-pox are reported for the week ending July 14, 1888.

*Hong-Kong, China.*—The State Department has received the following telegram, dated July 21st: "No cholera epidemic Hong-Kong." Signed Withers, consul; Jordan, health officer; Ayres, chairman sanitary board.

Notwithstanding the foregoing denial, press reports continue to state the existence of cholera at Hong-Kong.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paris | July 7. | 2,260,945 | 843 | .. | .... | 5 | .. | 23 | .. | 2 | 2 | 21 |
| Glasgow | July 7 | 545,678 | 191 | .. | .... | .... | .... | 2 | .. | .. | 3 | 3 |
| Warsaw | June 30 | 444,874 | 233 | .. | .... | 11 | .... | .. | .. | .. | 3 | 7 |
| Calcutta | June 9 | 433,219 | 192 | 25 | .. | .. | .. | .... | .. | .. | .. | .... |
| Amsterdam | July 7. | 389,916 | 140 | .. | .... | .... | .... | 1 | .. | .. | .... | 1 |
| Copenhagen | June 26. | 300,000 | 163 | .. | .... | .... | .... | .... | .. | .. | 2 | 2 |
| Edinburgh | June 23. | 202,739 | 60 | .. | .... | .... | .... | 1 | .. | .. | .. | .. |
| Munich | June 17. | 202,000 | 186 | .. | .... | .... | .... | 1 | .. | 3 | .. | 1 |
| Palermo | July 7. | 250,000 | 77 | .. | .... | .... | .... | 1 | .. | 2 | .. | 1 |
| Belfast | July 7. | 227,022 | 97 | .. | .... | .... | 1 | 5 | .. | 1 | .. | 3 |
| Genoa | July 7. | 179,526 | 78 | .. | .... | 1 | .... | .... | .... | .... | .... | .... |
| Trieste | June 30. | 154,500 | 65 | .. | .... | 1 | .... | .... | .... | .... | .... | 1 |
| Toronto | July 14 | 130,000 | 23 | .. | .... | .... | .... | .... | .... | .... | .... | 2 |
| Stuttgart | July 7. | 125,510 | 31 | .. | .... | .... | .... | .... | .... | .... | .... | 1 |
| Bremen | June 30. | 122,000 | 35 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Pernambuco | July 3. | 110,000 | 110 | .. | .... | .... | 1 | 1 | .... | .... | .... | .... |
| Barmen | June 30. | 102,000 | 37 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Leghorn | July 8. | 101,854 | 38 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Mayence | June 23. | 65,802 | 28 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Cadiz | July 7. | 65,028 | 39 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Merida | July 3. | 48,800 | 26 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Port au Prince | May 30. | 40,000 | 14 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Maracaibo | June 30. | 40,000 | 14 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Curaçoa | July 7. | 25,000 | 5 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Vera Cruz | July 12. | 23,800 | 18 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Gibraltar | July 8. | 23,631 | 10 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Macayo | June 30. | 17,000 | 31 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Kingston, Can | July 13. | 16,216 | 2 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Cape Haytien | July 14. | 15,000 | 9 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Matamoras | July 7. | 12,000 | 10 | .. | .... | .... | .... | .... | .... | .... | .... | .... |
| Laguayra | July 7. | 7,428 | 4 | .. | .... | .... | .... | .... | .... | .... | .... | .... |

UNITED STATES.

*Delaware Breakwater Quarantine Station.*—The American brig Teneriffe, from Havana, arrived July 22d with 2 cases of yellow fever on board. One man died during the passage. The sick have been admitted to hospital, and vessel placed in quarantine. Since the admission of the first 2 cases, the captain, who had remained on board, was taken sick, and at once removed to hospital.

*Tampa, Fla.*—The following is an extract from a telegram received from the president of the Board of Health, Dr. J. P. Wall, under date of July 20th: "Not much fever in this county. Six cases in and around Plant City. No spread from cases here. All precautions taken. Guards are wanted for Plant City and Manatee village. Not over 150 people in each. Both places are infected *foci*. No new cases reported in Manatee."

This bureau has authorized the employment of necessary guards to aid the local authorities, as recommended by Dr. Wall.

*July 24th:* Dr. Wall reports: "Began inspection Tampa and ordered inspection Plant City yesterday. Two cases in Plant City. None here."

*July 25th:* "House-to-house inspection in Tampa will be finished to-morrow. No sickness."

*July 26th:* "Inspection here completed. No sickness here. Two cases at Plant City. No new ones for several days. Dr. Murray reports no new ones at Manatee."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Variolid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Philadelphia, Pa | July 21. | 1,016,758 | 456 | .. | .. | 3 | .. | .. | .. | 17 | 1 | 3 | .. | 2 |
| Baltimore, Md | July 21. | 431,879 | 261 | .. | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | 3 |
| S'nFrancisco,C'l | July 13. | 300,000 | 109 | .. | .. | .. | .. | .. | .. | 5 | .. | 2 | .. | .... |
| S'nFrancisco,C'l | July 20. | 300,000 | 129 | .. | .. | .. | .. | .. | .. | 4 | .. | 2 | .. | .... |
| Cincinnati, O | July 21. | 255,139 | 117 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| New Orleans, La. | July 14. | 248,000 | 133 | .. | .. | .. | .. | .. | .. | 1 | .. | 3 | .. | 4 |
| Pittsburgh, Pa | July 21. | 230,000 | 86 | .. | .. | .. | .. | .. | .. | 1 | 2 | 4 | 1 | 2 |
| Wash'gton, D.C. | July 21. | 225,000 | 118 | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | 4 |
| Lowell, Mass | July 21. | 72,000 | 34 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 |
| Richmond, Va | July 21. | 63,600 | 44 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Charleston, S. C. | July 21. | 60,145 | 34 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Reading, Pa | July 23. | 60,000 | 10 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Mobile, Ala | July 21. | 40,000 | 31 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Wheeling, W.Va. | July 21. | 35,000 | 16 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Youngstown, O. | July 21. | 25,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Newton, Mass | July 21. | 21,105 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Schen'ct'dy, N.Y | July 22. | 20,000 | 6 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |

**Compressed Air in Pleurisy.**—"Dr. Joseph Szohner, of Visegrad," says the "Lancet," "gives in a Hungarian journal an account of some cases of pleurisy with effusion, in which the compressed-air treatment appeared to exercise a most salutary effect. The patients were ordered two sittings daily. In one of the cases, where the pleura had been nearly full of fluid, which the patient refused to have taken away, it made an opening for itself, and, in spite of all that could be done, the man seemed to get worse and worse, a large cavity forming in the apex. The compressed-air treatment was then resorted to, the drainage and irrigation of the cavity being of course attended to; and after a couple of months convalescence was completely established."

## ANSWERS TO CORRESPONDENTS.

*No. 211.*—The term is one of convenience only. The growths are not parasitic, but due to cystic degeneration of the chorion.

*No. 212.*—No.

*No. 213.*—A second examination may be allowed at the end of a year.

*No. 214.*—At the temperature of 59° F., 1 part dissolves in 750 parts of water.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

# AN ADDRESS

DELIVERED AT THE OPENING OF

## THE SECTION OF OBSTETRIC MEDICINE,

AT THE ANNUAL MEETING OF

## THE BRITISH MEDICAL ASSOCIATION,

*Glasgow, August 7, 1888.*

BY THOMAS MORE MADDEN, M. D., F. R. C. S. ED.,

PRESIDENT OF THE SECTION; OBSTETRIC PHYSICIAN TO THE MATER MISERICORDIÆ HOSPITAL, DUBLIN; EX-PRESIDENT OF THE OBSTETRIC SECTION OF THE ROYAL ACADEMY OF MEDICINE; PHYSICIAN TO ST. JOSEPH'S HOSPITAL FOR SICK CHILDREN; FORMERLY EXAMINER IN OBSTETRICS AND GYNÆCOLOGY, QUEEN'S UNIVERSITY; VICE-PRESIDENT OF THE BRITISH GYNÆCOLOGICAL SOCIETY, LONDON.

GENTLEMEN: I gratefully appreciate the honor of my election to the presidency of this important section of the British Medical Association, which I regard as a compliment to the Dublin School of Midwifery, with which I have been long connected, rather than to an individual otherwise so unqualified for the distinction as myself. I shall therefore trust to your continued indulgence for condonance of whatever shortcomings may be observable in my attempt to discharge the duties now intrusted to me.

The present meeting of the association should, I think, be especially valued by the members of this section, for it is to Scotland, and to the genius of her sons, that the twin sciences of obstetrics and gynæcology—which we are here met to cultivate—owe their earliest development in Great Britain; and to a large extent their recent progress is traceable to the same source.

Long before there was any systematic teaching of midwifery either in Dublin or in London, and fully twenty years before the foundation in the former city of the great maternity hospital—on the staff of which I served my apprenticeship to the obstetric art—a professorship of midwifery was, in 1725, established in the University of Edinburgh, and I have had in my possession the ancient manuscript notes of the obstetric course delivered there in 1756 by Professor Young, as well as of the lectures of Dr. Hamilton, by whom he was succeeded. From that time the obstetric teaching of the Scottish schools has come down in an unbroken continuity of excellence to our own day, and its character has been amply maintained by the reputation of their alumni. Thus it was to William Smellie, a native of Lanarkshire, that our professional forefathers owed a "System of Midwifery" as far in advance of any that had preceded it as the obstetric science of these last twenty years of the nineteenth century has progressed beyond that taught in 1752 by Smellie. To the same writer is more especially due the credit of the first real improvement on Chamberlen's original forceps, as well as directions for using that instrument, as he said, "on rational and mechanical principles," which even yet might be studied with some advantage by modern obstetricians.

It was in this country also that the mind of William Hunter received its early training in that obstetric art which he afterward so successfully cultivated and practiced in London, and of which he there became the most distinguished of all its older British teachers. Nor even in this brief retrospect can it be forgotten that in the city wherein we are now assembled, modern intraperitoneal gynæcological surgery was first anticipated in 1701 by Dr. Houstoun, in the curative treatment of an ovarian tumor by abdominal section; while more than a century later it was to another Caledonian surgeon—Mr. Lizzars, of Edinburgh, whose early ovariotomy cases were published in 1825—that the revival, although in a very different and improved form, of Houstoun's first laparotomy operation is mainly due. I shall not attempt to follow further the long history of the obligations of our art to the older Scottish schools, or pause to offer my humble tribute of respect to the memory of one of their ablest teachers—the late Sir James Simpson, whose name will be recalled as long as suffering humanity seeks relief in anæsthesia, and as long as obstetrics and gynæcology are cultivated. Nor need I here refer to the services to our branch of medicine of Dr. Matthews Duncan, who filled the position I now occupy at the last meeting at Edinburgh of this association, or allude to the well-recognized gynæcological work of Dr. Keith and of many other no less distinguished living Scottish authorities.

While willingly acknowledging how much we owe to Scotland, I can not omit a briefer reference to the similar labors of the Dublin school, although the credit of not a few of the obstetric advances that originated there in bygone years has more recently been elsewhere appropriated. Thus, for instance, the employment of version as a substitute for craniotomy, as advocated by some modern German and English writers, was first suggested in 1752 by Sir Fielding Ould, the second Master of the Dublin Hospital, and was revived a century later in the same place by the late Dr. M'Clintock, whose genius, erudition, and obstetric skill entitle him to remembrance even in our most oblivious of professions. In like manner the management of the third stage of labor by the method claimed as his own in the late Dr. Spiegelberg's recently translated "Text-book of Midwifery" is practically almost identical with that followed in the rotunda from time immemorial, as described several years ago in my edition of "The Dublin Practice of Midwifery." The resuscitation, moreover, of the use of the forceps, the prophylaxis of post-partum hæmorrhage, and many other improvements in the management of childbirth and the puerperal state—the introduction of which is claimed elsewhere—have, I may repeat, also emanated from the same practical school of midwifery.

The foregoing reference to the historic claims of the ancient Scotch and Irish centers of obstetric science might be readily expanded. Time, however, forbids my further trespassing either in this way or by any allusion to the better-known services of the early fathers of English midwifery, such as Raynald, Willoughby, Harvey, Cook, Chamberlen, Chapman, Giffard, Denman, and the host of other pioneers of obstetric knowledge, many of whose lives and labors are so well chronicled in Dr. Aveling's erudite "Biographical Sketches of British Obstetricians"; I shall there-

fore devote the remaining portion of this address to the more practical consideration of the results of some of the recent developments of obstetric and gynæcological science.

*The progressive improvement of midwifery practice* has been strikingly evinced during the past few years. Thus the pathology and preventive treatment of intra-uterine death and abortion have been freed from much of their former obscurity and difficulty by the recent writings of Dr. Priestly. The prevalence of puerperal septicæmia, by epidemic outbursts of which, in my early days, I have repeatedly seen the crowded wards of a great maternity hospital decimated, has been largely diminished by the hygienic and antiseptic measures now adopted for its prevention. Whilst if septicæmia should still occur, we are now armed with more scientific means for the curative treatment of this disease which some years ago was generally classed among the incurable *opprobria* of our art. In like manner, by the adoption of improved methods for the prevention and treatment of post-mortem hæmorrhage, that once frequent source of obstetric mortality has been almost completely removed. At the same time the throes and pains of labor have been rendered more endurable by the employment of comparatively safe anæsthetics, such as the mixture of two parts of ether and eau de Cologne with one of chloroform, which, for nearly twenty years, I have found a generally efficient and agreeable anæsthetic in such cases. Moreover, by judicious instrumental assistance, we may now, in many instances, safely abridge the duration of that formerly often long-protracted period of parturient suffering, which, when a student, I have too often seen allowed to continue unrelieved for forty and fifty, and even for eighty, hours and upward. Lastly, the former appalling frequency of child-destroying operations has been reduced in an exact proportion to the increasing employment of the forceps. Nor have the limits of the utility of this instrument, as a substitute for the cephalotribe, craniotomy forceps, cranioclast, *et hoc genus omne*, been even yet fully reached.

*The Uses of the Forceps, and its Improvement.*—The main reason why any embryotomic instruments are still included in the ordinary obstetric outfit appears to me the fact that most midwifery practitioners do not recognize sufficiently the compressive power of the long forceps, and, moreover, rely exclusively on some one form of forceps, whether the head be above or within the pelvic cavity, and without reference to the kind of mechanical power—tractile, lever, or compressive—that may be specially required in each case. Desirable as it may be to carry as few implements as possible in the obstetric bag, it is, nevertheless, impossible to combine in any one instrument properties so distinct as those referred to. In operative midwifery there should surely be some definite proportion between the power employed and the resistance to be overcome. Hence it seems about as needless to resort to an instrument of such compressive and lever power as the double-curved long forceps to assist delivery in an ordinary case of delay in the second stage as it would be to employ a steam-hammer to crack a walnut.

I have endeavored to carry out these views in the two instruments now exhibited, which have been considerably modified and, as I think, improved in the course of experience since I first demonstrated the use of their original models. The first is a short straight traction forceps, the blades of which are only six inches in length and are so curved as to fit the fœtal head very exactly, and so widely penetrated as to allow the scalp to protrude when applied, and thus protect the maternal passage during extraction. This instrument, as may be seen, is very portable, and, locking loosely, is easily applied; and being a really efficient tractor, as I have proved by experience of its use in upward of three hundred cases, may therefore be employed in nine tenths of the cases in which any instrumental assistance is required—namely, those in which delay arises from inertia in the second stage of labor.

The second instrument shown is intended only for cases of difficulty from disproportion or pelvic flattening. The blades are therefore of considerable length and strength, and are approximated by a powerful screw, by which the amount of compressive force exercised may be exactly regulated. The affixed traction-rods are closed or separated by a simple mechanical arrangement. This instrument, as will be seen, is not only a tractor and lever, but is a compressor of great power, with which the fœtal head may be gradually molded out and compressed within the limits of viability, so as to admit of delivery through pelves from which a living child could hardly be otherwise extracted. I need hardly add that such an instrument requires very great caution in its use, and should be employed only in the exceptional cases for which it is designed, and as a substitute for embryotomic implements.

*Recent Progress of Gynæcology.*—The development of this branch of medicine since our association last met in Scotland has been still more remarkable than that effected in the practice of midwifery during this period. Thus, for example, only a few years ago many of the most frequent forms of intra-uterine and circumuterine disease were beyond the diagnostic and remedial reach of gynæcologists, then unprovided with those means of rapidly and thoroughly dilating the cervical canal, or with the many other methods of direct investigation by the aid of which any well-educated practitioner may now recognize and treat intra-uterine, ovarian, tubal, and other intraperitoneal and pelvic complaints that baffled detection or treatment. Nor in those pre-antiseptic days could have been anticipated the wonderfully successful results since realized from laparotomy operations, and more especially ovariotomy, as well from some still more recent developments of intraperitoneal surgery in tubal and other diseases, including even peritonitis and cancer of the uterus, the latter a subject which has been recently elucidated in Dr. J. Williams's Harveian lectures. In the last-named cases, however, it is a debatable question whether we should persevere further with the intraperitoneal procedure for the removal of the uterus introduced by Freund, in view of the better results obtained from the vaginal method advocated by Dr. Martin, of Berlin; and also whether in the latter case the operation should be limited, as recommended by Dr. Williams and Dr. Braithwaite, to the removal of the cancerous portion, and not be extended to the extirpation of the entire uterus.

Only within the time referred to has the general correctness of Dr. Graily Hewitt's views with regard to the importance and treatment of uterine displacements and flexions become commonly accepted. Neither were the symptoms and appropriate treatment of ovarian displacements understood until a more recent period, when attention was directed to them by Dr. Barnes's able paper on this subject, in the "American Journal of Obstetrics," and in a minor degree, perhaps, also by a memoir of mine on the same topic in the "Transactions of the Irish Academy of Medicine." Nor is it so long since the bearing of cervical lacerations on pelvic pathology, as first demonstrated by Dr. Emmet, of New York, first became recognized in this country. Finally, the diagnosis, importance, and curability of diseases of the uterine appendages, such as hydrosalpinx and pyosalpinx, together with several other of the causes of female suffering and death, were, in like manner, practically ignored by gynæcologists until within a very recent period.

*Influences of Prejudice and Fashion in Gynæcological Progress.*—In the history of many of the successive developments of gynæcology just referred to we may observe proofs not only of the progress of our art, but also of the two causes which have temporarily retarded its advancement. The first is the opposition generally offered in matters medical, as in most others, to all innovations, and the consequent reaction by which the pendulum of professional opinion is swung from one extreme to the other, exaggerated over-estimation thus generally succeeding to earlier adverse prejudices. The second is the potent influence of fashion on medical opinion and practice; for, strange as it may be why this should be the case, it is, nevertheless, true that—

"In physic, as in fashion, we find
The newest is ever the rage of mankind."

This is strikingly illustrated in gynæcological practice, in which it now seems almost as much the fashion to ascribe various obscure complaints of women to ovarian and tubal disorders as, a few years ago, it was to attribute similar ailments to uterine flexions and displacements; or as, ten years earlier, it was the mode to credit them to chronic inflammation, or what was then regarded as ulceration of the neck of the womb; or yet, a century previously, to set them down, in the phraseology of our professional ancestors, to "the spleen" or "the vapors."

*Gynæcological Specialism and Woman's Place therein.*—In this connection I may venture to observe that I can not agree with those who are opposed to the admission of women into the practice of our department of medico-chirurgical science for which their sex should apparently render them so especially adapted. I can see no valid reason why any well-qualified practitioner, male or female, should not be welcomed among us. Nor, if there are women who prefer the medical attendance of their own sex, does it seem fair that in this age of free trade they should not be afforded every opportunity of exercising their discretion in a matter so personal to themselves. For my own part, I greatly doubt that, in these countries at least, "the lady doctors" (as they are termed) will ever replace the ruder sex in the general estimation of their sick sisters. But, if not here, elsewhere there is unquestionably an ample field for female practitioners, and more especially in India and other Oriental countries, where millions of suffering women and children are fanatically excluded from the possibility of any other skilled professional assistance; and I therefore think that such practitioners are entitled to admission into our ranks in the British Medical Association.

*Laparotomy in Relation to Gynæcology.*—Foremost among the proofs of modern gynæcological progress the most signal is that afforded by the results of abdominal surgery in the treatment of ovarian tumors, as demonstrated in countless cases at home and abroad and in this country, more especially in the practice of Sir Spencer Wells, Dr. Keith, Mr. Lawson Tait, Dr. Bantock, Dr. Savage, Mr. Thornton, and other specialists in this department of operative surgery, which, not very many years since, was so loudly and unfairly decried. Whether this should encourage the present frequency of resort to laparotomy in the various other intraperitoneal morbid conditions in which it is now advocated or not is, however, another question, and one which, I think, may be still advantageously reconsidered.

*Treatment of Falloppian-Tube Diseases.*—With respect to the tubal diseases, to the operative treatment of which so much attention is now devoted, and which I have elsewhere fully discussed, I shall only here again observe that, while recognizing the fact that in some instances of pyosalpinx and hydrosalpinx the removal of the diseased uterine appendages affords the only available means of treatment, and fully appreciating the surgical skill by which operations for this purpose have been brought to their present perfection, I have not, in my own experience, found laparotomy operations as generally necessary in such cases as they are apparently now deemed by others. On the contrary, I am confirmed, by increasing observation, in the belief that in some instances these tubal diseases, more especially in cases of hydrosalpinx, may terminate favorably without any surgical treatment, and, moreover, that in other cases such collections, whether purulent or serous, may be evacuated by cautious aspiration through the vaginal roof. Very recently I had an opportunity of again proving the advantages of this method of treatment in the case of a lady who, after many months of suffering, was sent to me from a distant country to have the affected uterine appendages removed, but whom I succeeded in relieving of her trouble, with the assistance of my friend, Dr. Duke, by aspirating the Falloppian tube, and thus removing about ten drachms of serous fluid from the distended duct. I would therefore still urge the expediency of a fair trial of other less serious methods of treatment before resorting to the extirpation of the uterine appendages in these cases generally.

*Operative Treatment of Uterine Tumors.*—It would be impossible, within the limits of this address, to enter at length into the consideration of a question so large and so controversial as the general necessity for surgical interposition in the treatment of uterine fibromata. This, I am glad to see, will be brought before you during this meeting by those eminently qualified to speak on the subject; and I trust that in the ensuing discussion new light may be thrown

on the comparative merits of the various intraperitoneal and vaginal surgical procedures advocated in such cases, as well as on the value of electrolytical treatment. Nor, in this connection, should the possibilty of arresting the growth of these tumors in some instances, by appropriate medical treatment, as well as the greater probability of thus effectively checking hæmorrhage so occasioned, and more especially by the free administration of ergot and iodide of potassium, to which I have elsewhere called attention, be entirely lost sight of.

With regard to the former, or surgical method, I may, however, venture to repeat that, in the majority of cases of interstitial and sub-peritoneal uterine tumors, no active treatment whatever appears to me essential, inasmuch as such growths seldom, if ever, destroy life, and in many cases become arrested in their development and quiescent in their symptoms at the menopause, or may even possibly disappear altogether in the course of time. The latter event is, however, far too exceptional to have much influence in determining the expediency of surgical treatment, and more especially that by oophorectomy, which is unquestionably called for in the case of fast-grown fibroids, giving rise to otherwise incontrollable urgent hæmorrhagic or pressure troubles, particularly when occurring in young patients.

With regard to hysterectomy, although exceptional cases may occur in which this procedure is necessitated, the average mortality that has followed its performance is such as to forbid its general employment, as an operation of election, in a disease the average mortality of which, when left to nature, is so comparatively insignificant. While as to myomotomy, in view of its too common results, I can only repeat that it would appear to me a method by which a patient may be effectually removed from a tumor, rather than as an operation by which a tumor can be safely removed from a patient.

*Treatment of Uterine Fibroids by Electricity.*—Although I have so nearly exhausted the allotted limits of this address, I can not omit a few words in reference to the latest and most promising of the methods available in the treatment of uterine fibromata—namely, that by electricity. Within the past year and a half I have had occasion to try this method, in some ten instances, in my hospital and private practice; and so far as the arrest of hæmorrhage is concerned, the result was most satisfactory, the bleeding being thus arrested in six of these cases. But with regard to the cure of the disease from this treatment, the possibility of which had been demonstrated in the experience of Dr. Apostoli and others, who had employed it on a much larger scale, I can only say that while I have not as yet seen the complete subsidence of the tumor effected in any of the cases so treated by myself, in three of them its apparent bulk became distinctly diminished even after six weeks' or two months' treatment of this kind. It should, perhaps, be added that in all these instances I used Dr. Apostoli's original plastic clay abdominal electrode, the current used being, of course, monopolar and acting directly on the growth by the intra-uterine pole, and was obtained from a powerful Leclanché battery of an estimated maximum current strength of 250 milliampères. In the first of my cases I employed the electrolytic negative current, but after a little experience I abandoned this, and in the subsequent trials used only the positive current, which, although non-energetic as a galvano-caustic, is far less liable to give rise to trouble, and, from its decided hæmostatic action, is more suitable to these cases of large hæmorrhage-producing tumors, in which alone this or any other active treatment seemed to me generally necessary.

If, however, the results obtained by Dr. Cutter, and, still more conspicuously, those recorded by Dr. Apostoli, from the employment of electricity—namely, permanent benefit in ninety-five per cent. of the cases of fibromata thus treated by him—should be confirmed, as I hope may possibly be the case, by the experience of those who are here about to discuss this disease, then we might well congratulate ourselves on having at last arrived within sight of the long-sought-for safe and effectual curative treatment of uterine tumors.

The foregoing *résumé* of some of the recent developments of obstetric and gynæcological science, imperfect as it is, affords a sufficient vindication of our branch of medicine from the aspersions which have been poured upon its followers. These advances and their results are surely more than enough to show that those by whom so much has been accomplished are engaged in no narrow specialism; but, on the contrary, should rank high in that noble and ever-progressive profession of medicine whose great objects are the prolongation of life and the relief of every form of human suffering.

In conclusion, gentlemen, it only remains for me again to thank you for the honor you have here conferred upon me and for the patience with which you have listened to this address.

## Original Communications.

# THE SPHENOID BONE:

## SOME OF ITS POSSIBLE FUNCTIONS.

By J. A. MALONEY,
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WASHINGTON, D. C.

In making tests to ascertain the conditions of those with impaired audition, preparatory to applying an otophone in the case, either as a restorative agent or simply as an aid, I have been very much impressed with a singular effect in some cases of profound hardness of hearing when I had reason to suspect partial ankylosis of the ossicula, or adhesions of the same resulting from catarrh of the middle ear. I observed that a very low voice could be heard when the ear-piece of the otophone was placed upon that portion of the temporal bone which joins the great wings of the sphenoid, while a comparatively loud voice could not be heard when placed over the meatus auditorius externus. This result was so striking in many cases that I determined to ascertain the cause if possible. To this end I took up the bones of the skull and examined them for conductivity of sound

vibrations, the determination of which was reached as follows:

The bone was clamped in the standard (A, Fig. 1) which was rigidly affixed to a base of iron weighing sixteen pounds. At one end of the bone was placed in light contact a button suspended upon a rod having a curved projection at its top to allow the button to swing clear of its support (Fig. 1). The other end of the bone was gently struck with a small hard-rubber mallet, and the space through which the button was projected noted.

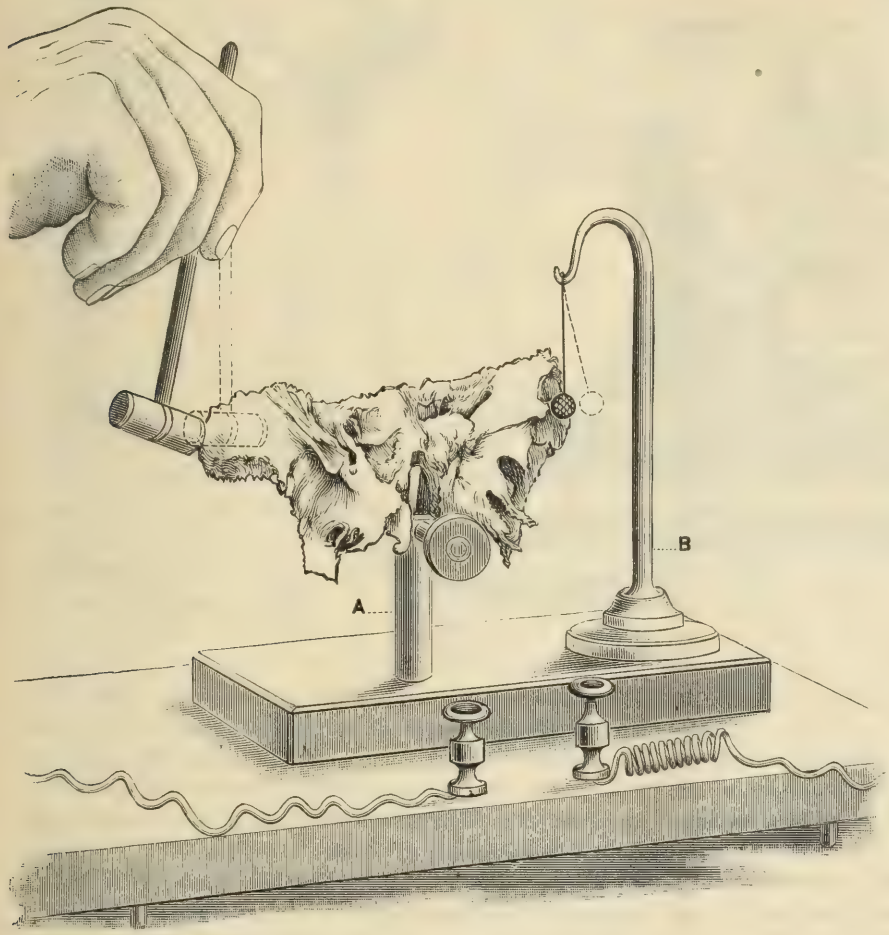



FIG. 1.

The results upon different bones were as follows:

Frontal, very hard blow, slight disturbance of ball, without projection.

Occipital, the same. Parietal, the same. Ethmoid, less than the former.

Sphenoid, a very slight tap on one great wing gave great projection from the other wing, and scratching with or rolling of the mallet over the surface of one wing caused the button impinging upon the other to be agitated.

The sphenoid was then made to communicate its vibrations to the diaphragm of a microphone in electric circuit with a telephone receiver, as shown in Fig. 2.

In this test a very fine thread of silk, held at one end, was drawn lightly over the free wing at B, and the same could be heard distinctly in the receiving telephone C.

Breathing gently through a tube against the wing at B would be heard in the receiver. Breathing through a tube with impact of air at D—D being the point at which the optic nerve and the internal carotid artery pass through—gave the same results.

The temporal bone was then substituted for the sphenoid, and the only point which gave results similar to that of the sphenoid was when the two tests were made upon that portion of the petrous or pyramidal process known as the jugular fossa.

From the foregoing experiments, may not the following phenomena be traced to the sphenoid and temporal bones as factors in their development?

*1. Localization of Sound.*—The direct or maximum result in localization is probably due to aerial conduction through the meatus auditorius externus. The indirect or bone conduction being through the sphenoid (from one wing to the other, and thence to the internal ear upon the opposite side), thus probably gives a maximum and minimum sensation by which the mental act of localization of sound is accomplished.

*2. Tinnitus Aurium.*—Owing to the extreme susceptibility of the sphenoid to conduct minute sound vibrations, may not the pumping sounds so frequently mentioned in this form of "noise in the head" be due to aneurysm or some abnormal condition increasing in intensity the flow of blood through the internal carotid, ophthalmic, or great meningeal arteries in their passage through this bone, or to the same factors through the jugular, in its relation to the temporal bone?

(I would here state that I have produced the "singing sounds" by getting a very loose contact in a Blake telephone transmitter, the contacts of which would be for the purpose analogous to the articulations of the malleus and incus, from which I have concluded that "singing sounds" are due to slight dislocation of the malleo-incudal joint placed in vibration by some subjective cause, and continued by reason of the membrana tympani acting as a retractile spring, thus producing the same effect as the "Neff hammer," or make and break upon the induction coil.)

*Autophonia.*—There are three theories for this phenomenon which deserve special mention:

1. That of Dr. Gustav Brunner, who says that alterations in the hearing of one's own voice are phenomena of resonance, a vibration of air in the middle ear shut in by closure of the tubes.

2. That of Dr. Gruber, which holds that autophonia is

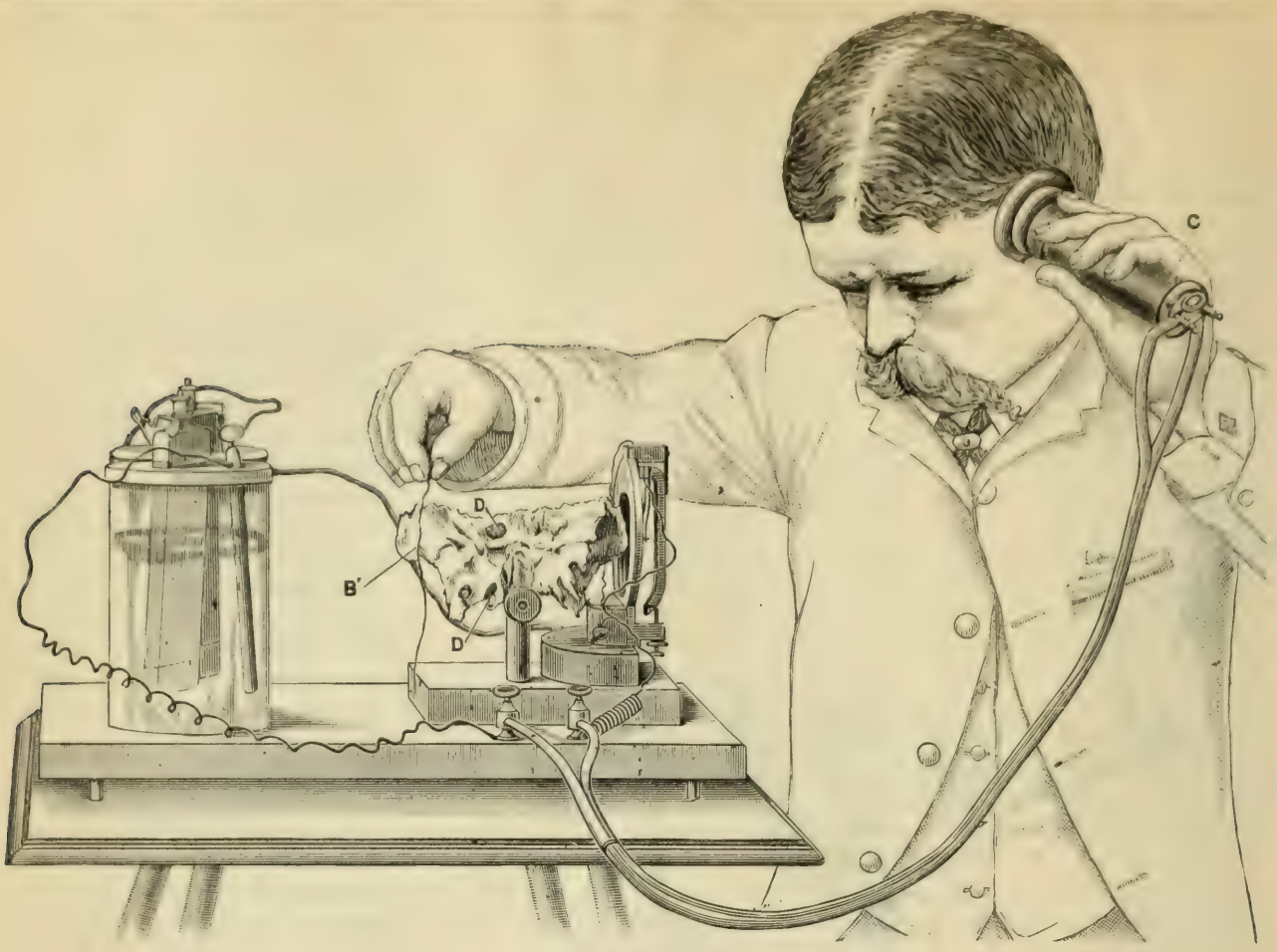



Fig. 2.

a "consonance phenomenon, caused by swelling of the mucous membrane of the middle ear."

3. That of Dr. Samuel Sexton. This holds that the "phenomena of autophonia are due to a disturbance of the normal equilibrium of tension in the transmitting mechanism of the ear."

When the Eustachian tubes are closed entirely (by which equal pressure upon each side of the membrana is prevented), may not the strong vibrations of air set up in the larynx and pharynx (the mouth cavity being known as a powerful resonator) be sent to the seat of audition, through the agency of the sphenoid bone, particularly at the part situated between the ethmoid and occipital bones?

*Color Audition.*—This phenomenon was first brought to the attention of the scientific world by Dr. Nussbaumer, of Vienna, who, when a child, was engaged with his brother one day in striking a fork against a glass to hear the ring, when he discovered that he saw colors at the same time that he perceived the sound; and so well did he perceive the color that, when he stopped his ears, he could divine by it how loud a sound the fork had produced. Dr. Nussbaumer was afterward able to add to his own observations nearly identical ones made by a medical student in Zurich. Later on M. Pedrono, an ophthalmologist of Nantes, observed the same peculiarities in a friend.

In these cases musical sounds gave sensations varying the color according to the instrument played upon, thus showing the dependence of the phenomenon upon the *timbre*. For instance, the saxophone gave yellow sensations; the clarionet, red; the piano, blue. When numbers and words were used, the following results were obtained in cases mentioned in an article, "Color of Words," by E. A. Newell, "Popular Science Monthly" for December, 1887: 1, Black; 2, light cream; 3, dark cream; 4, brownish red; 5, black; 6, tan-color, or cream; 7, greenish black; 8, dark straw; 9, mud-color; 10, black; 11, black and straw; 12, light cream; 13, dark straw-color; 14, light brown.

Following are some familiar names, and the color of each, and also the letters of the alphabet:

Mary, dark red; Abbie, tan; Lucy, dark blue; Richard, light gray; Atlanta, steel-gray; Charlotte, light red; Claire, light blue; Newcomb, dark red; Lincoln, black; Morse, brown; A, light straw; B, gray; C, tan; D, blue; E, black; F, black; G, light straw; H, red; I and J, black; K, blue; L, black; M, brown; N, dark blue; O, light red; P, light green; Q, blue; R and S, light straw.

I here quote from an article in the "Popular Science Monthly" for August, 1883, by Henri de Parville, and previously published in "Le monde de la science et de l'industrie": "Popular expressions are often significant. 'I saw three dozen lights of all colors,' or some such expression, may frequently be heard from persons who have received vio-

lent blows on the head or face. Under the influence of shocks of this kind the eye seems to see infinite numbers of sparks. Shocks of a certain class impressed upon the nervous system seem to have the faculty of producing phenomena of light. This remark has been suggested by the facts we are about to relate, which lead us to suppose that sonorous vibrations are susceptible in certain cases of provoking luminous sensations. There are, in fact, persons who are endowed with such sensibility that they can not hear a sound without at the same time perceiving colors. Each sound to them has its peculiar color; this word corresponds with red and that one with green; one note is blue and another is yellow."

May not color audition, in view of the readiness with which the sphenoid bone takes up and delivers vibrations, be due to mechanical stimulation of the optic nerve by impingement of the same upon the sphenoid bone in its passage through the optic foramen?

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## VARICOCELE IN THE FEMALE: WHAT IS ITS INFLUENCE UPON THE OVARY?*

By A. PALMER DUDLEY, M. D.,
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From a valuable paper read before this association at its first meeting, by Dr. H. C. Coe, entitled the "Exaggerated Importance of Minor Pelvic Inflammations," I make the following quotations: These "thickenings, increased tension, or whatever it is, which we find at the examining table and promptly enter in our case-books as cellulitis," frequently vanish after death, when the natural tension of the tissues has disappeared." That remark impressed me very much, and was parent to the thought, What pathological condition can exist in the broad ligament during life, giving rise to pain and symptoms simulating cellulitis, and still be found absent post mortem? It was certainly an interesting question, one I deemed well worthy patient search for an answer, and if I can be in any way instrumental in arriving at a correct solution by bringing the subject before this society for discussion, I shall feel that I have been amply rewarded for my efforts. After a careful study of the anatomy of the broad ligament, together with the experience I received from my service in the Woman's Hospital, and the results of such investigations as those set forth by Dr. Coe, it seemed to me that the condition must be one due to disturbances of the normal pelvic circulation, and I began to look the subject up. Hence the title of my paper.

Some doubts may arise in the minds of my hearers as to just why I should use the title "varicocele in the female" when the location of the condition I propose to consider is in the broad ligament. The only explanation I shall offer is the following: That the terms varix and varicocele are used synonymously is granted, but while the term varix is used to denote the existence of a dilated and knotted or tortuous vein in any part of the body, the term varicocele signifies a blood tumor, and is applied to a dilated condition of the spermatic veins.

* Read before the Alumni Association of the Woman's Hospital at its third meeting.

Now, as all writers upon anatomy whom I have been able to consult declare the ovarian veins in the female to be the analogue of the spermatic veins in the male (some authorities even using the term spermatic for both sexes), and accredit them with performing analogous functions—that of returning the venous blood from the testicle and ovary toward the heart, by emptying it on the right side of the body into the inferior vena cava, and on the left side into the left renal vein—I feel quite sure the term is not misapplied when referring to a dilated and tortuous condition of the veins in the broad ligament.

To properly understand any pathological condition in the human system, one must first have a correct knowledge of the normal anatomical condition of the parts involved. This is a difficult matter to do with respect to the broad ligament in the female, owing to the various changes which it is subject to during the child-bearing period, which, though not pathological, but rather physiological, are still changes that modify the anatomical structure and relation of the parts "for the time being" to a marked degree. If we pause for a moment and consider the anatomical relation and structure of the broad ligament while the uterus is in a state of rest, and then consider the changes which must certainly take place in the ligament and its vessels during the growth of a fœtus, the expulsion of the latter, and the period of time required for the proper involution of the pelvic organs, bearing in mind the accidents which are so liable to and do so frequently happen during this process, we certainly shall be led to the conclusion that varicocele in the broad ligament of the female can not be a rare condition.

Let us consider for a moment the anatomical make-up of the broad ligament in a woman whose uterus has never been impregnated. Here we find it a thin double layer of serous membrane, stretching across from each side of the body of the uterus to the inner surface of the pelvis, thereby dividing the upper portion of the pelvic cavity into two parts, an anterior and a posterior. Along its superior or free border runs the Falloppian tube, and to its posterior and superior surface is attached the ovary. Beneath the tube and ovary, between these two layers of thin serous membrane, which is their only support, lie the blood-vessels and nerves that supply and nourish the uterus in its normal state and maintain the life of the fœtus during the term of utero-gestation. A correct idea of the length, breadth, and thickness of these ligaments can readily be ascertained if we first consider the size and position of the uterus. The latter, pear-shaped, with an average transverse diameter of two inches, if in its normal position, occupies the central axis of the pelvis, the average transverse diameter of which is about five inches at its superior strait. Now, should we measure transversely across the fundus of the uterus, when in its normal position of slight anteversion, to the brim of the pelvis, such a measurement would only allow of an inch and a half space to be occupied by the broad ligament; but such I feel quite sure would not be a correct anatomical measurement of the ligament, for the latter, being attached to the pelvic wall on a line much posterior to its attachment to the uterus, allows of greater length of ligament; and laparotomists, who have frequent occasion to examine the broad liga-

ment in the normal and abnormal condition, will bear me out in the statement that the average length of it is from two inches to two inches and a half, while its depth is dependent upon the size and position of the uterus. Its thickness when in the normal condition is, as I have already stated, but trifling. It stands up as a thin partition-wall between the rectum and ovary and bladder. From this description it will be seen that the blood-vessels which course through it to supply the uterus have but very little support (especially the ovarian) from the time they leave the pelvic wall until they reach their destination, and *vice versa* with the veins on their return, while the latter are put at a disadvantage by gravity and lack of propelling force. Hence we can readily see how any undue pressure, from any cause, mechanical or otherwise, would tend to influence the blood-current through these vessels.

With this outline of the structure and relations of the broad ligament in the virgin, let us pass to consider some of the changes which necessarily take place should the uterus become impregnated. To accommodate the growth of the fœtus, the uterus undergoes its gradual increase in size, which is accomplished during the first three months with the uterus still occupying the pelvis. Its increase is nearly or quite symmetrical, and, while pressing the bladder and rectum to a certain extent, it must at the same time encroach upon the broad ligament. Then the relations and structure of the latter are soon changed. Its opposing surfaces are separated by the growing uterus. The blood-vessels which it holds, receiving the stimulus and being called upon to do additional duty, increase in size also, at the same time changing their shape and position. And so the process goes on, until the broad ligament, from being a thin, quite transparent structure made up of two opposing layers of serous membrane, holding between them the small blood-vessels and nerves that supply the uterus, together with a small amount of cellular tissue and a few muscular fibers from the outer layers of the uterus, becomes a mass of blood sinuses, its superior border containing the Falloppian tube, lying perpendicular to the side of the uterus, and its two serous surfaces spread out over the sides of the organ.

This certainly is not a falsely drawn picture of the condition of the broad ligament at or near the time of parturition. When the latter is accomplished and the uterus is delivered of its contents, a retrograde process commences, and Nature makes an effort to return these broad ligaments, together with the uterus, to their normal condition, as before impregnation. Does she always succeed? No. Innumerable cases on record are evidence to the contrary. Some accident accompanies or follows delivery (laceration or cellulitis), and involution is arrested. The uterus remains large, and contains an abnormal amount of blood, the vessels being gorged and tortuous, while the overweighted uterus drags upon the ligaments, and in time displacement occurs, which still further complicates the difficulty. Is it unreasonable to believe that from such a condition the vessels of the broad ligaments, which have no lateral support for a distance of three inches along their course, should become permanently dilated and tortuous—in fact, varicose? I hope the discussion will answer this question.

After quite an extensive search for literature upon this subject, I have been able to find only one article published in this country—that by Dr. Dwight, of Boston ("Boston Medical and Surgical Journal," February 15, 1877), in which he reports the accidental discovery of a large varicocele in the left broad ligament of a subject he had prepared for demonstration before his class. The case is one of interest, and I shall have occasion to refer to it further on. Winckel, in his work translated by Parvin, makes mention of the subject, and emphasizes the fact that the condition is one of great importance with respect to certain forms of uterine disease. Klob makes the statement that in no other part of the body are phleboliths so frequently formed, caused, he thinks, by absence of valves in the veins. Brandt has often seen stones in the veins of the broad ligament of the size of peas. Barnes thinks these stones the cause of early atrophy of the uterus.

*Causes.*—The causes of varicocele in the broad ligament are manifold—some constitutional, others mechanical. Among the former may be enumerated: 1. Arrest of involution of the uterine and ovarian vessels, keeping up pelvic engorgement long after confinement. 2. A relaxed condition of the tissues from a low state of general health. 3. An unhealthy condition of the vessel wall; an absence of valves in the veins, allowing of blood-pressure from gravity. Chief among the mechanical causes of this condition are the anatomical relations of the veins themselves. It is a noted fact that varicocele appears much the most frequently upon the left side of the body in both sexes, and this has been demonstrated to be due to the emptying of the venous blood from the left broad ligament into the left renal vein at right angles to the blood-current from the kidney, thereby obstructing the free flow of the blood from the ligament into the general venous circulation. The spermatic and ovarian vessels being of such great length, the weight of such a column of blood also has a tendency to weaken the vessels, while still another prominent mechanical cause of this condition is the habitual constipation to which so many women are subject, and this is accounted for by the passage of the veins behind the sigmoid flexure of the colon. The latter, being distended with fæces, makes direct pressure upon the veins. The veins upon the right side are less liable to this affection from not being subject to any direct pressure, and, emptying as they do into the inferior vena cava at an angle, they are provided with a valve, and thereby escape backward pressure. Displacements are a fruitful cause of this condition. Winckel emphasizes the fact in the following words: "Associated with uterine displacement is a tension of the broad ligaments, which become rotated about their transverse axes. Their outer extremities passing to the pelvic wall on either side, the infundibulo-pelvic ligament is even more distorted, and when we consider the great frequency of retropositions of the uterus it is not surprising to find that they are associated with a variety of complications," which he illustrated by the results of twenty-four post-mortems, in which he found one double parovarian cyst, four myomata, four ovarian cysts, one senile hæmatometra, and, he says, of greater significance, three varicoceles in one or the other broad ligament.

From the scanty literature upon this subject, it is impossible to arrive at any correct conclusions as to the frequency of this condition, but that it exists much more frequently than has been supposed, I think careful observation in the future will demonstrate. Winckel found it ten times in three hundred autopsies, but he does not mention having made a *diagnosis* of it in the *living subject.*

*Symptoms and Diagnosis.*—In attempting to bring to your notice the symptoms which point to the existence of varicocele in the broad ligament, and by which I have been able to make a diagnosis of that condition, I am obliged to confine myself to my own experience and a short narration of the results obtained from it, for, as I have previously stated, I have been able to find nothing written upon the subject except the results obtained from post-mortem investigations, although medical literature is teeming with narrations of cases and methods of treatment for the various forms of varix in the male. Therefore I hope that this explanation will be sufficient apology for my lack of more positive symptoms. That which I consider the most prominent symptom (aside from those furnished by physical examination) is pain of a peculiar dull, aching character, extending up the side to the region of the kidney (and when the patient is in the erect position for some time), having its greatest intensity about that organ. Also the fact that this pain will disappear after the patient has occupied the prone position for a time, and reappear after taking the erect position. Of course there are numerous pathological conditions which may exist in the female and give rise to pain resembling this, but a careful examination and history of the case will usually exclude them. The pain is quite similar in character to that experienced by the male who suffers from varicocele, while several of the general symptoms are analogous in character, such as lassitude, a vague sense of unrest, and mental depression. These symptoms are accompanied by a history of injury at childbirth, followed by inflammatory conditions which have arrested the proper involution of the pelvic organs. Chief among the physical signs elicited by digital examination will be a thickened ligament, flexible, but tender under pressure, and transmitting a doughy sensation to the touch. Examined with the patient in the erect position, the ligament is thicker than appears by examination in the prone position, but positive evidence of the varicose condition of the vessels of the ligament can be obtained only by careful digital examination *per rectum*, after the patient has been allowed to stand for a short time. Bimanual pressure of the ligament will then readily reveal the knotted, angle-worm appearance of the vessels. Such was the method employed in the diagnosis of my cases. My experience is yet too limited to allow me to express an opinion as to the ultimate result of the procedure I am advocating, but I beg your indulgence while I lay before you the results so far obtained in the treatment of four cases of varicocele in the broad ligament:

(*To be concluded.*)

**Yellow Fever in Jacksonville, Fla.**—Two cases were discovered on Wednesday last. Active steps to prevent the spread of the disease were at once taken by the health authorities. It is feared that these cases may be the beginning of an outbreak.

# THE RED BLOOD-CORPUSCLES OF LAMPREY EELS IN RELATION TO JURISPRUDENCE.*

By SIMON H. GAGE,

ASSISTANT PROFESSOR OF PHYSIOLOGY AND LECTURER ON MICROSCOPICAL TECHNOLOGY, CORNELL UNIVERSITY, ITHACA, N. Y.

In a full and adequate discussion of blood-corpuscles from a medico-legal standpoint it is necessary not only to bring out all that is known of human blood, but also that of the lower animals, stating all similarities as well as all differences.

As will be seen by the accompanying illustrations, the red blood-corpuscles of the fish-like animals known as lamprey eels are remarkably like those of man in general appearance. This has been known a long time,† and the fact is mentioned in most of the works on medical jurisprudence and in the longer papers on blood in its relation to legal medicine, but the bearing and possibilities of the fact are not adequately discussed, consequently there is left an element of uncertainty. As the writer's opportunities for studying the blood of these animals in adult and in larval forms have been exceptionably favorable, it has seemed worth while to place the facts before the medical profession so that fresh blood-stains or fresh blood from these animals may never enter as an element of uncertainty into the complex problems arising in legal medicine.

As the red blood-corpuscles of the *Camelidæ* form an exception in the great mammalian group in being oval instead of circular in outline, and, according to Gulliver,‡ in not forming distinct rouleaux, so the red corpuscles of the lamprey eels form an exception in the great non-mammalian group of vertebrates (birds, reptiles, amphibia, and fishes) in being biconcave and circular in outline, instead of being oval and biconvex, like those of all the rest of the great non-mammalian group. The corpuscles agree also with those of mammals in forming distinct rouleaux; this is especially marked in the brook lamprey and in the larva# (Fig., E F). The nucleus is present in all the corpuscles, but, as it is placed in the thickest part of the corpuscle (Fig., E), it does not show in perfectly fresh corpuscles except faintly in those of the embryo. The corpuscles when fresh appear, therefore, exactly like human corpuscles.

As these animals are often caught for food, and the larvæ are used for bait, fishermen are liable to have upon their clothing or instruments fresh blood or blood-stains,

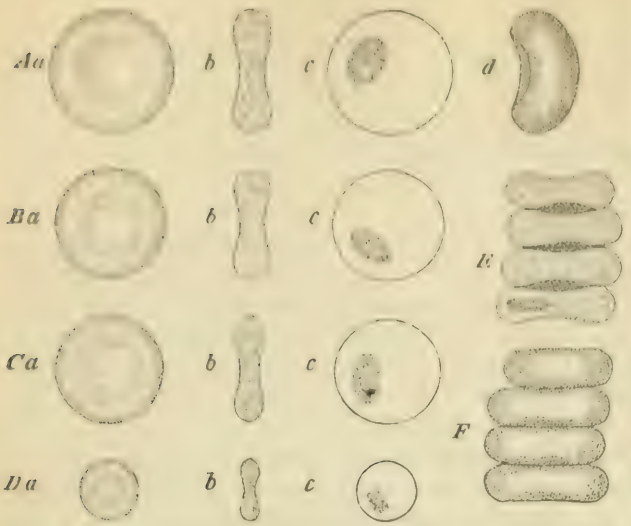
* Following Jordan and Gilbert ("Synopsis of the Fishes of North America," 1882), the adult lampreys are called sea lamprey (*Petromyzon marinus*) and brook lamprey (*Ammocœtes branchialis*). The name *Ammocœtes* was originally applied to the larval condition, supposing it to be a distinct animal and not merely a larva. All the specimens from which blood was taken were obtained in May and June in the streams flowing into the head of Cayuga Lake. The smallest larvæ (embryos 9 mm. long) were taken from the nest of the sea lamprey; the larger larvæ were dug out of a sand-bank along the stream. It is not known whether they are the young of the sea or of the brook lamprey.

† The circular outline of the red blood-corpuscles of the lamprey was discovered by R. Wagner. See his "Beitr. zur vergleichenden Physiologie," Bd. xi, 1838.

‡ See note cix in Hewson's works, edited by Gulliver, London, 1846.

# In a larva 73 mm. long the average diameter was 12·44 $\mu$—that is, 0·96 $\mu$ smaller than in the larva of 142 mm. given in the table.

and if a crime were committed the question might arise whether or not the blood or the blood-stains were from a




Figures of the red blood-corpuscles of adult and larval lamprey eels, showing the appearance in different positions and the relative size in the different animals. Magnified 1,000 diameters. Outlined with Abbe's camera lucida. Drawn by Mrs. Gage.

A. Red blood-corpuscles of the sea lamprey (*Petromyzon marinus*). *a*, face view of a corpuscle; *b*, optical section of a corpuscle on edge; *c*, face view of a corpuscle showing the nucleus after the action of one-per-cent. acetic acid; *d*, cup-shaped corpuscle.

B. Red blood-corpuscles of the brook lamprey (*Ammocœtes branchialis*). *a*, *b*, *c*, the same as in A.

C. Red blood-corpuscles of a larval lamprey 142 mm. long. *a*, *b*, *c*, as in A.

D. Red blood-corpuscles of a larval or embryo lamprey 9 mm. long. *a*, *b*, *c*, the same as in A.

E. Rouleaux of the corpuscles of the brook lamprey in optical section. In the lower corpuscle a nucleus is indicated to show that it is small and in the thickest part of the corpuscle. It is visible only after the hæmoglobin is partly or wholly removed from the corpuscle. In the embryo, where the corpuscles are so small, the nucleus is faintly visible in many corpuscles before the removal of the hæmoglobin.

F. Rouleaux of the 142 mm. larva focused on the upper surface. In both E and F the corpuscles are shown of different sizes. Compare the maximum and minimum diameters in the table of measurements.

human being. No difficulty should arise in deciding the question, for: (A) The presence of a nucleus may be readily demonstrated, as it is made apparent by drying, by acetic acid, and by the reagents most used in examining blood for medico-legal purposes.* (B) Except in the embryo 9 to 10 mm. long, which would never be used for bait, the corpuscles are nearly twice as large as those of man. (Compare the accompanying table of measurements.) Hence the blood-corpuscles of lamprey eels, in spite of their biconcave form and circular outline, really offer no more difficulty in medical jurisprudence than the corpuscles of any other of the non-mammalian vertebrates.†

*Table showing the Diameter and Thickness of the Red Blood-corpuscles of Lamprey Eels in the Adult and Larval Condition; also the Relative Number of Red and White Corpuscles, and the Number of Red Corpuscles in a Cubic Millimetre of Blood.*

| | DIAMETER. | | | | | | |
|---|---|---|---|---|---|---|---|
| | Maximum. | Minimum. | Average. | Thickness. | Ratio of diameter to thickness. | Ratio of white to red corpuscles. | Number of red corpuscles in a cubic millimetre. |
| *Petromyzon marinus* | 16·16μ | 10·1 μ | 14·2 μ | 5·05μ | 1 : 2·8 | Male, 1 : 20<br>Female, 1 : 15 | Male, 391,333<br>Female, 334,666 |
| *Ammocœtes branchialis* | 15·15μ | 10·1 μ | 13 μ | 5·02μ | 1 : 2·59 | 1 : 95 | 500,000 |
| Larval lamprey, 142 mm. long | 15·65μ | 12·12μ | 13·1 μ | 3·48μ | 1 : 3·8 | 1 : 10 | Not determined. |
| Embryo lamprey, 9 mm. long | 8μ | 7μ | 7·48μ | 1·96μ | 1 : 3·8 | 1 : 10 | Not determined. |

NOTE.—The blood for measurement was taken from the heart or a pithing wound, and mounted without the addition of any liquid; the cover-glass was supported by a hair, and sealed with castor-oil. Only undistorted corpuscles were measured. The averages were obtained from twenty-five measurements in each case. All measurements were made with a 2 mm. apochromatic objective and C. ocular containing a Jackson ocular micrometer, the value of which was determined by using a Rogers standard stage micrometer.

## DILATATION FOR STENOSIS AND FLEXIONS OF THE UTERUS, WITH NEW INSTRUMENTS.

BY T. J. McGILLICUDDY, M. D.,
SURGEON TO THE YORKVILLE DISPENSARY AND HOSPITAL FOR WOMEN AND CHILDREN, ETC.

IN chronic endometritis, obstructive dysmenorrhœa, and sterility, to remove the inflammation and the obstructions to menstruation and insemination, it is often necessary to dilate and straighten the uterine canal. The stenosis is very frequently at the internal os, and is caused by flexion of the neck on the body. This condition is the result of pelvic inflammation, subinvolution, or hypertrophy, which

* While it is true that the red corpuscles of mammalian embryos and the developing corpuscles in the adult are nucleated, the size and uniformly nucleated condition of the corpuscles of the lamprey would sufficiently characterize them.

† In 1887 wide circulation was given to a statement of Shipley ("Quart. Jour. of Micr. Sc.," N. S., vol. xxvii, 1886–'87) and Thompson ("Ann. and Mag. of Nat. Hist.," vol. xx, 1887, p. 231; "Anat. Anz.," Bd. ii, 1887, p. 631), that the red corpuscles of larval lampreys were oval in outline like the rest of the ovipara, and came to be circular only in the adult. This is certainly not the case with the larvæ from 9 mm. to 142 mm. long found in the streams flowing into the head of Cayuga Lake. In every specimen examined all the corpuscles not irregular in outline were circular. To make sure that this appearance was not due to reagents, the corpuscles were examined in the serum of the blood without the addition of any reagent whatsoever.

To avoid any error on account of the small quantity of blood in the 9 mm. embryos, the circulating blood was also examined. All the examinations were made with a 2 mm. apochromatic objective in combination with ocular × 12.

So far as has been investigated, the blood-corpuscles of all vertebrates, mammals and non-mammals, are at first circular in outline and become oval only as a later stage of development. (See Milne-Edwards, "Leçons sur la phys. et l'anat. comp.," t. i, p. 48; Hewson's works, p. 233; Kölliker's "Grundriss der Entwickel.," p. 63.)

It is stated distinctly by Günther ("Study of Fishes," p. 150, also article "Ichthyology," "Encyc. Brit.," 9th ed., vol. xii, p. 658) that the corpuscles of lampreys are flat or *biconvex*. In Gegenbaur ("Comp. Anat.," Eng. ed., p. 576) it is stated that the red blood-corpuscles of birds, reptiles, amphibia, and fishes are *biconvex*, no exception being made for the lampreys. Parker, in his translation of Wiedersheim's "Comparative Anatomy of Vertebrates," says, p. 268: "In the case of the red corpuscles the nucleus persists, and the whole cell is *biconvex* in all vertebrates below mammals." The biconcave character of the corpuscles was pointed out by Kölliker in his histology (Busk and Huxley's translation, vol. ii, p. 336) and by others, and is one of the most easily demonstrated facts in histology.

forces down the uterus and the cervix against the posterior vaginal wall, thus deflecting the cervix while in a softened condition upward on the body, or flattening the end of it button-shaped. It deforms the external os, causing it to become a mere slit.

Schroeder* says: "Stenosis of the cervix may be congenital or acquired. The congenital form sometimes involves the whole cervical canal, and is very frequent at the external os, which is much contracted; seldom at the internal os. In the normal uterus (with the small cervix and the small external os of the undeveloped uterus we are not concerned at present) the vaginal portion is sometimes very long, hard, and gristly, and projects unusually pointed and conical into the vagina. On the point is the external os, so small as sometimes scarcely to be perceived, and in the speculum it is difficult to discover the small opening, and then often only by a drop of mucus protruding from it. Frequently the anterior lip projects and overlaps the posterior, so that the os is hidden as by a valve." These are conditions of defective development. In the majority of cases of stenosis the obstruction is at the internal os, and is the result of anteflexion. On passing the sound in these cases it meets with an obstruction which is quite sensitive, due, probably, to inflammatory hyperæsthesia or irritability from flexion compression of the nerves at the angle. This obstruction may exist and there may still be no dysmenorrhœa. The internal os is occluded by inflammatory swelling before dysmenorrhœa manifests itself from this cause, although sterility is the common result.

Duncan† recommends in dysmenorrhœa spasmodica as very successful mechanical treatment by dilatation with bougies; the point he insists on is the stretching or distension of the internal os, using in some cases as high as No. 12 or 13, corresponding to male bougies, but with a different curve.

Sir James Simpson, of Edinburgh, maintained that stenosis of the internal os produced dysmenorrhœa and sterility, and devised a metrotome for cutting the constriction.

There is no doubt that flexions are a very great cause of sterility, not only by mechanical obstruction, but also by producing secondarily strongly alkaline uterine and cervical catarrhs, which destroy the viability of the spermatozoa.

Müller‡ states that "conception may be rendered difficult by a flexion of the uterus. This pathological condition in the majority of cases implicates the narrowed portion of the uterine body—viz., where normally the uterine walls are in simple apposition they become firmly compressed, thus producing a stenosis of the uterine canal."

The sharper, more acute the angle of flexion, the more certain the sterility; and, if the cervical canal is plugged with thick, tenacious mucus, there is no doubt of its being an absolute cause of that condition. Flexions of the uterus cause many reflex symptoms—vertigo, headache, nausea, and vomiting, and very many other hystero-neuroses. These are only relieved by dilatation and proper intra-uterine and extra-uterine treatment. Flexions and endometritis are very often the exciting and direct cause of hystero-epilepsy—a fact which I have demonstrated by several cases in my own private practice.

A number of different forms of uterine dilators have been devised, but about all of them—like Sims's, Ellinger's, and Palmer's—diverge laterally, and dilate the cervical canal at the internal os in a direction where there is very frequently no constriction. The advantages of this form of instrument over the ordinary lateral dilators is best shown by an article by Dr. Graily Hewitt, in the "Annals of Gynæcology" of this year, from which the two following cuts are taken. They represent a well-marked case of acute anteflexion, and demonstrate of themselves the correctness of dilating the internal os and cervical canal in an antero-posterior direction. He says, referring to Fig. 2: "The uterine cervical canal is here hardly visible at the center and upper part of the cervix, owing to the closeness of apposition of the anterior and posterior walls, which closeness is due, as is manifest, to the presence of the flexion. In Fig. 3 is shown another photograph of the same uterus, but the cervical canal on one side (the right) is opened out by traction of two threads. . . . It is thus made evident that the cervical canal is not by any means destroyed. The interesting fact becomes evident that the canal is unusually widened from side to side at the same time that it is so narrowed from before backward that it is hardly visible when the canal is in its untouched flexed state. In this particular case the part of the uterine canal most affected by the flexion is just below the internal os. The bending of the uterus produces a curvature of the canal, which operates particularly on the canal for about three quarters of an inch. In this space the canal is excessively wide from side to side,

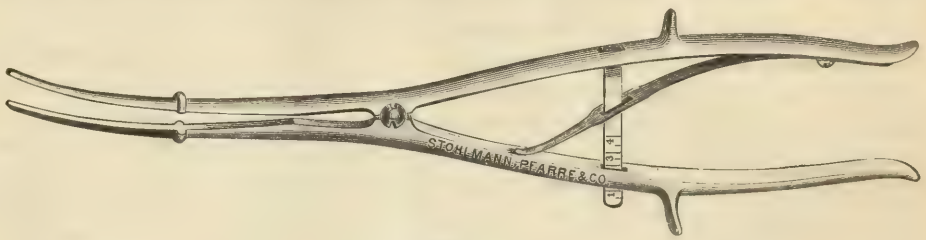



Fig. 1.



Fig. 2.

* Karl Schroeder, "Krankheiten der weiblichen Geschlechtsorgane," Berlin, 1881.

† J. Matthews Duncan, "Clinical Lectures on the Diseases of Women," 1882.

‡ P. Müller, "Cyclopædia of Obstetrics and Gynæc.," vol. xi, p. 86 *et seq.*, 1887, article "Sterility."

but excessively narrow from before backward, and it is manifest that the lateral widening, as well as the antero-posterior compression and narrowing, result from the shape of the uterus. The inference also follows that exaggeration of the degree of the bending of the uterus would have the effect of increasing the compression of the uterine canal. It is not easy, looking at this specimen, to avoid the conclusion that the escape of menstrual fluid and menstrual *débris* from the uterus must have been very difficult so long as the uterus remained flexed to its present degree."

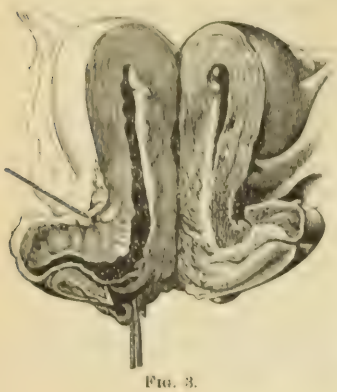


Fig. 3.

The following drawings demonstrate the result of flexion in a simple rubber tube: Fig. 4 represents a side view, showing the compression in the direction of the arrows, while Fig. 5 is a front view, showing the lateral widening. The lateral dilators can not be made to dilate the cervical canal in its antero-posterior or conjugate diameter with any sort of satisfaction, and lateral flexions are extremely rare. The instrument devised has handles which are most convenient to manipulate with the registering guide, well out of the way of the fingers, and is graduated in inches and in centimetres, so that one can exactly determine the amount of dilatation and keep a record of it if desired. The intra-uterine portion of the blades is but two inches in length, as that is all that is necessary. The danger of injuring the fundus uteri is thus avoided. It gives the greatest dilatation at the internal os, where it is most needed. Of the lateral dilators, I think Sims's is the best.

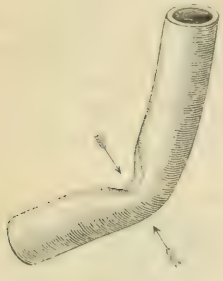


Fig. 4.



Fig. 5.

As to what constitutes stenosis.

Peaslee * says: "In the *imparous* woman the narrowest point of the cervical canal—viz., the internal os—is, when opened by passage of the menstrual fluid, an ellipse whose conjugate and transverse diameters average, respectively, one sixth and one eighth of an inch, its area corresponding very nearly with that of a circle one seventh of an inch in diameter. The external os, also elliptical when moderately dilated, has diameters averaging one fourth and one sixth of an inch. It thus has an area exactly twice that of the internal os, and equaling that of a circle one fifth of an inch in diameter. In the *parous* woman the size of the external os varies within quite extensive limits, since it is exposed to so many of the accidents of parturition, while the internal os is more nearly uniform." He finds, as a rule, the lowest average diameter in parous women who are neither sterile nor have dysmenorrhœa to be about one fifth of an inch, or a little less, at the inner os, presenting nearly twice the area of that of the imparous woman; the external os, as a rule, to be about one fourth of an inch in diameter. He believes that in the treatment of dysmenorrhœa and stenotic sterility these dimensions will be found sufficient in many cases:

*Imparous.*—The internal os equals a circle one seventh of an inch in diameter; the external os equals a circle one fifth of an inch in diameter.

*Parous.*—The internal os equals a circle one fifth of an inch in diameter; the external os equals a circle one fourth of an inch in diameter.

The performance of trachelotomy is now comparatively rare. There are many cases of conoidal cervix and anteflexion in which Sims's sagittal incision may be performed, but it is better to try the milder and safer method of dilatation first.

Coe * says: "That the incision of the cervix for stenosis is not an entirely harmless procedure is evident anatomically as well as clinically. The proximity of the peritonæum and the rich network of veins which lie in the muscular coat of the uterus renders the danger of peritonitis and septic absorption no imaginary one. The indications are clearly to make the incision as limited in length and depth as possible, and to practice rigid antisepsis." Bilateral incision is obsolete as an operation except in cases of conical cervix and pin-hole os, and then simply as preliminary to dilatation.

In the treatment of these cases we frequently find the uterus tender, with an almost imperforate cervical canal, swollen and occluded by tenacious mucus. It is necessary to have the uterus and annexa prepared for the operation of dilatation by the usual treatment for removing inflammatory conditions—*i. e.*, hot-water injections, astringent and detergent applications, boroglyceride, boric acid, tampons, etc. (Boroglyceride, an excellent preparation, was first introduced into this country from England by the late celebrated J. Marion Sims, where it was first used by a Mr. Balfe for preserving game.) On the table or cabinet at the operator's side there should be, besides instruments, solutions of carbolic acid, bichloride, etc., a small porcelain, china, or glass dish containing cotton tampons soaked with boroglyceride and glycerin, and others dry. If they are not ready prepared, it causes considerable delay while the patient is on the table, which is unpleasant. After cleansing the cervix and vagina by mopping them with wet absorbent cotton, a double tenaculum is hooked into the anterior lip of the uterus, and it is drawn downward gently. With a hypodermic syringe, to which a silver intra-uterine pipe is attached,

* E. R. Peaslee, "Trans. of the N. Y. Acad. Med.," 1876, p. 428 *et seq.*

* H. C. Coe, "American System of Gynæcology," vol. i, p. 151.

about thirty minims of an eight-per-cent. solution of cocaine are injected into the uterine cavity, and the external os is plugged for a few moments with absorbent cotton. This gives great relief, particularly in acute and subacute endometritis with pelvic pain. After a few moments the dilator can be inserted and the canal dilated. In some cases it is necessary to pass conical cervical bougies before the dilator can be used. Of the usual forms, Peaslee's are inflexible, being of steel, and Hanks's are of hard rubber; two sets have been made of block-tin and of copper, which are flexible, and can be molded without trouble to the curves of the uterine canal. They are to precede the dilator when the canal is too small for its introduction. The block-tin sounds can also be used as obturators for inserting the tracheal cannula. Ordinarily, half an inch is as far as dilatation should be carried. The patient should be in the Sims position. The operation can be done in many cases at the physician's office, but the uteri of some women have a habit of getting up a severe inflammation on very slight provocation, so it is safer to do the operation at the patient's home, and then with all antiseptic precautions. The instruments are to be washed in hot soap-water to remove adherent mucus, then in clean water, dried, and passed through the flame of a spirit lamp, thus destroying all germs, which boiling water does not do. It does not discolor the instruments or "give them the blues," and they are finally placed in a one-to-ten carbolic-acid solution. In rare cases, when an incision is required at the internal os on account of the fibrous band or induration at the compressed angle of flexion, I have had a knife made with a metallic handle, flexible below the blade, yet strong enough to resist any ordinary pressure for cutting purposes. It is one eighth of an inch broad at the base and one sixteenth near the point, with a rounded point and back. A Sims or Emmet intra-uterine knife can be used, but they are much more expensive. After the blades of the dilator have been sterilized by passing through the spirit flame, they are well greased and introduced. The handles are pressed gently and slowly, until the guide shows that half an inch, or a little over a centimetre, separates the blades. After cleansing the uterine cavity with an antiseptic, the intra-uterine stem is inserted and allowed to remain, the patient drawing it away by the silk thread, if it causes any irritation. The stem has been modified by giving it a retaining swell which adapts itself to the normal shape of the cervical canal between the external and internal os, and prevents it from slipping out if the proper size has been used. The principle involved in the intra-uterine stem is the same as in Dr. O'Dwyer's tubes for stenosis of the larynx, from which the idea of the retaining swell and the perforation for the thread for its withdrawal was copied. The special forceps for introducing the stem holds it very firmly during its insertion. Messrs. Tiemann & Co. have put the instruments in a case which also contains a rather heavy uterine probe to determine the direction of the canal. One is led to believe that the treatment of the foregoing conditions by dilatation is both rational and scientific. It is of course only applicable to chronic cases, and is a delicate procedure, requiring skill and good judgment.

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## WHAT KILLS THE CHILDREN.

IGNORANCE kills the children. Now and then accident lends a hand, as when some poor toddler tumbles into boiling water, or a weary, restless mother rolls upon her infant and stills its cries forever. But Ignorance does the business generally, blind giant that he is, always ready to seize the pillars of everything and turn bright places of joy as dark as buried Babylon. Tradition clutches the hapless infant the moment it is born, and decrees that it shall be immersed in water. The prenatal environment has a temperature of about a hundred degrees. This cold world boasts of any temperature it pleases That of the bath is also a movable feast. Under the circumstances, the custom of washing the new-born is not unlike, in effect, the refinement of cruelty that would grasp a man from his bed and thrust him ruthlessly into a snow-bank. The fact that childbirth is an exhausting process, even to the baby, is too often ignored. Time is required for necessary reaction. The little one needs repose as well as its mother, a good rest at the start to insure some health and strength for its future guerrilla warfare with life. If it were let alone, sleep would generally follow its preliminary outcries. But no; custom says the little pilgrim must be scrubbed, and scrubbed he is. He survives—as a general thing. But "How did my lamb get that dreadful cold and those bad eyes?" and "How he cries with colic!" It is possible to manage better, as, for instance, in the Maternity Department of the Woman's Hospital in Philadelphia. There the eyes of new-born babies are washed with an antiseptic solution at the earliest opportunity. When the child is entirely born, it is left quiet on the mother's bed until the expulsion of all appendages, which usually occurs within an hour. The infant is then carried away just as it is, well wrapped up, and let alone. After the mother has received proper attention, the child is cared for. One loose garment and a diaper are all it is burdened with in the way of clothes. Warmly covered, it is laid away in a little bed by itself, and neither washed nor dressed until twenty-four hours have elapsed, when it is carried to the baby's bath-room (which is properly heated), and there its toilet is performed for the first time. The physician in charge states that since this plan has been adopted the babies thrive to a far greater degree and cry less. This method is at once rational and natural, and would seem to need no defense.

The maternal physique has some subtle, indefinable influence over young children, a health-giving power not at present well understood. The new baby is still in a certain sense a part of its mother, although a separate unit. Its well-being requires close contact with her during the greater part of the

twenty-four hours. A bed by itself is an injustice to helpless infancy. It is paterfamilias who should seek another resting place, not the new life as yet so frail and insecure. Only those who have tried this natural method can thoroughly appreciate its advantages and realize how admirably it insures the happiness of three persons. The child can be cared for during the night without exposure or any sudden chill. Always warmed and protected by a loving presence, the little one sleeps long and well. After the weaning period, the baby has his own bed as a matter of course. Until then, an undisputed half of the maternal couch is a necessity to the embryonic citizen, if he is to grow into that relative perfection of health and strength which nature has intended for him. The human mother is the only animal that puts away its young at night, probably because the right kind of reason has not yet taken the place of half-eradicated instinct. The hen gathers her brood under her wings; the mother-bear forms herself into a sort of animate woolly nest about her cubs, just as the cat's body embraces her kittens. Our cousins of the lower orders may not be such bad examples to follow, after all. At any rate, why not give those "wonderfu' weans" the benefit of the doubt?

The slaughter of the innocents goes on in different ways. Emotional prodigality is a most efficient means of removing the joys of a household. "Died of too much grandfather, grandmother, uncle, and aunt" would be a fitting epitaph for many a bright child. Emotion is the most exhausting of all mental attributes. What children do, and how much, is of far less importance than the way in which they do it. The evils of premature mental activity are without doubt very great; but to prematurely and unduly excite emotional manifestations is tenfold more hurtful. In this regard there seems to be the densest ignorance. The fact that young children's only business in life is to develop slowly—to eat, sleep, and play in childlike fashion—is too often forgotten in the home circle. On the contrary, they are supposed to attend to their own work of growing and developing and afford fun for the family at the same time. Our tender little ones are made the playthings of the household—hugged, kissed, talked to, and made to talk, for the pleasure and gratification of the parents and friends. Their callow brains are overworked by exciting and intense emotion. What wonder they have big heads, little bodies, and hardly any digestion at all! Feebleness, asymmetry, excitability, premature arrest of growth, are some of the evils resulting from this continual tension selfishly imposed by thoughtless grown folk upon unresisting childhood. To what extent the influences under consideration can reach is, perhaps, known only to those who are in actual contact with large numbers of children and who have made the subject of very young Americans something of a study.

There is a common practice in vogue—established in America more than in any other country and deserving of the severest criticism—which is at once a great impertinence and thoroughly reprehensible from a hygienic standpoint. When any person of either sex or of any condition chances upon a small child walking or running about, he (or she, generally she) considers it his privilege to kiss that child if he happens to be pleased with its appearance. Even when not particularly pleased, from motives of courtesy, he feels well-nigh obliged to caress "the dear little thing," because such attention has come to be considered a sort of duty which grown persons owe to the rising generation. Entire strangers seem to think it imperative. Imagine how the children must suffer! Who can estimate the possible harm arising from running the gantlet of Tom, Dick, and Harry, or Jane, Sarah, and Mary, and Mesdames Brown, Jones, and Robinson? Ailments, slight in the adult, may be transmitted in this way, and become a source of much mischief among little people. Dr. A. Jacobi recently called attention to such dangers in connection with the diphtheritic and contagious form of follicular amygdalitis. "This mild variety," he remarks, "is that from which adults are apt to suffer. . . . With this variety, parents, while suffering from a slight sore throat, kiss their children." To break up a habit at once so cruel and so wanting in good taste as the promiscuous kissing of children requires iron-clad conduct and strength of purpose to bear with equanimity the displeasure of others. Let it be thoroughly understood by relatives and friends that young children are not to be kissed by them without special invitation by their parents. This will doubtless give offense, for many care more about their own personal pleasure than the present and future of the children in whom they take a passing interest. A mother who exacts right conditions of living for her child is bound to give offense, especially here in America, where the science of childhood is only just beginning to be understood. Let her bear it as best she may, consoling herself with the thought that an offended friend or relative is of infinitely less importance than the loss of a child or a child's health. It requires great force of character to bring up a family in the ways of health and beauty. As Mr. Lincoln said about being President, "If any one thinks it is easy, just let him try it."

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## THE MORRISTOWN LUNATIC ASYLUM.

Elsewhere in this issue we print the letter of resignation of the late medical director of the New Jersey State Asylum for the Insane at Morristown, otherwise known as the Morris Plains Asylum. Ordinarily, a letter of resignation is of little interest to the readers of a journal, but Dr. Booth's letter touches upon matters of importance connected with the management of the institution in question, and alleges a state of things of which the general public has learned something through the newspapers, and about the existence or non-existence of which the medical profession is very much concerned.

The root of the trouble seems to lie in the fact that there has been a growing lack of harmonious action by the medical department and the warden's department to secure the greatest amount of good capable of being done by the asylum to its inmates, and this is only the natural result of certain by-laws adopted by the board of managers three years ago. By a strict interpretation of those by-laws, the medical director has no authority to modify the general dietary; no authority to desig-

nate the style and quality of the patients' clothing in general or modifications of the same to meet special phases of disease; no authority to enforce the proper treatment of clothing in the laundry; no authority as to the color, quality, or texture of the bed-coverings, or in the furnishing of the wards, either in general or in regard to special appliances in particular cases; no voice in determining the character of the supplies bought for the institution, including drugs; and no authority to receive packages sent by patients' friends, and decide as to what articles shall be given to them and what shall be withheld. We do not know that he is positively prohibited from exercising these functions, all of which are unfit to be performed by any other person than the one who is charged with the patients' mental and bodily health, and we can not suppose that it was the original intention of the board of managers, of which so liberal-minded and straightforward a man as the late Dr. Varick was a member, to reduce their chief medical officer to the position of a mere registrar and a prescriber of drugs. However, under those regulations the medical department has found itself progressively encroached upon in matters essential to the patients' welfare, and we do not see how a medical director having the least heart in his work could conscientiously have continued longer to hold the position. It appears that Dr. Booth and his assistants have not allowed things to go by default, but have laid the evils of the system fully before the board at various times, but without the results that might reasonably have been expected.

It looks as if the managers had deliberately settled upon the policy of subjecting all the affairs of the asylum to the warden's control. In our opinion, if they are not hopelessly given over to day-book-and-ledger plan of caring for the insane, they will find before long that they have made a mistake; if they fail to make this discovery, it is to be hoped that legislative interference will set them straight.

## *MINOR PARAGRAPHS.*

### THE NEW NATIONAL QUARANTINE LAW.

Last week we briefly announced that the President had signed the quarantine bill passed by the Senate on the 3d of March and by the House on the 23d of July. The text of the act will be found in this issue, in the article entitled "Government Health Reports." It will be seen that liberal appropriations are made for carrying out the purposes of the act, but the most satisfactory feature about it is that the management of the stations is placed in the hands of the officers of the Marine-Hospital Service.

### A MISHAP TO AN AMATEUR DOCTOR.

The newspapers record a somewhat amusing incident that has happened to a person who tried to bring a man out of an epileptic paroxysm by pouring cold water into his mouth and down his neck. After a slight struggle, according to the account, the epileptic sank back apparently dead, whereupon the manipulator of the water became intensely anxious and placed his ear at the mouth of the patient, who straightway caught his ear between his teeth and proceeded to chew it until "its mystery had vanished." An arrest on a charge of mayhem followed the epileptic's return to consciousness, but a police justice discharged the prisoner, on the ground that he was not responsible for what he might have done while in a fit.

### THE ILLINOIS STATE BOARD OF HEALTH.

The report of the board's energetic secretary, Dr. John H. Rauch, presented at the last quarterly meeting, covers a wide range of subjects, but is so condensed as to occupy but a few pages of print. In the matter of the national quarantine service, Dr. Rauch mentions the regulations recently approved by the President of the United States for promulgation among our consuls; remarks that the Marine-Hospital Service has, through the Treasury Department, secured instructions to the Revenue Marine Service to co-operate in the prevention of the introduction of any foreign pestilence; and states that the maritime quarantine service is now better administered than at any previous time.

### THE ADVANTAGES OF CLANDESTINE PRACTICE.

A writer in the "Union médicale" tells a curious tale of a man who was recently summoned before a magistrate in Paris, charged with practicing medicine illegally. To the magistrate's surprise, he showed that he was possessed of a diploma, and went on to explain that patients were attracted to him by the semblance of illegal practice, and protested that it would ruin him if his qualifications were made public.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 7, 1888:

| DISEASES. | Week ending July 31. | | Week ending Aug. 7. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 31 | 11 | 34 | 12 |
| Scarlet fever | 111 | 14 | 81 | 18 |
| Cerebro-spinal meningitis | 1 | 0 | 2 | 2 |
| Measles | 200 | 19 | 157 | 17 |
| Diphtheria | 94 | 38 | 106 | 28 |

**Dr. Theobald Smith on the Disinfection of Dwellings.**—In Dr. Smith's article on this subject, published in our last issue, on page 119, second column, twelfth line from the bottom, the expression "from 4 to 5 per cent." should read *from ·4 to ·5 per cent.*

**Experiments with the Alternating Electric Current.**—At the School of Mines of Columbia College experiments were recently undertaken, at the request of Mr. Harold P. Brown, electrical engineer, to determine the danger of alternating currents, by Dr. Cyrus Edson and Dr. Charles F. Roberts, of the New York Board of Health. The first experiment was performed upon a mongrel dog weighing 61 pounds, strong and in good condition. His height was 24 inches, his length from the tip of the nose to the base of the tail 42 inches, and the resistance from the right fore leg to the left hind leg 14,000 ohms. Connection was made by binding a piece of cotton-waste saturated with water round the leg with No. 20 bare copper wire. The dog was placed in the cage and the alternating current applied by Dr. Roberts at 272·16 volts for five seconds, the number of alternations being 288 in a second. The dog was silent and motionless during the continuance of the current. He gave a few spasmodic gasps 31 seconds after the current was first applied, and the heart ceased beating in 90 seconds after the current was applied. The dog was immediately dissected by Dr. Roberts and Dr. Peterson, and sections of the sciatic and pneumogastric nerves, the muscular fibers of the diaphragm, and the

lungs were placed under a microscope, and no changes in structure were observed. The second dog was a full blooded Newfoundland, strong and in good condition, weighing 91 pounds, measuring from the tip of the nose to the base of the tail 48 inches, 25 inches high, and having a resistance of 8,000 ohms. The connection was made in the same manner as before. An alternating current was applied by Dr. Roberts at 340·5 volts electro-motive force for five seconds. The dog was silent and motionless during the continuance of the current, and howled and gasped for eight seconds after the circuit was opened, but, in the opinion of the physicians present, this was purely a mechanical action, as the dog was unconscious from the instant the current first reached him. The heart stopped beating in two minutes and fifty seconds after the current was first applied. The third dog was a half-breed setter and Newfoundland, weighing 53 pounds, 42 inches long from the tip of the nose to the base of the tail, and 24 inches high. His resistance was 30,000 ohms. The connections were made in the same way as before. Dr. Roberts applied the alternating current at 220 volts for five seconds; the result was not fatal in four minutes afterward. Mr. Porter, superintendent of machinery of Columbia College, then suggested that, as the dog was rigid and motionless during the continuance of the shock, it would be impossible for a man in the same conditions to utter a sound or to break the contact in five seconds. Dr. Edson then determined to administer the current at the same number of volts for 30 seconds on this account and because of the high resistance of this subject. This was done, and during the period of the 30 seconds the voltage rose to 234 volts. The dog died instantly, without sound or struggle. The resistance after death was found to be 2,800 ohms. All the physicians present expressed the opinion that a dog had a higher vitality than a man, and that, therefore, a current which killed a dog would be fatal to a man under the same conditions. It was their opinion that all these deaths were painless, as the nerves were probably destroyed in less time than that required to transmit the impression to the brain of the subject.

Dr. Edson had invited Mr. Elihu Thomson, of Boston, and Dr. Otto A. Moses to be present with measuring instruments to record the voltage, etc., but neither of those gentlemen was present.

This account was signed by Dr. Cyrus Edson, of the Board of Health; Dr. Charles F. Roberts, assistant professor of physiology, Bellevue Hospital Medical College; Dr. Frederick Peterson; Dr. Frank H. Ingram; Dr. H. A. Haubald; Dr. Schuyler S. Wheeler, electrician to the Board of Electrical Control; Mr. Harold P. Brown, electrical engineer; Mr. John Murray Mitchell; Professor C. E. Colby, Columbia College; Captain E. L. Zalinski, U. S. Army; and Professor L. H. Laudy, Columbia College.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 5 to August 11, 1888:*

Koerper, Egon A., Major and Surgeon. Relieved from duty at Fort Keogh, Montana, and ordered to duty at Fort Walla Walla, Washington Territory. Par. 5, S. O. 175, A. G. O., July 30, 1888.

De Witt, Calvin, Major and Surgeon. Relieved from duty at Fort Sully, Dakota, and ordered to duty at Fort Missoula, Montana. Par. 5, S. O. 175, A. G. O., July 30, 1888.

Corson, Joseph K., Assistant Surgeon. Leave of absence extended one month. Par. 17, S. O. 178, A. G. O., August 2, 1888.

Harvey, Philip F., Captain and Assistant Surgeon. Relieved from duty as assistant to the attending surgeon at Washington, D. C., and ordered to duty at Fort Keogh, Montana. Par. 5, S. O. 175, A. G. O., July 30, 1888.

Merrill, James C., Assistant Surgeon. Granted one month's leave of absence from August 3d. Par. 7, S. O. 178, A. G. O., August 2, 1888.

Gardiner, John de B. W., Assistant Surgeon, will, on the expiration of his present sick leave of absence, report in person to the commanding officer at Fort Leavenworth, Kansas, for duty. Par. 4, S. O. 178, A. G. O., August 2, 1888.

Gorgas, William C., Captain and Assistant Surgeon. Granted leave of absence for one month, to take effect on being relieved from duty at Fort Randall, Dakota. Par. 4, S. O. 77, A. G. O., August 1, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 4, 1888:*

Hudson, A., Medical Inspector. Detached from the Trenton and ordered home.

White, C. H., Surgeon. Ordered to the Trenton *via* Panama.

Uric, John F., Assistant Surgeon. Ordered to the Receiving-ship Franklin.

Bates, N. L., Medical Inspector. Detached from the Richmond and ordered to the Pensacola.

Anderson, Frank, Passed Assistant Surgeon. Detached from the Richmond and ordered to the Pensacola.

Kite, Isaac W., Assistant Surgeon. Detached from the Richmond and ordered to the Pensacola.

Jones, W. H., Surgeon. Detached from the Pensacola and ordered to the Richmond.

Stone, E. P., Assistant Surgeon. Detached from the Pensacola and ordered to the Richmond.

McCormick, A. M. D., Assistant Surgeon. Ordered to special duty in the Bureau of Medicine and Surgery.

Wieber, F. W. F., Assistant Surgeon, reports arrival home, having been detached from the Vandalia.

## Proceedings of Societies.

### PHILADELPHIA COUNTY MEDICAL SOCIETY

*Meeting of June 12, 1888.*

Dr. C. B. Nancrede in the Chair.

**A Contribution to the Study of Bone Repair** was title of a paper read by Dr. John S. Miller. The recent ovations of Macewen, he said, had done much to stimulate thedy of bone repair, and thrown not a little light upon the fuon of the medullary cells in osteogenesis. The resort to mecical irritation of the medullary tissues as a means of accelng bone repair was an old procedure. Nancrede had allegriority in this for America. As far back as 1793, Eve related, the lay surgeons of the frontier had been wont toke multiple perforation of the external table of the skullre necrosis had followed the Indian mutilation of scalpingnd twenty years ago Agnew had resorted to the same prore in a case of injury to the head. A fatal termination he case, however, by encephalic complication, had renderhe experiment incomplete. Reports of success by this prore had recently been multiplied to an extent that need notepeated in detail.

That, furthermore, medullary proliferation was not an element in osteogenesis, but was of itself sufficient to thd without periosteal co-operation, was shown by the of

Macewen, in which a considerable restoration of the humerus had been secured "by bone-transplantation" after a suppurative inflammation had destroyed both the shaft and its periosteum. The date of this observation was 1878.

The patient was a boy two years of age. A suppurative periostitis of the right humerus of nine weeks' duration had resulted in total necrosis of the entire diaphysis, and this latter had been removed, leaving a tube of granulation material lining the periosteum. This tube had been kept patent by suitable dressing until the whole space had become filled with granulation tissue, and had finally become a mass of cicatricial tissue. No bone had grown from this periosteum, except in a small part next the proximal epiphyses, where at the outset the periosteum had been found covered with plaques of adherent osseous tissue. In the remainder there had been no osseous deposit, the result being a flail-like arm, which the patient found so useless that the parents desired its removal.

Macewen determined, however, upon another procedure. An incision was made into the upper third of the arm, exposing the head of the bone, to which was found attached a spike-like process of cartilage. This was removed, leaving as remains of the diaphysis a portion of bone an inch and three quarters in length. From this point a sulcus about two inches in length was made in a downward direction between the muscles. The former presence of bone was nowhere indicated, there was no vestige of periosteum, and the sole guide as to the correct place for transplanting was an anatomical one. Two wedges of bone with anterior curves were then removed from the tibia of a patient aged six years. The face of the osseous wedges consisted of the anterior portion of the tibia, along with its periosteum, the wedges gradually tapering toward the posterior portion of the tibiæ. After removal they were cut into minute fragments with the chisel, quite irrespective of the periosteum. The bulk of the fragments had no periosteum adhering to them, as they had been taken from the interior of the bone. They were then deposited in the muscular sulcus of the boy's arm, and the tissues drawn over them and carefully adjusted. The wound healed without suppuration. Two months after, a portion of bone an inch in length and three quarters of an inch in thickness was found firmly attached to the upper fragment of the humerus. Two other wedges of bone, larger in size, were similarly dealt with, and inserted two months subsequently to the first graft, and two more were placed in position five months after the first. These filled up the gap in the arm to the extent of four inches and a quarter. The arm then measured six inches in length.

Soon the utility of the arm was greatly restored. Seven years afterward he was seen and examined. The shaft of the humerus was found to have increased in length by an inch and three quarters, being now seven and three quarters; and it had increased in circumference to a marked extent, and assumed a somewhat irregular shape. The length of the sound arm had, however, considerably outstripped the length of the transplanted humerus. He could use the arm for many purposes, taking his food, adjusting his clothes, and many games.

Whether the introduction of proliferating medullary cells into ordinary connective-tissue granulations could convert the whole into osseous tissue, so that a few osteoblasts would, so to speak, leaven the whole mass, was a question involving grave doubt, but the affirmative would seem to receive some support from the case which Nancrede had related in 1883. An extensive laceration had caused denudation and necrosis of the ulna in two thirds of its extent and the process of repair had been delayed. He drilled numerous holes through the sequestrum into the medullary canal, and, to quote his own words, "in a few days granulations sprang up from the ulna and fused with the granulations of the soft parts, and, in course of time, the fragment was separated."

That the procedure in this case had had the effect of stimulating osteogenesis from within could readily be believed; but concerning the fusion with granulation tissue without, a more accurate observation than had been recorded by Nancrede was desired, although by analogy we might conceive it possible, inasmuch as repair within the bone was by ossification of an embryonic tissue derived from the connective tissue around the blood-vessels of the medullary spaces. A similar case had been reported by Macewen, in which granulations appeared upon a surface of bone completely denuded of its periosteum, and gradually spread until they became united with the granulation tissue at the periphery of the wound. Macewen, however, inferred from this observation that the periosteum covering a bone might be completely destroyed or permanently removed, yet the denuded bone not only retain its vitality, but throw out cells which would cover it and form a new periosteum.

These cases seemed to confirm Macewen's dictum that the periosteum had no part whatever in the regeneration of bone. But the first case that the author would present demanded a different hypothesis for its explanation.

The patient, D. M., aged fourteen years, suffered from an osteomyelitis of the right tibia, resulting in total necrosis of its diaphysis. A complete involucrum had formed around the sequestrum and afforded an unsteady support to the body weight. It was covered with the thickened periosteum. A number of fragments had been removed from time to time, and the parents had refused to entertain for him the proposal of amputation. The case, however, when it came into the author's hands, had become from septic infection so desperate that he was compelled to do something radical at once.

Exposing the shaft, or rather the involucrum, through its whole length, he made with trephine and saw a fenestra large enough to permit the removal of the remaining sequestra, and cleared out the whole canal. Both epiphyses were found carious upon their exposed surfaces, and were scraped to the limit of safety. In a few days a superficial necrosis took place upon the inner surface of the tube.

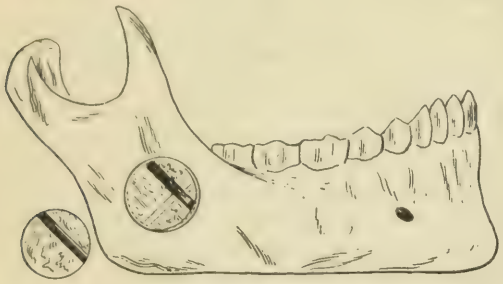
Demarkation was, however, promptly effected by the free use of aluminium acetate—that sheet-anchor in all sloughing wounds—and a layer of fine granulations became the field for any osteogenesis which might be hoped for. During the long process of repair with the carious epiphysis as a never-failing source of bacterial supply, it had been no trifling task to keep this extensive opening dry and sterilized. Furthermore, neither the patient, the household, nor the neighborhood could endure frequent dressings without great nervous prostration.

The requirements of the case were successfully met by a mixture of iodoform and starch, in proportions which varied with the changing conditions. The cavity of the wound was filled with this dry powder, and to the whole was applied a closed dressing of gutta-percha tissue. The purpose of the starch was to absorb the excess of moisture incident to a closed dressing as well as to dilute the iodoform. As soon as the powder became saturated it was removed by a stream of sterilized water, and the wound was filled and closed as before. The periods of dressing were gradually increased from three to ten days. In process of time the hollow of the involucrum became completely filled with granulation tissue, which continued to extend until it fused with the granulations from the soft parts, and finally the whole became covered with a new epithelium, which had gradually spread from the edges of the wound. The tissues now became denser, and offered more and more support to the body weight until, as could be seen, the patient had acquired a very useful limb, and could walk without discomfort.

We must therefore infer that a metamorphosis into bone had taken place, and, as the original diaphysis was gone with its medullary structure, no osteogenic agent in the result could be found other than the periosteum.

We must draw a similar conclusion from the recent case reported by Ceci: The patient, a young man, was seized with acute osteomyelitis of the left scapula five days after circumcision for inflamed phimosis. One month later Ceci extirpated the bone, making the usual L-flap. The periosteum was left intact as far as possible, and the arm was preserved. The patient recovered rapidly, and there was a subsequent regeneration of the bone. The only possible explanation of this result was by the hypothesis of periosteal agency or co-operation.

The second case presented by the author was in confirmation of Macewen's proposition that a portion of bone which had its continuity severed on all sides, and had had all its periosteum removed, was capable of living and growing. This is in contradiction to our inference in the case of the tibia, and the two could be reconciled only by the assumption that the discovered laws of osteogenesis were subject to some general law of which we were as yet ignorant.



Mrs. L., aged forty-seven years, had suffered with a neuralgia of the maxillaris inferior, for the relief of which all medical means had been exhausted in vain, which, therefore, left only the *dernier ressort* of neurectomy. The mode of operating was the usual one. The ramus was trephined near the angle of the jaw, the canal was exposed, and about two inches of the nerve trunk were drawn out and exsected. The button was, however, returned after having been sterilized in a 1-to-1,000 solution of corrosive sublimate, but it was not returned to its old position. With a view of imposing a barrier to the reproduction of the nerve, it was so rotated that the groove upon its lower surface stood at right angles to the axis of the canal. Not only did the wound close by first intention, but the button grew solidly in its position. Now, the curious thing in the case was that, before trephining, the author had carefully removed the periosteum, so that the latter could have taken no part in the subsequent bone repair. After seven months there had been no return of the disease.

Dr. John B. Roberts said it was a curious fact that the medical mind had not appreciated the possibility of bone production, despite the frequent instances that must always have come under notice. He had been taught in cases of comminuted fracture to take out the spicules of bone that were entirely separated from the larger fragments, lest they should necrose and give rise to trouble. Now it was the practice of the best surgeons to leave the spicules, and it was found that often they did not die, and that they assisted in the process of union and solidification. This experience was in the same line as the facts given by Dr. Miller in connection with his interesting cases. If these spicules of bone could reunite, why not the button removed by trephining? Why was it not good practice to insert, when necessary, a portion of dog-bone or chicken-bone, as, indeed, had been done? We must not forget, however, the importance of asepsis, and that it was antiseptic surgery that had made these procedures possible. In a case such as Dr. Miller had reported, where he rotated the button of bone, turning the groove in which the inferior dental nerve had run at right angles to its former direction, the speaker would be inclined to go still further, and turn it upside down. The bottom of the pit in which it was to be placed and the periosteal surface of the button being scraped, the ungrooved, freshened surface, formerly external, would then be placed inward, and a bony plug would be interposed between the divided ends of the nerve, probably preventing the reunion and return of pain which so often occurred.

The case of tibial resection had been very interesting to the speaker, as he had recently operated in a similar one, the patient being, however, a woman of about fifty years, so that he could not hope for so complete a closure of the cavity in the bone as in this growing child exhibited by Dr. Miller. In that case he had removed the whole front of the tibia, going as near the articular cartilages above and below as he dared. The process of repair was like that we saw in a tree. We knew that if a foreign body was inserted into a wound made in the trunk of a young tree, the process of cell growth would go on about it, and finally it would be completely covered in and its presence be unsuspected, until, perhaps, the saw struck it as the tree was being converted into lumber. Dr. Keen, in his recent case of trephining for brain tumor, had returned the button of the skull removed, and the patient was able in a few days to walk around with a perfectly healed and reunited cranium. Then we knew what the dentists did in the way of transplantation of teeth, or the return of teeth to their original sockets after the removal of diseased portions. More remarkable still was the implanting of old, dried teeth into new sockets bored in jaws from which even the alveolar process had disappeared, and their becoming fixed there.

Dr. George E. Stubbs said that perhaps in the numerous resections that had been done in army and in civil practice we had made mistakes. Surgery had advanced immensely since the war time, and antiseptic surgery had opened new possibilities. Often in his army practice all the bone was removed when there had been a comminution. He would now, with our new light, try to save more of the broken bone, and so shorten the period of recovery. In regard to the operative treatment of neuralgia, he believed that we were entering upon a stage of work that would be much enlarged in the near future. He had had a case recently in which neuralgia of the inferior dental nerve had existed for nearly seven years. He removed an inch and three quarters of bone with the dental engine, took out as much of the nerve as he had access to, and dressed and treated the wound antiseptically. The wound healed by first intention, and as yet there had been no return of pain; so that he considered that he had obtained a very good result.

The Chairman said that the first question to be answered in a discussion of this kind was, What constituted the periosteum? If we meant a fibrous membrane the inner layer of which consisted principally of yellow elastic tissue, we must agree with Macewen's extreme views, and admit that it had nothing to do with bone repair. But, if we studied the normal process of bone development, he, at least, must arrive at a different conclusion. The long bones were laid down in cartilage, a temporary structure. How did they ossify? By means of this very periosteum, which Macewen treated with such contempt, and which Ollier exalted too highly. There was a third layer of the periosteum in direct contact with the bone, and this layer was composed entirely of those elements which, wherever we saw them, we recognized as the agents of ossification—the osteoblasts. The temporary cartilage was invaded by

connective-tissue ingrowths from the periosteum, covered with osteoblasts, and was eaten up by them; and we found it permeated and finally replaced by a net-work of fibrous tissue covered with osteoblasts. A certain number always remained beneath the periosteum. A certain number, very small, remained in the Haversian canals, a still larger number in the medulla. It was clear to him why compact tissue died; it had so few osteogenetic cells. The medullary tissue lived because it was comparatively rich in osteogenetic elements. Why did bone die when the periosteum was stripped off? Because the resulting inflammation was so severe that the inflammatory tissue strangulated the osteoblasts in the Haversian canals. With antiseptic means we now controlled the inflammation, the osteoblasts were not killed, and the bone was saved. We were very hard nowadays on the periosteum. The fibrous layer had nothing to do with bone repair, but its osteoblastic layer was in direct communication through the lining of the Haversian canals with the medulla; it was practically one structure; and thus, if we looked at this matter from the standpoint of a correct histology, we found that both views were correct, provided only that we had a distinct understanding of what was meant by the word periosteum in each case.

As to Dr. Miller's cases, he could not quite agree with him as to what formed the bone in the case of total excision of the diaphysis of the tibia. While the shaft was dying, new bone was formed by the deep layer of periosteum, but after that the medullary spaces of the involucrum completed the bone. He would also take exception to Dr. Roberts's proposition to scrape the button of bone and turn it inside out in the case of trephining the jaw for neuralgia. By this process he would remove all the osteoblastic cells, and the compact tissue would have a very good chance of dying. One reason for failures in operations about the lower jaw was that it contained so little true medullary tissue, while, on the contrary, we could replace trephine buttons in the skull and have union, because the skull contained a large amount of such tissue.

He thought Dr. Stubbs need not blame himself for his practice in resecting in military surgery. The necessary condition to bone repair was that absence of suppuration afforded by antiseptic methods, and, under the conditions present in the operations he had spoken of, he had done right. And to-day he did right in trying to save the bone. In each case he took the proper course in relation to the circumstances, and that was all any one could do.

The case of Dr. Agnew, referred to in the paper, had occurred some twenty odd years ago. The speaker had seen the operation. The wound was completely covered by granulations. The fact that a denuded external table did not always necrose had been known to Pott, and to all the older as well as modern surgeons, and, if Ollier had not led us astray by grafting, by insisting upon the periosteum being the sole osteogenetic agent, ignoring the fact that in removing it a layer of cells identical with those of the medulla was torn off, he thought we should have arrived at a correct practice sooner. But surgeons had gone wrong by authority of Ollier, as they were now going wrong in the other direction by authority of Macewen.

In regard to the implantation of dead teeth, which Dr. Roberts had referred to, the principle was probably the same as in the bony pegs formerly employed for ununited fractures. They were hollowed out by the granulation tissue which developed into a fibrous or even osseous tissue, and so held the tooth in place by these newly formed digitations.

About twelve years before, the speaker had exhibited to the society a case in which he had resected four inches and a half of the humerus, and about two inches and a half were reproduced from the sawn end. This was without antisepsis. In the case referred to by Dr. Miller, where he had drilled the ulna, he was sure that the bone granulations had fused with those of the soft parts, for these reasons: The shell of bone when detached was not more than one fourth the thickness drilled through, while the new bone was nearly as thick as the ulna of the other side, as the cicatrix was not materially depressed. A recent experience in a case of knee-joint excision induced him to recommend that, instead of wiring fragments of bone, we nail them together, after having previously drilled, or not, according to circumstances, allowing the heads of the nails to project through the skin. We thus saved trouble, and avoided damage in the removal.

Dr. Roberts said that the chairman had misunderstood him in regard to scraping away the cancellated tissue in reversing the plug in the case of trephining the lower jaw. He would scrape only what the chairman called the fibrous periosteum from the button, and from the bottom of the pit in the jaw he would take away the cancellated structure sufficiently to remove all trace of the nerve canal. The two raw surfaces would be placed together, and, by sinking of the button, would be a solid bony plug interposed between the nerve ends.

Dr. Miller saw no advantage in reversing the plug over rotating it. The groove being at right angles to the course of the nerve, the part in contact with the nerve was still solid bone, and the groove did not matter at all. In relation to the tibia case, the reason he emphasized the fact that the repair took place from the periosteum was that there was entire death of the old bone with the involucrum, and the periosteum did not die.

## Book Notices.

*A Practical Treatise on Materia Medica and Therapeutics.* By Roberts Bartholow, M. A., M. D., LL. D., Professor of Materia Medica, General Therapeutics, and Hygiene in the Jefferson Medical College of Philadelphia, etc. Sixth Edition, revised and enlarged. New York: D. Appleton & Co., 1887. Pp. xxiv–802. [Price, $5.]

Dr. Bartholow's style of writing is so concise and pointed that it has hardly been possible for him to abridge the matter contained in previous editions of this work to any considerable extent for the sake of accommodating new material; but that same faculty for condensed expression has enabled him to give adequate consideration to a number of new remedies and new applications of old ones without adding quite a hundred pages to the book as it stood before. The additions are interstitial, so to speak, each new drug being classed under the appropriate heading among those before made use of, according to its physiological relations. The judiciousness of a writer on pharmacology may readily be judged by the way in which he speaks of new drugs, and in this light, as in so many others, Dr. Bartholow's treatise shows abundant evidence of the sterling worth that, being recognized by the profession, has made it such a favorite. Much of the labor that has fallen to him in preparing this edition must have consisted in weighing testimony as to the value of new drugs, and throwing out a good share of it as worthless. Shallow writers are continually bringing forward this or that plant or chemical compound as a drug possessed of notable powers. If it were reasonable to expect that anything would wean them from their evil ways, we would commend to them this sentence from Dr. Bartholow's preface: "The earliest announcements are not unfrequently given forth by medical *quidnuncs*, who are more enthusiastic than logical, more sensa-

tional than exact, and more concerned to advertise their own doings than to give expression to faithful observations."

*The Practice of Medicine and Surgery applied to the Diseases and Accidents incident to Women.* By W. H. Byford, A. M., M. D., Professor of Gynæcology in Rush Medical College, and of Obstetrics in the Woman's Medical College; Surgeon to the Woman's Hospital of Chicago, etc., and Henry F. Byford, M. D., Surgeon to the Woman's Hospital of Chicago; Gynæcologist to St. Luke's Hospital, etc. Fourth Edition, revised, re-written, and very much enlarged, with Three Hundred and Six Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xxiii 17 to 820 inclusive.

The preceding editions of Dr. Byford's work have been held in high esteem by the profession, and it seems to us that its value is greatly enhanced by the revision shown in the fourth edition, a great part of which, as we learn from the preface, has been done by the younger author. As the book now stands, it has two features that, in our opinion, make it invaluable to the learner: the minuteness with which it teaches the technics of physical diagnosis and the careful distinction that it makes between different sorts of cases that are ordinarily described only from the standard examples—the description being conventionalized, as it were. We know of no more useful book for the student of gynæcology.

### BOOKS AND PAMPHLETS RECEIVED.

The Abortive Treatment of Specific Febrile Disorders by the Biniodide of Mercury. By C. R. Illingworth, M. D. (Ed.), M. R. C. S. London: H. K. Lewis, 1888. Pp. 24.

La lepra es contagiosa. Por el Dr. R. Enrique Robelin. [Publicado en Cronica Medica-Quirugica de la Habana.]

University of Kansas City, Medical Department, Eighth Annual Announcement, Session of 1888–'89.

The Medical and Surgical History of the War of the Rebellion. Part III, Volume I. Medical History. Being the Third Medical Volume. Prepared under the direction of the Surgeon-General, United States Army. By Charles Smart, Major and Surgeon, United States Army. Washington: Government Printing Office, 1888. Pp. xiii–989.

Reports for the Years 1886–'87, and 1887–'88. Presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

The Extra Pharmacopœia with the Additions introduced into the British Pharmacopœia, 1885. By William Martindale, F. C. S., late Examiner of the Pharmaceutical Society, etc. Medical References and a Therapeutic Index of Diseases and Symptoms. By W. Wynn Westcott, M. B. Lond. Fifth Edition. London: H. K. Lewis, 1888. Pp. 462.

Hygiene for Base-Ball Players; being a Brief Consideration of the Body as a Mechanism; the Art and Science of Curve Pitching; a Discussion of the Causes and Treatment of the Disabilities of Players; with a Few Practical Hints to Club Managers. By A. H. P. Leuf, M. D., of Philadelphia, etc. Philadelphia: A. G. Reach & Co., 1888. Pp. 13 to 135.

## Reports on the Progress of Medicine.

### OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

**The Pathogenesis of Glaucoma.**—Stilling ("Arch. of Ophth.," xvi, 4), as the result of his experiments, decides that from the young eye to the senile, and from the senile to the glaucomatous eye, there is a continuous decrease of the filtrating power. The pathological change which is here described has not hitherto been mentioned. In glaucomatous eyes a peculiar separation of the lamellæ of the optic nerve may be noticed, principally in the outer lamellæ which blend with the zone of the sclera surrounding the optic nerve. These changes Stilling found constantly, more or less pronounced, in glaucomatous eyes. They were most marked in absolute glaucoma. Stilling concludes: 1. That there is no open anatomical communication capable of demonstration between the anterior and posterior portions of the globe. 2. Diffusible fluids may, under pathologically altered conditions, penetrate into the anterior chamber from the vitreous through the space between the retina and chorioid. 3. The escape of the lymph of the vitreous takes place in all probability through the optic nerve and its sheath. Fluids may also pass directly into Tenon's capsule by means of filtration or diffusion through that part of the sclera bordering on the optic nerve. 4. The older the eye the smaller the scleral zone, and the less the power of filtration. This is most marked in glaucomatous eyes. A glaucomatous eye is a highly senile or sclerosed eye, showing an increase of pressure, which in the young eye is compensated for by filtration through the zone of the sclera surrounding the optic nerve, as well as through the interspaces of the dural sheath which are in communication with the scleral zone. This view of the glaucomatous process combines the two most important theories of the present time, inasmuch as it is regarded as a hypersecretion within physiological limits in eyes with impeded channels of filtration. In hæmorrhagic glaucoma the normal channels of filtration are not only narrowed by senile change, but atheroma of the retinal vessels is also present. The course and symptoms of the different forms of glaucoma have for their *raison d'être* the possibility of a compensation of the existing hypersecretion and increase of tension. One of the conditions necessary for the carrying out of this compensation is found in the thickness of the sclera; where it is very thick, it is an obstruction to compensation. This may have something to do with the predisposition of hypermetropic eyes to glaucoma and the relative immunity of the myopic eye. In myopic eyes there is a splitting of the sheath of the optic nerve, which is in some cases prolonged a considerable distance into that part of the sclera surrounding the optic nerve, a circumstance which renders filtration considerably easier.

**The Return to the Flap Operation for Cataract.**—Schweigger (*ibid.*), in a paper on the modern operation for cataract, states that, owing to irregularities in the wound made by the narrow knife and for other reasons, he has given up the use of the small knife for cataract operations, and about a year ago he began using a knife which was 5 mm. broad at a distance of 30 mm. from the point. He soon, however, recognized the advantage of the old-fashioned cataract knife, and increased the width of the blade to 7 mm. Since then he has done all extractions of senile cataracts with the triangular knife, with a flap about 4 mm. high, gradually omitting iridectomy. The transition to the old method was gradual. It has seemed to Schweigger that the dangers of prolapsed iris have been exaggerated. It is desirable to have a clean cut, not too peripheral, but in the transparent cornea, on the anterior edge of the tinnitus. With the escape of the lens there is almost always some prolapse of the iris, but it can readily be stroked back with the curette. Should, however, the iris be pushed into the wound by the pressure of the vitreous body, it is much better to do an iridectomy at once. In sixty-two cases without iridectomy, prolapse of the vitreous happened but twice. Eserine should be dropped in the eye directly after the operation, and perhaps at the first change of the bandage. If used too long it favors iritis. For the first three days both eyes should be closed by a binocular bandage, and any opening of the lids should be avoided. A contracted pupil is desirable for the first two days; after this mydriatics are necessary, as more than 50 per cent. of all cases heal with posterior synechiæ. Absolute rest upon the back is not necessary; the patient may slowly change his position. After the first three days there is no danger of prolapse of the iris unless some unforeseen accident should take place. If it does occur, its excision is not advisable unless it occupies the greater part of the wound, and even then not until two weeks after the operation. Where it is small, it is often flattened down by cicatrization, at the same time improving the irregular curvature of the cornea. The opening of the capsule is always done with the forceps, which passes easily beyond the iris, and under all circumstances the re-

moval of a piece of the capsule is a great advantage. Portions of the cortex remaining are to be scooped out with the small spoon.

**Total Blindness from a Cortical Lesion with Softening of the Internal Surface of the Occipital Lobes.**—Bouveret ("Rev. gén. d'ophthal.," Nov. 30, 1887) reports an interesting case occurring in a man, aged seventy-two, who was suddenly attacked, while apparently in health, with trembling in the limbs and incoherent speech. He was taken to a hospital and remained immovable on his back. His intelligence was clouded, but he was not unconscious, and had no verbal deafness. His look was fixed and vague. Both pupils were sluggish, and the eyes were turned upward. Vision was absolutely abolished. There was no hesitation in the articulation of words, but his answers to questions were very slow. There was no motor aphasia. The faculty of memory was profoundly affected. There was no appreciable defect either of motility or of cutaneous sensibility. There was no deviation of the face and no paralysis of any cranial nerve. There was incontinence of urine and fæces. The media were normal and there was no ophthalmoscopic evidence of disease. From October 12th to October 20th he remained in the same unchanged condition. A bed-sore over the sacrum then made its appearance and he became feverish. The next day it became necessary to tie him in bed. Three days later he became slightly hemiplegic on the left side and he became comatose and died on October 29th. At the autopsy both posterior cerebral arteries were found dilated and atheromatous. On being opened, they were found entirely obliterated by grayish plugs. On the left side the thrombus extended from the primary bifurcation of the artery to some distance into the branches distributed to the infero-internal surface of the brain. On the right side the thrombus began near the bifurcation of the basilar artery and extended for a considerable distance into the terminal and collateral branches. There were two spots of softening of unequal size on the infero-internal surface of both occipital lobes. On the left side the degenerated portion occupied the angle, nearly two thirds of the second temporo-occipital convolution, and the posterior half of the first temporo-occipital convolution. The softening extended through the cortex into the white matter as far as the wall of the occipital horn of the lateral ventricle. Immediately beneath the perpendicular cleft the softening extended slightly on the external surface of the occipital lobe. On the right side the softening was in the same region but more extensive. It occupied the angle, the posterior two thirds of the second and first temporo-occipital convolutions, and extended over the external surface of the occipital lobe.

**Purulent Conjunctivitis of the Newly Born.**—Korn ("Arch. f. Gynäkologie"; "Amer. Jour. of Ophth.," Nov., 1887) is of the opinion, from his own observations, that the infection of the eyes of babies probably does not take place while they pass through the vagina, but later, and is artificial, and due to unsatisfactory cleansing. In fact, the eyes of the babe are sufficiently protected to make the entrance of mucus into the conjunctival sac almost impossible. Only a face presentation might favor this accident. Hence he thinks it possible to dispense with the nitrate of silver in these cases. The baby is to be carefully washed with water, without paying any attention to a previous cleansing of the parturient mother. The results were equally good with this method, as soon as the nurse became accustomed to scrupulous compliance with the orders. Out of one thousand babies treated in this manner, only 0·4 per cent. were affected during the first four days of life by purulent ophthalmia. In summing up the results of his experiments, he formulates the following propositions: 1. Credé's method of preventing purulent ophthalmia is absolutely certain and trustworthy when applied in the proper manner. 2. The active part in Credé's method is the nitrate of silver, which is a specific against the gonococcus. 3. The infection of the baby's eye with the poison does not take place in the vagina, but always after birth. 4. The most scrupulous cleanliness during birth and the puerperal state is sufficient to reduce the affections of the eyes to a minimum, and most probably can prevent them altogether. 5. The method is very simple and can be learned by any nurse.

**Independent Idiopathic Inflammation of the Optic Nerve.**—Hirschberg ("Ctrlbl. f. prakt. Aug.," Nov., 1887) reports a case of this kind occurring in a boy, aged fifteen, who complained of a recent and sudden loss of vision in the right eye. This eye had squinted inward for a long period, and the patient was highly hypermetropic. In the right eye, vision was reduced to counting fingers at one foot. The field of vision showed a large central scotoma. The pupil contracted only by reflex irritation from the other eye. The right eye was painful on pressure, and the optic disc was clouded and obscure in outline. The course of the disease showed three stages. The first and shortest was marked by pronounced visual disturbance and almost negative ophthalmoscopic evidence. The second, longer stage was marked by an improvement in visual power, but with distinct optic neuritis. The third, more lasting stage, was distinguished by almost complete restoration of vision and disappearance of most of the inflammatory symptoms. One point of great importance for the diagnosis is the loss of direct pupillary reaction in a case marked by great disturbance of vision without ophthalmoscopic evidence of disease. When an eye is attacked by a marked central scotoma in the visual field and then becomes rapdily and totally blind, we may conclude that the disease has first attacked the sheath of the optic nerve, and afterward the nerve itself.

**An Instance of Marked Heredity in a Form of Cataract developed in Early Life.**—Berry ("Oph. Rev.," January, 1888) gives a very interesting account of a very marked family tendency to the development of cataract in early life, running through seven generations. Out of 55 individuals belonging to five generations whose existence could be traced, 28 of whom were males and 27 females, 20 had cataract, 8 males and 12 females, a percentage of 44·4 of the females and of about 28·6 of the males. There were five instances in which transmission took place through the females, and always in the case of a female who herself had cataract. In one case transmission took place through a male who was himself the subject of cataract. In another case this was highly probable, although he had no cataract, but his ancestors had. The transmission was shown to be much more strongly marked through the female than through the male, and in this respect this hereditary history differs from most which have been published in connection with cataract. This may possibly be on account of the different nature of the cataract, which always developed in early life. In true congenital cataract Berry has never found any evidence of heredity. No other disease besides cataract appears to have been transmitted at the same time. A point of general interest in connection with heredity in these cases is the tendency in every instance for the cataract cases to appear in succession, apparently showing a greater tendency to inheritance from the mother at one particular time of child-bearing life than at others. In the third and fifth generations the cataract cases all came first, and were followed by a number free from this defect, while in the fourth and sixth generations the tendency asserted itself after children with healthy eyes had been born. In no instance did the eldest girl escape.

**The Treatment of Serious Forms of Granular Conjunctivitis.**—Abadie ("Ann. d'oc.," Nov.–Dec., 1887) recognizes two factors in the pathogeny of severe granular conjunctivitis: 1, The presence of the microbe; and 2, the state of the tissue in and on which it develops. The accessory factors are: The state of the adjacent parts, lacrymal passages, palpebral fissure, and the reaction of the general nervous system of the individual. For some time past he has in rebellious cases combined systematically daily scarifications of the conjunctiva with cauterization. If there is great local irritation and marked nervous reaction, he begins by applying leeches to the temple. Then he instills a solution of cocaine, and, after anæsthesia has been produced, he makes slight scarifications in the conjunctiva with Desmorres's instrument, beginning usually with the superior *cul-de-sac*. The parts are allowed to bleed freely, and are subsequently cauterized with the glycerole of copper. This treatment is repeated daily, and gradually the conjunctiva becomes thinner, less red, more elastic, the pannus gradually disappears, and the infiltration of the underlying and neighboring tissues slowly recedes.

**Ocular Phenomena in Sclerosis "en Plaques" and in Ataxy.**—Charcot ("Rec. d'ophthal.," November, 1887) thinks that a comparison made between the ocular troubles of sclerosis "en plaques" and those of locomotor ataxia is very instructive. In ataxy, one of the commonest symptoms is diplopia, which lasts two or three months, and is caused by paralysis of the third or sixth nerves. The same symptom may occur in sclerosis "en plaques" when the lesions occur in the

nerve trunks themselves. But it is a rare phenomenon here. But we meet in sclerosis "en plaques" with paralyses of ocular muscles, the origin of which must be sought in the nuclei, and these do not occur in ataxy. These are not peripheral lesions as in tabes, but are distinguished by a defect of co-ordination in the necessary movements of the eyes, or, in other words, paralysis of associated movements. These patients never are able to fix any object, and the movements of the eyes are often oscillatory and resemble nystagmus. At first these patients see double, but soon learn to suppress the second image. Finally nystagmus supervenes, which is a specific symptom. In tabes we often meet with pronounced myosis, but along with this symptom there is a condition known as the Argyll-Robertson pupil. This symptom consists of two elements: first, the mydriasis or myosis is not influenced by light; secondly, this pupil, insensible to light, contracts when the eyes converge for near vision even in extreme myosis. The contrast between the effect of light and that of the accommodation constitutes the symptom known as the Argyll-Robertson pupil. In sclerosis "en plaques" this symptom does not exist. If myosis is present, a slight contraction is produced by exposure to light, and in the dark the pupil dilates. In tabes the blindness is final and permanent and due to an atrophy of the optic nerve characterized by a brilliant white aspect of the disc, with sharply defined outlines. This atrophy of the optic nerve is often the first symptom of tabes. In sclerosis "en plaques" blindness may be present, but the only ophthalmoscopic evidence is a simple discoloration of the papilla. Moreover, the blindness is transient, lasting five or six months and then disappearing. This re-establishment of the vision is explained by the fact that in sclerosis "en plaques" the axis-cylinder persists, and consequently the functions of the nerve may be re-established. In tabes there is a narrowing of the visual field, which is irregular owing to the existence of scotomata, and it is not concentrically limited as in hysteria. There is also achromatopsia partialis, the faculty for recognizing blue and yellow being long preserved. These phenomena have no analogues in sclerosis "en plaques," except that in the latter there sometimes occurs a narrowing of the visual field resembling that in hysteria.

**Ocular Cephalalgia.**—Parinaud (*ibid.*) divides this form of cephalalgia into ocular and neuro-ocular. Under the first head the asthenopia complained of is accommodative or muscular. In accommodative asthenopia the insufficiency of the ciliary muscle may be due to age, the hardening of the lens rendering it less amenable to the contraction of the ciliary muscle. Another cause is hypermetropia or astigmatism, which imposes upon the muscle of accommodation permanent or abnormal contraction. In muscular asthenopia the insufficiency of the muscles may be due to congenital weakness, a peculiar shape to the skull, exophthalmia, etc. Muscular asthenopia, like accommodative asthenopia, is marked by the difficulty of continuous application of the eyes and by the cephalalgia caused by this application. In accommodative asthenopia the letters are obscured; in muscular asthenopia they move about, become doubled, and seem to glide over each other. The cephalalgia is preceded by a sense of fatigue at the internal canthi. Sometimes the patients complain of a sense of tension or of pressure at the apex of the orbit, accompanied by vertigo and nausea. The insufficiency of the internal recti existing in myopes may be overcome by giving concave glasses for reading, or by the use of prisms of 3° to 5°, with the base inward; and if the insufficiency is of a high degree, by tenotomy of one or both external recti. In neuro-ocular cephalalgia the cause is found in a general indisposition, such as hysteria or neurasthenia. Another form is that met with in young persons, from fifteen to eighteen years of age, in whom the pain is mainly frontal, and is always exaggerated by use of the eyes. It resembles the headache met with in hypermetropes.

**General Apoplexy of the Vitreous in Young Persons.**—Zieminski ("Rec. d'ophthal.," December, 1887, and January, 1888) considers that profuse, non-traumatic hæmorrhage into the vitreous occurs, as a rule, at two principal epochs of life—during youth and old age. In adults with vitreous hæmorrhage there are most always found the signs of a gouty constitution; the walls of the blood-vessels have undergone degeneration as a result of arterio-sclerosis. Among adults with this affection, however, there are often women who show no signs of the arthritic diathesis. The intra-ocular hæmorrhages in such women occur usually at the menstrual epoch. The vitreous hæmorrhages which are the subject of these observations, however, occur in the young, and ordinarily attack but one eye, though the other eye may be subsequently affected. At first there is usually no pain, but there may be a few sharp twinges. The patient at the same time perceives a distinct luminous phenomenon, caused by the sudden compression of the fibers of the optic nerve. This is especially the case where the hæmorrhage is close to the disc, and has come from the vessels of the disc or of the sheath of the nerve. The vision may be lost suddenly, or it may diminish gradually during several days before it is entirely lost, or even very decidedly affected. Central vision is most affected, though peripheral vision may also be abolished. There is no external sign of any lesion, and the intra-ocular tension is at first not at all affected. If the hæmorrhage is near the posterior pole, the blood has come from a ruptured vessel in the retina, or on the disc, or from the sheath of the nerve. If the extravasated blood is found mainly at the periphery, it has come from a ruptured chorioidal or ciliary vessel. Still, it is by no means easy to locate the source of the hæmorrhage, for the absorption of blood extravasated in the vitreous goes on the more slowly the farther it is from the ciliary body. If, after the blood has been absorbed, the field of vision be carefully examined, a small scotoma will usually be found to indicate the seat of the lesion in the chorioid or retina. Observations with the sphygmograph do not teach us much, for it is well known that a capillary hæmorrhage may occur not only when the arterial pressure is increased, but also when it is lowered. There is, as a rule, in these cases no valvular disease of the heart, but there is an essential hypertrophy of the heart, due probably to an exaggerated development of the heart in proportion to the other organs. The hæmorrhage may be the result of an abnormal condition of the digestive canal or of the sexual apparatus. Zieminski thinks that, under certain circumstances, they may even occur from a cerebral congestion due to a faulty attitude in reading or writing. As regards treatment, the patient should avoid all muscular exertion of every kind and all moral or emotional excitement, and should abstain from alcoholic drinks. The digestive apparatus should be kept in perfect order. If there is hypertrophy of the heart, give potassium bromide and convallaria. All use of the eyes should be absolutely forbidden. A light bandage may perhaps facilitate the absorption of the blood.

**A Needed Reform in Visual Records.**—Wilson ("Amer. Jour. of Ophth.," Dec., 1887) advocates a reform in recording the results of the examination of vision. For clinical purposes, he thinks it a safe assumption that visual acuity may be measured by the ratios between the heights of the smallest letters distinguished at a given distance from the eye, and that these ratios may be expressed in terms of the series 1, 0·9, 0·8, 0·7, etc., 0·09, 0·08, etc., the intervals of which can be made to serve all necessary accuracy. Thus, instead of writing $V = \frac{20}{20}$, $\frac{20}{40}$, $\frac{20}{100}$, $\frac{18}{200}$, $\frac{10}{200}$, etc., we may write V = 1, 0·5, 0·2, 0·9, 0·05, etc. If $a$ equals the height of the five-minute letter for twenty feet, $y$ that of any other letter, and $v$ the expression for visual acuity, then $y = \frac{a}{v}$ expresses their relation, and since the height of the letters is proportional to the greatest distance at which they can be distinguished, the same values of $v$ substituted in $x = \frac{20}{v}$ will give $x$, which is the number of feet at which these letters with the height $y$ can be read. To carry out the plan thus proposed involves the construction of a new series of test-types, but, in default of this, the ordinary Snellen card may be used, the numbers corresponding to the new values of V, as follows: Snellen Nos. XX, XXX, XL, L, LXX, C, CC. Visual acuity, 1·, 0·7—, 0·5, 0·4, 0·3—, 0·2, 0·1. For values less than 0·1, the patient should move toward the test-type, and we have $V = \frac{18}{200} = 0{\cdot}09$, etc.

**Results of Treatment of Convergent Strabismus by the Correction of the Refractive Error, with and without Tenotomy.**—Lang and Barrett ("Roy. Lond. Ophth. Hosp. Rep.," xii, 1) give the results of their observations extending over a period of four years. Their methods of observation were as follows: 1. The distant vision was tested for each eye with and without glasses. 2. The power of fixation of each eye was tested. 3. The movements of the eyes were examined, particular attention being given to the extent of the excursion outward of the squinting eye. 4. The angle of convergence was measured by a

modification of Landolt's method. 5. The iris and ciliary muscle were completely paralyzed with atropine, or with homatropine and cocaine. 6. The angle of convergence was again measured. 7. The refraction was estimated by retinoscopy, and the vision measured by the correcting glasses when practicable. 8. The full correction was ordered for each eye and the glasses procured and worn steadily, and the mydriatics were then discontinued. 9. The patients returned at intervals of three to six months. At these visits they were examined with respect to (A) The angle of convergence while the glasses were worn. (B) The angle of convergence when the glasses were removed. (C) The vision in each eye. (D) The presence of binocular or uniocular vision as ascertained by the colored letter-test. 10. In those cases in which this treatment did not produce satisfactory results the internal rectus was divided. The angle of convergence was measured immediately before and after the operation, and at the usual intervals of three to six months. In no case were the two interni divided at the same time. The authors draw the following conclusions: 1. The spectacle treatment of convergent strabismus produces a rapid and complete cure in about 10 per cent. of the cases. 2. In a larger number (33 per cent.) the cure continues so long as the glasses are worn. 3. The effect of this treatment is in direct ratio to the youth of the patient. 4. Spectacle treatment should therefore, in the great majority of cases, be adopted as an indispensable preliminary adjunct to any operative treatment. 5. If the spectacle treatment fails to produce absolute cure, a division of the internal rectus generally suffices, together with the use of glasses, to remedy the deformity.

**Œdema of the Suprachorioidea in Glaucoma.**—Schlegtendal ("Kl. Mon. f. Aug.," Feb., 1888) offers a very different explanation of the views of Stölting in regard to the fibrous network of the suprachorioidal space in glaucoma. He regards the phenomena here met with as artificial, produced by the process of hardening of the eyeball and the action of the celloidin in which the globe is imbedded for the purpose of making sections. To the same cause he attributes the folds in the iris and the detachment of the retina and chorioid, either together or both from the sclera, and also the very common detachments of the ciliary body from the sclera. The hardening process is brought about by the evaporation of the ether, which also causes a diminution of the volume of celloidin. The ether escapes not only outward, but also within the inclosing vessel which contains the imbedding mass, and here the process of shrinking meets with no hindrance. But the reverse is the case in the mass in which the eyeball is imbedded, for as the latter slowly shrinks it draws along with membranes behind which some celloidin also exists, such as the chorioid, and the celloidin enters the spaces of the suprachorioidea and produces the results seen with the microscope.

**Tumor of the Optic Nerve.**—Lawson ("Roy. Lond. Ophth. Hosp. Rep.," xii, 1) reports an interesting case in a boy aged twelve. Two months before, the left eye was first noticed to protrude, and this protrusion had steadily increased and the vision had steadily failed. The boy had complained of frontal headache and of pain behind the ear, but of no pain in the eye. The left eye protruded forward and downward, but the motility was still good. At the upper and inner part of the orbit a hard mass was felt, extending backward in close contact with the roof of the orbit. There was no nasal obstruction, no deafness, no posterior palatine growth, and no glandular enlargement. There was no perception of light in the left eye and the pupil was insensible to light. The optic disc was white, the margin blurred, and the veins were engorged and tortuous. The other eye was normal. An exploratory incision was made through the upper lid in a line parallel with the roof of the orbit, and a finger being passed into the orbit, detected a tumor which entirely surrounded the optic nerve. The eye was then enucleated with the tumor *en masse* and the wound through the upper lid closed with sutures. The tumor extended backward from the sclera about 23 mm. It was irregularly pear-shaped, the smaller end forward, and measured 18·5 mm. in diameter. Its surface was lobulated, and it was entirely inclosed within the sheath of the optic nerve. Immediately behind the eye there was a fusiform swelling of the nerve measuring 10·5 mm. in its greatest diameter at a distance of 10 mm. behind the eye. It then gradually tapered down to the point at which it was divided. Between the swollen nerve and the dural sheath was the new growth, which had a porous, speckled appearance. There were several small points of extravasation in the growth, and two small cysts close to the capsule. The new growth proved to be a sarcoma of the loose connective-tissue type, which was in places undergoing myxomatous degeneration. It probably grew from the connective tissue of the inner sheath, or from the loose tissue of the intersheath space.

**Tobacco Amblyopia.**—Doyne (*ibid.*) reports one case of uniocular central amblyopia in a man, aged thirty-eight, a tobacco smoker. The left eye remained normal throughout, and the central scotoma eventually disappeared from the right eye. In a second case, binocular central scotoma in a smoker, a man aged twenty-nine, Doyne adopted the plan of bandaging the eyes to exclude the light on the following theory: Admitting the hypothesis that there exists in the human retina a substance analogous to the visual purple, and that there is produced in it, by the action of light, a chemical change which gives the stimuli conveyed by the nerve-fibers to the brain, exciting there visual impressions, he deduces—1. That tobacco may have a toxic influence on this substance, inducing degeneration in it and thereby causing retinal exhaustion, especially in those who are debilitated from any cause or who are susceptible to its influence. 2. That the exhaustion shows itself in the failure of the more delicate color-sense. 3. That the exhaustion naturally takes place at the point of greatest retinal activity. 4. That the patients, as a rule, see better in dull light because there is less retinal exhaustion produced by its action.

**The Galvano-cautery in Conjunctivitis Follicularis.**—Reich ("Kl. Mon. f. Aug.," Feb., 1888) recommends the use of the galvano-cautery in this disease, and advises the cauterization of each individual follicle, first anæsthetizing the conjunctiva with cocaine. Small, grayish sloughs appear at the points cauterized, which are soon cast off, producing a loss of substance which rapidly cicatrize, and are so small that they do not produce any perceptible contraction of the conjunctiva in any direction. In fact, the conjunctiva retains almost intact its softness, elasticity, and vitality. A more extensive cauterization is not necessary in the early stages of follicular conjunctivitis, and thus the danger of the formation of extensive masses of cicatricial tissue is avoided. In the *culs-de-sac* a more extensive cauterization is permissible, and here a cautery with a larger surface may be employed. Where the follicular deposit is in the palpebral conjunctiva, the punctate cauterization is to be preferred, and in the case of the upper it should be very carefully done. Repeated cauterization of a few follicles at a time is better than one extensive cauterization of the whole diseased surface at a single sitting, so as to avoid producing any marked reaction. When there is considerable hyperæmia, swelling, and secretion of the conjunctiva, the galvano-cautery should be employed with caution, and it is better to wait until these inflammatory symptoms have been reduced before cauterizing the follicles. After the cauterization it is well to thoroughly irrigate the whole conjunctival surface with a sublimate solution of 1 to 5,000.

**Can Overuse of the Retina cause Organic Disease of the Fundus?**—Nettleship ("Ophth. Rev.," Feb., 1888) considers that the well-known predisposition of the optic disc and region of the yellow spot to inflammatory and degenerative disease, due to various local and constitutional causes, prepares us to admit the possibility that overuse of the retina may cause organic disease of the fundus. Still the only retinal affections which can at present be positively attributed to the effect of overuse are the temporary, though prolonged, exhaustion which occurs in endemic night blindness (torpid retinæ), and forms also a part of what is called snow-, ice-, and electric-light blindness, and which is not accompanied by any visible ophthalmoscopic changes; and the inflammatory changes which have in a few cases occurred on exposure to the intense light and heat of direct sun-rays. Some few cases, however, do occur of disease localized at the yellow spot in which overuse may have had a principal share in producing the result. The much commoner occurrence of similar cases without apparently any connection with too great functional activity of the retina does not weaken the suggestion that intense light or prolonged use are sometimes important factors in the production of neuro-chorioiditis.

**A New Practical Ophthalmometer.**—Leroy and Dubois ("Rev. gén. d'ophthal.," Feb. 29, 1888) have devised a new ophthalmometer which they describe as follows: A combination of two thick pieces of glass, with plane and parallel surfaces, mounted in a cubic box, is placed in

front of the objective of a telescope. These pieces of glass revolve around a common axis, so that in inclining the one on the other they produce double images of a point distant from each other any wished-for distance. A screw stops in the desired position each of the needles, the movement of which guides the corresponding glass plate. The telescope is composed of an achromatic objective of about 12 ctm., and a powerful ocular. A transverse graduated rule is fixed to the tube, and the length of the tube is so regulated that the distance of the object, seen exactly on the face of the rule turned toward the object, is 340 mm. This rule carries two sights, the images of which, reflected by the cornea, should be seen through the telescope. One of these sights is a white rectangle framed in black, and the other is a similar rectangle carrying seven stripes, 5 mm. wide, and alternately black and white. These enameled sights are mounted on a traveler, the reverse side of which carries a reading mark. The cubical box is fitted to the telescope by a ring which glides smoothly over the barrel, the posterior border of which is notched. A pin penetrating this notch so trims the box that the axis of rotation of the glass plates is normal to the rule. The telescope may be freely rotated round its axis, carrying the rule and the box. It carries a needle parallel to the rule, which moves along the arc of a semicircle graduated in distances of 5°, and indicates the inclination to the horizon of the meridian under observation. One or the other of the notches in the anterior borders of the cubical box and the upper edge of the rule, placed at zero, constitutes the line of direction which passes by the object when at the point of fixation. The notch opposite the division 90 in the upper edge of the graduated semicircle, and the point of the guidon fixed at the anterior extremity of the cubical box, determine a visual line, which also passes by the object when at the point of fixation. This plane and this visual line aid in aiming approximately at the point of fixation without looking through the telescope. A Placido's disc has been added to the apparatus for the measurement of irregular corneæ in the place of the cubical box.

**The New Local Anæsthetic, Hydrochloride of Erythrophlœine.**—Alt ("Amer. Jour. of Ophth.," Feb., 1888) describes this new drug as follows: The substance as obtained from the chemist was a fine straw-colored powder, readily soluble in water, and giving a clear, odorless solution. Some, of a one-tenth-per-cent. solution, when heated with sulphuric acid, assumed a yellowish-red tint. One drop of this solution instilled into the human *cul-de-sac* produced a noticeable anæsthesia of the conjunctiva in two minutes, which became profound in from seven to nine minutes. The cornea became anæsthetic much later; even after twenty minutes the cornea was still sensitive. The blood-vessels of the conjunctiva did not seem to be much affected, and the pupil and accommodation were not at all affected by a solution of the above strength. A disagreeable burning sensation was produced, which lasted for some time. The anæsthesia produced by one such drop lasted about four hours for the cornea.

**The Ocular Symptoms of Lepra and their Treatment.**—Panas ("Arch. d'ophthal.," Nov.–Dec., 1887) considers that the favorite location of the leprous tubercles in the eye is the sclero-corneal limbus. Thence they spread to the cornea, and extend both superficially and deeply, causing more or less opacity. As the lesion extends more deeply, the iris becomes involved, and posterior synechiæ are formed. In some cases real leprous nodules develop in the iris, independently of those in the cornea. The color of the conjunctival and corneal nodules is a yellowish-white, and they are sometimes vascularized. They cause but little pain or photophobia. The sensibility of the cornea involved is somewhat blunted to the touch, but the sensibility to pain produced by an operation is not so. The nodules under the microscope show a mass of lymphoid cells full of leprous bacteria. The corneal epithelium remains for a long time intact, unless xerosis supervenes, but the corneal tissue proper early becomes infiltrated, and the anterior chamber may be opened by the growing mass. The little tumors are dense and fibrous in consistence. If the disease is not checked, the cornea ulcerates through, the eyeball is perforated, and atrophy of the globe ensues. Panas recommends an early removal of all the nodules as completely as possible, and subsequent lotion of a solution of carbolic acid (1 to 2,000).

**Paralysis of Convergence in Progressive Locomotor Ataxia.**—Borel (*ibid.*) thinks that the division of the roots of the oculomotorius into multiple nuclei may explain the occurrence of this paralysis of convergence, since the nuclei of the internal recti occupy the median part of the floor of the aqueduct of Sylvius. It is supposable that a portion of the nucleus presides over convergence, and another portion directs the lateral movements. These examples of tabetic paralysis of the associated movements of the eyes certainly do not belong to the category of peripheral paralyses caused by ataxic neuritis. The muscular asthenopia of ataxy may easily escape recognition if the visual acuity of one or both eyes does not admit of a manifestation of the difficulties of convergence. The temporary character of these lesions in the associated movements of the internal recti muscles is a proof that they should be regarded as actual paralyses. No case can be regarded as belonging to this category in which the visual field is not normal. Moreover, the power of convergence is by no means always interfered with in ataxy; on the contrary, it may be markedly increased. Still, the center for convergence is frequently involved in the disease, but there is frequently no direct relation between the degree of the paralysis, measured by the perimeter, and the maximum of convergence. Sometimes the field-of-vision examination shows the oculomotorius to be intact, and here we attribute the cause of the variations of the amplitude of convergence to a concomitant lesion of several centers presiding over different movements.

**The Anatomy of Serpiginous Ulcer of the Cornea.**—Verdese (*ibid.*) takes up the origin of hypopyon in serpiginous ulcer of the cornea. In this disease it has been proved that Bowman's membrane is infiltrated with lymphoid cells, while in the membrane of Descemet no wandering cells have ever been found. In view of this fact, it has been considered that the probable cause of the presence of pus in the anterior chamber is a prolapse of the posterior limiting membrane and the passage of the pus-cells from the cornea through the rent into the aqueous humor. This view Verdese thinks must be modified, as he considers the presence of the hypopyum due directly to a rupture of the membrane of Descemet which is not a real elastic membrane, as has been proved by its reaction with coloring matters. According to Ranvier, the membrane of Descemet is extremely fragile. In specimens examined by Verdese the membrane at the point of rupture was found to be the seat of a finely granular transformation, due probably to the compression exerted by the collection of lymphoid cells in its neighborhood. The leucocytes found in the anterior chamber are comparatively so few that they may be readily assumed as coming entirely from the cornea through the rupture in the posterior limiting membrane. Those lymphoid cells which have by their gravity reached Fontana's spaces below here set up an irritation which causes infiltration of the sheath of the vessels with numerous leucocytes. The iris takes no part in this inflammatory process. The filament met with so often in this form of corneal trouble which is attached to the posterior surface of the cornea and floats in the aqueous humor, and which has been regarded as pathognomonic of a serpiginous corneal ulcer, must now be regarded as equally pathognomonic of a rupture of the membrane of Descemet. The little abscess which causes the rupture of the posterior limiting membrane and which infiltrates and separates the deep bundles of corneal fibers becomes the origin of a new ulcerative process which extends from behind toward the superficial parts. The incision recommended by Saemisch in these cases, which splits the entire ulcer, makes a communication between the deep and the superficial ulcerative processes, and thus enables the disinfecting agents to destroy the germs lodged in the tissues.

**Astigmatism.**—Bettremieux (*ibid.*) thinks that the blepharospasm met with so frequently in astigmatic patients is due to the existence of an instinctive closure of the lids in the interest of improved vision, and that instinctive closure is at some period transformed into an involuntary and at times painful veritable blepharospasm. He admits also the possibility that the contraction of the lids may produce a dynamical compensatory astigmatism which temporarily modifies the shape of the eye. Mydriasis is an important symptom if not produced by a drug, and provided it is not excessive but moderate, as in some cases of myopia. Bettremieux thinks that mydriasis of one eye may be induced by the irregular and spasmodic contractions of the ciliary muscle provoked by astigmatism in the other eye.

**Ophthalmoplegia Externa following Faucial Diphtheria.**—Evetsky (*ibid.*) reports several cases of this complication, one of them occurring

in his own practice, and gives a summary of the modern views on this subject. It is generally believed that the seat of the lesion of the oculomotor nerves in ophthalmoplegia externa is to be found in their nuclei. If we admit another locality it will be difficult to explain the existence of an isolated paralysis of the external ocular muscles alone, while the internal ocular muscles, the nerves of which run in the trunk of the oculomotorius by the side of the other paralyzed branches, remain entirely intact. In addition to this purely theoretical consideration there are a large number of clinical observations in favor of the above view, such as the complication of ophthalmoplegia with bulbar paralysis. Still, many neuro-pathologists hold that the anatomical seat of diphtheritic paralyses must be looked for in multiple neuritis, and hence that they are not central but peripheral in origin.

**Electric Ophthalmia.**—Terrier (*ibid.*, Jan.–Feb., 1888) regards the ophthalmia produced by exposure to the electric light as a sort of ocular sunstroke, in which the membranes of the eye react much more violently than the skin. The ocular conjunctiva, which is exposed to the action of the electric light, is much more actively congested than the parts which are concealed by the lids. The action of the calorific rays in the production of this congestion may be entirely neglected, but we are not yet in a position to decide whether the active congestion is due to the chemical or luminous rays.

**Binocular Vision after the Operation for Strabismus.**—Landolt (*ibid.*) formulates his conclusions on this subject as follows: If the case is one of inveterate strabismus of a high degree; if the vision of the deviating eye is very defective, or if there exists such a difference in the refraction of the two eyes that there is great difficulty in fusing the two retinal images; or in all the cases in which the orthoptic treatment fails and an operation is necessary to render the eyes parallel—the restoration of binocular vision is a desideratum very much to be desired, and to be brought about by any means in our power. The treatment should commence by the correction of the astigmatism and the hypermetropia; this should be followed by the experiments with the colored glass and the flame of a candle, and then by that with the stereoscope; finally, the experiment of Hering should be carried out, which usually institutes a cure.

**Cataract Extraction with Irrigation of the Anterior Chamber.**—Panas (*ibid.*) gives the results of 460 extractions of non-traumatic cataract done at the clinique of the Hôtel Dieu since April, 1884. From May to the end of December, 1884, 50 extractions were made, without iridectomy, with irrigation of the anterior chamber by a solution of mercuric biniodide (1 to 20,000). Of these, 48 were complete successes, in one case there was secondary pupillary occlusion, and in one case the eye was lost by purulent irido-cyclitis coming on seven days after the operation. In 1885 there were 109 extractions, with 101 complete successes and 8 imperfect successes from pupillary obstruction. In 1886 there were 87 extractions, with 84 complete successes, 2 imperfect results, and one eye was lost from purulent iritis, beginning on the second day after the operation. In 1887 there were 213 extractions, in 115 of which the irrigating fluid employed was the mercuric biniodide, and in the remainder a saturated solution of boric acid was used. There was no case of suppuration, but there were 11 cases of plastic iritis and 14 cases of incarceration of the iris. Of the group of 115 cases, 66 were perfect results, 27 were fairly good, and 20 were imperfect. Among the entire number of 460 extractions, incarceration of the iris occurred 23 times, suppuration with total loss of the eye occurred in 2 cases, there were 31 cases of imperfect vision, and 437 cases of good vision.

**One Hundred Consecutive Cases of Cataract, Mature and Immature, treated by Intra-ocular Injection.**—McKeown ("British Med. Jour."; "Amer. Jour. of Ophthal.," Jan., 1888) presents the statistics of 100 cases of cataract, of all degrees of maturity and immaturity, in which he employed intra-ocular injection. Among the 100 cases are a large number of cases of striated cortex with clear triangles interspersed, through which portions of the fundus could be seen. There were 81 cases of idiopathic uncomplicated cataract, 5 cases of complicated cataract, and 14 traumatic cataracts. Of the 81 cases, 13 patients before the operation could see to go about; 9 had striated cortex with transparent triangular areas. Among the 81 cases, there were 8 cases of loss of vitreous, only 2 of which occurred during injection. There was 1 case of panophthalmitis occurring three weeks after operation. There were 3 cases of severe iritis; of these, one patient now counts fingers at four feet, another at one foot, and another at six inches. Vision in all three is capable of improvement. There were 3 cases of iridocyclitis and chorioiditis. In all the cases operated upon, except 30, distilled water at the temperature of the body was injected, and in no case was there any evidence of intra-ocular inoculation. The force employed in the injection does not seem to have produced any dangerous results. Panas's solution was injected in 30 cases. In 2 cases it did not prevent suppuration of the cornea and panophthalmitis, and McKeown thinks it may induce iritis. He also thinks that the method of contracting the pupil by pouring eserine solutions into the *cul-de-sac* is quite as effectual as De Wecker's method of injecting it into the anterior chamber. He does not apply the bandage until the pupil is well contracted. The instrument used in the injection should be so constructed and capable of exercising such force as to clear out the remains of the lens without regard to tension. McKeown considers iridectomy unnecessary except in very immature cataracts. The method of intra-ocular injection may be used in every sort of extraction except the removal of the lens in its capsule.

**The Operative Treatment of Zonular Cataract.**—Little (*ibid.*) confines his observations to those cases of ordinary uncomplicated zonular cataract in which there is no arrest in the development of the eye, no shrinking of the lens, and no vitreous opacity or deeper seated disease. When destruction of the lens is decided upon, he recommends a free crucial incision of the capsule with a needle, and two or three days later he performs extraction by means of a Teale's suction instrument. He recommends destruction of the lens in all cases of a progressive character, and also in non-progressive cases where vision equal to $\frac{20}{50}$ can not be obtained, after dilating the pupil with atropia. The suction operation he performs as follows: The pupil being dilated, a free rupture of the capsule is made, extending entirely across the pupil, and another one at right angles to the first. A light bandage is then placed over the eye for two or three days, and atropia freely employed. Then an incision is made in the outer part of the cornea, midway between limbus and center, with a double-cutting edged needle. Through this wound the curette is introduced into the area of the pupil, and suction is then applied by the mouth, and the pupil thus easily and rapidly cured. Atropine is then instilled, a bandage applied over both eyes, and the patient placed in bed. In the course of a week or ten days recovery may fairly be expected.

## Miscellany.

**The New Jersey State Asylum for the Insane at Morristown.**—The following is the text of Dr. Edward C. Booth's letter to the board of managers, dated July 18th, tendering his resignation as medical director:

In the year 1886, at your request, after some years' service as assistant physician, I accepted the office of medical director of the State Asylum for the Insane at Morristown. I did this with some misgivings as to the working of the new system; but I was encourged by assurances of the hearty support of the managers and the warden, with whom my personal relations had been most kind. The system is faulty, and the best results can not be obtained under it; yet, with a competent and reasonable man, devoted to the welfare of the patients, at the head of each department, its defects might be to a considerable extent remedied. It is not for me to say whether I am such a person; but it is only justice to declare plainly that, in my judgment, the warden is not; and in this view I am confirmed by the practically unanimous opinion of those who have had an opportunity to know how he has discharged his duties. I say this with no ill-will to the warden, with whom I have always been able, though at times with difficulty, to keep up the outward forms of courtesy. The medical department has been made so dependent upon that of the warden that any mismanagement on his part is immediately felt therein. I sought to correct the evils that

arose by exercising the power given to me and by defending the medical department from the warden's repeated encroachments. Thus, when the regular diet prescribed and furnished by him proved unfit, the physicians resorted freely to their power to order special diet, taking pains to cause as little inconvenience as possible. When these orders were disobeyed, as they were continually, my only resource was to complain to your board. This I did, avoiding for a time complaints of the warden's deficiencies in his legitimate department. When, however, a public investigation was ordered, through no act of mine, I considered it my duty to disclose as fully as possible all neglects that affected the comfort and treatment of the patients. It was my hope that the managers, who alone have the power to introduce reforms, would assume an impartial attitude. It was, therefore, a painful surprise to me to find that before hearing the evidence several of them had openly taken sides with the warden, resenting the offer of evidence of his mismanagement; and that the exposure before the Legislative Committee of abuses which it was impossible to conceal truthfully was regarded by some of the managers as an attack upon themselves. The discharge of one of my assistants, Dr. McFarlane, a physician of high character and promise, for no offense other than in zealous service in the investigation ordered by the Legislature, including a call made by him at my request upon one of the employees of the warden's department, to procure her statement, a discharge made without consulting me and, so far as I can learn, without consulting any officer of the asylum except the warden, together with the fact that it seems to be the settled policy of the managers and the warden to inflict the penalty of summary dismissal upon any employee who should testify to abuses, destroys all presumption of a serious determination to reform the management. Apart from these considerations, my position has long been most painful from the consciousness that I could not secure proper treatment of the patients. Accordingly, I am constrained to add my name to the long roll of physicians who during the last three years have for similar causes resigned their offices in the Morris Plains asylum, and hereby tender to you my resignation as medical director. By the terms of my engagement you are entitled to three months' notice, but I request the board to fix as early a date as possible for my relief. It remains only to say that in leaving the asylum, where I have spent nearly six years of my life, I desire to retain in memory only the personal courtesies I have received, and to express the hope that this magnificent building, which will stand for generations after the present differences and difficulties are forgotten, will yet amply fulfill the noble purpose for which it was erected.

**The Southern Surgical and Gynæcological Association** will hold its annual meeting at Birmingham, Ala., on the 11th, 12th, and 13th of September. The preliminary programme is as follows:

The President's Annual Address, by Dr. W. D. Haggard, of Nashville, Tenn.; The Annual Oration, by Dr. W. F. Hyer, of Holly Springs, Miss.; "Floating Kidney, with Vicarious Menstruation," by Dr. DeSaussure Ford, of Augusta, Ga.; "Gastrostomy," by Dr. W. B. Rogers, of Memphis, Tenn.; "The Medical Treatment of Fibroid Tumors of the Uterus," by Dr. Bedford Brown, of Alexandria, Va.; "Indications for Operative Interference in Cerebral Troubles," by Dr. T. O. Summers, of Jacksonville, Fla.; "A Case of Tubal Pregnancy presenting Interesting Medico-legal Relations," by Dr. E. P. Sale, of Aberdeen, Miss.; "Superinvolution of the Uterus following Trachelorrhaphy," by Dr. Virgil O. Hardon, of Atlanta, Ga.; "Dermoid Cysts of the Coccygeal Region," and "Electrolysis in Gynæcology and Surgery," by Dr. E. J. Beall, of Fort Worth, Texas; "Alexander's Operation," by Dr. W. L. Nichol, of Nashville, Tenn.; "Hysterectomy in Cancer of the Uterus," by Dr. W. H. Wathen, of Louisville, Ky.; "The Extravagancies and Impracticable Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is concerned," by Dr. J. M. Taylor, of Corinth, Miss.; "Treatment of Fractures with Plaster-of-Paris Splints," by Dr. W. F. Westmoreland, Jr., of Atlanta, Ga.; "The Present Status of Electrotherapeutics in Gynæcology," by Dr. J. R. Buist, of Nashville, Tenn.; "Antiseptics in Surgery and Gynæcology," by Dr. F. T. Meriwether, of Asheville, N. C.; "The Attitude of Removal of the Uterine Appendages for the Cure of the Convulsive Neuroses," by Dr. W. Locke Chew, of Birmingham, Ala.; "Interesting Cases of Surgery," by Dr. R. M. Cunningham, of Pratt Mines, Ala.; "My Antiseptic Bags, or Practical Aseptic Surgery," by Dr. J. W. Long, of Randleman, N. C.; "The New Departure in Uterine Therapeutics—the Dry Method," by Dr. T. A. Means, of Montgomery, Ala.; "A Study of the Various Methods of Treatment of Laceration of the Perinæum and Rectocele, with Report of Cases," by Dr. J. H. Blanks, of Meridian, Miss.; "Report of a Case of Spinal Concussion," by Dr. John R. Page, of Birmingham, Ala.; "Fractures of the Forearm," by Dr. John Brownrigg, of Columbus, Miss.; "Some Practical Thoughts in Surgery," by Dr. James Guild, of Tuscaloosa, Ala.; "Perineal Lacerations," by Dr. M. C. Baldridge, of Huntsville, Ala.; "Electrolysis in the Treatment of Urethral Strictures," by Dr. S. M. Hogan, of Union Springs, Ala.; "The Field and Limitation of Laparotomy," by Dr. I. S. Stone, of Lincoln, Va.; "Operative Procedures in Hypertrophy of the Prostate," by Dr. R. D. Webb, of Birmingham, Ala.; and a discussion on "Abdominal Surgery." Dr. John Herbert Claiborne, Dr. Duncan Eve, Dr. Paul F. Eve, Dr. W. T. Briggs, and others will present papers, but as yet have not stated their subjects.

**The Lehigh Valley Medical Association** will hold its eighth annual meeting at the Paxinosa Inn, Easton, Pa., on Wednesday, August 15th. There will be an address by the president, Dr. W. B. Erdman, of Macungie, also an address on "The Treatment of Lung Cavities," by Dr. Thomas J. Mays, of Philadelphia.

**The Health of Boston.**—During the week ending Saturday, August 4th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: 22 cases of diphtheria and 5 deaths; 7 cases of scarlet fever; 14 cases of typhoid fever and 2 deaths; 7 cases of measles. There were also 28 deaths from consumption, 4 from pneumonia, 2 from whooping-cough, 14 from heart disease, 2 from bronchitis, and 10 from marasmus. The total number of deaths was 244, against 260 in the corresponding week last year.

**The Health of Michigan.**—It appears from the State Board of Health's summary of returns for the month of July (the four weeks ending July 28th) that, as compared with the same month in the preceding nine years, there was no disease more prevalent, while intermittent fever, remittent fever, diarrhœa, cholera morbus, diphtheria, cholera infantum, amygdalitis, and pulmonary consumption were less prevalent.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending August 3d:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending July 14th corresponded to an annual rate of 15·7 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 10·6, and the highest in Bolton, viz., 28·5 in a thousand. Small-pox caused 6 deaths in Preston, 1 in Bolton, 2 in Sheffield, and 1 in Leeds. Diphtheria caused 2 deaths in Manchester.

*London.*—One thousand two hundred and eighty-eight deaths were registered during the week, including small-pox, 1; measles, 26; scarlet fever, 18; diphtheria, 24; whooping-cough, 32; enteric fever, 12; diarrhœa and dysentery, 72; simple cholera and choleraic diarrhœa, 3. Diseases of the respiratory organs caused 164 deaths; different forms of violence, 56; and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 15·7 in a thousand. In greater London 1,563 deaths were registered, corresponding to an annual rate of 14·8 in a thousand of the population. In the "outer ring" 6 deaths from whooping-cough and 13 from diphtheria were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending July 14th in the sixteen principal town districts of Ireland was 19·8 in a thousand of the population. The lowest rate was recorded in Kilkenny, viz., 4·2, and the highest in Drogheda, viz., 38·1 in a thousand. In Dublin 153 deaths were registered, including whooping-cough, 8; enteric fever, 1; scarlet fever, 4; typhus, 1; and diarrhœa, 6.

*Scotland.*—The deaths registered in eight principal towns during the week ending July 14th corresponded to an annual rate of 16·1 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Perth, viz., 9·6, and the highest in Aberdeen, viz., 19·2 in a thousand. The aggregate number of deaths registered from all causes was 406, including measles, 3; scarlet fever, 1; diphtheria, 5; whooping-cough, 8; fever, 3; and diarrhœa, 8.

*Martinique.*—The United States consul, in his dispatch dated July 2d, states that "the health of St. Pierre and Fort de France continues excellent. During the week ending June 30th there were officially reported in the whole island 325 new cases of small-pox and 28 deaths. The commune of Gros Morne, about twenty miles from St. Pierre, had 202 of these new cases and 4 deaths."

*July 7:* "During the past week there are officially reported 191 cases and 27 deaths from small-pox. There were no new cases or deaths in Fort de France, but there were 2 new cases reported in St. Pierre, with no deaths."

*Havana, Cuba.*—Twenty-one deaths from yellow fever and 4 from small-pox were registered during the week ending July 21, 1888.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Glasgow | July 14. | 545,678 | 165 | .. | .... | .... | .... | 1 | .... | 2 |
| Warsaw | July 7. | 444,814 | 217 | .. | .... | 6 | .... | .... | 8 | 4 |
| Calcutta | June 16. | 433,219 | 202 | 11 | .... | .... | .... | .... | .... | .. |
| Amsterdam | July 14. | 389,916 | 120 | .. | .... | .... | .... | 1 | .... | 2 |
| Rome | May 26. | 388,300 | 146 | .. | .... | .... | .... | 2 | .... | 1 |
| Copenhagen | July 10. | 300,000 | 95 | . | .... | .... | .... | .... | 5 | 5 |
| Munich | July 7. | 275,000 | 169 | .. | .... | .... | .... | 1 | 5 | 3 |
| Edinburgh | July 7. | 262,733 | 85 | .. | .... | .... | 1 | .... | 1 | 3 |
| Palermo | July 14. | 250,000 | 98 | .. | .... | .... | .... | 1 | .... | 5 |
| Genoa | July 14. | 179,570 | 71 | .. | .... | 2 | .... | .... | .... | .... |
| Leipsic | July 14. | 170,000 | 77 | .. | .... | .... | .... | 1 | .... | 4 |
| Trieste | July 7. | 154,500 | 62 | .. | .... | 4 | .... | .... | .... | 3 |
| Toronto | July 21. | 130,000 | 25 | .. | .... | .... | .... | .... | .... | 1 |
| Stuttgart | July 14. | 125,510 | 43 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | July 7. | 122,000 | 29 | .. | .... | .... | .... | .... | .... | 1 |
| Havre | July 14. | 112,074 | 67 | .. | .... | 4 | .... | 3 | .... | .... |
| Barmen | July 7. | 109,000 | 41 | .. | .... | .... | .... | .... | .... | .... |
| Leghorn | July 15. | 94,423 | 37 | .. | .... | .... | .... | .... | .... | .... |
| Leith | July 7. | 74,320 | 20 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | July 14. | 65,028 | 41 | .. | .... | .... | .... | .... | .... | .... |
| Guayaquil | June 3. | 30,000 | 68 | .. | 5 | 1 | .... | .... | .... | .... |
| Guayaquil | June 10. | 30,000 | 63 | .. | 2 | .... | .... | .... | .... | .... |
| Curaçoa | July 20. | 25,000 | 5 | .. | .... | .... | .... | .... | .... | .... |
| Vera Cruz | July 19. | 23,800 | 16 | .. | .... | .... | .... | .... | .... | .... |
| Kingston, Can | July 27. | 16,216 | 4 | .. | .... | .... | .... | .... | .... | .... |
| Sagua la Grande | July 14. | 15,605 | 7 | .. | .... | .... | .... | .... | .... | .... |
| Cartagena, Cola. | July 7. | 13,000 | 8 | .. | .... | .... | .... | .... | .... | .... |
| Matamoras | July 14. | 12,000 | 13 | .. | .... | .... | .... | .... | .... | .... |
| Laguayra | July 14. | 7,428 | 3 | .. | .... | .... | .... | .... | .... | .... |
| Livingston | July 21. | 2,500 | 3 | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

*San Francisco, Cal.*—The secretary of the health department informed this Bureau, under date of July 23d, that "the health officer to-day received the following dispatch from Hong-Kong: 'Cholera epidemic terminated July 9th.' Every precaution will be taken by the Board of Health to prevent the landing of infected persons or baggage from China at this port."

*Nashville, Tenn.*—The secretary of the State Board of Health reported 48 cases of small-pox in Tennessee from its first appearance this year to July 24th. The cases were distributed as follows: Jackson, 1; Memphis, 26; Shelby County, 1; Nashville, 12; Obion County, near Union City, 5; Rutherford County, 3. The secretary also states: "Precautions taken promptly, viz., isolation, vaccination, and disinfection. Think we have the disease under control now."

*Buffalo, N. Y.*—The medical officer in charge of the Marine-Hospital Service reported under date of July 30th as follows: "Since my last report in reference to small-pox in this city, 3 new cases have occurred in the same district. All have been taken to the city pest-house. The health officers have vaccinated 16,000 people gratuitously in the Polish quarter. There have been no deaths thus far."

*Delaware Breakwater Quarantine Station.*—One of the seamen admitted to hospital from the brig Teneriffe, suffering from yellow fever, died in the hospital on the 27th instant. He had black vomit. The captain and the other seaman are convalescent. The vessel has been cleansed and fumigated, and is now being held in quarantine for further observation.

*Tampa, Fla.—Yellow Fever.*—Dr. J. P. Wall telegraphs as follows:

*July 29th:* "No new cases anywhere, and no sick."

*July 31st:* "One case at Plant City."

Instructions were given Dr. Wall to perform thorough disinfection of all dwellings and infected things in Tampa and Plant City, and similar instructions were sent to Surgeon Murray, at Manatee.

*Manatee, Fla., August 1st.*—The first two suspicious cases occurred last evening. Two others this morning. Manatee village guarded by 25 men. Suspicious houses have been disinfected. Probably 100 persons unacclimated, and liable to take the fever. No panic among the people. Inspection completed on the 27th of July.

*August 2d:* Three new cases reported.

*Sanford, Fla.*—The death of a baggage-master has been reported as of a suspicious character, and, although the local authorities deny the existence of any yellow fever, the circumstances will be investigated by Passed Assistant Surgeon John Guitéras.

*Jackson, Mich.*—Health Officer Mitchell reports that diphtheria prevails as an epidemic.

The following is the quarantine act which passed the Senate May 3, 1888, passed the House July 23, 1888, and was approved by the President August 2, 1888. Its provisions go into immediate effect, and the quarantine buildings will be erected as soon as practicable. Steps will be immediately taken to secure sites for the quarantines not now on Government land:

AN ACT to perfect the quarantine service of the United States.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That whenever any person shall trespass upon the grounds belonging to any quarantine reservation, or whenever any person, master, pilot, or owner of a vessel entering any port of the United States, shall so enter in violation of section one of the act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April twenty-ninth, eighteen hundred and seventy-eight, or in violation of the quarantine regulations framed under said act, such person, trespassing, or such master, pilot, or other person in command of a vessel shall, upon conviction thereof, pay a fine of not more than three hundred dollars, or be sentenced to imprisonment for a period of not more than thirty days, or shall be punished by both fine and imprisonment, at the discretion of the court. And it shall be the duty of the United States attorney in the district where the misdemeanor shall have been committed to take immediate cognizance of the offense, upon report made to him by any medical officer of the Marine-Hospital Service, or by any officer of the customs service, or by any State officer acting under authority of section five of said act.

SEC. 2. That, as soon after the passage of this act as practicable, the Secretary of the Treasury shall cause to be established, in addition to the quarantine established by the act approved March fifth, eighteen hundred and eighty-eight, quarantine stations, as follows: One at the mouth of the Delaware Bay; one near Cape Charles, at the entrance of the Chesapeake Bay; one on the Georgia coast; one at or near Key West; one in San Diego Harbor; one in San Francisco Harbor; and one at or near Port Townsend, at the entrance to Puget Sound; and the said quarantine stations when so established shall be conducted by the Marine-Hospital Service under regulations framed in accordance with the act of April twenty-ninth, eighteen hundred and seventy-eight.

SEC. 3. That there are appropriated for the purposes of this act the following sums, out of any money in the Treasury not otherwise appropriated, for the construction, equipment, and necessary expenses of maintaining the same for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine:

For the Delaware Breakwater quarantine: Construction of disinfecting machinery, steam-tug, warehouse, officers' quarters, and expenses of maintenance for the fiscal year eighteen hundred and eighty-nine, seventy-five thousand dollars.

For the quarantine station near Cape Charles, Virginia: For the purchase of site, construction of wharf, repair of present hospital build-

ings and officers' quarters, disinfecting machinery, steam-tug, expenses of maintenance for the year eighteen hundred and eighty-nine, one hundred and twelve thousand dollars.

For the South Atlantic Station (Sapelo Sound): Construction of disinfecting machinery, warehouse, wharf, small boats, and expenses of maintenance for the year eighteen hundred and eighty-nine, thirty-eight thousand five hundred dollars.

For the quarantine near Key West: Purchase of site, construction of disinfecting machinery, warehouse, small boats, steam-tug, hospital buildings and officers' quarters, expenses of maintenance for the year eighteen hundred and eighty-nine, eighty-eight thousand dollars.

For the Gulf quarantine (formerly Ship Island), provided for by the act of March fifth, eighteen hundred and eighty-eight, in addition to the amount appropriated by the act approved March fifth, eighteen hundred and eighty-eight: For the expenses for the year ending June thirtieth, eighteen hundred and eighty-nine, fifteen thousand dollars.

Quarantine station, San Diego Harbor, California: For the purchase of site and the construction of disinfecting machinery, warehouse, small boats, hospital buildings, officers' quarters, and for expenses of maintenance for eighteen hundred and eighty-nine, fifty-five thousand five hundred dollars.

For the quarantine station at San Francisco, California: Hospital buildings and officers' quarters, disinfecting machinery, warehouse and wharf, steam-tug, small boats, expenses for the fiscal year eighteen hundred and eighty-nine, one hundred and three thousand dollars.

For the quarantine station at Port Townsend: For the purchase of site, construction of disinfecting machinery, warehouse, small boats, hospital buildings, and officers' quarters, for expenses of maintenance for the fiscal year eighteen hundred and eighty-nine, fifty-five thousand five hundred dollars.

Approved August 2, 1888.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Varioloid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
| New York, N. Y. | July 28. | 1,529,444 | 1,002 | .. | .. | .. | .. | .. | .. | 13 | 19 | 35 | 23 | 2 |
| Philadelphia, Pa | July 28. | 1,016,758 | 459 | .. | .. | 3 | .. | .. | .. | 23 | 2 | .. | 1 | 2 |
| Chicago, Ill..... | July 28. | 800,000 | 399 | .. | .. | .. | .. | .. | .. | 7 | 7 | 5 | 8 | 7 |
| Brooklyn, N. Y.. | July 21. | 793,960 | 512 | .. | .. | .. | .. | .. | .. | .. | 8 | 19 | 1 | 5 |
| Baltimore, Md.. | July 28. | 431,879 | 219 | .. | .. | .. | .. | .. | .. | 2 | 2 | 1 | 2 | 1 |
| Boston, Mass.... | July 28. | 415,000 | 240 | .. | .. | .. | .. | .. | .. | 4 | .. | 7 | .. | 2 |
| Cincinnati, O... | July 28. | 255,139 | 115 | .. | .. | .. | .. | .. | .. | 2 | .. | 2 | .. | 1 |
| New Orleans, La. | July 21. | 248,000 | 125 | .. | .. | .. | .. | .. | .. | 1 | .. | 3 | .. | .. |
| Pittsburgh, Pa.. | July 31. | 230,000 | 101 | .. | .. | .. | .. | .. | .. | 10 | .. | .. | 3 | 1 |
| Wash'gton, D.C. | July 28. | 225,000 | 103 | .. | .. | .. | .. | .. | .. | 3 | 1 | 2 | .. | 8 |
| Detroit, Mich... | July 28. | 220,000 | 93 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 |
| Milwaukee, Wis | July 28. | 195,000 | 64 | .. | .. | .. | .. | .. | 1 | .. | 1 | 1 | .. | .. |
| Minn'p'lis, Minn | July 27. | 180,000 | 91 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. |
| Kansas City, Mo. | July 28. | 180,000 | 53 | .. | .. | .. | .. | .. | .. | 9 | .. | .. | .. | 1 |
| St. Paul, Minn.. | July 28. | 175,000 | 46 | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | 1 |
| Rochester, N. Y. | July 27. | 120,000 | 62 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Denver, Col..... | July 28. | 96,000 | 27 | .. | .. | .. | .. | .. | .. | 3 | .. | 5 | .. | .. |
| Toledo, Ohio ... | July 28. | 80,000 | 35 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Fall River, Mass | July 28. | 65,000 | 56 | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .. |
| Cambridge, Mass | July 28. | 64,079 | 40 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 |
| Charleston, S. C. | July 28. | 60,145 | 40 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Reading, Pa.... | July 30. | 60,000 | 33 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Wilmington, Del | July 28. | 57,000 | 32 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Evansville, Ind. | July 26. | 53,000 | 27 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Savannah, Ga... | July 27. | 52,827 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Lynn, Mass .... | July 28. | 50,000 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Manchester, N.H | July 28. | 41,000 | 24 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Galveston, Texas | July 20. | 40,000 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Mobile, Ala..... | July 28. | 40,000 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Portland, Me.... | July 28. | 40,000 | ..... | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. |
| Springfield, Mass | July 28. | 40,000 | 26 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. |
| Fort Wayne, Ind | July 30. | 39,000 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Wheeling, W.Va | July 28. | 35,000 | 12 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| E.Saginaw, Mich | July 28. | 33,800 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| New B'df'd, Mass | July 28. | 26,845 | 18 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Auburn, N. Y.... | July 28. | 26,000 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Haverhill, Mass. | July 28. | 25,000 | 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Jackson, Mich.. | July 23. | 22,500 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Newton, Mass.. | July 28. | 21,105 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Newport, R. I... | July 27. | 20,000 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Schen'ct'dy, N.Y. | July 30. | 20,000 | 8 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. |

NOTE TO HEALTH OFFICERS.—Several of the reports received can not be given for the reason that the name of the city was not stated.

**The Medical Corps of the Army.**—An army medical board will be convened in New York on October 1, 1888, for the examination of such persons as may be properly invited to present themselves before it as candidates for appointment in the medical corps of the army. Application for an invitation should be addressed to the Secretary of War, stating date and place of birth and place and State of permanent residence, and accompanied by certificates, based on personal acquaintance, from at least two persons of repute, as to citizenship, character, and moral habits. Testimonials as to professional standing, from the professors of the medical college from which the applicant graduated, are also desirable. The candidate must be between twenty-one and twenty-eight years of age and a graduate from a regular medical college, evidence of which, his diploma, must be submitted to the board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

## ANSWERS TO CORRESPONDENTS.

*No. 215.*—On the ground now occupied by the Post Office.

*No. 216.*—The last volume published, vol. viii, takes the work to the title "Medicine, Naval."

*No. 217.*—In Berlin.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

### A CLINICAL LECTURE
### ON SERUMURIA AND ITS TREATMENT.*

DELIVERED AT THE NECKER HOSPITAL, PARIS.

BY M. PETER,
PROFESSOR OF CLINICAL MEDICINE, FACULTY OF PARIS.

GENTLEMEN: I should like in this lecture to make you understand the synthesis of albuminuria, or rather *serumuria*, as I propose to call it, and I wish to show you how congestion can be transformed into inflammation, and how this last can degenerate.

It has been asked if the kidney was the organ that made the urine. In answer, it has been shown that it does not manufacture the urine, as we find urea in the blood, from which the deduction is drawn that urine is made in every part of the organism, so that the kidney only relieves the blood of its urinous elements. To prove this we have only to find out how much of the blood urea there is in urine. In blood serum we see 0·16 gramme of urea to 1,000 grammes of blood, and in the urine itself there is at least 19 grammes of urea to 1,000—that is to say, 100 times as much. What, then, is the part of the kidney that makes this marvelous selection from the blood, which results in such a complex product as urine? Is it the corpora malpighiana, or the tubuli contorti, or the tubuli recti? It is the glomerulus and the tubuli contorti; these last tubes are, as you know, tortuous, so that they will give a larger surface of contact. Bellini's tubuli recti are the vector tubes that carry to the summit of the Malpighian pyramids the urinary liquid that is secreted by the glomerulus and that selected in the tubuli contorti. But what is most interesting here is to show the part played by the vessels and the nerves. The renal plexus is certainly mostly an emanation from the great sympathetic, and anatomy with histology shows us that the renal artery constitutes, by an admirably constructed artifice, the Malpighian glomerulus. This is formed by a series of vascular loops surrounded by Bowman's capsule. The tortuous form of the arterial capillaries in the Malpighian corpuscle is intended to act in the same way as the tubuli contorti—that is to say, the surface is large, the circulation is *slowed up* as it were, and the extravasation of the serum of the blood is here accomplished.

But thus far we have not shown how the selection from the blood is made. The loops that form the glomerulus come out from the capsule in the form of arterial capillaries, which have very thin walls; they are covered by a sort of muscular sphincter that is supplied with nerve force from the renal plexus, and this acts by increasing or diminishing the pressure, contracting or dilating as it is acted upon by the nerve force. Here, then, is a constant modification, made at this point, in the circulation coming from the branches of the renal artery into the interior of the glomerulus. As for Bowman's capsule, it is made of a connective tissue that gives out projections to support the vascular loops. This is the circumvascular tissue, which acts a most important part in the secretion and extravasation of the liquid that constitutes urine; add to this that the tubuli contorti are lined with striated epithelium, and that the tubuli recti have a pavement epithelium, and you can see that the tortuous tubes play a considerable part in the selection and definite constitution of urine. The liquid that comes through the thin walls of the glomerulus may be called the *rudimentary urine*, and it is the striated epithelium of the tubuli contorti that continues the selection and constitutes the *definitive urine*.

Having said this much, let us see now what happens in certain physiological and pathological conditions. Take, for instance, pregnancy for the first and scarlatina for the second. In the last it is proved from cases of patients who have died in the acute stage of the disease while they had albuminuria that they had glomerulitis, with an inflammation not only of the corpuscles themselves, but also of the tubuli contorti—that is to say, of that particular portion of the kidney substance that forms the cortical substance. In fact, at this moment, by microscopical examination, and even by the naked eye, an enormous congestion of this part is seen, and, besides, there exists a kind of acute œdema of the whole of the kidney which increases the organ considerably in size. This is what pathological anatomy teaches us from an autopsy of an acute case of inflammation of the kidneys, a parenchymatous nephritis, in scarlatina. If this state persists, not only then is there inflammation with a violent hyperæmia, but also a tendency to phlegmonous inflammation itself, and in the tubes themselves will soon be found a considerable anatomical disturbance, an infiltration in the glomeruli, independent of the congestion of which I have already spoken; and besides, worst of all, in the tortuous tubes as well as in the tubuli recti, you will now find a degeneration of the epithelium. In place of its being clear, it is granular, discolored, and infiltrated, quite broken down in fact, and throughout the whole of the tubes there is a desquamation with a certain quantity of red and white globules and albumin, fibrin, etc., constituting a mass that ends at the Malpighian pyramids. You know that we may consider Bowman's capsule as the beginning of the tubuli contorti, so that the tortuous tubes are the continuation of the capsule; the tubuli recti are the tubes that follow, and in these also the same condition will be found, so that the whole trouble ends in what you see as casts or cylinders, and these are granular or granulo-fatty in nature or hyaline as the trouble is advanced or not. You can understand that this great congestion that commences in the glomerulus and that gives birth to a torrent that carries along with it all it comes across is dangerous; what happens is that the striated epithelium is first of all infiltrated, then swollen until it is broken up, and carried off in the shape of granular casts.

The most interesting part of all this trouble is the glomerulitis. After the congestion there is considerable pressure in the corpuscles, and not only is there an extravasation of the watery part of the blood serum, and

* Translated from stenographic notes by Thomas Linn, M. D., Paris, France.

salts, such as phosphates, carbonates, urates, etc.—in one word, all the substances held in suspension in urine—but there is also a loss of red and white blood globules. In all such autopsies as I have mentioned you will see that this fact is spoken of, but, according to my notion, there is not enough practical value derived from these facts as to treatment. There is also here a loss of *serum itself in its complete form*, and I wish here to return to the first part of this lecture where I said that it was not albuminuria but *serumuria*—that is to say, *that the totality of the serum with all its nutritive qualities was lost.* It is true that the red globules play an important part in vital functions, but it is none the less a fact that blood serum is the vector liquid of all that is nourishing in the blood, and if it is extravasated it is not only albumin that is lost, but all those grand life principles that the serum carries. The word serumuria is therefore much more exact and comprehensible than albuminuria. But in these cases there is not only serumuria; there is also a degradation of the whole kidney. The immense pressure in the glomerulus makes an inundation that carries along with it all the secreting epithelium of the tubes, and, gentlemen, you must understand that all vitality has its center in the cell structures. It is the cerebral cells that make thought, we do not know how. One finds it natural enough that an individual who has muscular atrophy has also certain lesions in the brain substance. Muscles are made up of cells which are the vital principles, and it follows that when the cells are diseased the muscle becomes atrophied, so that it carries in itself a power for good or evil that does not depend on the brain lesion. What is true for such cells is also true for the epithelial cells lining the kidney tubes, and, to come to the treatment of such states, it is the physician's duty to prevent this inundation that will sweep away the epithelial cells. So long as the condition is one of congestion alone, we can hope that the anatomical changes I have described have not yet reached a point of danger, and we may well believe that after the congestion has subsided the kidney will again continue its functions; but, if this inflammation is allowed to run on to a chronic phlegmonous form, it will then be too late to act, and I wish to insist on prompt and early action in all such cases. Without proper treatment the first red coloration of inflammation will be succeeded by a paleness of tissue, and this will be followed by a definite white color, an anæmia of the cortical substance, that only precedes by a little that of the tubes. The hyperæmia brings it to a phlegmonous inflammation, which last leads to a degeneration of the epithelium, and a replacement of the proper epithelium by a deeper sort, which has not the power of carrying on the function of the kidney. We have then what is called the *large white kidney*—large, because it is œdematous; white, because there is anæmia; and, most serious of all, it has lost the cells that carry on the selective action for the urinary secretion.

All this teaches us a great lesson. We know that the women who die of Bright's disease six, eight, ten months after confinement have a large white kidney, and there is evidence to prove that many of these women had been in fair health up to the time of pregnancy. The beginning of their troubles was a simple renal congestion, caused by the uterine plethora; and post-mortems of acute nephritis after scarlatina show that the commencement of the difficulty was a simple hyperæmia. The therapeutic indication is therefore evident: we must prevent such processes from becoming chronic, and our duty is to act on the striated epithelium; but, curious to say, it has no nerves. Like the cerebral cells, it acts of itself, *proprio motu*, so that the physician can not act directly upon it, but he can use indirect means to accomplish his purpose by working on the great sympathetic nerve and the renal arteries—that is, on those arterial capillaries that are controlled by the branches of the sympathetic nerve (which, by the way, is one of the few well-named nerves). So, then, when you have a pregnant woman who has albumin in her urine—that is to say, *serumuria*—you should help the Malpighian glomeruli which are in difficulties. That is, try to prevent their congestion from becoming so intense that the inundation of serum I have spoken of will weaken the tortuous tubes and destroy the secreting epithelium. And, gentlemen, you can do this in a very simple way by *revulsion.* You will find that when you order cupping with the scarificator over the lumbar region in persons who have albumin in their urine, you diminish its quantity, and, having done so, it is evident that the pressure on the glomeruli has been taken off. You have, above all, acted on that very sensitive part, the vaso-motor nerves of the afferent artery, and perhaps also on the efferent artery, which by its loops constitutes the glomerulus. So, then, diminution of congestion is the motto here in the acute stage; and later on order tincture of iodine painted over the renal region, or, when the disease is of a still more chronic order, apply yourself a series of cautery points with Paquelin's cautery. You should also give purgatives from time to time, as you will thus diminish the congestion by a sort of compensating fluxion of the intestines; and if to this treatment you add milk, you will pass through the kidneys a liquid that has no irritating action, and you will wash out, as it were, the parts that are inflamed. It is only in this way that I understand the use of milk in renal troubles, for it can not cause albumin to disappear from the urine, as you can easily see in our cases of Bright's disease, which are only transformed by its use into a chronic phlegmonous form of inflammation, that might possibly have been prevented if the congestion had been reduced in time. I hope you have seen that there is an active congestion, which may be physiological, like that seen in pregnancy, or pathological, what is called *a frigore*, and also the congestion seen in infectious diseases (scarlatina, small-pox, typhoid fever, erysipelas, diphtheria, cholera, etc.). There is in all such cases a kind of temporary fluxion that causes the blood serum to pass into the urine along with some blood cells.

We have seen what active congestion will do. Let us take up *passive congestion*—that which is most often seen following heart diseases. Here there is a relative stagnation of blood in the veins and an interference with arterial circulation, and there follows a proliferation of a solid nature into the intercanalicular connective tissue of the kidney tubes; there is first a hyperæmia, next a phlogosis, and last sclerosis. This is what is called the *heart kidney*, and it also ends by losing

its secreting power. These patients have first a diminution of urine, and it is altered in quality; there is an increase of salts, urea is much less in quantity, and, if the region is exposed to cold, congestion of the kidney follows with serumuria. So you see what a large part the circulation plays in renal lesions. Another one of these kidney troubles has also an arterial origin. You know that endarteritis of the very small arteries, called *arterio-sclerosis* or "capillary-fibrosis arteritis," is an alteration of these vessels by which they lose a part of their elasticity and contractility by fibrous degeneration. There is an irritation that is propagated to the surrounding connective tissue, and it is just in the same way that you must understand interstitial nephritis, and even sclerosis *en plaques*. There is an alteration of the artery first which is propagated to the nervous system, so that the lesion of the capillaries ends by destroying the nerves. Well, in the kidney it is much the same; we have small lumpy bodies and the disease runs from the periphery to the center, while in the other form of kidney disease the contrary takes place. The anomaly here is an increased secretion of urine. The fact is that the irritation is propagated from without inward, and as long as the tortuous tubes are intact they work on, and you have polyuria; but the urine is of bad quality, and does not contain much urea. Finally, there is an atrophy of the tubes and the glomerulus only remains at work, and the urine gets less and less abundant; the patient then has serumuria, and often symptoms of uræmia. You can understand that this form of nephritis is seen often in gouty people, in arterio-sclerosis, and in lead-poisoning. There is, finally, another degeneration, known as amyloid, that has also a vascular origin, that you will see sometimes in cases of prolonged suppuration in scrofulous subjects and in Pott's disease.

Serumuria, then, is the blood serum in the urine. By our usual reagents we see albumin, but in doing so we only see a part of what is lost, which is really serum with all its nutritious properties; but what I want to show you in taking this review of serumuria and the kidney troubles is the important part that the vessels play in such difficulties. Now what are the conclusions to be drawn from these facts? Well, for the amyloid kidney we can do but little, as the whole organism would have to be modified. For the endarteritic trouble we can do good by giving iodide of potassium, and, as I said before, by using revulsion; milk, too, is useful, but do not suppose that an *exclusive* milk diet will be of value. Most of these patients are already of a certain age, many are old, and their stomachs will not tolerate milk alone; you will find that they will vomit it, or else they will have diarrhœa or constipation and other digestive troubles. I advise, therefore, that you give small doses only of milk, four to five cups at most during twenty-four hours, with other light food. And as to iodide of potassium, it is only well supported when given in the amount of a gramme a day; if you push it to four or five grammes you will find that it will be badly supported in such cases, and do no good, but in small doses it can and does do much good. Such is the intelligent and effective therapeutic action you should take in kidney troubles. I should like here to mention two curious patients who prove my theory that kidney troubles have their ætiology in vascular difficulties. They are two ladies, who are well educated and capable of judging of their sensations, and they both have persistent albumin in the urine, which came from a pregnancy dating now some eighteen months ago, in both cases. They have been much improved by treatment, and so well do they know that the albumin is not only diminished, but also made to disappear entirely for a time, that they ask to have the cautery points applied over the kidney whenever they feel a curious symptom; this is a *pulsation over the renal region;* the beating of the renal artery is felt over the lumbar region in both these cases when there is a fluxion of the kidney, and at once the urine is diminished in quantity and albumin is found.

What does this prove? Simply that the sphincter of the efferent artery of the glomerulus is contracted and the renal artery beats. Revulsion causes this to cease and the urine to increase and the albumin to diminish. A very curious fact in regard to one of these ladies is that the pulsation was first felt after a violent fit of anger; so you see the part that even emotion plays in the renal function through the great sympathetic nerve. Fear, you know, also produces the same effects. The same patient two years ago was in imminent danger of death from an accident, and at once she had vertigo, vomiting, etc., while her urine fell to 250 grammes. I felt sure that there was a contraction of the renal vessels, and ordered first revulsion, but, that not acting as quickly as I liked, I applied the continuous current for twenty minutes at a time every day for a week, and the urine returned to its normal quantity.

The practical conclusion from all this is: every time you see a woman who complains of pulsation over the lumbar region, think of the glomerulus and bear in mind that it may be prevented from carrying on the renal function. Examine the urine always in pregnancy, in all the infectious diseases, scarlatina, etc.; if albumin is present, the important indication is to diminish the congestion of the renal vessels by the means of procuring revulsion that I have already mentioned, or others that you will learn of by experience, and you will then be doing what is rational and efficacious, and do real and permanent good, as is the physician's duty.

## Original Communications.

### THE ÆTIOLOGY OF CHRONIC OOPHORITIS: ITS RELATION TO TAIT'S OPERATION;

*WITH THE REPORT OF TWO SUCCESSFUL OPERATIONS.**

By ARCHIBALD McLAREN, M. D.,
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THE propriety of Tait's operation, so called, in certain chronic inflammatory diseases of the ovary and Fallopian tube, is so well established on sound surgical principles that it is entirely unnecessary for me to enter upon a discussion of the operation as a justifiable surgical procedure.

* Read before the Minnesota State Medical Society, June 21, 1888.

Like many other operations, it has been subjected to severe criticism, when the fault lay in the operator and not in the operation. Either it has been improperly performed, or patients have been operated upon who received no benefit, or who might have been relieved by a less radical course of treatment. But this does not disprove the fact that a certain number of women would be consigned to a life of misery and chronic invalidism, perhaps insanity, if not relieved by this same operation.

I have purposely confined this paper to Tait's operation for the relief of oophoritis, leaving out the various inflammatory diseases of the tubes which also call for this operation, for two reasons: First, that I might economize your time. Second, that I might emphasize the fact that in a large number of cases the chronic oophoritis was the permanent injury remaining after a salpingitis, the patient having recovered from the inflammation of the tubes, but with the ovaries hopelessly crippled.

It seems probable that some of the unjustifiable operations of the past may be accounted for by the chaotic state of our knowledge on the subject of the ætiology of acute and chronic oophoritis.

*Uterine Diseases.*—The writer of one of our best modern text-books says "chronic oophoritis is often a complication of uterine disease, and often results from prolapse." As this sentence occurs under the heading "Ætiology of Chronic Oophoritis," we must infer that the meaning of this first clause is that the uterine disease is the cause of the complicating oophoritis. To say the least, this is a very loose and indefinite statement. The only uterine disease which can produce either acute or chronic oophoritis is septic endometritis. The second clause of the foregoing sentence, "and often results from prolapse," is also a mistake, and again confounds cause and effect. When an ovary becomes inflamed, congested, and increased in size, as is always the result in acute inflammation, which is also the first stage of chronic inflammation, it usually becomes prolapsed from its own weight, dragging upon and stretching the ovarian ligaments; but to say that the prolapse of itself can produce either acute or chronic oophoritis is certainly a flight of imagination.

*Cold and Violence.*—Catching cold, external violence, blows upon the abdominal wall, and falls are all given as causes of oophoritis by different authors. That any of these causes can produce oophoritis is very doubtful—so doubtful indeed that, in looking for the cause of an ovarian inflammation in any given case, we may safely lay them all aside.

*Fevers.*—The exanthemata, typhus and typhoid fevers, and rheumatic fevers are given as causes of chronic oophoritis. Probably oophoritis is sometimes so produced, but I am sure that the number of cases must be very limited. In my short experience I have never seen such a case, and I find but very few reported cases.

*Cellulitis.*—Pelvic cellulitis and pelvic peritonitis are usually combined in the same case. Taking it for granted that a certain inflammation was originally cellular, then the broad ligament will be the seat of a secondary inflammation, usually an adhesive peritonitis. In such a case the peritoneal coat of the ovary will usually become inflamed, and we shall have an acute oophoritis. Such an ovarian inflammation usually clears up with the abatement of the acute stage of the cellulitis, but occasionally ovarian adhesions, combined with the physiological activity of the ovary, carry the inflammation on into a chronic oophoritis.

*Peritonitis.*—Peritonitis, if general, will produce an inflammation of the peritoneal coat of the ovary. The oophoritis is then but a part of the general disease. As a rule, peritonitis is either an accompaniment or, more properly, a symptom of the oophoritis. The poison which causes the oophoritis also produces the peritonitis.

*Septic Endometritis.*—Under this head and starting from this cause will be found the great majority of all cases of oophoritis. In nearly every case we shall be able to find, by close questioning, that the first symptoms of oophoritis were preceded by a metritis, and that this was caused by the passage of a dirty sound, the use of tents, a dirty surgical operation, a gonorrhœal infection, or a puerperal septic poisoning.

When septic matter passes through the uterus, follows the mucous membrane lining the Falloppian tubes, and enters the peritoneal cavity, there is set up a peritonitis, either local or general, depending on the amount and intensity of the septic poison so discharged. When the inflammation becomes general, the case will probably end fatally if the peritoneal cavity is not immediately opened, washed out, and drained like any abscess cavity.

If the poisoning is less in amount, adhesions will form and shut off the inflammation from the general peritoneal cavity; there will then result a pelvic abscess or an abscess of the ovary. If the discharge of pus from the tube takes place at or near the menstrual epoch, when the fimbriæ of the tube are adherent to the surface of the ovary, or in the intermenstrual period if the pus passes on to the ovary, the inflammation will then particularly attack this organ, and as a result we shall have either an abscess or an inflammation of the ovary.

In Delafield and Prudden's "Hand-book of Pathological Anatomy and Histology," of 1885, we find the following under the head of Oophoritis: "Inflammation of the ovaries occurs most frequently in the puerperal condition, either as part of a general peritonitis or as a primary affection." "Inflammation of the ovaries unconnected with the puerperal condition is not common, but it may occur in connection with acute or chronic peritonitis, or perimetritis."

From these statements we see that oophoritis is found post mortem in the great majority of cases after a puerperal septic poisoning. My observation has led me to fear childbed fever in women who have suffered or are suffering at the time of delivery from gonorrhœa, and the question occurs to me in this connection if a certain number of puerperal inflammations of the endometrium, tube, ovary, and peritonæum are not due to gonorrhœa which may have lain dormant as a gleet, a chronic gonorrhœa, or a leucorrhœa which is lighted up afresh by the confinement and easily passes to the peritonæum through the now patulous Falloppian tubes.

*Gonorrhœa.*—Aside from the puerperal period the greatest number of cases of oophoritis follow a gonorrhœal poi-

soning. Nearly all recent authorities are agreed upon this point, in so far as it affects acute gonorrhœa. But the position of Noeggerath—that septic metritis, salpingitis, peritonitis, and oophoritis may follow a latent or chronic gonorrhœa—is not so universally accepted.

As in all other septic inflammations, we see cases of gonorrhœa of different degrees of intensity. One man suffers from the severest form of acute gonorrhœal poisoning, while another man with his first clap has little or no inflammation; they are due to the same poisoning—in fact, may have been contracted from the same woman, the connections having taken place the same day. This is epecially true of gonorrhœa in women. The acute stage of the inflammation may attract little or no attention and the woman go on to have a chronic gonorrhœal inflammation, which is passed over as a leucorrhœa or as an endometritis. Let me state a case in point which came under observation a few months since:

Mr. M. contracted gonorrhœa from an illicit intercourse; before he was aware that he had the disease he had connection with his wife and she contracted the disease from him. His attack was of the severest type; hers was very mild indeed. The mucous membrane of the vulva and vagina was hardly inflamed at all. A mild leucorrhœa and a slight attack of urethritis were the only symptoms which led her to ask for advice. Despite active treatment, she went on to a septic endometritis and afterward to a pelvic inflammation of a very severe character, and to-day, several months since her first attack, she is still suffering from chronic gonorrhœal inflammation of both tube and ovary on the left side.

Reviewing the ætiology of chronic oophoritis, we find that the majority of all cases follow puerperal septic poisoning, and that nearly all the remaining cases are produced by a gonorrhœa.

A word as to the diagnosis and prognosis of chronic oophoritis in reference to Tait's operation. The symptoms are not diagnostic, because oophoritis is produced by and therefore combined with other surrounding inflammations, such as cellulitis, salpingitis, etc. The only true diagnostic points are the physical signs which we get from the bimanual examination.

When the ovary is rolled between the left index finger in the vaginal vault and the right hand pressed deeply into the anterior wall, we shall find that the ovary is somewhat enlarged, that it is very tender, and we shall produce the sickening pain which is truly characteristic. Painful defecation, painful and profuse menstruation, and dyspareunia are all diagnostic symptoms to be well considered in making a diagnosis.

The prognosis of a chronic oophoritis is not good. Many cases are undoubtedly cured by long courses of local combined with general treatment. The surest cure follows a pregnancy. I have now under my care a young lady who contracted gonorrhœal oophoritis during the first six months of her married life, her husband having had a stricture and a slight gleety discharge when married. She was under the care of one of the most eminent surgeons in the East for nearly a year; he advised a Tait's operation, to which she would not consent. At the end of a year the ovarian tenderness was so much improved that she returned to her husband. The ovary was still large, very tender on pressure, and lying prolapsed in Douglas's *cul-de-sac*. She soon became pregnant, her husband's gleet having been cured. One year ago she was delivered, and to-day she is entirely cured of her oophoritis. The ovaries are now of normal size and lie out of harm's way at their normal level.

All cases of chronic oophoritis, even though they can not be cured, do not necessarily call for Tait's operation. The severity of the symptoms and the effect of the disease upon the patient's nervous system must be the points to guide us in advising our patients.

In conclusion, let me briefly give the histories of two cases of chronic oophoritis in which the urgency of the symptoms led me to perform Tait's operation:

Case I. *Chronic Oophoritis following Puerperal Poisoning.*—Mrs. N., aged thirty-six, mother of six children, last confinement in November, 1886, when she miscarried at the fourth month. This, her only miscarriage, was followed by a slight attack of childbed fever. Rise in temperature and pulse. Lochia light-colored and quite offensive, with pain particularly referred to the right side. Mrs. N. was confined to her bed for six weeks and never again regained her health, nor was she able to leave the house until after her operation, performed some eight months after her miscarriage.

In December, 1886, one month after the miscarriage, her condition was as follows: Menses profuse, occurring at least every three weeks; duration six days. Pain before and after the flow. Suffers from very severe headaches, with intense soreness of the scalp. Is sleepless and excessively nervous, making it necessary to send her children away from home.

Examination shows bilateral laceration of cervix, with erosion of os. Uterus retroverted; left ovary prolapsed, enlarged, and very tender.

After months of persistent and careful local treatment, keeping her confined to her bed for the greater part of the time, with no relief from either her local pains or her general nervous debility, Tait's operation was advised and eagerly accepted.

On August 19, 1887, assisted by Dr. Stone, Dr. Wheaton, Dr. Spencer, and Dr. Wells, I removed both ovaries and tubes. Incision two inches and a half long. The left ovary was found adherent in Douglas's *cul-de-sac*, of about the size of a hen's egg, containing several small cysts. The fimbriæ of the left tube were adherent to the surface of the ovary. The right ovary was small and cirrhotic.

Silk ligatures which had been boiled in 1-to-500 bichloride solution were used for the pedicles; a continuous stitch of juniper-oil catgut was used to sew up the peritoneal wound, and three silver stitches were taken through the skin and muscles; 1-to-2,000 bichloride solution was used on the sponges and hands. The instruments had been first washed in 1-to-30 carbolic-acid solution, and then passed through the flame of a spirit lamp. I prepared my own sponges, first soaking them in dilute hydrochloric acid and then washing in running water, and finally in a 1-to-500 bichloride solution, in which they were kept until used.

The patient's temperature never went above 100·5° F., and this was on the eve of the second day. The pulse was never above 110. On and after the third day, temperature below 100°. The urine was drawn but twice during her whole convalescence, and but three quarter-grain suppositories of morphine were used during the same time. The bowels were moved on the third day by enema.

Ten months after the operation: On June 1, 1888, patient reports herself as being better than at any time since the birth of her first child. Walks for miles without pain, and can now perform all her household duties—not light by any means.

Has menstruated once since the operation. The uterus is in normal position. No tenderness or thickening, and her sexual life is now perfectly normal.

Case II. *Chronic Oophoritis following Gonorrhœa.*—Mrs. R., aged twenty-nine, first seen in January, 1888. Married seven years; one child three years old; pregnant but once.

During the first week of married life Mrs. R. commenced having pain and heat in the external genitals, painful and frequent micturition, and a creamy-white purulent discharge. Was confined to her bed. She had a severe attack of pelvic peritonitis. She soon entered Dr. Emmet's private hospital in New York. He told her that she had pelvic cellulitis and peritonitis, which she would probably never entirely get over. The inflammation of the bladder and urethra soon necessitated the opening of the bladder and permanent drainage, and local applications to the inflamed viscus.

Mrs. R. lived irregularly with her husband for four years, when she was divorced, intercourse having become too painful for her to submit longer. The brother of Mrs. R. tells me that Mr. R. had a stricture and a gleety discharge before marriage. He was told by his physician that there would be no danger in his being married.

Examination shows the right ovary large, exquisitely tender, and prolapsed. Uterus retroflexed.

Mrs. R. is a confirmed invalid, and spends over nine months of every year in bed. Suffers from the most severe pain in the side and back, especially at the menstrual period. Sleepless and excessively nervous; can not walk or sit without aggravating her pain. General and local treatment gave her no relief, and after five months of fruitless work I advised a Tait's operation.

*May 9, 1888.*—Assisted by Dr. Wheaton, Dr. Epley, and Dr. Wells, I removed both ovaries and tubes. Peritoneal wound two inches long. Cavity opened fifteen minutes.

Right ovary adherent to the posterior fold of the broad ligament, which was rolled over upon it. Ovary considerably enlarged, and of about the size of a small hen's egg. The stroma was congested and the seat of a fibrous hypertrophy. The left ovary was small and cirrhotic.

On the morning of the second day the temperature reached 100°. It immediately dropped, and on the morning of the third day was normal, and continued normal until the 9th.

Mrs. R. passed her own water. Was moved in bed from one side to the other, and I moved her bowels on the third day by a calomel purge, followed by a saline cathartic.

It is too soon to predict what the result of the operation will be as to her ultimate recovery, but I think she will soon be a well woman. This is certain: that she, like others of her class, can now thank God and Tait that there is a hope of deliverance from that life-long horror—chronic invalidism.

Note.—*July 20th.*—Mrs. R. is now up and about, is perfectly well of her former trouble, and, as she expresses it, is "better than at any time since marriage."

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# VARICOCELE IN THE FEMALE: WHAT IS ITS INFLUENCE UPON THE OVARY?

By A. PALMER DUDLEY, M. D.,
SURGEON IN CHARGE, ST. ELIZABETH'S HOSPITAL.

(*Concluded from page 149.*)

Case I.—Mrs. P., aged forty, married twelve years. One labor (instrumental); three abortions (produced). No history of menorrhagia or metrorrhagia. Some leucorrhœa. No vesical symptoms. Bowels very constipated. For the preceding ten years she had suffered from pain in the left side, increased by standing or walking. This pain was also felt in the back near the kidney. She had been treated by various physicians for spinal irritation, nervous prostration, etc., and in 1881 underwent an operation for lacerated cervix by Dr. Mann, of Buffalo (then of Hartford). For twenty months previous to my seeing her she had been able to sit up only about three hours each day, and to take a few steps across the room with assistance. She was brought to St. Elizabeth's Hospital on May 4, 1887, when I made my first examination of her. Digital touch showed the perinæum in good condition, the vagina about normal, the uterus in proper position, the cervix small and showing evidence of having been sutured. The endometrium appeared to be healthy. The broad ligaments were thickened and tender, while the ovary lay somewhat prolapsed behind the left one. Not being satisfied with an examination *per vaginam*, I made a careful rectal examination of the ligaments, and then discovered that, besides the prolapsed ovary on the left side, both ligaments contained a large cluster of dilated tortuous veins, giving just the same feel to the finger as that given by a varix in the scrotum. I advised laparotomy for her relief, believing I could tie the veins off and cure her, and I put her upon preparatory treatment for one week. On May 10, 1887, I did abdominal section and removed the ovaries and tubes, together with a large varix in each ligament, the left one the largest, the veins being nearly as large as my little finger. The tubes were not diseased, but both ovaries were atrophied and dotted with small cysts. The patient made a good recovery, her pain was relieved from the time of the operation, and four weeks later she left the hospital to return to her home. Fourteen months after the operation she writes that she is perfectly well and free from pain.

Case II.—Mrs. B., aged fifty-one, married thirty-three years. Had borne four children. No miscarriages. Last child born ten years and a half ago; labor rapid. She had never been well since, suffering all the time from pain in the left side. Never had had metrorrhagia, but had suffered from menorrhagia during the last two years of menstrual life. Menopause two years ago. Leucorrhœa to some extent. No vesical symptoms. Bowels much constipated. She had received treatment during the previous eleven years from sixteen different physicians without benefit, many diagnoses being made. She had been in bed most of the time for the past eleven years, and for the past three years had only got up to use the commode at the bedside. Her principal complaint during this time had been of pain at about the lower edge of the spleen, from there shooting down into the left groin. Careful physical examination of the abdomen by palpation, percussion, and auscultation showed nothing abnormal, except a prominent pulsation of the abdominal aorta (a diagnosis of aneurysm of the abdominal aorta had been made by one physician). Vaginal examination showed the uterus thrown back somewhat and fixed in its position, about normal in size, although the menses had ceased for nearly two years. There also seemed to be an enlargement to the left of the uterus in the broad ligament. Careful rectal examination showed the enlargement to be a mass of blood-vessels, and beneath it a strong pulsation of the uterine artery could be plainly felt. I made a diagnosis of varicocele, and advised the patient to come to New York for operation. She was brought to the city upon a bed, October 7, 1887. I at once put her upon preparatory treatment of milk diet, vaseline baths, etc.

On October 11th, in the presence of Dr. Smith, her family physician, and my assistants, I put her under the influence of an anæsthetic and made an incision, four inches in length, through the linea alba, sufficiently large to allow of the intro-

duction of my hand and wrist. I carefully examined all the abdominal organs before touching the pelvic cavity. Nothing pathological was found in the region where the pain was complained of. There were no adhesions about the spleen or intestines in that region. The spleen was small, the stomach normal, the transverse colon low, and the aorta normal, except that it bifurcated high up (behind the navel), and at the point of bifurcation the pulsation was prominent. Tracing the descending colon down, I found it bound to the left ovary and tube to the extent of an inch. The ovary and tube were atrophied, and the uterus was somewhat retroverted and adherent. Beneath the ovary and tube on the left side was the bunch of knotted varicose veins that I had previously diagnosticated by rectal touch. All adhesions about the parts were broken up, and as much of the ligament as could be drawn up, at the same time that gentle traction downward was made upon the ovarian vein. (From the extreme emaciation of the patient most of the ligament could be brought into view.) It was then quilted with the cobbler's stitch, commencing at the outer extremity, near the pelvic brim, and including all the ovarian vein that I dared to draw down. As I neared the uterine extremity of the ligament I passed the stitches deeper, quilting close to the pelvic floor, and in the last two stitches I included the round ligament so as to be able to remove about an inch and a half of it. The ovary and tube, together with the varicose veins, were then cut away. On the right side the vessels were not so large, but I wished to correct the displacement if possible at the same time, so I treated the right broad ligament in the same manner. The result of such a pronounced shortening of both broad ligaments can be readily understood. When I let go of the pedicles the tension upon the round ligaments at once sprang the uterus into a position of anteversion, where it remained at the time she left the hospital, nine weeks later. She never had a day's pain after the operation, and her after-treatment was simply with good diet and a nerve tonic of dilute phosphoric acid and strychnine in calisaya elixir. Her recovery was slow but steady, and when leaving the hospital she walked down two flights of stairs and out to the carriage. A letter from her daughter, received July 25, 1888, says that she is perfectly well, rises at 7 A. M., never thinks of lying down during the day, and goes to bed at 10 P. M. to sleep well all night.

I have reported this case somewhat at length owing to the fact that the patient had been bedridden for such a long time, and after the operation has returned to such perfect health.

Case III.—Mrs. L., aged fifty-three, married twenty-six years, entered the hospital January 24th. Menses first appeared at fifteen, regular but scanty, with pain in the sides and back. She had given birth to three children, the first by instrumental delivery. Had one miscarriage, between the first and second child; the last child born thirteen years ago. No history of metrorrhagia, menorrhagia, or leucorrhœa, but had had frequent and painful micturition. Locomotion painful. *Bowels much constipated.* General health poor. She had passed the menopause a year and a half. Had never had local treatment. Her symptoms at the time of entering the hospital were severe pain in the back and pain of a sharp, stinging character down through the left side and limbs, also pain in the stomach (dyspeptic). Her last confinement had been followed by some form of inflammation in the pelvis which confined her to bed twelve weeks. She gave no evidence of heart, lung, or kidney disease, except that the urine showed some phosphates, evidence that the kidneys were laboring. She was put upon the use of a strictly milk diet for ten days, and the urine then examined with a better result, the phosphates having disappeared. Digital examination showed the uterus small; also a small, tender thickening behind each broad ligament; the broad ligaments were thickened, boggy, and very tender to the touch. A rectal examination was made with the same result as in the two previous cases, except that the ovaries seemed somewhat enlarged. On February 9, 1888, I did laparotomy, and quilted both broad ligaments and removed all that I could of them; cleansed the abdominal cavity thoroughly and closed the wound. She made a good recovery. There is nothing in the after-treatment of her case worthy of mention. She left the hospital five weeks after the operation, relieved of the pain through her back and hips, but still suffering somewhat from the dyspepsia.

*Note.—July 26, 1888.*—To my personal knowledge she is now well and doing her own work.

This was the third case in which I had made a diagnosis of varicocele in the broad ligament, and done laparotomy for its removal. It was the most obscure of the three, the varix being the smallest, and on that account I determined to have a careful microscopical examination of the specimen made, to either confirm or invalidate my diagnosis. I gave the specimen for examination to Professor Porter, of the Post-graduate School, who had sections of it mounted and drawings made from them for me. The following is his report in full:

*Pampinocele.*—Upon microscopical examination of the ovaries, tubes, and broad ligaments removed by Dr. Dudley, the following conditions were found:

First, the ovaries were slightly enlarged and the seat of a few small cysts, some of which were filled with a clear serum and others with a semi-gelatinous substance. The stroma of the ovary was composed of ordinary white fibrillated connective-tissue substance (Fig. 1, *a*), smooth muscular fibers, and blood-

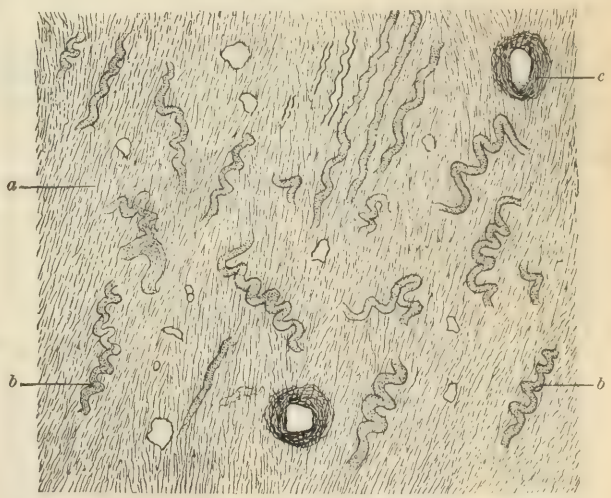



Fig. 1.—*a*, ovarian tissue; *b*, *b*, blood-vessels; *c*, an arteriole.

vessels. The walls of the arterioles and small arteries in the stroma were generally thickened (Fig. 1, *b*); in some the lumen was diminished, while in others it was expanded. This condition would naturally disturb the nutritive supply to the gland, and tend to produce a capillary engorgement.

Second, the Falloppian tube presented no special abnormity.

Third, the most marked pathological changes were found in the substance of the broad ligament, the pampiniform plex-

uses, and their tributaries. The pampiniform plexus was in a state of marked congestion, the walls of the vessels were thickened, and their course was unusually tortuous. That this engorgement was of long duration is sustained by the condition of the capillaries, which were found, upon microscopical examination, to be enormously distended and filled with blood in a state of partial pigmentary degeneration (Fig. 2, *b*), indicating

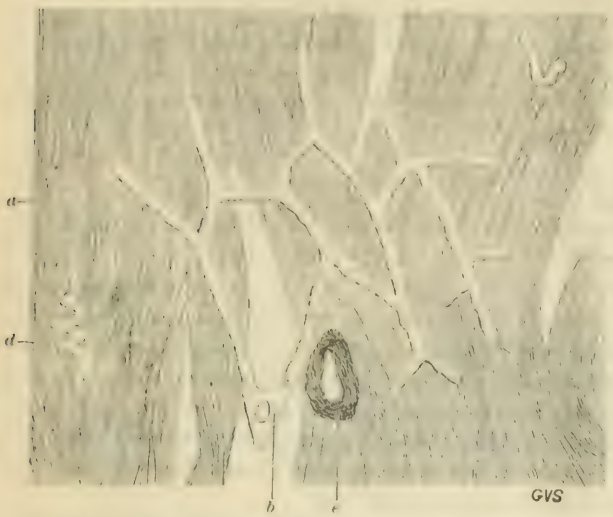



Fig. 2.—*a*, fibrous tissue of the broad ligament; *b*, dilated blood-vessel filled with blood-cells; *d*, convoluted blood-vessel; *e*, an arteriole.

considerable duration of the stasis. Under ordinary circumstances the capillaries collapse and can not be distinguished from the fibrillated connective tissue in which they are imbedded, unless an artificial injection is made, or they are distended by blood as the result of an acute or chronic congestion. Had the congestion been acute in character the capillaries would have been distended with red and white corpuscles, which could be

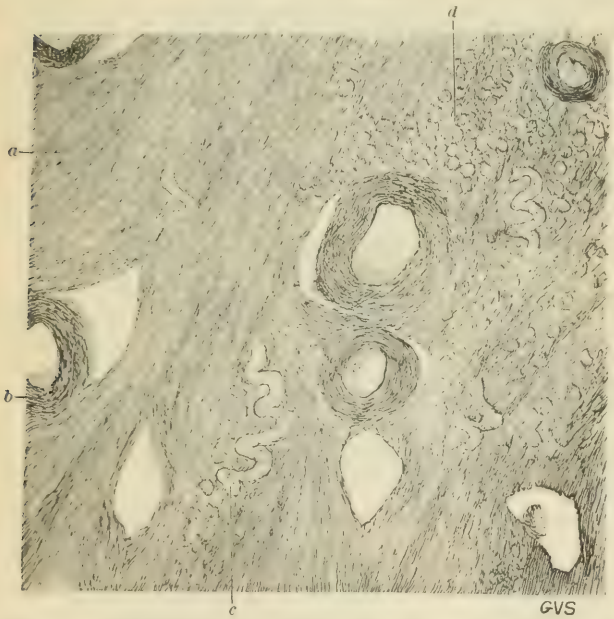



Fig. 3.—*a*, fibrous tissue; *b*, ligament, longitudinal cut; *c*, convoluted blood-vessel; *d*, fibrous tissue cut transversely to the axes of the fibers.

readily recognized as such. But in this case it was difficult to make out the corpuscles, but the vessels were very much distended by the blood-pigment matter, showing clearly that the engorgement was of long duration or chronic in nature.

The walls of all the veins were thickened and their course was quite tortuous, as we commonly see in varicose conditions (Fig. 2, *d*). The walls of the arteries were very much thickened; in some the lumen was contracted (Fig. 2, *e*), in others it was expanded (Fig. 3, *b*). This condition would naturally cause an irregular pressure to be maintained in the capillaries, and act as an element in producing the capillary engorgement (Fig. 3, *c*), which, together with the chronic congestion of the veins, explains the stagnation and pigmentary degeneration in the capillaries. The sections were made by Dr. Crowell, and the drawings made from them by Dr. George G. Van Schaick represent very accurately the great capillary congestion and thickening of the blood-vessels.

[Signed] William H. Porter, M. D.

Case IV.—Mrs. D., aged fifty, married thirty-two years, four children, one miscarriage. Matured at fifteen; regular, flow normal. All labors normal. Had suffered from profuse leucorrhœa and obstinate constipation. Locomotion painful. Menopause one year previous to my seeing her. Had been under the care of three different physicians for local treatment during the past two years. Complained of constant pain in the left side and back and across the abdomen. When she lay in bed this pain would at once disappear; half an hour after her taking the erect position it would reappear in the same spot. She had suffered so much that she was ready to do anything for its relief. I saw her first at my office, April 5, 1888. Examination showed thickening and tenderness on the left side only. The urinary analysis revealed some pus cells, but no albumin or casts. She was put upon the use of a strictly milk diet, with directions to drink freely of distilled water as well. These directions she faithfully carried out. She entered the hospital April 15th, when the urine was again examined, with negative results, with respect to albumin and casts, but there were still some pus cells. No evidence of cystitis existed, and the small number of pus cells was accounted for by the presence of some large crystals of oxalate of lime. I hesitated about giving her an anæsthetic under such circumstances, but afterward decided to do so, and on April 20th did the operation and removed the varix from the left broad ligament. Digital touch along the ureter to the kidney did not reveal any abnormity, still, on the fourth day after the operation, the pus cells in the urine began to increase until quite a number were present, and yet no pain or irritation about the bladder attended their presence; neither was there elevation of temperature or pulse, both having become normal, on the second day after the operation. The wound healed kindly and she returned to her home in sixteen days, with directions to watch the condition of her kidneys.

*Note.*—A letter from her, dated July 27, 1888, states that she has gained flesh, and has no pain through the back, but that the urine still contains some pus.

I do not consider this case an entire success, but the points of interest in it are the character of the pain caused by standing, the fact that it was entirely relieved by lying down, and the rapid increase of pus in the urine after the administration of an anæsthetic, its appearance being unattended by elevation of temperature or pulse.

My paper is already much longer than I intended, and the subject too great for me to attempt to touch upon all the conditions which may bear relation to it, but before summing up there is one point to which I wish to draw attention.

At the reading of this paper I raised the question as to what the influence of varicocele might be upon the ovary.

Then I had not received the report of the result of Professor Porter's examination of the specimens, and could only reason from analogy, believing that if a varicocele in the scrotum would in time produce atrophy and loss of function in the testicle (which is a well-known fact), the same condition of constant increased blood-pressure in the venous circulation of the ovary must necessarily produce analogous changes in that organ, which would cause a train of symptoms such as I have endeavored to describe and have demonstrated by operative measures to actually exist; and the result of the microscopical examination by Dr. Porter confirms the opinion I then held, while the drawings made from the mounted specimens are positive evidence of the changes which had taken place. Hence, to sum up—

1. It is my belief that varicocele in the broad ligament is not a rare condition.

2. That it is produced by long-continued congestion; arrest of uterine involution, from whatever cause, and chronic constipation being the most important factors in its production.

3. That it may exist and be mistaken for so-called cellulitis or salpingitis unless careful rectal examination of the broad ligament is made.

4. That it will produce changes in the structure and function of the ovary similar to those produced in the testicle, causing atrophy of its stroma, and interference with the proper development of the ova to such an extent as to produce cystic degeneration of it and consequent sterility.

5. That when the varicocele has existed for some time, or for a sufficient length of time to have caused a permanent dilatation of the veins, local treatment by counter-irritation (with Churchill's tincture of iodine), cotton tamponing, pessary support, or local depletion will be of no permanent benefit.

6. That the result of a radical operation for its removal in the four cases reported, although not sufficient to make the operation a justifiable one in all cases, is strong evidence in its favor, even though the woman has passed the menopause.

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## THE ACCIDENTS INCIDENTAL TO THE USE OF THE EXPLORING NEEDLE FOR DIAGNOSIS.*

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The object of this paper, in response to the request of your president, is to present some facts to form the basis of a discussion regarding the grave accidents and secondary septic complications that sometimes follow the use of the exploring needle for diagnostic purposes. My own attention was particularly directed to the subject recently by a case of pneumothorax followed by sudden death, produced apparently by an exploratory puncture with a hypodermic needle. This case was reported to this society in December.

I wish to say in advance that I would not be understood as in any way protesting against the use of the exploring needle for diagnosis in properly selected cases with necessary precaution, nor as suggesting that in the vast majority of cases there is any considerable danger attending its use; but I would protest against the routine indiscriminate and careless puncture of everything normal and abnormal upon insufficient grounds, when other signs and symptoms, and especially the physical examination, give more reliable information. The impression has arisen in the minds of a large number of the profession that this procedure is absolutely free from any danger, however performed and under whatever conditions resorted to. This is especially the case among hospital men. A member of the house staff of one of the large city hospitals recently said to me, in speaking of the nature of a pulsating tumor of the chest: "I know it is an aneurysm because I introduced a hypodermic needle into it and moved it around in all directions, thus proving it was a large cavity, and then withdrew a syringeful of blood." That in this case portions of stratified fibrin from the aneurysmal wall were not separated and set free as emboli was not the fault of the operator. So general is the belief in the absolutely harmless nature of this operation among the younger physicians that I believe few would think of ascribing to it any accidents occurring after its use, however close the relation to the operation.

I wish in these remarks to simply call attention to the fact that serious results do sometimes unquestionably follow the use of an exploring needle, and to report a few of the accidents that have occurred from its use.

I have made no attempt to collect a large series of cases or go carefully into the literature, scanty as it may be, as this was not necessary for my purpose, but have been content with a few cases illustrating the different kinds of accidents and secondary complications following puncture of different parts of the body with an exploring needle.

These may be divided into three classes:

1. Those accidents resulting directly or indirectly from the traumatism produced by the needle.

2. Those cases of septic infection produced by the inoculation of healthy tissues during the withdrawal of the needle through them after introduction into more deeply seated infectious matter.

3. Those cases of septic infection produced by the introduction of needles not properly disinfected into healthy or diseased tissues or fluids.

Under the first head, the accidents following from the traumatism produced by the puncture, the following cases should be recorded:

*Cases of Pneumothorax.*—The first case of this kind that came under the writer's notice was reported to this society in December.

In that case a patient came under observation for some pulmonary affection, and the physician in charge introduced a hypodermic needle into both sides of the chest. From the right side he obtained two or three drops of pus and blood. From the left nothing was obtained. The following morning the patient was found dead in bed. The autopsy revealed the presence of a very extensive interstitial pneumonitis with tubercular

* Read before the New York Clinical Society, February 25, 1888.

deposits in the left lung. The lung was very much contracted and occupied not more than half the space ordinarily filled by the normal lung. The heart was drawn to the left of the median line. The right pleural cavity was exceedingly large and was filled with air. The right lung was collapsed and compressed against the spinal column and contained scarcely any air. There were no adhesions between the two layers of the pleura, and there was no fluid of any kind in the pleural cavity. The lung was very carefully removed and inflated. Then, after placing it under water, an exceedingly small pin-hole perforation was found in the lower lobe near the free border. There were a few small tubercular nodules scattered through the lung, and extensive emphysematous changes. The tissues around the puncture seemed to be normal with the exception of a slight hæmorrhage at the point of puncture and the emphysematous condition found elsewhere. I believe that this perforation and the subsequent pneumothorax were due to the puncture of an emphysematous vesicle that, as was shown by the drops of pus, was situated over more deeply seated diseased tissue. The puncture remained patent and the pneumothorax followed. This interpretation, of course, is not susceptible to proof.

Dr. G. F. Lloyd, of the Flatbush Hospital, Brooklyn, has given me the history of the following case, which was apparently one of the same nature:

The patient was a Hungarian laborer, aged forty-one, and was admitted to the hospital with the following history: He fell on the ice a day or two before admission, and struck the right side of his chest against a curb-stone. On admission, the diagnosis was made of simple pleurisy with effusion, situated on the right side. There were ecchymoses in the skin over this side where he had struck against the stone. His temperature was 101·5° F. and his pulse 80. The patient did not seem to be very sick. A day or two after his admission a hypodermic needle was introduced into the right side and then into the left side. Serum was obtained from the right side. The left side appeared to be normal, and nothing was withdrawn through the needle. Four hours later the physician was called to see the patient because of severe dyspnœa. On examining the chest he found the intercostal spaces on the left side bulging, with tympanitic resonance over the whole side. Stimulation by hypodermic injections and by the stomach was resorted to without avail, and the patient died half an hour later with symptoms of intense dyspnœa and cyanosis. No autopsy could be obtained.

It seems to me that there is no way of accounting for the symptoms and signs in this case except by assuming the presence of pneumothorax. This followed immediately after puncture of the lung with a hypodermic needle in a man suffering apparently only from a simple pleurisy on the opposite side. The needle used was an ordinary hypodermic needle.

Dr. Thacher reported a similar case at the December meeting of this society. The history of his case was as follows:

"A child had some infectious disease, some pulmonary symptoms developed, and, in order to settle the diagnosis between broncho-pneumonia and pleurisy, the hypodermic needle was inserted on both sides. Within two or three hours intense dyspnœa developed, and the child soon died. The speaker made an autopsy. Both lungs were collapsed, and a puncture was found through the lower edge of both at the site where the physician said he had introduced the hypodermic needle. There was a slight amount of broncho-pneumonia. The speaker could account for the pneumothorax in no other way than on the supposition of puncture of the lungs by the hypodermic needle."

These cases of pneumothorax, it seems to me, are of special interest. So far as I know, attention has not been previously called to the occurrence of this condition after the use of an exploring needle. It probably would never follow the introduction of a needle into a perfectly normal lung. The conditions under which it would, perhaps, be most likely to occur are when the pleura is quite normal and the lung is diseased, and especially when there is a process of softening in the lung near the pleural surface, but not involving it.

It seems to me probable that there are cases of pneumothorax of less extent due to this cause, which do not produce symptoms marked enough to attract attention, and that there are other cases which are recognized, and in which recovery takes place, that may also be produced in this manner. A moderate degree of pneumothorax, existing on one side and gradually developed, would not be likely to produce very urgent symptoms, and, as the opening would probably be soon closed as the lung became partially collapsed and the air in the pleural cavity absorbed, the condition might easily escape recognition, and, if recognized, soon disappear. In all the cases reported above, where death occurred, it will be noticed that both lungs were involved and rendered practically useless.

I have obtained the notes of a number of cases of general peritonitis produced by oozing along the track of the needle after puncture of a distended gall-bladder. The first one was reported by Dr. A. B. Pope. The case occurred in the service of Dr. Ball in Bellevue Hospital:

A fluctuating tumor was found in the region of the gall-bladder, which was supposed to be a distended gall-bladder. A hypodermic needle was introduced, and immediately after its withdrawal the patient complained of intense pain in the abdomen. He said to the physician, "You have done me up this time, doctor." He died in three days of general peritonitis. At the autopsy, bile was found mingled with the peritoneal exudation.

Dr. Wylie, in the "Trans. of the New York Obstet. Society," March 2, 1886, described a similar case. Dr. Roosevelt reported a third case at the December meeting of the Clinical Society, and Dr. Janeway has given me notes of a fourth case of the same kind that he saw in consultation in private practice.

Dr. Wylie has also reported a case of fatal peritonitis produced by oozing of pus along the track of the needle in a case of perityphlitic abscess. A hypodermic needle was used for the puncture. Dr. Mundé has reported, in the "Trans. of the New York Obstet. Soc.," a case of suppurating dermoid cyst which he punctured with a hypodermic needle after opening the abdominal cavity, and on withdrawing the needle a drop of pus escaped. If this had been punctured through the abdominal wall, death would have certainly followed from general peritonitis. It illustrates well the mode of occurrence of such accidents. Cases of peritonitis have also been reported as following puncture of pyosalpinx and encysted pockets of pus in the abdominal cavity.

Gerster ("Aseptic and Antiseptic Surgery," p. 247) has reported a case in which death occurred from general peritonitis after puncture of a perityphlitic abscess, the needle having passed through the peritonæum.

The "Medical News" for January 1st contains the report of a case of sudden death following the introduction of an aspirator needle occurring in the practice of Dr. J. C. Reeve, of Dayton, Ohio.

The patient was suffering from abscess of the liver and it was decided to aspirate the liver. Immediately after the introduction of the needle the patient suddenly began to breathe heavily, and in a moment was dead. No anæsthetic was used. There was nothing found at the autopsy to account for the sudden death.

A German surgeon, whose name I have forgotten, has recently reported a case of removal of a large pancreatic cyst in which, previous to the removal, an exploring needle was introduced into the cyst for diagnostic purposes. A general peritonitis, lasting about a week, immediately followed, although the patient recovered, and the cyst was later removed.

Dr. Janeway has given me notes of the following case:

In a patient with suspected pericarditis with effusion an exploratory puncture of the pericardium was made by the physician in charge. The patient died soon after, and at the autopsy laceration of the heart was found, with hæmorrhage into the pericardium.

In the "Australian Medical Gazette" of June, 1887, a series of cases are reported where unfortunate results followed puncture of hydatid cysts. These are given with the report of a case in which symptoms of collapse terminating fatally followed immediately upon puncture of a hydatid cyst of the spleen. Only a few drops of fluid had escaped, when the patient went into collapse and died. Among the cases included in this paper are the following:

In the "St. Bartholomew's Hospital Reports," vol. xvi, the following case is reported:

A small hydatid cyst of the liver was punctured with a very fine trocar. Only a few drops of fluid escaped, when the patient died suddenly with the symptoms of shock.

In the "Lancet," vol. xxi, the following case was reported:

A very fine trocar was introduced into a hydatid cyst of the liver, and a few drops of fluid escaped, when the patient went into collapse and died in twenty minutes.

A number of cases are on record of death following puncture of hydatid cysts of the lungs. In most of these death has followed from escape of fluid into the lung and drowning; in others, as in the foregoing, collapse and death have directly followed the puncture.

Dr. Tingley, of the house staff of Bellevue Hospital, has given me notes of the following case:

A hypodermic needle was introduced into a large ovarian cyst; the following day the cyst was removed by operation, when a thin layer of colloid matter was found at the site of puncture between the abdominal wall and the cyst wall. Had not an operation been performed early, peritonitis would probably have followed.

Not properly belonging here, perhaps, is a case of continued oozing following puncture of an ovarian cyst with the aspirator needle reported by Dr. Lusk.

A case of circumscribed pleurisy following breaking of a hypodermic needle in the chest wall is also reported by Dr. Tingley.

Dr. A. A. Smith has called attention to the occurrence of cough with bloody sputum for several days after exploratory puncture of the lung, and Dr. F. S. Dennis has referred to a case of continued oozing from an aneurysm after puncture with a hypodermic needle.

It is possible that some of the cases included in this class properly belong in the second class.

The second class includes those secondary septic complications following the inoculation of healthy tissues in the withdrawal of the needle after its introduction into more deeply seated infectious material.

A case was reported at the December meeting of the Clinical Society by Dr. Roosevelt:

When, in the exploration of the chest in a case of empyema, the needle was introduced into the peritoneal cavity, through the diaphragm, and into the pleural cavity, a general peritonitis followed the exploration, probably produced by the infection of the peritoneal cavity by material remaining on the needle in its withdrawal, or perhaps by oozing along the needle track.

Dr. Janeway has referred to two cases of cellulitis of the back that had fallen under his observation which followed the introduction of an exploring needle into the lung in cases of fœtid bronchitis:

The cellulitis was of the gangrenous type, accompanied by subcutaneous emphysema, and was probably produced by the infection of the tissues with the material from the bronchiectatic cavities remaining on the needle when it was withdrawn.

An instance of mild septic infection of a similar nature has fallen under my observation.

In a case of encysted peritonitis attended with little rise of temperature the introduction of an exploring needle was followed by a chill and a temperature of 104° that continued for several days. A similar case is reported by Dr. Tingley. Following the introduction of a needle into a perinephritic abscess the temperature ran up to 106°. The infection in these cases may also have been produced by oozing along the track of the needle.

The third class includes the cases of infection of normal or diseased tissues or collections of fluid by inoculation of them with a septic needle. These cases occur most frequently, and are those most generally recognized and most easily avoided. But little requires to be said about them. There are but few clinicians of considerable experience who have not had the misfortune to see one or more cases of simple pleurisy changing into suppurative pleurisy after puncturing with a hypodermic needle. Several such cases have fallen under my own observation. I do not refer, of course, to those cases that become suppurative after aspiration, but to those that become suppurative after simple exploratory puncture. In some of these cases certainly, if not in all, the occurrence is not a mere coincidence, but is due to the infection of the serous fluid by a septic needle.

Similar cases of suppurative peritonitis following the introduction of a needle into the abdominal cavity in peritonitis have been observed. Dr. Lusk has reported two cases of suppuration in ovarian cysts following the introduction of an aspirating needle.

A similar result would be likely to result from this procedure under the same conditions in any form of cystic neoplasm or retention cyst, or in cases of collection of serous fluid in any pre-existing cavities. The occurrence of suppuration under such conditions is simply a question of inoculation of the tissues or fluids with septic organisms.

Reference should be made to the dangers and accidents following puncture of intestines distended with gas or liquid contents. There are numerous cases recorded where a general peritonitis has resulted from the oozing of fæcal matter through the wounds thus produced.

I especially desire not to seem to exaggerate the dangers following the use of the exploring needle or to overestimate their importance. The following remarks, however, are suggested and seem to be justified by the cases reported:

1. The employment of the exploring needle is not infrequently attended by considerable danger, and a number of deaths have directly resulted from its use.

2. The indiscriminate, careless, and routine resort to exploration with a needle should be condemned. This procedure should not be resorted to without careful consideration of the conditions obtaining in each case and the results that may follow the puncture. The site for the puncture should be thoughtfully chosen, the puncture carefully made with complete antiseptic precautions, and the smallest needle that will answer the purpose employed.

3. The puncture of collections of fluids with tense walls in relation with serous surfaces should be, as far as possible, avoided, and, if it is resorted to, sufficient fluid should be withdrawn to relieve the tension upon the walls of the sac. In many cases certainly an exploratory operation would be attended by less danger.

4. In the introduction of the needle into deeply seated infectious matter the nature of the intervening tissue should be carefully considered.

5. The needle before use should be always thoroughly disinfected, preferably by heating in the flame of an alcohol lamp or a Bunsen burner.

6. The skin where the puncture is to be made should be rendered thoroughly aseptic by first scrubbing with soap and water and then washing with an antiseptic solution.

7. The dangers attending the use of this valuable adjuvant in diagnosis should not in the slightest interfere with its employment in properly selected cases, where due precautions are observed as to its use.

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## SOME REMARKS REGARDING THE TREATMENT OF CHOLERA INFANTUM.

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Probably there are no diseases known among physicians which are so fatal in their results and common in our midst as the various derangements of the gastro-intestinal tract of the infant, especially during the hot summer months. In view of the importance of this very common disease, I have thought it proper to offer a few suggestions regarding its management, which, if not original, may at least tend to revive in the mind of the busy practitioner some details of value which have escaped his memory.

Having been called to a case of "cholera infantum," so called, in the great majority of instances it is wise to administer a purgative dose of castor-oil, ʒ j. At the same time a poultice of ground flax-seed, containing two tablespoonfuls of ground mustard, should be applied over the entire abdomen; it should be thick and warm. After remaining sufficiently long to redden the skin very markedly, it may be removed, and from four to six layers of flannel wound about the bowels, which flannel may be removed by degrees after recovery. It may be necessary to apply the poultice more than once. Very strict injunctions should be made against handling or tossing the child. He should be kept as still as possible, not held, but allowed to lie on a hard bed, in as cool a place as can be found. His pillow should be made of some hard material, preferably of the "excelsior filling," which does not retain heat well. His clothing should be of the lightest texture, and very limited in amount. It is well to keep the baby out of doors as long as the sun is up, but to avoid night air with care.

From the first it will be helpful to give some alcoholic; probably brandy, in doses of half a drachm every hour, is the best, this dose being modified according to the depression.

As for medication, I have found the following formula to work well in very many cases:

℞ Tinct. opii camph., } .....āā ʒ iij;
Bismuthi subnit., }
Ext. ipecac. fl..... ʒ ss.;
Tinct. krameriæ ..... ℥ ss.;
Aquæ.....q. s. ad ℥ ij.

M. Sig.: One drachm every two, three, or four hours.

This prescription is to be used after the action of the castor-oil only. Usually the child will suffer from great thirst, and possibly barley-water, taken *ad libitum*, will satisfy him in this particular better than anything. Should there be much nausea or vomiting, oxalate of cerium, in one-grain doses, will usually control it. Regarding alimentation, we should take everything from the list which is digested in the intestine. The best food is made from beef, mutton, or chicken, in the shape of broths, care being taken to skim all the fat from the surface, or the various meat extracts may be used—such as Cibil's, Liebig's, or Valentine's. These meat preparations should constitute the entire food during the active inflammatory stage. Sometimes the child can digest the tenderloin of a porter-house steak, chopped into very small pieces, or the juice of a much underdone steak may be given, but nothing sweet or of a starchy nature, as most artificial foods are. In my experience, milk does not answer so well as the broths, although occasionally a small quantity of eggnog containing an alkali does seem to digest remarkably well.

If vomiting is a marked element in the case, it has

been my custom to resort to rectal alimentation, with most excellent results. I usually employ a mixture of brandy, milk, and egg, or one of the above-mentioned broths, and put nothing into the stomach as food. I am firmly convinced that many physicians do not appreciate the value of rectal alimentation in these various intestinal disorders in infants.

After convalescence has commenced, and, indeed, often during the severity of the attack, a patient will improve wonderfully if removed to a country, mountainous region. Sea air does not seem so helpful as that of the mountains. The foregoing suggestions are offered for a child one year old, and must be modified accordingly.

I would add that even in breast-fed children the animal broths have seemed to work better than mother's milk in many instances.

The three points on which I would lay special stress are:

1. The administration of foods digested by the stomach absolutely.

2. That the child be kept away from the warm body of the mother, however much it may cry, and be allowed to lie on a hard surface in absolute quiet.

3. Rectal nourishment.

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## FOREIGN BODIES IN THE EXTERNAL AUDITORY CANAL.

By CHARLES W. KOLLOCK, M. D.,
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The tolerance and intolerance of the ear to foreign bodies are frequently demonstrated, and, while some bodies, especially insects, cause the greatest agony, those of a different nature may remain in the ear for long periods without apparently causing discomfort. A remarkable case of foreign bodies in the external auditory canal has recently been under my care.

Mrs. D. consulted me for deafness, which was profound, as only the loudest tones with the mouth close to her ears could be heard. My prognosis was unfavorable, but at her request I made an examination of the better ear, and saw there a lump of hardened wax. This was with some difficulty removed, but its removal made little or no difference in the hearing. As the mass was removed it became somewhat disintegrated, and two objects resembling seeds were seen in it. Of this I said nothing, but intended asking my patient, after finishing the examination, for an explanation. In the mean time she happened to see the mass, and immediately exclaimed: "Are those seeds?" I replied that they were. Whereupon she said: "They have been in my ear for *forty years*." She said that when nine years old she had poked two apple-seeds into her left ear, which her mother had tried to remove, but had not succeeded. She had never experienced any trouble, and supposed that long ere this they had worked their way out. The seeds were encapsulated by the wax until it became softened by syringing, and when first seen by me were perfect in shape, but when placed in water soon softened and disintegrated. The canal was apparently unaffected by their presence, and the deafness in no way connected with it, as hearing was worse in the other ear, and evidently the trouble was labyrinthine.

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### THREE QUARTERS OF A SCIENCE.

The numerical method of arriving at generalizations seems to exercise a fascination over many minds, and it has often been employed in attempts to throw light on obscure questions. It is not perfectly convincing to everybody, notwithstanding the general impunity with which its adherents exploit the dictum "figures can not lie"; otherwise Louis would now be regarded as among the greatest of the philosophers that ever turned their attention to things medical. Some interesting applications of the method are to be found in a paper read by Dr. J. R. Uhler, of Baltimore, before the Baltimore Academy of Medicine on the 5th of June, published in the "Maryland Medical Journal."

Somewhat in Louis's vein, Dr. Uhler declares that, if he were writing a treatise on the practice of medicine or surgery, he would place at the head of the chapter on each disease a list of the symptoms of that disease, with the idea that, in the diagnosis of any supposed case of the disease in question, the practitioner should ascertain how many of them were present, and use that number as the numerator and the number of those in the list as the denominator of a fraction that would express his approach to certainty in the diagnosis. For example, he would make a list of six symptoms of inflammation; if five of them were found to be present in a given instance, the physician would be "five sixths sure" that he was dealing with a case of inflammation. Dr. Uhler's six symptoms of inflammation are redness, heat, pain, swelling, interference with nutrition, and interference with function. Now there is hardly one of these phenomena that is not uniformly absent in some forms of inflammation. In a case of suspected iritis, for instance, the examiner might fail to detect either redness, heat, or swelling, in which event, according to the rule here laid down, he could not be more than half certain of the diagnosis. We fancy that some ophthalmologists would repudiate such a conclusion. It will be observed that our author makes no attempt to assign greater significance to one symptom than to another; if we accept his view, the absence of so-called pathognomonic symptoms no more vitiates a diagnosis than the absence of a like number of other symptoms of comparatively trivial import. It is to be feared that the application of the numerical test would not constitute much of an advance in the art of diagnosis.

This matter, however, Dr. Uhler touches upon only incidentally; the main part of his communication consists of a novel exemplification of one of the uses to which the numerical method may be put—nothing less than a scheme for expressing the degree in which what we term the science of

medicine approaches exactness. To this end the author divides medicine into nine branches, in each of which, as he thinks, the proportion of positive facts to current statements may be expressed numerically. He admits that anatomy and chemistry are "all true"—that is to say, as we understand him, that all the statements made in recognized text-books on those subjects represent demonstrated facts. In this we think he is somewhat overcredulous. He puts down six eighths of physiology as true, five twenty-fourths of practical medicine, one third of pharmacology, and ten twelfths of surgery and obstetrics. It is not perfectly clear what fractions he would assign to the other branches, and it is to be observed that in the practical branches he does not appear to discriminate between matters of doctrine and matters of practice. Reducing all his fractions to a common denominator and adding them together, he finds that the proportion of demonstrable truth to current assertion in medicine as a whole is as 153 to 216—that is, medicine is $\frac{153}{216}$, or a little less than three quarters, of an exact science. He goes into some details concerning the considerations that led him to assign the various fractions, frankly indicating that his deductions are only meant to be taken as approximate.

It must be acknowledged that this is a graphic and original way of stating one's impressions, and, whatever may be its shortcomings, we trust that it may conduce to the commendable end that the author had in view in the preparation of his paper, which is entitled "Positive Medicine," namely, to induce medical writers to confine themselves to facts. This, to be sure, is what they generally try to do; the trouble lies in the difficulty of distinguishing facts from illusions.

## *MINOR PARAGRAPHS.*

### SPINAL MANIFESTATIONS OF GONORRHŒA.

M. Hayem and M. Parmentier have lately contributed an article to the "Revue de médecine," an abstract of which appears in the "Gazette hebdomadaire de médecine et de chirurgie," in which they describe certain affections of the spinal cord as directly due to gonorrhœa. The authors have endeavored to extend the range of certain observations made by preceding writers in France and England, and to add to their precision. It seems that in a few persons suffering with gonorrhœa such spinal phenomena are met with as a zone of pain, fulgurant pains in the lower limbs, double sciatica, hyperæsthesia, exaggeration of the patellar reflex, epileptoid trepidation, enfeebled motility, and atrophy of the muscles of the legs and thighs. Ordinarily these phenomena appear in company with articular affeclions, and, with them, show periods of exacerbation and of amelioration. The time of their onset seems to bear no definite relation to that of the beginning of the gonorrhœa. They may be grouped in three classes: disorders of sensibility, those of motility, and those of both sensibility and motility. The manifestations are always confined to the lower limbs, and the spinal lesion is generally a congestion or a meningo-myelitis affecting the posterior or the postero-lateral columns of the cord.

### A NEW SPECIAL JOURNAL.

An illustration of the extent of the tendency to divide medicine into specialties, at least as regards its literature, is shown in the appearance in Paris of a journal of hypodermic medication, of medical antisepsis by means of subcutaneous injections. We have not yet seen the new journal, but its title is given in "Progrès médical" as "La médecine hypodermique, antisepsie médicale au moyen des injections sous-cutanées."

### CAMP HYGIENE.

An excellent little manual of hygiene for the use of medical officers of the National Guard of the State of Pennsylvania has been prepared by the Committee on Preventable Diseases of the State Board of Health, and issued in the form of a pamphlet. The need of some such guide is a real one, and it is to be hoped that the militia organizations of various States will be furnished with something of the sort. In the State of New York an equivalent is to be found in the instructions and suggestions drawn up by the Surgeon-General, Dr. Bryant, to which we have before called attention.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 14, 1888:

| DISEASES. | Week ending Aug. 7. | | Week ending Aug. 14. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 34 | 12 | 16 | 4 |
| Scarlet fever | 81 | 18 | 69 | 12 |
| Cerebro-spinal meningitis | 2 | 2 | 3 | 4 |
| Measles | 157 | 17 | 144 | 10 |
| Diphtheria | 106 | 28 | 102 | 27 |
| Small-pox | 0 | 0 | 2 | 0 |

**The Health of New York City.**—The following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department during the four weeks ending Tuesday, August 14th: Typhus, one case; typhoid fever, 113 cases and 36 deaths; scarlet fever, 377 cases and 66 deaths; cerebro-spinal meningitis, 9 cases and 10 deaths; measles, 709 cases and 59 deaths; diphtheria, 411 cases and 124 deaths; small-pox, 11 cases.

**The New York Post-graduate Medical School and Hospital.**—During the winter session of 1887–'88 over three hundred and thirty-five different physicians attended the courses of instruction, an increase of more than sixty per cent. over last year. In the hospital department about four hundred operations were performed, all of major importance. To all of these the matriculates had access. This remarkable increase in the matriculation list has rendered increased clinical space and hospital accommodations necessary, so that a new clinical amphitheatre has been built, and will be used for the first time at the opening of the winter session, September 17, 1888. A new and commodious laboratory also has been built and furnished with the latest apparatus for the study of normal and pathological tissues. The nose and throat clinical room has also been enlarged.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 12 to August 18, 1888:*

Lauderdale, J. V., Major and Surgeon. July 28th promoted to surgeon, with rank of major, to rank from July 3, 1888.

Mason, Charles F., First Lieutenant and Assistant Surgeon. Re-appointed July 28, 1888, to rank from July 2, 1888. Reported for duty at Fort Washakie, Wyoming, August 2, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 11, 1888:*

WHITAKER, H. W., Passed Assistant Surgeon. Detached from the Mohican and to proceed home and wait orders.

**Society Meetings for the Coming Week:**

MONDAY, *August 20th:* Hartford, Conn., City Medical Association.

TUESDAY, *August 21st:* Ogdensburg, N. Y., Medical Association.

WEDNESDAY, *August 22d:* Medical Society of the County of Albany, N. Y.

OBITUARY NOTES.

**John Miller, M. D.,** of Andover, N. J., died on Wednesday, the 8th inst., at the age of seventy-two years. The deceased was a graduate of the College of Physicians and Surgeons, of New York, of the class of 1846.

**John F. Dunphy, M. D.,** a graduate of the Georgetown Medical College, of the class of 1873, who had for several years practiced medicine in New York, died on Sunday, the 12th inst. Dr. Dunphy was a member of the Medical Society of the County of New York and of the Medico-legal Society.

**Henry Raphael, M. D.,** died suddenly at Saratoga on Sunday, the 5th inst., in the forty-eighth year of his age. He was graduated from Bellevue Hospital Medical College in 1862, and for several years had been attending physician to the Bellevue Hospital Out-patient Department, in the class of diseases of the genito-urinary organs and syphilis, and to the Eastern Dispensary, in the class of diseases of children. In 1869 he translated Vogel's work on "Diseases of Children," and in 1886, von Zeissl's work on the "Pathology and Treatment of Syphilis," to both of which works he added numerous editorial notes. He was a member of the Medical Society of the County of New York. His death was probably due to heart disease, from which he was known to have suffered for several years.

## Letters to the Editor.

### THE SAMBUCUS NIGRA AS AN ANTIPARASITIC.

CHARLESTON, W. VA., *August 8, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: I wish to call your attention to the unique treatment of a case by an ex-member of the State Board of Health, Dr. L. Carr, of our city. He, with several of us, call occasionally to see Dr. Watkins, of our city, who is entirely helpless, and who, by the way, is the oldest living graduate in the State of West Virginia. The nurses whom we employ failed to keep the old gentleman as clean as they should have done, consequently the larvæ of the fly made their appearance in considerable numbers, for which the ex-member ordered the patient washed in elder-juice for their extermination. Now, what I wish to ask of you is, to explain the peculiar action of this new antiparasitic. I acknowledge that it is entirely new to me, but, as it comes from an ex-State officer, it is highly probable that the promulgation of it may do the profession at large much good.

F. S. THOMAS.

*** In Stillé and Maisch's "National Dispensatory," edition of 1886, on page 1332, our contributor will find mention made of the use of the elder for the destruction of maggots.

## Proceedings of Societies.

### ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

*Fourth Meeting.*

The President, Dr. W. H. BAKER, of Boston, in the Chair.

(*Continued from page 78.*)

**Varicocele in the Female: What is its Influence upon the Ovary?**—This was the title of a paper read by Dr. A. PALMER DUDLEY, of New York (see pages 147 and 174).

Dr. HOWARD KELLY, of Philadelphia, said that this was a subject in which he had been interested for some time. He had published something on it within the last two weeks. In several cases of laparotomy he had found a distorted, distended condition of the veins on the left side. At that time he had not known what significance to attribute to them. About eight months ago he had operated in a case of very severe pelvic pain, in which he thought that by bimanual palpation he felt ovarian enlargement. He found large veins, and a number of tributary veins moderately enlarged. On thinking about the matter, he had come to the conclusion that a large number of cases which found their way to the surgeon, because of pelvic disease, apparently affecting the tubes and ovaries, were of that kind. He thought that in many instances he had felt by bimanual palpation a fullness in the left broad ligament giving a sensation like that of cellular tissue high up, almost beyond reach. Patients of this class seemed to have a peculiar expression of countenance, indicative of a pain of peculiar character. The expression was not that of a person suffering from pain due to localized pus formation, in which there was a peculiar color of the skin, with a peculiar character of the pulse and febrile exacerbations. As to the cause, he thought the anatomical feature in the veins alluded to by the author had much to do with it, as had also constipation. Correcting constipation alone, however, had not cured the disease. Subinvolution was one cause if not a frequent one. There was scarcely any class of patients seen by the gynæcologist whose condition required more careful study than that in which the tubes and ovaries had often been removed to relieve severe suffering, although they were apparently not diseased, and he thought the condition described by the author would throw much light on many such cases.

Dr. C. P. TUCKER, of New York, had under treatment at present a woman who had formerly been in the Woman's Hospital, where he had first seen her. She then suffered from pain in the left side, and on examination it was thought that the condition might be one of small cyst of the left ovary. An abdominal section was made, but the operator could find nothing at all abnormal on the left side, while on the right side the ovary seemed to be somewhat diseased and was removed. The patient continued to suffer as much after the operation as before, the pain being still confined to the region of the left ovary. The same mass was present, apparently in the left broad ligament, and, when he had spoken of it to Dr. Dudley, they had both thought it might be a varix.

Dr. MOSELEY had for some time recognized this condition, which he believed to be a varicose state of the veins of the broad ligament. He had especially noticed it in connection with anterior displacements of the uterus. He had for some time thought about ligating the vessels.

Dr. T. A. EMMET had not heard the paper read, but, having listened to the discussion, thought the same subject had to some extent been considered in his own paper.

Dr. DUDLEY regretted, since he had heard the reading of

Dr. Emmet's paper and listened to the discussion thereon, that more of the gentlemen had not been present to hear what had been said on varicocele in the female, as it had a bearing upon the substance of Dr. Emmet's paper. He thought one of the causes of the form of inflammation discussed by Dr. Emmet and others to-day was rupture of the dilated veins which constituted varicocele in the female. Dr. Emmet's paper had led so well up to the subject treated of in his own paper that he wished he had gone further and told whether he had cured varicocele by the method of treatment described. The patients whom the speaker had operated upon had previously gone through the course of treatment described by Dr. Emmet in the hands of skilled men; lacerations of the cervix had been repaired, the hot-water treatment had been carried out faithfully, one patient had been kept in bed a year, the other most of the time for eleven years, still the varicocele was found on opening the abdomen. His two cases were evidence that such general treatment would not cure, although it might relieve. There were, he thought, many cases which, when taken in time, were cured by hot water, etc., but one could not look into the pelvis to confirm that opinion. When, however, the veins had become distended and formed a knotted mass, and, as Ziegler had said, the opposing walls had become absorbed from close contact, leaving sinuses, he thought the tampon, and even hot-water injections long continued, would not cure the patient. The difficulty in such cases had extended too far up, out of the reach of the tampon and hot water. That was the class of cases to which he had desired to call attention. He had also wished to bring forward a method of treatment of such varicose condition of the broad ligament without sacrificing the tube and ovary. Everybody present had seen the tubes and ovaries removed in cases in which the microscopist could discover in them nothing abnormal, or at least nothing which, aside from the symptoms, would apparently justify their removal. Apropos of such cases, he had asked in his paper what the effect of the varicocele described would be upon the tubes and ovaries. In both of the cases related he had found the ovaries atrophied. It was true, one patient had passed the menopause, but the other patient had not, yet the ovary was atrophied. There were no adhesions. In certain cases treatment which required the intelligent aid of the patient in carrying it out could not be employed, and one had to seek for measures which could be employed by the physician alone. The use of the pessary in these cases could only be of temporary benefit unless, indeed, the patient was willing to wear it during the remainder of her life. Dr. Emmet had spoken of the relief afforded by an operation upon the cervix uteri. Dr. Dudley had found that such an operation did temporarily cut off part of the circulation to that organ, allowed the veins to rest and to contract, and in that way proved of benefit. One of his patients had had that operation performed, and she had for a time been improved, but as soon as she assumed the erect position her difficulty was renewed. In neither of his cases had there been sufficient displacement or prolapsus of the uterus to be worthy of attention. In neither had there been adhesion or distortion of the broad ligament to cause the sufferings. The patients had been relieved only by removal of the varicocele. Yet he had not raised the question of other forms of treatment. He had opened the abdomen, and, finding the condition mentioned, been obliged either to go ahead and remove it or leave the patient to suffer as she had done for so long a time. The cases suggested a possible means of cure for a class of patients in whom heretofore the symptoms had been so severe as to require some radical treatment, and, as no other plain course lay before him, the surgeon had removed the ovaries and tubes, even when those organs were apparently but little, if at all, diseased.

# Book Notices.

*The Throat and its Diseases*, including the Nose and Ear. With One Hundred and Twenty Illustrations in Color and Two Hundred Engravings designed and executed by the Author, Lennox Browne, F. R. C. S. E., Senior Surgeon to the Central London Throat and Ear Hospital, etc. Second edition, re-written and enlarged. Philadelphia: Lea Brothers & Co., 1887. Pp. xviii–614. [Price, $6.]

The first edition of Mr. Browne's work appeared in 1878. The second edition includes much that is new and interesting. The first chapter treats of the anatomy and physiology of the throat and nose, and the second deals with the methods employed in the examination of the upper respiratory tract. The chapter on therapeutics is clear and concise and furnished with numerous well-executed illustrations. Laryngological literature has made such rapid strides during the past decade that it would be beyond reason to expect to find every well-known author's views embodied in a book of this size, but it is only fair to say that this one contains a satisfactory *résumé* of the more important work that has been done in the special branch of practice to which it relates. The recital of original cases and the accompanying illustrative drawings do much to emphasize certain facts, and also serve to bring out the author's individuality and place the reader face to face as it were with the cases. The author is not in accord with some writers as to the dangers of amygdalotomy, but advocates the operation when it is indicated, instead of the employment of caustics and other uncertain measures. The chapter on aural affections associated with pharyngeal disease is very opportune, as the connection between diseases of the ear, the nose, and the throat is daily becoming more clearly established and appreciated. The work is practical and largely original. The colored illustrations and the formulæ add decidedly to its value.

*The Relation of Alimentation and Disease.* By J. H. Salisbury, A. M., M. D., LL. D., etc. New York: J. H. Vail & Co., 1888. Pp. xi–332.

The name of Dr. Salisbury is doubtless familiar to many of our older readers in connection with his discovery of the "*Palmella gemiasma*," the "*Crypta syphilitica*," the stramineous origin of measles, and sundry other cryptogamic marvels which a perverse generation of bacteriologists has refused to accept, notwithstanding his positive assurance of certitude. In the present work he further extends the scope of his inventive genius, and lays before a skeptical profession and a confiding public an announcement which he has waited twenty years to make, and the rest of the world twenty centuries to hear—namely, that of the true causation of all diseases and that of an infallible method for their cure.

Starting with the postulate that "we have twenty meat teeth and only twelve vegetable teeth" (a somewhat arbitrary classification as regards the bicuspids), and that therefore two thirds of our diet should consist of lean meat, the author finds in the alcoholic and acetic fermentation of amylaceous and saccharine foods the *fons et origo* of chronic diarrhœa (which he considers as synonymous with "consumption of the bowels"), fibroid or tubercular pulmonary phthisis, uterine myomata, ovarian cysts, locomotor ataxia, Bright's disease, glycosuria, cancerous growths, paralytic affections, in fact, all maladies except those arising from poisons, parasites, or injuries. Ergo, the therapy appropriate to all these various disorders resolves itself into an almost exclusive regimen of "the muscle pulp of lean beef made into cakes and broiled," with the adjunct of

washing out the accumulations of "yeast" from the stomach by means of draughts of from half a pint to a pint of hot water before each meal and on going to bed. In order to restore vital energy to the nervous system, a sort of self-mesmerism is recommended: The palm of the right hand and the fore part of the body being both "positive magnetic poles," while the left palm and the back part of the body are negative, it is evident that placing the right hand on the forehead and the left on the occiput, and subsequently (after exactly forty-nine respirations) moving them to the pit of the stomach, the umbilicus, and their respective rearward opposites, must send "a vital current back into the body," causing "the physical and mental systems to become passive, contented, and comfortable."

It will be seen that this remarkable treatise comprises in itself an entirely new and rather startling series of propositions relating to physiology, pathogeny, histology, and bio-chemistry, quite at variance with the views traditionally entertained and obstinately taught by contemporary writers and lecturers; and, while we confess our inability to discuss seriously the numerous questions involved until the author has published a detailed cyclopædia of the medical sciences, we fear that, even with such explanatory aid, another twenty years, if not another score of centuries, will elapse before his opinions gain general acceptance, or his work is adopted as a text-book in schools of medicine.

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*Partial Syllabic Lists of the Clinical Morphologies of the Blood, Sputum, Fæces, Skin, Urine, Vomitus, Foods, including Potable Waters, Ice and the Air, and the Clothing* (after Salisbury). By EPHRAIM CUTTER, M. D., LL. D., etc. New York: Published by the Author, 1888. Pp. xviii–81. [Price, $1.]

THIS opusculum is avowedly a sort of tender to the more ponderous engine of Dr. Salisbury, whom the author has long admired and followed as "the master discoverer and explorer," and is little more than a catalogue of the microscopic objects described in every text-book, with the addition of the cryptogamia named by Dr. Salisbury, and the omission of all the schizophytes which are attracting modern attention. The yellow-fever cryptococcus of Freire is admitted as a "monumental" contribution to pathology, but the tubercle bacillus has no recognition; perhaps because, like his master, the author is able to detect by microscopic examination of the blood "consumption of the lungs before there is any lesion of them," and, by the use of lean beef and hot water, to arrest the nascent disease before it has developed sufficiently for the birth of bacilli, or for detection by ordinary diagnostic means. Although the lists may be acceptable to the author's pupils, for whom they are chiefly prepared, they are not likely to be much sought after by medical readers.

### BOOKS AND PAMPHLETS RECEIVED.

On the Deleterious Results of a Narrow Prepuce and Preputial Adhesions. By Lewis A. Sayre, M. D., Professor of Orthopædic Surgery in Bellevue Hospital Medical College, New York. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

The Therapeutics of Diphtheria. By A. Jacobi, M. D., President of the New York Academy of Medicine. [Reprinted from the "Transactions of the Philadelphia County Medical Society."]

Comparative Studies of Mammalian Blood, with Special Reference to the Microscopical Diagnosis of Blood Stains in Criminal Cases. By Henry F. Formad, B. M., M. D., etc., Philadelphia. With Sixteen Illustrations from Photo-micrographs and Drawings. [Reprinted from the "Journal of Comparative Medicine and Surgery."]

Cornell University College of Agriculture. Bulletin of the Agricultural Experiment Station. II. August, 1888. Printed by the University, Ithaca, N. Y., 1888.

Fermented Milk. By E. F. Brush, M. D., Mount Vernon, N. Y. [Reprinted from the "Archives of Pædiatrics."]

A Report of Some Cases of Abdominal Surgery. By J. M. Barton, M. D., Surgeon to the Jefferson Medical College Hospital, Philadelphia, etc. [Read before the Philadelphia County Medical Society, April 11, 1888.]

Twenty-third Annual Announcement and Catalogue of the Missouri Dental College, St. Louis. Session of 1888–'89.

Footprints of a Profession; or, Ethics in Materials and Methods. Address delivered before the Maine Dental Society, at their Twenty-second Annual Meeting, held in Waterville, July 19 and 20, 1887. By Horatio C. Meriam, D. M. D., Harvard University Dental School.

University of Toronto, Medical Faculty. Calendar. Session of 1888–'89.

Rectal Insufflation of Hydrogen Gas an Infallible Test in the Diagnosis of Visceral Injury of the Gastro-intestinal Canal in Penetrating Wounds of the Abdomen. By N. Senn, M. D., Ph. D., Attending Surgeon to the Milwaukee Hospital, etc. [Reprinted from the "Journal of the American Medical Association."]

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## Reports on the Progress of Medicine.

### OTOLOGY.

BY CHARLES STEDMAN BULL, M. D.

**Carcinoma of the Ear, probably arising in the Tympanum or Mastoid Antrum.**—Bacon and Muzzy ("Arch. of Otol.," xviii, 1) report an interesting case in a woman, aged fifty-six, who first noticed, a year previous to her coming to them for treatment, that she was deaf in the right ear. There was some tinnitus. A discharge of a watery nature made its appearance in March, 1887, and had continued ever since. In July, 1887, she noticed a swelling in front of the right ear, and the pain, which had occurred only at intervals, became constant. The swelling in front of the ear was followed by facial paralysis. The swelling and induration of the tissues extended upward and forward toward the orbit, and also downward toward the angle of the jaw. There was tenderness on pressure in front of the meatus, with a steady boring pain in front of the helix. On August 26th an exploratory incision half an inch long and an inch and a half deep was made just in front of the external meatus, but nothing was found. On October 1st, two bleeding vegetations were seen at the bottom of the external auditory canal. On November 2d, when Dr. Bacon first saw her, she could hear a loud voice with the right ear, and the tuning-fork, when placed on the vertex, was referred to the same ear. The tissues over the mastoid were indurated and there was some deep-seated pain on pressure. A Wilde's incision, an inch and a half long, was made, and denuded bone found, also an irregular opening leading to the mastoid cells. The ear and mastoid cells were syringed out several times a day, and morphine was given to relieve the pain. Subsequently the original incision was enlarged and extended upward to the upper border of the pinna and downward as far as the end of the lobule. The mastoid was found extensively diseased, and contained loose sequestra of bone. These and some spongy tissue were removed, and the cavity was scraped with a sharp spoon and thoroughly washed out with a solution of carbolic acid, and iodoform powder was insufflated. A slice of the indurated tissue from the mastoid region was examined, and proved to be carcinoma of the scirrhous variety. The induration around the ear steadily increased, extending upward two inches, forward two inches and a half, and downward two inches. The incision behind the ear gradually healed. The entire auricle except the helix and lobule became indurated. On February 22d the pinna became enormously swollen and black in color, and a large swelling existed on the neck, below the ear. The intense pain was now in the upper temporal region and the vertex. There was right hemiplegia, the speech was affected, and the mind wandered. The disease rapidly extended to the neck, and the patient died on March 24th.

**Labyrinthine Disease in a Case of Leukæmia.**—Steinbrügge (*ibid.*)

reports an interesting case in a young man aged twenty-six. He had been healthy up to the age of twenty, except for deafness in the left ear, resulting from purulent otitis media. For some years he had suffered from hoarseness, cough, dyspnœa, vertigo, headache, and palpitation of the heart. Then he began to suffer from epistaxis and vomiting, and his urine was often turbid. He was admitted into the hospital in Giessen in April, 1886. The liver and spleen were enormously enlarged and the inferior extremities œdematous. Both eyes showed papillitis with hæmorrhages. On December 25th great roaring in the head was complained of, followed by sudden deafness in the right ear. He died January 8, 1887. The autopsy showed suppurative bronchitis, emphysema of the lungs, dilatation of the heart and endocarditis, enormous enlargement of the spleen and liver, and parenchymatous nephritis. In the right labyrinth the two scalæ were filled with extravasated blood, and here and there were shining hyaline globules. The ductus cochlearis also showed extravasations, and the same granular masses were visible in the aqueduct as in the inferior convolutions. The membrane of the round window was considerably thickened and ossified. Extravasated blood was also found in the neurilemma of the nerves of the internal meatus and around the sacculi. The membranous semicircular canals were for the most part inclosed in neoplastic bone tissue.

**A Bilateral Labyrinthine Affection during Cerebro-spinal Meningitis.**—Steinbrügge (*ibid.*) publishes the notes of a case occurring in a boy of six years, who entered the hospital December 23, 1885, complaining of vomiting and headache for three previous days. He had been totally deaf for two days, and he remained so till his death, January 20, 1886. There were no convulsions, paralysis, or stiffness of the neck, and the temperature was usually normal. At the autopsy there was found leptomeningitis of the convexity and base of the brain. The right auditory nerve in the inner meatus was surrounded with pus and infiltrated. The facial nerve was partially surrounded with pus and loosened, and the nerve-fibers were swollen. The nerves of the vestibule, ramus, and sacculus were surrounded with pus. The modiolus was full of pus cells. Patches of inspissated pus were found above the organ of Corti. Corti's membrane was totally destroyed, the separate cellular tissues being reduced to a homogeneous mass. Neoplastic connective-tissue strands extended from Reissner's membrane to the wall of the scala vestibuli. Pus cells were found in the aquæductus cochleæ. The perilymphatic space in the vestibule was filled with neoplastic connective tissue and there were numerous hæmorrhagic extravasations. In the utriculus, the bony space of the inferior ampulla was full of neoplastic connective tissue. The bony semicircular canals were also filled with connective tissue, and the periosteum was almost entirely absent. On the left side the destruction was much more extensive, especially in the bony structures. New connective tissue extended from the scala vestibuli to the vestibular space corresponding to the sacculus, and from the scala tympani into the aquæductus cochleæ, completely closing it. A large amount of pus was found in both scalæ as far as the summit of the cochlea. All the bony parts showed incipient defects, which were very marked in the recessus hemisphæricus of the vestibule. The bony semicircular canals were partly empty, and partly filled with bony lamellæ and detritus.

**Bacterial Invasion of the Inner Ear in the Course of Diphtheria.**—Moos's article (*ibid.*) is long and interesting. The petrous bones, on which his observations were made, were laid in Müller's fluid. After inspection of the internal and middle ear, the pyramids were detached and decalcified with chromic acid. They were then washed out for several hours in running water, preserved in absolute alcohol, and imbedded in celloidin, and the sections were made in the usual manner. Each section was first laid in glycerin, and then examined. The transverse and longitudinal sections for bacterial examination were subjected to Gram's staining method. In the first case there was no diphtheria of the middle ear, but rather a secretory form of inflammation, and there was an inflammation, probably a beginning diphtheritic process, involving the membrana tympani, the mucous membrane of the tympanum, and the base of the long process of the incus. The second case showed primary catarrh of the middle ear complicated by diphtheria. The micro-organisms found in the labyrinth were round or oval, and often arranged like the beads on a rosary. The labyrinth and the petrous bone, especially the pyramid, were invaded by streptococci—that is, by organisms that are only an accidental complication, and not specific in diphtheria. These bacilli were found everywhere in the medullary spaces of the pyramids of the petrous bones. They were also met with in the endolymphatic space of the semicircular canals in one case, as well as in the same space of the frontal ampulla, in a third case. The endolymphatic space of the semicircular canals of the same bone was completely filled with a metamorphosed proliferous mass, but no bacilli were found. Negative results were obtained on examination of the vestibule and cochlea in all the cases. Alterations in the cochlea existed in only one case, in which there was hæmorrhage into the first turn of the scala tympani, with an accumulation of lymph and large, round cells in the sulcus spiralis and ductus cochlearis. No bacteria were discovered in the defects in the acoustic nerve and its ramifications, but their presence was demonstrated in the aquæductus vestibuli and in the apertures of the proliferated and partially degenerated periosteum. The globar stasis of the blood-vessels noticed in different parts of the body was also found here, especially in the arteria auditiva interna. Consecutive hæmorrhages were traceable on one side as far as the periosteal region of the lamina spiralis ossea of the first turn of the cochlea, and on the other side as far as the cristæ of the vestibule. The Haversian canals and the periphery bounding the marrow spaces were the seat of cellular infiltration, with hyperplasia of the sheath of the medullary substance, while the latter was disintegrated and filled with the products of retrograde metamorphosis.

This series of changes in the labyrinth is undoubtedly traceable, at least in the beginning, to the influence of a pathogenetic micro-organism. There are, however, a number of infectious diseases besides diphtheria which are marked by the same assemblage of symptoms.

**Fistulæ Fissurarum Branchialium, with Peculiar Malformation of the Tympanic Membranes.**—Ole Bull (*ibid.*) reports a case of this kind in a young man whose hearing had always been absent. For several years there had been at intervals a discharge from one or the other ear. The left auricle was somewhat shorter and more concave than the right. On both sides, beginning at the helix, there was a depression like that left by a small pinhead. On each side, in the skin over the sternomastoid muscle, there were small openings, 60 to 65 millimetres from the lower margin of the auricle. A small probe could be introduced on both sides through the opening, to the depth of 5 millimetres. There was a slight viscid discharge from the openings. The drum-heads were defective, the membranæ flaccidæ being absent. The folds extending from the processus brevis mallei formed the anterior and upper boundaries of the drum. The handle of the malleus was much retracted. On inflation through the Eustachian tube the air was heard and felt in the ear of the physician. In syringing the ear the water could be made to issue from the corresponding nostril.

**The Effects of Pressure by Polypi of the Tympanic Cavity.**—Blake ("Ann. des mal. de l'oreille," etc., January, 1888) reports two cases of this kind, showing that a tumor of considerable size may exist in the middle ear with no other sign of its presence than the ordinary subjective and objective symptoms of polypi, together with a chronic purulent inflammation of the middle ear. In these two cases, however, there were grave general symptoms. In both cases the tumor was between the external wall of the tympanum and the incus, extending downward and causing a permanent pressure on the labyrinth through the medium of the oval window. In both cases the function of the facial nerve was interfered with, but the function was restored when the polypi were removed, and the vertigo at the same time disappeared.

**Bilateral and Unilateral Total Deafness following Mumps.**—Ménière ("Rev. mens. de laryng. et d'otol.," January, 1888) reports two additional cases of unilateral deafness and two of bilateral deafness following mumps. One was in a boy twelve years old, with bilateral mumps, in whom the deafness appeared on the seventh day in the left ear, and was complete. The second was in a girl, eight years old, with bilateral mumps, in whom the right ear became totally deaf on the ninth day. The third was in a boy, fourteen years old, with bilateral mumps, who became totally deaf in both ears on the fourth day. The fourth was in a boy, five years old, with bilateral parotitis, who became totally deaf in both ears on the sixth day. All these patients recovered from the parotitis, but remained totally deaf. While admitting the

possibility of an affection of the labyrinth, Ménière thinks that the more frequent cause of the deafness is a meningeal hyperæmia, leading to grave lesions of the auditory nerve at its origin or in its course.

**Lactic Acid in Suppuration of the Ear.**—Aysagner (*ibid.*) has corroborated the statements of Moorhof in regard to the efficacy of lactic acid in fungous caries of the auditory canal and middle ear, and shows that the acid only attacks decayed tissues. Fungous growths of the tympanum, granulations occurring in the course of purulent otitis or myringitis, polypoid vegetations, and carious and necrotic processes accompanied by fungoid growths and fleshy granulations, are all very much benefited by lactic acid. But in simple purulent inflammations of the tympanum, acute or chronic, it produces no beneficial effects whatever. Aysagner begins with solutions of one to five, and gradually increases the strength until he is able to use the pure acid. The pain produced is slight. The tissues touched by the acid turn gray, shrink up, become covered by a whitish cicatricial membrane, and eventually disappear.

**The Possibility of Determining some Important Topographical Relations in the Temporal Bone from the Form of the Skull.**—Koerner ("Arch. of Otol.," xvi, 4) began his investigations with the object of determining whether there was not some way of foretelling whether any given temporal bone was or was not likely to be a dangerous one to operate on in cases where that was deemed necessary. In dolichocephalous skulls the lateral walls are almost perpendicular to the base, so that the distance between the mastoid processes, on the outside, is about the same as that between the parietal tuberosities, because the lateral walls converge from above downward. The angle formed by the upper side of the pyramid and the squamous portion of the temporal bone, or the lateral wall of the skull, is in each case nearly a right angle. Hence in dolichocephalous skulls this side of the pyramid is almost horizontal, while in brachycephalous skulls it ascends sharply from without inward. These variations in the topography of the temporal bone were found to be so plain that Koerner was led to investigate the question whether the exact situation of the floor of the middle cranial fossa and the course of the transverse sinus in the temporal bone depended in any way on the form of the skull, His examinations were made on 120 temporal bones from the skulls of 38 different races, and of 22 that were exclusively German, all sawn through the median plane. Koerner was convinced that certain easily obtained measurements gave such sufficient information in regard to the form of the skull as would enable one to decide on important anatomical relations in and about the temporal bone. If the distance between the bridge of the nose and the most prominent point of the occiput, and then the distance between the parietal protuberances, are measured with calipers, and if then the first measurement is divided by the second, a number is obtained, which Koerner calls an index. This index varied in his collection between 1·55 and 1·07. In skulls where the parietal protuberances are absent the superior and posterior angle of the origin of the temporal muscle should be regarded as an equivalent point. In order to compare the varying situation of the floor of the middle cranial fossa and the transverse sinus, we must keep invariably to unalterable points on the skull. These points are: First, the most anterior portion of the linea temporalis; second, the upper end of the porus acusticus externus; third, the spina supra meatum. The next point to be established is the boundary-line between the floor itself and the lateral wall of the fossa. The results of Koerner's measurements showed that the floor of the middle cranial fossa in dolichocephalous skulls lay higher above the porus acusticus externus and the spina supra meatum than in brachycephalous skulls. Thus it is seen that, if we know the index of any skull, the table of measurements will assist greatly in determining the location of the floor of the middle cranial fossa. If we imagine a straight line projected through the outer and lower angle of the bony orbit and the upper margin of the porus, the floor of the middle cranial fossa, at least in the mastoid region, will be found to lie as high above this line as above the porus itself. In a well-pronounced dolichocephalous skull the linea temporalis may pass through the field of operation, and here we should utilize the space above as much as possible, in order to obtain a large orifice for the operation, and a good view into the bottom of the cavity. The operation is much more difficult in well-marked brachycephalic skulls, because when the petrous bone lies higher as we proceed inward, and when the middle cranial fossa is deep, we are sure to find that the antrum lies high. We must therefore chisel obliquely, because the summit of the excavation ought not to lie any higher than the upper part of its external margin. Hence, in every operation on the mastoid it is desirable to begin as far forward as possible. It should not be forgotten that the transverse sinus occasionally advances so far forward and outward into the mastoid process that it may in some cases absolutely prohibit the operation. This, however, is rarely met with except in brachycephalous skulls with a deep middle cranial fossa. Koerner's measurements show that the sinus lies farther outward in the brachycephalous skulls than in the dolichocephalous, and that it lies farther outward on the right than on the left, independently of the form of the skull. The smaller the index, the farther forward the opening should be made; if the patient is an adult, with an index of 1·30 or less, we ought to operate if possible in front of the auricular attachment, especially if the right antrum is the one involved.

**The Relative Frequency of Ear Diseases in the White and Colored Races in the United States.**—Burnett (*ibid.*) finds in his experience that the negro is more prone to the acute catarrhal diseases than white persons, and that he is quite as frequently affected with chronic purulent otitis media, but that he rarely suffers from dry catarrh, and when he does it is in a mild form, never leading to such an amount of deafness as to render ordinarily loud conversation difficult to understand. Inspissation of cerumen seems to affect the two races in about the same proportion. Negro girls are more often affected with tumors of the lobules than white girls, but Burnett does not know whether this is due to race predisposition or to a greater prevalence among negro girls of the wearing of ear-rings.

**Necrosis of the Labyrinth and Paralysis of the Facial Nerve.**—Bezold (*ibid.*) draws the following conclusions from an analysis of all the cases hitherto published, and from a very careful examination of five cases of his own: In spite of the immediate neighborhood of the facial nerve to the morbid process, permanent disturbance of its function is the exception in necrosis of the cochlea, and in most cases elimination of the cochlea is attended with temporary disturbance only or none at all. In every case of facial paralysis accompanying long-continued suppuration of the middle ear we are justified in excluding simple superficial suppuration, and in assuming the existence of extensive destruction of the bone in most instances of the labyrinth. In 19·6 per cent. of the cases examined, death resulted in most of the cases from implication of neighboring meningeal and cerebral regions, extension of the suppurative process taking place from the posterior surface of the pyramid. The cerebellum was most frequently involved. Thirty-seven cases were without a fatal issue. In twenty-nine of these cases the sequestrum was removed from the auditory canal, while in seven cases it was extracted through fistulæ in the pars mastoidea. In one case the sequestrum passed through the tube. In eighteen of the cases of recovery the discharge stopped a few weeks or months after the removal of the sequestrum. In five cases the otorrhœa persisted, but was less copious. In one case atresia, and in another constriction of the bony meatus, was noticed after loss of the posterior wall of the canal.

The treatment is about the same as in necrosis of the temporal bone. The most important point is the removal of the luxuriant proliferations obstructing the passage of the sequestrum through the tympanum and the auditory canal. The sequestrum is surrounded by granulations on all sides, and we should support the tendency to their growth behind it while we remove the granulations and polypi accumulating in front of it as completely as possible, thus allowing the pressure of the granulations from behind it to exert their full influence. The most appropriate instrument for the removal of these proliferations is Wilde's snare. After the removal of the sequestrum, further involution is favored by the introduction of alcohol by Politzer's method. Strict antisepsis is absolutely necessary. Where the mastoid is not involved and where the sequestrum is probably small enough to admit of its passage through the auditory canal, no other treatment is necessary. When the mastoid is implicated, the fistulous openings should be enlarged, if they exist, or the antrum should be opened and the sequestrum removed. If the latter is too large to admit of its removal in this way,

excision of the posterior wall of the osseous canal is indicated. The after-treatment consists in the introduction of a rubber drainage tube, subsequently substituting one of lead, and frequent washing out with a one-per-cent. solution of carbolic acid; and in keeping the ear covered with an iodoform bandage. All granulations in the tympanum are to be carefully removed with a snare, and all proliferations thoroughly curetted.

**Aural Epilepsy compared with other Forms of Epilepsy.**—Boucheron ("Rev. mens. de laryngol. et d'otol.," July, 1888) gives his conclusions from the investigation of certain cases in which there was a defect in the organ of hearing connected with labyrinthine pressure and coinciding with an epileptic attack. Sometimes in these cases the deafness is very slight at first and intermittent. Aural epilepsy from irritation of the acoustic nerve alone is found in adults and in children, and may co-exist with gross or slight lesions. In this variety of epilepsy, with the excess of labyrinthine pressure, the irritation is carried by the auditory nerve to the bulbar epileptogenous center, and produces accurately all the epileptic phenomena—such as cerebral inhibition, vertigo, convulsions, stertorous breathing, etc. The onset is identical with that of trifacial epilepsy, as well as the complex irritations of the tympanic cavity and its immediate vicinity, where all the bulbar sensory nerves have branches. Aural epilepsy has an elective action on the condition of vertigo, since irritation of the nerves of the semicircular canals exerts a very powerful action in inhibiting or exciting the apparatus of equilibration. Aural epilepsy is characterized by a diminution of hearing, or by tinnitus, preceding the attack, and sometimes by obstruction of the Eustachian tubes. The arrest of the attack is obtained by lessening the pressure of the labyrinth and acoustic nerve by insufflation of air, etc. A complete cure is possible by removing the causes of irritation by ordinary methods, or by operative procedures which lessen the pressure in the labyrinth, such as the mobilization of the stapes.

## PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

**A New Function of the Medulla Oblongata; Regulation of the Temperature by the Respiration.**—Richet ("Arch. de phys. norm. et path.") exposed dogs to a temperature of over 30° C. (86° F.). With the elevation of the bodily temperature of the animals the number of the respirations increased to from 350 to 400 a minute—a form of respiration which the author calls polypnœa. He shows by numerous experiments that it is not the want of oxygen which causes polypnœa, because the animal must not be in need of breathing, but must be in a state of apnœa, for polypnœa to occur. An excess of carbon dioxide in the blood interferes with polypnœa. The rôle of polypnœa is to regulate the temperature exclusively, as was seen from the experiment on two dogs exposed to an equally high temperature, one of which was curarized or otherwise manipulated so as to interfere with polypnœa; the temperature of the curarized dog rose to 43·1° C. (110° F.), while that of the other did not go higher than 39·5° C. (103° F.). This new function of the nervous system the author calls thermic polypnœa, a reflex function ordinarily, but, when that is insufficient, central; and its regulation of the temperature is by an exhalation of vapor from the skin or from the lungs. Section of both vagi does not alter the course of the phenomena in any respect.

**The Staining of Living Tissues.**—Pelliet and Talat ("Prog. méd.") kept living frogs in a weak solution of methyl blue for several days. On examination, the tissues were found to be colored blue; the glomeruli of the kidneys carmine-red, rose, or ochre-yellow, with the nuclei of the cells of the glomeruli of the same colors, but much more pronounced. Similar results were obtained from experiments on different animals. The authors conclude that the glomeruli have an oxidizing reaction and are not simply a filter, but are also at the same time a reducing apparatus. Ehrlich, in 1885, introduced easily reducible substances into the circulation of living animals, and found that in the order of their oxidizing power the different tissues stood related as follows: First, the lungs, next the cortex of the kidney, then the mucous membrane of the stomach, the liver, and the glands. The differences in reducing power, the authors say, is due to an unequal capacity for hæmoglobin in the cytoplasma of the tissues, as may easily be seen from the fact that tissues which are thought to be comparatively rich in hæmoglobin or its remains, such as the locus niger, are relatively of a marked reducing power.

**Death following Hæmorrhage and Post-hæmorrhagic Transfusion.**—The following are the conclusions arrived at by Hayem ("Arch. de phys. norm. et path."): Death caused by hæmorrhage is due to anæmia followed by paralysis of the intracardiac ganglia. The paralysis of the heart is independent of that of the higher nervous centers, as seen from the experiments on animals in which the blood-supply to the head is cut off, thus paralyzing both vagi and suspending respiration; yet here the heart continues to work very regularly, though all nervous connection with the higher centers is ended. It does good work for a considerable time if, by artificial respiration, sufficiently oxygenated blood is supplied to it. Transfusion may be performed successfully as long as the intracardiac centers are not completely paralyzed by profound anæmia. Animals brought to extreme anæmia by artificial bleeding may survive if transfusion is performed before, and even at the moment of, complete abolition of the corneal reflex.

**The Influence of the Brain on the Production of Animal Heat and Fever.**—Gerard (*ibid.*) has performed eighteen experiments on animals, producing artificial lesions in different parts of their brains. A certain time after the production of the lesion, in each case there was presented an acceleration of the heart-beat and respiration, and a marked increase in the absorption of oxygen and the production of carbon dioxide. The urine was in every case found to be richer in nitrogen than under physiological conditions. The temperature was decidedly higher than before the operation. The author concludes that it is certain that lesions of different regions of the central nervous system bring about a perturbation of the normal calorification. He does not agree with Ott, who, in a recent publication ("Therap. Gaz."), established four cerebral heat-centers. Artificial hyperpyrexia is amenable to the action of antipyrine. The cause of the elevation of temperature in fevers must be looked for in the central nervous system.

**Experimental Researches on the Chemical Phenomena of Respiration.**—Poulet (*ibid.*) has discovered the presence of sodium citrate in arterial blood, and supposes that the following takes place in the lungs: The citrate of the venous blood, while passing through the pulmonary capillaries, is decomposed by oxidation, and furnishes sodium tartrate, carbon dioxide, and vapors; the two latter are expelled from the lungs by virtue of their tension being superior to that of the atmosphere. The vapors are formed as follows: I. $2(C_6H_5O_7Na_3) + 11H_2O + O_3 = 3C_4H_4O_6Na_2\ 3(2H_2O) + 4H_2O$. Two molecules of neutral citrate are acted upon by three volumes of oxygen, and form three molecules of sodium tartrate, plus four molecules of water. The origin of the carbon dioxide is explained by formula II: $C_6H_3O_7Na_2 + H_2O + O_4 = C_4H_4O_6Na_2 + 2H_2O + CO_2$. One volume of bimetallic sodium citrate, absorbing four volumes of oxygen, generates one molecule of neutral sodium tartrate, plus two volumes of carbon dioxide. The sodium tartrate of the arterial blood loses oxygen while passing through the tissues, and is reduced to neutral sodium citrate. From a number of experiments the author found that in inflammatory diseases the venous and arterial blood contained the maximum amount of sodium tartrate, because the metamorphosis was more or less suspended by the lowered interstitial nutrition. The access of oxygen into the circulation is reduced to its minimum by the diminished amount of sodium citrate generated. The nitrogenous substances are consequently insufficiently oxygenated, and that explains the diminution of urea and the excess of uric acid in certain forms of pyrexia. Dialysis of the hepatic and splenic blood and that of the portal vein revealed the presence of both sodium tartrate and sodium citrate; in the blood of the sublobular vein, however, the latter only was found. The author thinks that the liver decomposes the tartrate to form sodium citrate, and considers that gland as the indirect regulator of the absorption of oxygen. To denote the origin of these salts, they are called respectively the pulmotartrate and the hæmocitrate. The following is the author's hypothesis of the glycogenic function of the liver: The pulmotartrate present in that gland contributes probably to the conversion of dextrin into sugar; the latter, being a reducing agent of the first order, reacts as soon as it is formed on the pulmotartrate. According to the first formula, three

molecules of pulmotartrate might be reduced by the glucose, and furnish neutral hæmocitrate; the oxygenated glucose evolves carbon dioxide, which combines with another part of pulmotartrate, and forms bimetallic hæmocitrate, the latter being the source of carbon dioxide in the second formula.

**The Cardiac Nucleus of Motor Fibers of the Pneumogastric Nerve in the Medulla Oblongata; the Effect of an Artificial Lesion and Destruction of that Nucleus on the Function of the Heart; the Functional Dissociation of the Cardio-motor and Respiratory Phenomena.**—Laborde (*ibid.*) has proved experimentally on animals the existence of a cardiac nucleus of motor fibers of the vagi in the medulla oblongata, which he locates in the middle of the lateral part of its posterior surface, outside the region circumscribed by the V-shaped gray substance. The author punctured that nucleus, having previously avoided all conditions which could cause a suspension of the heart's action by reflex irritation, such as an irritation of the restiform fibers, etc. The heart stopped after a previous irregularity of action; the respiration, however, continued very regularly. Complete destruction of the same nucleus was effected, and a marked acceleration of the heart's movements followed. The author supposes that the accelerator and the regulator centers are separated from one another, and that they are independent in action.

**The Physiology of the Liver; Researches on the Hepatic Ferments.**—Dastre (*ibid.*) has demonstrated the existence of an inversive ferment secreted by the hepatic cells, and the non-existence of the supposed amylolytic glycogen ferment. The transformation of glycogen into sugar in the liver the author considers to be a result of the vital function, or nutrition, of the hepatic cells. All circumstances which diminish the vitality of the cells interfere with the formation of sugar. The transformation of glycogen into sugar, when in contact with hepatic decoctions, is due to the presence of micro-organisms. The following are some of the author's arguments: 1. Glycogen acted upon by sterilized hepatic decoctions is not transformed into sugar, whereas the real pancreatic ferment, taken for comparison under the same conditions, is capable of transforming starch and glycogen. 2. The salivary and pancreatic ferments are active under a temperature of 30° C. (86° F.); a temperature of from 0° to 3° C. (32° to 37·4° F.) paralyzes the action of hepatic decoction upon glycogen. 3. The activity of the hepatic decoction increases under a normal temperature with the duration of time, which, as a consequence, implies the generation of micro-organisms.

**The Influence of Cold and Heat on the Chemical Phenomena of Respiration and Elementary Nutrition.**—Quinquand (*ibid.*) points out that the administration to animals of cold baths, general or partial, increases the absorption of oxygen and the exhalation of carbon dioxide if, after the bath, the animal's temperature is about from 28° to 30° C. (82·4° to 86° F). The author found, by analysis of the arterial and venous blood, that at this temperature the loss of oxygen and gain of carbonic dioxide by a given volume of blood passing through the tissues might attain double and even triple the physiological amount. The combustions, oxidations, and nutritive exchanges are all increased by the giving of a cold bath. If, however, the central temperature is brought to 26° C. (78·8° F.) or less, the animal dies with a subnormal temperature, although the pulmonary exchanges are increased, the blood is at its maximum of respiratory capacity, and the blood of the right heart is arterialized. The death is due to the retardation of the ultimate cellular nutrition in the tissues, not to asphyxia. Immersion for a short time in a cold bath increases the amount of sugar present in the blood; for that reason, the author remarks, diabetic patients must avoid cold. If an animal is kept for eight or ten hours in the bath, the sugar begins to decrease, first in the blood and then in the liver. The administration of hot baths gives similar results. A warm bath must not raise the animal's temperature higher than 42° C. (107·6° F). A central temperature of from 43° to 44° C. (109·4° to 111·2° F.) kills an animal in the same manner as a cold bath does, stopping the nutrition in the tissue cells. The amount of oxygen absorbed and carbon dioxide exhaled after either a cold or a hot bath is decidedly superior to the normal; it is relatively greater, however, after a cold bath. Both a cold and a hot bath diminish the quantity of blood passed through the vessels in a given time.

## GYNÆCOLOGY.

By ANDREW F. CURRIER, M. D.

**Experience with Pyosalpinx and its Operative Removal.**—Gusserow ("Arch. f. Gyn.," xxxii, 2) has performed laparotomy for pyosalpinx thirty-one times during the past three years, both tubes being removed in ten cases. He defines pyosalpinx as that form of disease of the Falloppian tube in which the latter, filled with pus, forms a sac which is closed by adhesion to neighboring structures. Clinically, purulent salpingitis is indistinguishable from pyosalpinx, however it may be distinguished anatomically. The point of greatest importance clinically—that is, to the patient—is whether the diseased tube is closed and there has or has not been an accumulation of the purulent secretion of its mucous membrane. Of the thirty-one operations, only one resulted fatally, and that from septic peritonitis. The study of the cases teaches little as to the ætiology of pyosalpinx. Perimetritis had existed for a longer or briefer period in all cases before the tumor in the pelvis was recognized, and it is believed that such a condition must always precede pyosalpinx. Gonorrhœa was frequently found to have been an antecedent to the perimetritis, but so also were miscarriage and parturition. In those cases in which infection by gonococci did not take place there was probably, primarily, catarrh of the uterine mucous membrane which extended to the mucous membrane of the tube. Next, the contents of the tube probably found their way into the abdominal cavity and set up a localized peritonitis. The passage of the tubal contents into the abdominal cavity was favored, in some cases at least, by traumatic influences, such as blows, falls, etc. It is important to notice that in almost every one of the author's cases the ovaries were implicated in the tubal disease, perhaps forming the most intimate relationship with the tubes, containing abscesses in some cases with the abscess cavity communicating with the purulent collection in the tube. The clinical phenomena of the disease are those of chronic perimetritis, with sensations of pain and pressure in the pelvis, the intensity of which may be governed by the seat or the size of the tubal sac. Those patients who can remain quiet and rest suffer far less than those who must attend to work or household cares. It follows from this, also, that the disease is much more common in the poorer than in the well-to-do classes. With the congestion of menstruation the pain is increased; it may be violent and colicky, and it may be accompanied by tympanites, vomiting, and fever. In none of the cases were there symptoms which could be considered absolutely distinctive of pyosalpinx. Profuse menstruation may be present, but is not necessarily an evidence of pyosalpinx. The danger of rupture of the tube, and its almost certainly fatal consequences, should inspire one with a feeling of the urgent need of all such cases for operative interference. The differential diagnosis of this condition from small subserous myomata is not always easy. The history of the case must furnish us with important particulars. The distinction from small tumors of the ovaries or broad ligaments is also oftentimes a matter of no little difficulty. The removal of tubal sacs is usually difficult, for reasons which are perfectly obvious. The operation may usually be facilitated by allowing an assistant, with one or two fingers in the vagina, to press the uterus forward toward the abdominal wound as far as possible. By this means the tubes can be brought within reach, which would otherwise be impossible in some cases. Gusserow favors the removal of the ovary in all cases with its tube, and in case the disease is limited to one tube, he would leave the other intact. The danger of ventral hernia is a real one, and the author thinks it may best be avoided by making the abdominal wound as small as possible.

**Suspected and Malignant Adenoma.**—The following statements represent (Fürst's) the author's conclusions upon this subject ("Ztsch. f. Geb. u. Gyn.," Bd. xiv, H. 2):

1. Adenoma uteri simplex, or simple glandular hyperplasia, in which the uterine glands are increased in number and enlarged, but still preserve their typical character in structure and as to their epithelial covering—in which, also, the interstitial tissue is compressed, though there is no evidence of extraordinary cell proliferation—must be regarded as benign. It is not advisable, however, to treat this condition by curettement, application of caustic substances, and similar means, but by excision, for the new growth tends to malignant degeneration.

2. Adenoma uteri suspectum, or destructive glandular hyperplasia,

which, whether it is localized or diffuse, shows a new formation of atypical gland tubes, together with more or fewer normal glands imbedded in connective tissue which is rich in cells—which also shows an increase in the gland epithelium and a tendency to proliferation in its lower portions—must be regarded as a suspicious condition and inclined to malignancy, even in cases in which no solid processes are demonstrable. In such cases excision will not suffice, but the uterus should be extirpated as soon as possible, the prognosis with reference to radical cure being good.

3. Adenocarcinoma uteri, in which the typical gland formations have almost entirely disappeared, and in which we find epithelial infiltration and cancer processes in a foundation which is rich in cells, is absolutely malignant in character. Even if the uterus is extirpated the prognosis as to radical cure is not good, for the chances of being able to extend the section into healthy tissue are poor; hence the treatment can be only palliative for the greater number of cases.

4. The clinical symptoms in connection with cervix adenoma are of less value in determining as to operative procedures than the result of the pathologico-anatomical examination. As early an examination as possible of an excised portion of the mucous membrane is therefore imperative.

**The Primary and Final Results in Operations for Prolapsus Uteri.**—Cohn ("Ztsch. f. Geb. u. Gyn.," xiv, 2) concludes:

1. The continuous catgut suture gives the securest guarantee of primary union in addition to relative ease and rapidity in the performance of the operations. The objections which have been made to catgut are not valid. The superficial union of the wound obtainable by this means gives a firm cicatrix which is favorable to a permanent result.

2. Colpo-perinæorrhaphy may be the means of permanently curing even extensive conditions of prolapse. Hegar's method answers fully the demands which may be made upon it. The reasons for failure as regards complete healing in nearly half of the author's cases are as follows:

*a.* Some of the cases which are referred to *recurrence of the cause of operation* are not recurrences in the proper sense of the term, but simply cases in which healing did not take place.

*b.* Some of the recurrences are attributable to incompleteness of the operation, only anterior colporrhaphy having been done.

*c.* The other recurrences are due to such factors as severe parturition, quick repetition of pregnancy, and particular anatomical conditions of the posterior vaginal wall. In order to obtain permanent results from operations of this character it is desirable:

1. In conditions of prolapse to operate upon the posterior vaginal wall at the earliest possible moment.

2. To narrow the vagina as much as possible throughout its entire extent by the high operation of posterior colporrhaphy.

3. To make as high a perinæum as possible, bringing forward the narrow introitus. The higher the perinæum, the firmer the pelvic floor, the more the vagina is drawn forward, the more favorable will be the chances of permanent recovery.

**Tuberculous Ulceration of the Vulva.**—Zweigbaum ("Brit. Med. Jour.," June 23, 1888) reports a case of this rare form of tuberculosis. The patient was treated in 1884 for "fungous ulceration" of the vaginal portion of the uterus by means of Paquelin's cautery, a cure resulting. She was then thirty-one years old, and had borne five children. The following year there was found a deep, painful ulcer just within the left posterior vaginal wall, and cauliflower excrescence of the *portio vaginalis*. The left *labium minus* was almost destroyed by ulceration, and microscopical examination of the contiguous tissue revealed tubercle bacilli. Auscultation and percussion also revealed obscure signs of phthisis at the apex of the right lung, the spleen was enlarged, and the patient had fever. Death followed after five months, having been preceded by purulent expectoration and œdema of the lower extremities. Syphilis was satisfactorily excluded from the case.

The author has been unable to find more than two recorded cases like this, these having been reported by Deschamps and Chiari, one each. The disease is not so rare, however, in connection with general tuberculosis. Five cases are reported in which infection was attributable to coitus, and others in which it was due to contact with tuberculous nurses. Danger exists from the use of the bedclothes, closets, or baths which have been used by tuberculous subjects, and self-infection may occur from the sputa or fæces. The conditions which favor the establishment of the tuberculous process in a particular part are not yet known, but certain pathological processes induce a predisposition to it, as is the case with the lungs. Cleanliness is, above all things, a necessary condition in order to its prevention.

**Notes on Three Years' Ovariotomy Work in the Samaritan Free Hospital; Eighty-two Cases without a Death.**—Bantock ("Brit. Med. Jour.," June 30, 1888) reports a successful series of eighty-two cases preceded by one fatal case. In forty-seven of the cases there were adhesions involving the parietes or omentum, or both. In some of them the tumor was adherent to the pelvic organs, and in a few to the intestines also. In one, with parietal adhesions, the patient had reached the seventh month of her first pregnancy. In six cases there was no pedicle, the tumor requiring enucleation. In one the cyst was suppurating; in another nine ligatures were required to arrest the bleeding from the stump, which was formed by the left broad ligament and the left side of the uterus. Other interesting complications were shown by other cases. In only twenty-eight were there no adhesions, and one of these cases was complicated by a large umbilical hernia, which was successfully operated upon at the same time that the ovarian tumor was removed. In forty-five of the cases a drainage-tube was required, the peritoneal cavity in most of them being washed out with warm water. In thirty-four cases both ovaries were diseased, and were removed. In nine cases the tumors were dermoid, both ovaries being affected in one of the cases. In only four of these cases were there adhesions. In five cases the cyst had ruptured, in all of which the peritoneal cavity was washed out and a drainage-tube used. In three of the cases the disease was malignant; one was fatal after fourteen months from extensively disseminated cancer; the second recurred soon after operation, and ended fatally in a short time; in the third there was a sarcoma of the left ovary weighing six pounds, another of the right ovary weighing three fourths of a pound, and the pelvic and lumbar glands were already infected. The operation was recovered from, but gastric irritation and œdema of the lower extremities recurred in a few weeks, and were quickly fatal. In none of the eighty-two cases were antiseptic substances used. Warm water was used for washing out the peritoneal cavity whenever the contents of the cyst had escaped into it, and in all such cases a drainage-tube was employed. In no case was either opium or alcohol given. A comparison of the results obtained at the Samaritan Hospital for the years 1885, 1886, and 1887 is made between the work of the author and that of the three other operators at that hospital, who differ with him in treatment in that they use Listerism. For this period Bantock had seventy-nine cases, of which only one was fatal. The others had one hundred and twenty-one cases, with eleven deaths. Of the one hundred and twenty-one cases, however, three should be added to Bantock's list, as they were successful cases, operated upon by Doran after he had abandoned Listerism.

**Post-operative Reflex Accidents consequent upon Utero-ovarian Operations; also Remarks concerning the Guttural Reflex.**—Just Championnière ("Nouv. arch. d'obst. et de gyn.," June 25, 1888) says that physiologists long since showed that irritation of organs supplied with nerves causes reflexes of various kinds, physicians have long studied the painful phenomena associated with organs which, though at a distance from the uterus and ovaries, were yet influenced by them, but surgeons have given little attention to troubles due to irritation of the uterus, its annexa, or the peripheric nerve plexuses, except to perform surgical operations upon the uterus or ovaries. This may be due to the fact that the first abdominal operations were performed for the removal of ovarian cysts, and, owing to the precedent destruction of the ovaries, reflex nervous phenomena must necessarily be rare. In the early days of abdominal operations, too, interest centered upon the prevention of septic peritonitis, which was most dreaded of all the accidents which might follow the operations. Of the various books and papers which have been written upon these operations, only one, that of Thiriar, entitled "De l'ovariotomie antiseptique," has anything particular to say in regard to the reflexes following operations, and he refers only to certain complications common to all abdominal operations. The author

has studied this subject carefully in connection with nearly 200 abdominal operations which he has performed, and a large experience in obstetrical work. By post-operative reflexes the author does not refer to the vomiting, the modified respiration and heart action, and cough which are sometimes excited by forcible irritation of the uterus or ovaries, but subside when the irritation is removed. In operations for the removal of parovarian cysts, which are usually simple, the results are not infrequently bad owing to disturbance of the substance of the ovary. In castration operations the results are often more severe than in those for uterine myomata. Among the utero-ovarian operations, those which present the most gravity are the ones in which the body of the uterus with the peripheric nerve plexuses are concerned. If the author's explanation as to reflex influence is incorrect, he confesses his inability to explain why operations which have been performed rapidly and without grave complications have resulted fatally while many others apparently more severe have terminated in cures.

In vegetating tumors of the ovary the reflexes following operations are particularly significant. The greatest number of accidents in such cases is observed in cases in which the substance of the uterus and the nerve plexuses of the organ are secured by ligature. The reflex phenomena generally differ decidedly from those which are observed in connection with septicæmia. Sleep may be impossible though the patient complains of no pain, and there is little if any rise of temperature until just before death. The nature of these accidents may be characterized by a want of co-ordination in the temperature, pulse, and respiration. The pulse is small and rapid and subject to sudden changes from very slight causes. The expression of the countenance is very bad, both in the fatal cases and in those which recover. Vomiting may be absent, but it is usually present and distressing in character. Attacks of dyspnœa are of frequent occurrence, with accelerated breathing in the intervals. These phenomena may be regarded as immediate or as secondary. In the first form they may be mistaken for shock and are due to irritation of the nerves by the ligatures which have been required. In the second form they have not appeared until after an interval of several days in the author's operations, and have all occurred in cases of hysterectomy in which metallic ligatures were used. Of all the post-operative reflex accidents, it is believed that the guttural reflex or spitting (*crachotement*) is the most important and most characteristic, and it is of very common occurrence after the operations which have been referred to—that is, those upon the utero-ovarian apparatus. It has never been observed by the author in connection with other abdominal operations. Patients describe it by saying that they have a desire to spit, but are unable to do so. This symptom was at first observed by the author only in connection with the reflexes which followed hysterectomy, but it was subsequently seen in connection with two cases of ovarian cyst, operations for which ended fatally. It may occur when the pulse is not much accelerated and the temperature normal. It may precede nausea and vomiting, and sometimes seems to be a prodrome of such phenomena. It has its analogue in the salivation and spitting which often occur during pregnancy, and has been recognized as an utero-ovarian reflex in connection with circumuterine hæmatocele. With the guttural reflex may be associated a tendency to syncope, a sensation of suffocation without marked acceleration of the respiration, a small and mobile pulse, an anxious feeling, insomnia, and a pronounced inclination to weep. In the diagnosis, the condition in which the foregoing phenomena occur is to be distinguished from shock by the fact that in the latter the phenomena are associated with depression rather than excitation. Vomiting occurring soon after an operation must be considered as due to peritoneal or to the anæsthetic influence rather than to reflex utero-ovarian derangement. Morphine or chloral in small doses after operations is recommended as a preventive of these reflex phenomena. Should these prove inefficacious, bromide of potassium should be given. In performing the utero-ovarian operations silk should be preferred as a ligature, and one should be particular to see that a sufficient number of ligatures is used to effectually crush the nerves and not merely pinch them. Suitable care in this respect will obviate many of the accidents such as have been described, and those who have obtained the best results undoubtedly owe them in large measure to such care.

**Curetting in Endometritis.**—Boureau ("Nouv. arch. d'obst. et de gyn.," June 25, 1888) offers the following conclusions respecting this operation:

1. Intra-uterine therapeutics realizes the only logical and rational treatment which is applicable to lesions of the uterine mucous membrane occurring in the evolution of an acute process.

2. Intra-uterine therapeutics should be radical, and necessitates the use of destructive agents capable of removing the last vestiges of the morbid tissue. Experience has shown that incomplete destruction of the diseased mucous membrane is almost always followed by a recurrence of the trouble.

3. Chronic endometritis of the body of the uterus is one of the most rebellious affections, and will yield only to destructive processes.

4. Such processes may be either caustics or cutting instruments.

5. The instruction which is furnished by a great number of cases is that the curette is superior to caustics both as to its action and as to security.

6. Curetting alone and curetting combined with *écouvillonage* (sponging or swabbing out) are operations which can be practiced without submitting the patient to the least danger, always on the condition that the contra-indications are observed and a rigorous antisepsis practiced before, during, and after the operations. The action of creasote as a caustic does not have the same danger which attends the use of those caustics which produce an eschar.

7. In the statistics of Doléris's clinic for 1887 one hundred and ten operations of curetting are recorded, with only one accident resulting. This occurred in a turbulent patient in the form of a mild attack of perimetritis from which she rapidly recovered. To these one hundred and ten cases may be added nearly four hundred additional ones performed in previous years without accident or complication which was worthy of notice.

8. Antiseptic *écouvillonage* may be practiced alone in all forms of endometritis, especially in mild and recent cases. In long-standing hæmorrhagic, vegetating, and polypoid varieties it is better to combine curetting with *écouvillonage*.

9. The *écouvillon* brushes the uterine cavity systematically, completes the action of the curette, and relieves the intra-uterine surface of the *débris* left adherent by the curette. It also furnishes an excellent opportunity whereby one may apply creasote to the surface which has been scraped.

10. Curetting may be considered a perfect curative means for different forms of metritis, especially for hæmorrhagic metritis. In the latter condition it always gives good results, even after all other means have failed. It is sometimes necessary to repeat the operation at intervals more or less remote.

11. Curetting is not only a therapeutic agent which is worthy of great esteem, it is also an exploratory measure which is often indispensable, for it enables one to establish an exact diagnosis by furnishing a layer of mucous membrane which can be submitted to microscopic examination. Exploratory curetting is also entirely harmless; the pain which attends the operation is quite supportable, and it may be done without causing the patient to remove her clothes.

12. The first menstruation which is due after curetting is usually missed, but the second usually comes on normally.

13. Curetting favors fecundity.

**Sixteen Abdominal Hysterectomies.**—Terrillon ("Ann. de gyn. et d'obst.," May, 1888) draws the following conclusions from these sixteen operations and from a study of sixty additional cases of fibroid tumor of the uterus, together with a study of the statistics of the work done by other operators in a similar class of cases:

1. Fibromata of the uterus constitute a grave condition in certain cases. This depends upon their volume and the complications resulting from them, upon the continuous and often fatal hæmorrhages which they excite, and upon other accidents—such as phlebitis, albuminuria, necrobiosis of the tumor, septicæmia, etc.

2. Death often results from these tumors. In every case they are the cause of a painful and often insupportable infirmity, especially in women who are obliged to work for their living.

3. When fibromata present such conditions as have been mentioned, surgical treatment is called for, especially after all forms of medical treatment have proved unavailing: (1) by ablation of the ovaries and

tubes; (2) by abdominal hysterectomy. This does not refer to those tumors which are more or less readily accessible by the vagina, for which other considerations will obtain.

4. Abdominal hysterectomy is a grave operation, which gives an average mortality of thirty per cent. when voluminous and really dangerous tumors are attacked, and only such are now under consideration.

5. Ablation of the ovaries and tubes gives excellent results in cases of small or moderately large abdominal fibromata which cause severe hæmorrhage. It should always be preferred when practicable to hysterectomy, as it is much less dangerous.

It must not be overlooked that in many cases surgical treatment is not called for, especially if the patient can take a great deal of rest and receive proper tonic medical treatment.

**The Treatment of Retroflexion of the Uterus.**—Skutsch ("Ctrlbl. f. Gyn.," June 16, 1888) says that, so long as we are not always in a position to employ a causal therapy for cases of retroflexion produced by anomalous conditions of the uterine supports, we must make use of a substitute for the lost functions of these supports. Such a substitute may be furnished by pessaries, with which better results can be obtained than are usually reported. The failure in treatment by means of pessaries is usually due to the fact that an improper instrument for the given case is used, and that the obstacles for proper reposition of the organ and for keeping it in a normal position are not removed. Those cases in which the peritoneal adhesions are too firm to admit of separation according to Schultze's method, and those in which there are extensive parametric cicatrices, are the ones which are most likely to prove incurable. Even in such cases successful results are often accomplished by patient trial with pessaries, a resort to laparotomy being thus avoided. The way is prepared for such a result by gradual extension and methodical massage of the adhesions and cicatrices. For the past three years the author has had firm convictions of the truth of the foregoing statements. They were established by experience in a case in which there was firm retroflexion, and in which the presence of heart lesions forbade treatment under anæsthesia. Success came by the patient use of extension and massage. In cases in which the peritoneal adhesions are long and slender, extension is accomplished by methodical attempts at bimanual replacement of the displaced organ. In the case of extensive flat adhesions, or the remains of parametric exudates, bimanual massage according to the method of Brandt is indicated, and, after the exudate has diminished, gradual extension may be practiced. If the difficulty does not consist in replacement, but in retention of the organ after it has been replaced, extension by the bimanual method may be practiced at once, and the adhesions being divided, the proper position may readily be maintained by a suitable pessary. Skill in diagnosis is essential before this operation is attempted, and much attention should be given to examination of the condition of the pelvic floor. The inner hand examines from the vagina or the rectum, according to circumstances, while the outer one should pass deeply into the pelvis over the pyriformis and levator-ani muscles. During the last four years 230 patients with retroflexion have been treated at Schultze's clinic (Jena). In 25 no treatment for this condition was given on account of other indications; of the remainder, 182 were successfully treated by means of pessaries, and in only 4 cases was an intra-uterine stem required. In 15 cases pessaries could be used after successful massage and extension. In 19 cases peritoneal adhesions were separated by Schultze's method with no bad results, only partial separation being obtained, however, in 4 of the cases.

**The Anatomy of Healthy and Diseased Ovaries.**—Nagel ("Ctrlbl. f. Gyn.," May 26, 1888) has examined many specimens from ovaries which have been removed by Gusserow and has reached the following conclusions: Chronic oophoritis can not be divided into chronic follicular and chronic interstitial varieties. What is commonly known as chronic oophoritis is the so-called chronic interstitial variety. It always begins with disease of the interstitial tissue, which results in the Graafian follicles losing their normal appearance, and in an inability on the part of the ovary to discharge ova which are susceptible of fructification, until finally the follicles are destroyed. The most frequent cause of this disease is circumscribed peritonitis. The peripheral portions of the ovaries are first involved, and gradually the disease affects the deeper structure. Seldom has proof been found that the disease began as acute interstitial oophoritis. The so-called chronic follicular oophoritis, or small-cystic follicular degeneration of the ovaries, is a physiological condition. It is neither an inflammation of the ovary nor the beginning of a cyst, but a condition in which there is an increase of the follicles containing perceptible, healthy ova, which is not due to disease of the stroma of the ovary. In the so-called *hydrops folliculi* the follicle can never become larger than when it first assumed this condition; in other words, it can not develop into a true cyst. It must be considered as a phenomenon which is secondary to disease of the ovarian tissue. The simple non-epithelial cysts usually, if not always, originate from cystic degeneration of the corpus luteum, and this is never followed by contraction and cicatrization. The corpus luteum is the product of a proliferation process which leads to a new formation in the ovarian tissue.

**Gonorrhœal Infection in Women.**—Sinclair ("Ctrlbl. f. Gyn.," May 12, 1888) remarks that, since Noeggerath alarmed the medical world in 1872 by his monograph on latent gonorrhœa in women, much attention has been devoted to the relation between gonorrhœa and diseases peculiar to women. The discovery of the gonococcus by Neisser followed in 1879. Among English physicians in general these discoveries remained unheeded, and the author states that his object in writing is to show, especially to his English colleagues, that the disease is indeed a very common one, and fraught with great danger to health. A rich clinical experience has established his views in this respect. He found that acute gonorrhœa might attack the urethra and glands of Bartholin without involving the vagina, and that the cervix was almost invariably involved. The progress of the disease to the tubes is of very common occurrence, but a subsequent general peritonitis was of rare occurrence. The disease often progresses insidiously, and is especially apt to attack young married women within a year or two after their marriage, causing dysmenorrhœa, leucorrhœa, and pelvic inflammation, especially if an abortion or a delivery at term takes place. Should perimetritis occur, the patient almost certainly will be sterile subsequently. The means of treatment suggested consist in the internal use of sublimate and copaiba balsam. If the uterus is involved, injections of tincture of iodine into its cavity are recommended.

**The Treatment of Uterine Myomata by Apostoli's Method.**—Robson ("Lancet," June 23, 1888) gives details of several cases in which Apostoli's method was used. In one a large tumor reaching to the ribs had been reduced to a simple pelvic enlargement in a little over two months, a current of 150 to 270 milliampères having been used twelve times. Previous to treatment, menorrhagia had compelled the patient to use eighteen napkins twice a month. When treatment ceased she required only six napkins once a month. In another case the tumor had steadily increased, though nineteen applications had been made in the course of three months, each application lasting ten minutes, and 180 to 300 milliampères being used. In other cases hæmorrhage had been controlled and decided improvement obtained, and in no case had the treatment caused inconvenience. Apostoli's directions had been strictly carried out in all cases, and the author gave as his opinion that while electrolysis was a powerful agent for treating some fibroid tumors successfully, we must not expect too much from it, as in some cases it failed to be of any benefit. At present it is desirable that all cases which are treated should be reported, as a positive conclusion can not yet be reached from existing data. Cases in which there is subinvolution, endometritis, or hæmorrhage can hardly fail to be benefited. The author was in the habit of using a battery consisting of fifty-one pint Leclanché cells, a double collector, a water rheostat, and a Gaiffe's galvanometer.

**Electrolysis in Gynæcological Practice.**—Steavenson *et al.* ("Lancet," June 23, 1888) took part in a discussion upon this subject before the London Obstetrical Society, June 6th. W. E. Steavenson called attention to the numerous cauterizing agents which are used in gynæcological practice, including the actual cautery, Paquelin's cautery, and the galvano-cautery. The particular object of the paper was to call for a more extensive use of the electrolytic method of treatment. Such a method is particularly useful in treating disease in parts which are difficult of access, notably the genital organs of women. The galvano-cautery is more efficient than any other form of caustic. It can be accurately localized, the quantity to be used and the degree of destruction of tis-

sue to be obtained can be accurately determined, and its action can be begun and arrested at will. Its value has been tested in the treatment of stricture of the urethra, stenosis of the os uteri and cervical canal, dysmenorrhœa, sterility, abrasions of the cervix, extra-uterine fœtation, uterine fibromata, and cancer.

Lovell Drage had treated chronic cervical catarrh successfully with electrolysis. Menstruation was not interfered with, and no pain was caused either by the passage of the current or subsequently.

R. A. Gibbons had used this method for treating chronic metritis, endotrachelitis, lupus minimus, urethral caruncle, and uterine cancer. In the last-mentioned disease the effect of the positive pole in arresting bleeding was very satisfactory. The negative pole had been found useful as a caustic in chronic inflammatory conditions of the body and neck of the uterus; with it one was enabled to make applications directly to a diseased surface.

J. Shaw described the appearance of a myofibroma which was subjected to the action of the constant current twelve hours after its removal. He referred to the different action of the positive and negative poles upon granulations and the effects of the constant current in intra-uterine applications and punctures upon the circulation, temperature, sensibility to pain, and urinary excretion. He concluded that the constant current acts upon a fibroid (1) to but a small degree by electrolytic action, the positive pole affecting the cellular and the negative the formed elements; (2) by the hæmostatic action of the positive pole and the derivative influence of the negative; (3) by increased arterial tension, and hence diminished nutrition, with alteration of the mutual relation of the fluid and solid elements.

Horrocks observed that electricity possessed no specific virtue, but acted merely as stimulant, caustic, or cautery. A suitable battery with galvanometer was very expensive, and in general practice would not be preferred to acids, alkalies, the knife, or the thermo-cautery. Even in the treatment of paralysis, careful friction was as beneficial as electricity.

Aust Lawrence called attention to the by no means unimportant share which rest in bed, purgation, and other means of general treatment played in the care of those who had been treated by electricity.

Herman believed that the value of electricity was not to be tested by *a priori* argument but by clinical observation, and this showed that the results of treatment were no better by electricity than by other well-known means.

William Duncan was satisfied that electricity was something more than a mere cauterizing agent, since by its use he had not only seen metrorrhagia in connection with myomata relieved, but also a diminution in the size of the tumor.

**The Treatment of Peritoneal Tuberculosis, with Special Reference to Laparotomy.**—Pribram ("Ctrlbl. f. Gyn.," June 2, 1888) states that the operative treatment of tuberculosis of the peritonæum has been the subject of much discussion of late by the gynæcologists and surgeons, and that they have generally expressed themselves in favor of laparotomy as the result of a series of successful operations. The author looks at the question from its clinico-medical standpoint. For certain cases of peritoneal tuberculosis he does not question the value of laparotomy, but he warns against a too optimistic view of the results of such treatment, and believes that cases for such operations should be very carefully selected. In those cases in which the tuberculous affection of the peritoneum is only a portion of a serious general affection, laparotomy should not be attempted. Those cases which are purely peritoneal, or are complicated only to a slight degree by affections of the lungs, bones, and intestines, especially if the latter are not very progressive and there are no intestinal ulcerations, should have a methodical treatment. First the hectic fever should be combated with suitable antipyretics, and it may be overcome by either of several recently introduced agents of this character. The patients should at first receive light nourishment with especial reference to the use of fat-producers, and subsequently the nutriment may be more substantial. If the nutrition is good and there is no diarrhœa, a moderate use of diuretics is advisable for some time. The abdominal walls should receive systematic inunction with green soap, moderate massage without force being used. Of course the most favorable climatic and hygienic conditions are essential. If after four weeks of the foregoing method of treatment absorption has not taken place, the hectic continuing, laparotomy may be tried. An exploratory incision may be necessary to diagnosticate between ovarian cyst and peritoneal tuberculosis.

# Miscellany.

**The late Dr. Milner Fothergill.**—The "Edinburgh Medical Journal" publishes the following obituary notice of the late Dr. John Milner Fothergill:

"Between the years 1860–1865 the Edinburgh School of Medicine was at the zenith of its fame as a teaching school. Goodsir and Christison, Syme, Simpson, and Hughes Bennett within the University, Spence, Gairdner, Warburton Begbie, and Littlejohn in the extra-mural class-rooms, made it a school of extraordinary power. The new infirmary and the new university buildings, with all the magnificent teaching appliances of the last decade, were still unthought of; but with the small class-rooms, starved laboratories, and cramped hospital wards, still good work was done, and immense enthusiasm was roused in the leading students. In those days there was probably more room for individuality, and oddities were probably more characteristic and less noticeable. Nowadays the constant grind which is absolutely essential even for a pass, the multiplication of text-books, and the much less powerful personality of the professoriate, with the stern discipline of a students' representative council, tend in the direction of producing a complacent, self-satisfied mediocrity, a level—probably a high one—of general education in the profession; yet we sometimes miss the outstanding characters of an earlier age.

"Foremost among these was John Milner Fothergill. Born of a stout dalesmen race, he might, by his vast personality, have been an exaggerated caricature of the wildest dream ever imagined by a satirist of the typical John Bull. Enormously stout, even as a lad, with a round rosy face and long black hair, his great carcass, set upon sturdy legs wide apart, might be constantly seen at the University gate, a center of all mirth and jollity. To him the students' hostelry was too well known. By many names he was called; some of his teachers will remember him as the 'Pirate Captain.' But with all his wild Bohemianism and his Falstaffian ways and bulk, any one who came in contact with him who had an eye to see recognized in him a man of a commanding personality, with immense power of good or evil. The writer, then a demonstrator, once said to him, 'Fothergill, you are a very clever fellow; why do you pretend not to be, and waste your time?' 'Do you think I am clever?' said he. 'Yes, I know it.' 'Well, then, watch me and I'll try.' And from that day to this, with all his oddities, rustic manners, and intense self-consciousness, Fothergill showed himself to be a man of great ability, power of work, perseverance, and originality in expression, if not in experiment.

"A great and successful student he never was at the University, even after he began to work; he had wasted too much time for that; but he took his degree in 1865 with credit, passed the colleges, and then, after graduation, with a loyalty that did him much credit, he went home to Morland to assist his father in the rough work of a general country practice in the Westmorland hills. His father was a quaint specimen of the old school, eupeptic, square-headed, with a firmly knit frame, without the enormous bulk of his son, who, with native shrewdness, much kindness, and the wisdom of experience, attended the stalwart dalesmen and statesmen of his native valleys. He came, we are told, of a good medical ancestry, including Dr. John Fothergill, of London, and Anthony Fothergill, of Bath. The latter was the Fothergill of the Fothergillian gold medal, which distinction Milner Fothergill afterward won. For four years, however, he stood the burden of the country practice, and gained experience of a certain kind; but wishing a larger field, where he could see more sick folk with less distances between them, he went off, got experience in a great dispensary in Leeds, where, in 1869, he obtained the post of senior resident medical officer. He worked then so well that in 1870 he obtained the Hastings medal of the association for an essay on digitalis. He then, after two years

at Leeds, went to the Continent, working under Rokitansky at Vienna and Traube at Berlin.

"But London was the goal of his hopes, and a chair of clinical medicine with ample time for study and writing was his proper sphere. Unfitted by his bodily frame for work as a general practitioner, he was eminently endowed with a power of assimilating information, and of putting it in an easy way in fair conversational language, so that he that runs may read. So in 1872 he settled in London as a physician, taking the membership of the Royal College of Physicians, and was soon elected assistant physician to the West London Hospital. After some years he became assistant physician and afterward physician to the London Hospital for Diseases of the Chest. He never had the good fortune to obtain a post in a great teaching school, so he had to teach from his desk, if not in the wards.

"Fothergill was a voluminous writer, and since the time, now eighteen years ago, when he won the Hastings medal with his essay on 'Digitalis; its Mode of Action and its Use,' numerous works have appeared with his well-known name on the title-page. Among these we may mention as the most important 'The Heart and its Diseases,' a thoroughly practical treatise, which attained a success in every way deserved; 'The Practitioner's Hand-book of Treatment,' based upon rational therapeutics, and the means, through several editions, of leading many a younger member of the profession to treat his cases on scientific principles; 'The Antagonism of Therapeutic Agents,' which gained the medal of the medical society bearing the name of his ancestor; 'Indigestion, Biliousness, and Gout in its Protean Aspects,' marked by keen appreciation of the causal nexus existing between these affections; 'The Diseases of Sedentary and Advanced Life,' a somewhat diffuse and rambling series of papers upon many of these ailments; 'A Manual of Dietetics,' embracing much valuable teaching upon a subject too little studied; and 'Vaso-renal Change *versus* Bright's Disease,' in which, with much that was of real value, there was a highly artificial and largely imaginary division of the inhabitants of this country into two classes —the Norse and Arab types. In all these works the strong individuality of the writer was prominent; and if we were inclined to regret that he allowed his tendency to employ language of a more racy than scientific character to display itself, we could not but admit the force and suggestiveness of his teaching.

"If not an original thinker in the strict sense of the term, his mind was endowed with two gifts which often pass for originality. He had the power of bringing knowledge to a focus, so to speak, and he had also the faculty of catching the current tendency of the times and rendering it articulate. These two characteristics made it possible for him to make his own clear ideas stand out in strong relief upon the hazy background of scarcely formed conjecture. They are valuable characteristics, and, used as they have been by him, they have been the means of rendering real service to many a younger man by placing facts before him in an impressive as well as a suggestive style.

"No man knew better than Fothergill how to describe a case, or a group of cases, so as to make the malady and diathesis he was describing easily recognized. He was not always absolutely correct; he often sacrificed precision to picturesqueness, his atmosphere was too clear and his distances too near. His Norsemen and Celts, Arabs and Jews, were all too perfectly typical, and either rejoiced in their splendid diathetic advantages, or groaned over their dyscrasiæ with too great certainty. Diet and regimen were sure to produce effects with accuracy and dispatch. Fothergill's drugs and combinations were always perfect in their results. Everything was sure to go as it should, and the weapons of his warfare always hit the mark.

"His many books testified to his extraordinary diligence at his desk. He was never idle; if he was not writing a book, he was busy with medical journalism. His connection with the defunct 'Medical Examiner' was rendered obvious by many a witty article, and to some American magazines he used to furnish page after page of special correspondence on most varied subjects; medical gossip of all kinds; personal sketches, sometimes satirical, but never venomous; long tirades about medical reform and the delinquencies of the College of Physicians; essays on diet and therapeutics—they were always readable and amusing. Indeed, Fothergill was probably better known in America than in London.

"Though Fothergill never attained a large consulting practice, yet he was commencing to found one, on the two great pillars of the confidence of his professional brethren and the gratitude of his patients. Some consultants, the very highest ones, owe their reputation and success to the confidence of the profession, the knowledge that their opinion is valuable and their conduct upright. Others, often fairly successful at first, get their work through the public by the pushing of some great or rich lady, by books well advertised, or by church connection well worked, by the reciprocal courtesies of colleagues or fellow-teachers.

"Fothergill was connected with no school, was a reformer in medical politics, and somewhat rash with his tongue on the subject of the great corporations and their heads. He had everything against him, and yet many well-known men were glad to have his opinion on their patients, and, as a rule, the patients, once they had got over the first visit, became his friends. The warmth of his heart, his obvious interest in the case, his freedom from self-seeking and greed, and the child-like innocence and frankness of his self-confidence, inspired both trust and affection—his profession was so obviously not a trade. Had he lived, his practice would have become a good one, though not a very large one.

"For some years he had suffered from diabetes, and many other symptoms which he put down to gout. A few weeks before his death gangrene of the foot came on, for which no surgical interference was possible, and the end came from diabetic coma.

"Born April 11, 1841, he was little over forty-seven years of age at his death, and many years of successful work might have been hoped for. An honest, hearty, simple soul, he had stuck to his work under physical difficulties and discouragements that would have broken many a man. A stalwart fighter, loving war for its own sake, he often lost a chance which a more cautious man would have taken, and perhaps gave offense where none was intended. Humorous, vigorous, and friendly, while any of his generation survive they will keep a warm place in their hearts for the memory of John Milner Fothergill."

**The American Orthopædic Association** will hold its annual meeting in Washington on the 18th, 19th, and 20th of September. The preliminary programme contains the following announcements: "The Modern Treatment of Chronic Joint and Spinal Disease," by Dr. Newton M. Shaffer, of New York; "Immobilization in Articular Disease" and a "Report on the Treatment of Club-foot by means of the Thomas Wrench, or the 'T. T.,'" by Dr. V. P. Gibney, of New York; "The Mechanical Treatment of Senile Coxitis," by Dr. Henry L. Taylor, of New York; "A Practical Point in the Treatment of Pott's Disease of the Spine," by Dr. A. B. Judson, of New York; "An Efficient and Inexpensive Method for the Mechanical Treatment of Pott's Disease," by Dr. C. F. Stillman, of New York; "Rest in the Treatment of Chronic Joint Diseases," by Dr. John Ridlon, of New York; "Acute Epiphysitis in Infants," by Dr. Dillon Brown, of New York; "Remarks on Lateral Curvature and its Early Treatment," by Dr. Samuel Ketch, of New York; "Osteotomy for Anterior Tibial Curves," by Dr. De Forrest Willard, of Philadelphia; "Description of an Apparatus for Measuring any Inequality in the Length of the Lower Extremities," by Dr. T. G. Morton, of Philadelphia; "Hæmatoma Oris as a Sign of Injury to the Spine in the Superior Cervical Region," by Dr. Benjamin Lee, of Philadelphia; "Two Knee-joint Excisions," by Dr. A. J. Steele, of St. Louis; "Report on Morton's Operation for the Immediate Reduction of Club-foot," by Dr. H. Hodgen, of St. Louis; "Femoral Osteotomy," by Dr. Ap Morgan Vance, of Louisville; "A Case of Reflex (?) Valgus," by Dr. George W. Ryan, of Cincinnati; "Remarks on the Operative and Mechanical Treatment of Some Joint Diseases and Injuries, with special reference to the Hip, Knee, and Elbow Joints, with Illustrative Cases," by Dr. W. R. Whitehead, of Denver; and "Analysis of Treatment of Seventy Cases of Club-foot," by Dr. E. H. Bradford, of Boston.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending August 10th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great

towns of England and Wales during the week ending July 21st corresponded to an annual rate of 16 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Brighton, viz., 12·2, and the highest in Preston, viz., 20·2 in a thousand. Small-pox caused 1 death in Preston, 1 in Bristol, 2 in Sheffield, and 1 in Hull. Diphtheria caused 3 deaths in Manchester.

*London.*—One thousand two hundred and ninety-seven deaths were registered during the week, including small-pox, 1; measles, 25; scarlet fever, 14; diphtheria, 15; whooping-cough, 33; enteric fever, 8; diarrhœa and dysentery, 62; choleraic diarrhœa, 2. Diseases of the respiratory organs caused 166 deaths; different forms of violence, 54; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 15·8 in a thousand. In greater London 1,589 deaths were registered, corresponding to an annual rate of 15 in a thousand of the population. In the "outer ring" 11 deaths from whooping-cough and 7 from diphtheria were registered.

*Scotland.*—The deaths registered in eight principal towns during the week ending July 21st corresponded to an annual rate of 18·4 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Dundee, viz., 11·3, and the highest in Glasgow, viz., 23 in a thousand. The aggregate number of deaths registered from all causes was 466, including measles, 9; scarlet fever, 2; diphtheria, 4; whooping-cough, 5; fever, 3; and diarrhœa, 12.

*Catania, Italy.*—Three hundred and nineteen deaths were registered during the month of May, 1888, including small-pox, 53, and enteric fever, 10.

*Havana, Cuba.*—Five hundred and eighty-six deaths were registered during the month of July, 1888, including yellow fever, 79; enteric fever, 15; pernicious fever, 22; small-pox, 6; and measles, 1. The sanitary inspector states that 55 of the deaths from yellow fever occurred in the military hospital, the remainder among civilians in the city. Merchant vessels at wharves on the Havana side of the harbor are being invaded by yellow fever.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. |
| Glasgow | July 21. | 545,678 | 233 | .. | .... | .... | .... | 2 | 1 | 1 |
| Warsaw | July 14. | 444,814 | 223 | .. | .... | 3 | .... | .... | 4 | 3 |
| Calcutta | June 23. | 433,219 | 162 | 8 | .... | .... | .... | .... | .... | .. |
| Amsterdam | July 21. | 389,916 | 153 | .. | .... | .... | .... | .... | .... | 3 |
| Rome | June 2. | 388,300 | 167 | .. | .... | .... | .... | 2 | .... | 1 |
| Genoa | July 21. | 179,572 | 93 | .. | .... | 1 | 1 | .... | .... | .... |
| Trinidad | July 7. | 178,270 | 36 | .. | .... | .... | .... | .... | .... | .... |
| Trieste | July 14. | 154,500 | 83 | .. | .... | 7 | .... | .... | 1 | 2 |
| Toronto | July 30. | 130,000 | 34 | .. | .... | .... | .... | .... | .... | 1 |
| Stuttgart | July 21. | 125,510 | 37 | .. | .... | .... | .... | .... | .... | .... |
| Bremen | July 14. | 122,000 | 32 | .. | .... | .... | .... | .... | .... | .... |
| Barmen | July 14. | 109,000 | 32 | .. | .... | .... | 1 | .... | .... | .... |
| Mayence | June 30. | 65,802 | 24 | .. | .... | .... | .... | .... | .... | .... |
| Cadiz | July 21. | 65,028 | 43 | .. | .... | .... | .... | .... | .... | .... |
| Merida | July 17. | 48,000 | 30 | .. | .... | .... | .... | .... | .... | .... |
| Santiago de Cuba | July 14. | 40,000 | 44 | .. | 9 | .... | .... | .... | .... | .... |
| Callao | July 7. | 34,000 | .... | .... | .... | .... | .... | .... | .... | .... |
| Guayaquil | July 1. | 30,000 | 67 | .. | 4 | .... | .... | .... | .... | .... |
| Guayaquil | July 8. | 30,000 | 65 | .. | .... | .... | .... | .... | .... | .... |
| Vera Cruz | July 26. | 23,800 | 16 | .. | .... | .... | .... | .... | .... | .... |
| Gibraltar | July 15. | 23,631 | 11 | .. | .... | .... | .... | 1 | .... | 1 |
| Sagua la Grande | July 21. | 15,605 | 7 | .. | .... | .... | .... | .... | .... | .... |
| St. Thomas | July 6. | 15,000 | 8 | .. | .... | .... | .... | .... | .... | .... |

UNITED STATES.

*Nashville, Tenn.*—The health officer stated in his report dated August 4th: "We had an outbreak of small-pox July 3, 1888. Total number of cases of variola and varioloid, 11 (sent to pest-house beyond city limits). Deaths, 2. Last case occurred July 21st. Consider it stamped out."

*Wheeling, W. Va.*—The health officer, in his report dated August 4th, stated that "there is 1 case of small-pox in Springtown, Ohio, a river village 50 miles below here, opposite Sisterville, W. Va. A rigid quarantine exists."

*Delaware Breakwater.*—The brig Teneriffe was discharged from quarantine on the 7th instant. The captain and seaman remaining under treatment for yellow fever at last report have recovered and returned to vessel.

*Tampa, Fla.*—Dr. J. P. Wall telegraphed as follows:

*August 3d:* Fumigation going on at Plant City. No new cases. Dr. Murray reports no change at Manatee since yesterday.

*August 6th:* Was at Plant City to-day. No sick except case reported convalescent. Fumigation going on. Employed two more guards, as some parties entered at night were captured and put in quarantine under guard. All right here.

*August 9th:* Six suspicious cases have appeared here, all "indigenous"; diagnosis not positive yet.

*Manatee, Fla.*—Surgeon R. D. Murray telegraphed:

*August 4th:* Two cases forty-eight hours. No deaths. Twenty persons sent to pine woods. Thirty indigent colored people ask for subsistence.

To which the following reply was sent:

*August 5th:* Furnish subsistence to all destitute persons necessarily detained at quarantine line, but pass them outside your lines as soon as detention period is passed. Do not ration people determined to stay in Manatee.

*Sanford, Fla.*—Passed Assistant Surgeon John Guitéras, U. S. M.-H. S., telegraphed:

*August 2d:* No cases of fever at present in city, but the suspected case required further investigation, which will be completed to-morrow.

*August 3d:* Case was probably not yellow fever. There appears to be no fever here, but will have to investigate further.

Under date of August 5th Dr. Guitéras wrote as follows:

I exhumed the body of the suspected case, and performed to-day a post-mortem examination. The man died of abscess of the liver, which opened into the œsophagus, thus giving rise to hæmorrhagic vomiting. I shall write out a full report of the case, which proves to be a very interesting one. I have received all the assistance I could desire from Dr. Wylly and Dr. Caldwell. I found it necessary to make the autopsy; otherwise I should have been forced to report that I did not know what had been the cause of death.

*Jacksonville, Fla.*—A report having been received of the existence of yellow fever in Jacksonville, Dr. Guitéras was directed to proceed immediately to that point and investigate and report facts. The following are his reports:

*August 7th:* I visited to day McCormack at the Sand Hills, where he has been carefully isolated. The case is one of yellow fever, contracted in Plant City and developed in Jacksonville. Patient convalescent. Other boarders in same house thoroughly isolated.

*August 8th:* Two cases of yellow fever discovered this morning. One of them had been in city six days from Orlando when taken sick. The other had not been out of city. Other 2 suspicious cases traceable to same store where the others taken sick. Health authorities are taking active steps in the matter. All cases will be sent to the Sand Hill Hospital. I fear it is the beginning of an outbreak.

There is a circumscribed focus of infection in one block in the city. Two more cases discovered, traceable to same center. County Board of Health very active in isolating all 4 patients, and some suspicious sent to Sand Hills. The board will communicate with you to-night, I believe.

*August 9th:* Since yesterday evening 2 cases found at the city hospital, in the outskirts of town. They have been isolated there; 1 of them can be connected with the original focus. Three other cases discovered to-day. Total, 5 new cases. We are beginning to lose connection with the original focus. The last 3 cases will probably be sent to Sand Hills, but the importance of isolation is evidently diminishing. Infected localities have been closed up, and measures for disinfection have been taken.

The following has been received from Dr. Neal Mitchell, president of the Board of Health, Jacksonville:

We shall enforce thorough isolation.

*August 9th:* All infected bedding and clothing burned. Five new cases to-day; disease assuming epidemic form.

*Manatee, Fla.*—Surgeon Murray telegraphed:

*August 8th:* Four new cases. Thirteen in total. One fatal case in Palmetto, across the river. No other case known or suspected.

*St. Mark's, Fla.*—It is reported that refugees from Manatee are landing at St. Mark's. The collector of customs at Cedar Keys has

Westminster Tribunal. Cases of the Lancet Series.



Changes of Address.—Dr. [illegible] has removed to No. [illegible] Madison Avenue.

Residents and Surgeons.—[illegible] Hospital, for the Year [illegible]. Applications [illegible] Secretary. The Resident Physician of the Brooklyn [illegible] Hospital, [illegible] Street, will [illegible] on and after [illegible] to the [illegible] Surgeons, [illegible] Hospital, [illegible] Street, [illegible] Hospital. The position [illegible] Physician [illegible] Surgeon [illegible] Hospital, [illegible] Street, [illegible] Hospital.

## Original Communications.

### COBALTO NITRITE OF POTASSIUM.

PRELIMINARY NOTE ON SOME OF ITS THERAPEUTIC EFFECTS.

By J. WEST ROOSEVELT, M. D.,

LECTURER ON CLINICAL MEDICINE AT THE COLLEGE OF PHYSICIANS AND SURGEONS; VISITING PHYSICIAN TO BELLEVUE HOSPITAL; AND ATTENDING PHYSICIAN TO ROOSEVELT HOSPITAL, NEW YORK.

The writer desires to call to the attention of the profession a drug which seems likely to prove of some value in cases where it is desirable to lower arterial tension, or to produce any of the physiological effects of the various nitrites now in use, and to sustain these effects for some time.

Dr. Wolcott Gibbs suggested to the author that cobalto-nitrite of potassium might be of value in certain cases, on the ground that its stability and relative insolubility would probably cause a slower, more uniform, and more easily controlled action than that of nitro-glycerin, sodium nitrite, amyl nitrite, or ethyl nitrite. He further stated that the salt could easily be prepared in a state of absolute purity, and would have the advantage of not being deliquescent or subject to chemical change.

When a solution of potassic nitrite is mixed with a solution of a salt of cobalt, previously acidulated with acetic acid, a crystalline precipitate is formed, varying in color from bright yellow to a dull olive shade. This salt was discovered many years ago by Fischer, and, according to Sadtler, has the formula $Co_2(NO_2)_{12}K_6 + 2$ Aq. The salt may be considered as derived from the acid $Co_2(NO_2)_{12}H_6$.

Acting upon the suggestion of Dr. Gibbs, the writer gave the salt to a dog, weighing about eight pounds, in a dose of five grains. No other effects than drowsiness and probably lowered tension and more rapid pulse were produced. The dose was repeated several times on different days. As there was no apparatus to measure blood-pressure at hand, no attempt was made to ascertain anything save whether the salt was actively poisonous or not. A dose of seven grains produced no symptoms in another dog of about the same size. A pregnant cat took about five grains without toxic effect. In the dogs examined there seemed to be increased speed in the pulse, and a fall in tension as appreciated by the finger. The temperature also fell from 2° to 4° F. In the absence of precise observations the experiments are of little value.

As the animals certainly suffered from no dangerous symptoms, the drug was tried in various cases in the Roosevelt Hospital. The dose usually given was half a grain every two to four hours. It was given in a few cases in half-grain doses as often as every hour. The cases chosen were those in which the other nitrites are often found to be of value. Three cases of uræmia with high arterial tension and dyspnœa, with or without signs of œdema of the lungs, were selected. In two an attempt was made to compare the action of nitro-glycerin and the new salt administered alternately in the same case. The tension, as shown by the sphygmograph or finger, fell in from fifteen minutes to an hour. The dyspnœa was wonderfully relieved in two of the cases, and in one of these, where nitro-glycerin was given alternately with cobalto-nitrite, there was no doubt (in the patient's mind at least) that the effects were more lasting as regards the relief from dyspnœa with the latter, and that it produced no fullness, throbbing, or pain in the head, while nitro-glycerin had caused a great deal. In the other case in which the two drugs were given alternately, neither seemed to give much relief to the symptoms, and after the use of the cobalto-nitrite was begun there was vomiting. Whether this was caused by the salt or the uræmia can not be told. In the third case the salt gave absolute relief from the dyspnœa and produced neither headache nor vomiting. A fourth case of uræmia presented head symptoms without dyspnœa. Here the patient became better after taking the drug, but it is very doubtful whether this result was *post* or *propter hoc*. The improvement continued after the salt was stopped, and the patient passed from under observation.

A case of emphysema of long standing, with severe asthmatic seizures, was completely relieved of the dyspnœa by the drug, so far as the subjective symptoms or chest signs are concerned. In this case also nitro-glycerin was tried. The relief obtained by the latter was the same, but there was headache with it, while the cobalto-nitrite did not seem to cause any.* In a case of cardiac valvular disease, in which there was dyspnœa and œdema of the lungs and very pronounced albuminuria (the urine also containing hyaline and granular casts), the tension was lowered, but no positive good results were obtained. In this case the patient had vomited before taking the drug, and continued to do so afterward. Possibly the vomiting was more severe after than before. In the case of a woman, seventy years old, with somewhat thickened vessels, an attack characterized by severe headache, nausea and vomiting, very high arterial tension, restlessness, slight albuminuria, with urine of normal specific gravity, containing a few hyaline casts and rather numerous leucocytes, was relieved by chloral. This drug, when given in efficient doses, caused drowsiness. The cobalto-nitrite was substituted, tablet triturates of one fourth grain each being administered every three hours, and the same relief without any drowsiness was obtained. When the drug was discontinued, the headache, etc., returned, and relief again followed its use.

In a case of lead colic, with high arterial tension, the drug lowered this, but did not relieve the pain.

A case of mitral stenosis, with marked albuminuria, improved under the use of this salt with digitalis; but it is not possible to say what share the cobalto-nitrite had in this result.

It seems to the writer that this salt is worthy of trial in all cases where nitrites are now used. Besides the cases mentioned, he has a number of others under observation,

* Since the above was written the patient again came under the writer's care in Bellevue. The cobalto-nitrite relieved in great measure the dyspnœa, and completely abolished the sibilant and sonorous râles which at first were audible. Nitro-glycerin, in doses of $\frac{1}{100}$ of a grain, failed to produce any effect. Cobalto-nitrite, in doses of half a grain every hour, caused headache, but half a grain every two hours decidedly improved the subjective and objective signs, and caused no head symptoms.

and it is his intention to publish a detailed statement of his studies as soon as a sufficient number of cases have been observed and satisfactory experiments have been made upon animals. The experience with it so far has been encouraging. It is easily prepared, cheap, stable, and safe. It seems probable that we shall find that it lowers arterial tension, and that it does not produce so much discomfort as the other nitrites.

The effects of the drug seem to begin in about fifteen minutes to one hour after its administration, and to last (in some cases at least) for three or four hours. The average dose given has been half a grain every two or three hours. It is possible that this may be largely increased, but the fact has not been proved. It is also possible that vomiting may have resulted from its use in two cases mentioned. It seems to relieve more or less the dyspnœa of uræmia and of asthma.

The above conclusions, of course, need confirmation by further study.

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## TWO CASES OF REMOVAL OF UTERINE MYOMA:

### ONE, SUPRAPUBIC HYSTERECTOMY; THE OTHER, COMPLETE HYSTERECTOMY.

*A New Method of disposing of the Stump.*
*Microscopical Examination of the Appendages.*
*Remarks on the Treatment of Uterine Myoma by Electricity.*

By MARY A. DIXON JONES, M. D.,
SURGEON TO THE WOMAN'S HOSPITAL OF BROOKLYN.

Case I.—V. J., thirty-five years of age, had one child twenty years ago, and has been sick from that time, with constant pain and distress in the abdomen; but the last six or seven years has been the period of her greatest suffering; severe cramps several days before menstruation, pain, sick stomach, vomiting, and then would follow uterine hæmorrhage lasting fifteen days or more, leaving the patient perfectly prostrated, weak, sick, and incapable of any kind of labor. During the last three years there has been scarce a day's interval entirely free from the flow, the regular menstrual period being recognized only by the increased flow and more severe and continued cramps.

The patient called to see me first on the 15th day of last August. She said then that she had had a constant hæmorrhage, varying in quantity, since the 3d of the preceding May. I found the uterus enlarged by an intramural myoma, the tumor commencing at the internal os, suddenly increasing in size, and extending an inch above the umbilicus; the lower portion was wedged tightly down into the small pelvis. The patient called to see me once after this; she was still bleeding and growing weaker. She entered the Woman's Hospital of Brooklyn in October, 1887, in a very weak and an extremely anæmic condition. She was put immediately into bed and had the most careful nursing, the best nourishment, and constant medical attendance. She continued to bleed; was evidently growing weaker and less able to help herself; complained of great pressure and distress in the region of the bladder and rectum, the functions of which organs were seriously interfered with, so it was decided best to perform hysterectomy without delay. Accordingly, on the 15th of November, after the usual preparations, the operation was performed, with the assistance of Dr. C. N. Dixon Jones. An incision six inches in length was made in the abdominal wall. The omentum was firmly adherent in many places. After separating and tying, I passed my hand around the tumor to free other adhesions, which were most numerous in the region of the uterine appendages. The incision had to be enlarged, and, after liberating the adhesions, with one hand under the tumor and the other with Tait's screw, the mass was lifted from the abdominal cavity. There was no little difficulty in tying off the broad ligaments, and yet there were graver difficulties in securing the uterine pedicle. First putting a temporary clamp around the tumor, the peritoneal covering was cut and the body enucleated, and many small fibroids shelled out. Then, lower down, a wire clamp was applied with Kœberlé's serre-nœud, still more of the mass was cut away, and more small fibroids were removed. The pedicle, thus secured, was transfixed with pins and placed in the lower angle of the abdominal wound, the peritoneal edges were brought closely around it; a drainage-tube was placed in the upper part of the wound extending to the lower part of the pelvis, and, after closing the abdominal walls, the usual dressings were applied. When the operation was finished the patient was in good condition; pulse 125, temperature 97° F. The same evening the wound was redressed, and two ounces of bloody serum drawn from the tube. Second day, dressing renewed, tube emptied three times; pulse 125, temperature 101·7° F.; urine passed naturally. Third day, same treatment, three turns given to the screw; pulse 120, temperature 101·5° F.; natural evacuation of the bowels. Her temperature now went down to 100° F.; dressings changed every day; drainage-tube removed on the seventh day, and when removed there spurted out great quantities of pus; the pus cavity extended to the stump, and the pus was in such quantity that for several days it was drawn off by a glass syringe and the abscess washed out. The patient was apparently very comfortable; natural evacuations and a good appetite. On the 15th the stump came off, leaving a healthy granulating cavity which soon healed. The patient continued to improve, gained in strength every day, and no happier face was in the hospital than that of this long-suffering woman; she said she was better and more comfortable than she had been for twenty years.

*December 20th.*—Wound entirely healed; patient able to sit up.

*January 5th.*—Patient goes around perfectly well and with ordinary strength.

*May 5th and July 18th.*—Patient strong and in excellent health, able to attend to her ordinary duties.

The pedicle in this case was so extremely short that it was necessary to make great traction in order to get it into the abdominal wound. I thought for a moment of adopting Billroth's management of the pedicle as I saw him proceed when I was in Vienna in the fall of 1876, and about as pictured in Gerster's late work on surgery, but the stump was so large and so low down in the contracted pelvis that this would have been attended with almost insurmountable difficulties, especially as the pedicle was composed of a portion of the tumor, and so I did not dare to trust to this method. The *ligature* was out of the question, though Thomas Keith says in the "British Medical Journal" for December 10, 1887: "The best results in hysterectomy will be got by the ligature." A few years before he had said: "Muscular tissue is ill adapted to bearing a ligature. You tie it as tightly as you can draw the threads, and in an hour or two the muscular tissue has contracted and internal hæmorrhage goes on." Emmet says in his work, p. 611: "I am disposed to the belief that there can be no likelihood of even an approximate success to that after the removal of an ova-

rian tumor until the stump can be treated with safety in the same manner by being returned to the abdominal cavity." He says elsewhere: "If myotomy was to have a future, it would have to be done by covering the stump with the peritonæum and dropping it into the peritoneal cavity." ("American Journal of Obstetrics and Diseases of Women and Children," January 5, 1885, p. 85.)

I saw Schroeder, of Berlin, manage the pedicle intraperitoneally and the patients did well, yet Schroeder's published statistics are 32 deaths out of 100 cases. Martin, by the same method of treating the pedicle, as reported at the last Medical Congress, lost 27 out of 84, while Bantock, by the extraperitoneal method, reported a mortality of 12 out of 72, and he said that with him "the intraperitoneal method has been as uniformly disastrous as the extraperitoneal has been successful." Bantock said in the "British Gynæcological Journal," May, 1886: "In every case in which he had trusted to a ligature a fatal result had ensued, and he would not resort to it again; while in similar cases treated by the serre-nœud he had had not a moment's anxiety." He reported at the same time a case of "a subserous tumor which sprang from the fundus by a fleshy vascular pedicle an inch and a half long and an inch and a half by two inches in diameter. He first firmly compressed the pedicle by large powerful forceps, then transfixed and tied the pedicle with a figure-of-eight loop, and then firmly encircled the whole pedicle with another ligature. The tumor was cut away and the peritoneal edges were brought together by a continuous suture. Scarcely was this finished when it was evident that the ligatures were loose, and he was obliged to apply the serre-nœud and keep the stump outside." In his late address in Philadelphia * he remarked: "The uterine stump, under the pressure of a ligature tied with as great a strain as it will bear, yields before the compressing force so that in a few hours the ligatures may be quite loose, and that when he had so treated the pedicle of a tumor which may have sprung from the fundus, or some part of the free surface of the uterus, out of five cases so treated, only one was successful." †

Matthew D. Mann reports in the "Am. Jour. of Obstetrics and Diseases of Women and Children," May, 1887, a case where a tumor was attached to the fundus uteri by "a small, short pedicle. Tempted by its smallness, I ligatured it with silk, pulled it very tightly, and asked my assistant to try after I had exerted my utmost strength. In a few hours there was internal hæmorrhage, the patient was pulseless and profoundly collapsed, and was saved only by the use of the clamp; the silk ligatures had slipped entirely off, and were never found." Dr. J. C. Renton reports a case: Pedicle was first treated with silk ligature, hæmorrhage supervened, the abdomen was re-opened, and the pedicle secured by Kœberlé's serre-nœud. Dr. S. C. Gordon, of Maine, reports two fatal cases of hysterectomy, 1871–1883; ligature to the pedicle in both cases. Dr. E. Muller, of South Carolina, reports a fatal case; ligature and stump returned to the abdominal cavity.*

Gerster, in his work on surgery, says of a case of hysterectomy: "The smallness of the stump induced the author to treat it like an ovarian pedicle, and it was replaced in the abdominal cavity after securing the elastic ligature by a knot of strong silk." The further record is: "The author's only case of supra-vaginal hysterectomy ended fatally by septicæmia." Lawson Tait, in the "British Medical Journal," December 17, 1887, says: "I have already placed on record the fact that my mortality in hysterectomy was largely due to efforts to develop the intraperitoneal method of dealing with the pedicle, and my recent success is due to using the clamp entirely." Thomas said "he had removed the uterus from seventeen patients; nine of them had recovered, and the remainder had died. A large number had been treated by the clamp, and they had done remarkably well. A smaller number had been treated by simply returning the pedicle, and they had done badly." † Dirner, of Budapest, Hungary, speaks in favor of the extraperitoneal method, "as it prevents hæmorrhage and sepsis more completely than the other method." Greig Smith ‡ says: "The dangers of the intraperitoneal treatment are nearly twice as great as the extraperitoneal."

But, even when the stump is treated extraperitoneally, there are many dangers and may be much trouble, as an operation, performed, September, 1887, by one of the most distinguished living gynæcological surgeons and at a center of gynæcological science, the record is death on the seventh day "from pus cavity on one side of the pedicle." The pedicle, when treated extraperitoneally, becomes almost a foreign body, ofttimes a putrid mass; the odor that is sometimes perceived tells how danger is lurking around. Greig Smith puts it as pleasantly as possible when he says: "The part of the pedicle beyond the wire or ligature is removed by pressure necrosis. A sort of dry gangrene, which is not entirely putrefactive and which does not set loose foul discharges, is sought to be produced." We may seek to produce the best conditions, but there are still foul septic discharges, and, if the patient recovers, it is only the question of escaping the many dangerous possibilities. At best the stump is a hard, fibrous mass, extending from the vaginal to the abdominal walls, and pulling upon both. In this case I have reported the traction upon the abdominal walls was so great that it made a considerable sink or depresssion in the surface, and caused such pressure from the pins that, notwithstanding every care and all possible disinfection, keeping constantly fresh gauze under the pins, yet beneath them the skin sloughed, and with all this there were the threatening dangers of sepsis, abscess, etc., from the decaying stump. Is a course of procedure the wisest that is necessarily accompanied by, or may encounter, such grave conditions? What is the good of preserving the stump intraperitoneally or extraperitoneally? It is only the remnant or remains of a sickly womb, and can be of no service and

* "Medical News," November 19, 1887.

† In London, September 29, 1886, I saw Bantock remove a large fibroid which was attached to the fundus by a short, soft pedicle. The pedicle was secured by Kœberlé's serre-nœud and placed in the abdominal wound.

* Bigelow, "Am. Jour. Obstet."

† "Am. Jour. Obstet.," January, 1887.

‡ *Opus*, 2d ed., 1888.

may do much damage—how much, who can tell?—not only at the time of the operation, but in the subsequent history of the patient. One case is reported in which "within a year cancer developed in the remains of the cervix, and proved fatal."

In both methods of operation, extraperitoneal or intraperitoneal, it is the stump that makes the difficulty; it is the source of most of the danger, and statistical history shows that the great mortality of this operation is due almost entirely to unfavorable conditions originating in, or generated around, the stump. Emmet reports a case, *op.*, p. 614: "The stump was almost all cut away, leaving only enough of the cervical tissues to hold the ligatures from slipping off, and it was so covered as to be placed outside of the peritoneal cavity, yet on the fourteenth day the patient died from rupture of an abscess." This distinguished operator says further: "I have removed the whole or portions of the uterus in five instances, and, notwithstanding the greatest care to insure a favorable result, all the patients died, sooner or later, from *blood-poisoning* generated about the stump." Shall we say it is a safe method when it is so frequently fatal in the hands of our best operators? It is not the operation, or the method of operation, but it is the danger which is *inherent in this method of procedure.*

When I presented Case I of this paper to the New York Pathological Society, November 23, 1887, I stated that I believed a better and more natural procedure would have been, after opening the abdominal walls, being assured of the condition of affairs, and liberating any adhesions that might exist, then to have severed the vaginal connections, as in kolpo-hysterectomy, and to have removed the entire uterus. Or, if the body of the tumor or uterus was removed through the abdominal incision, then to remove the uterine stump *per vaginam*, and, after "la toilette du peritoine," close the abdominal walls, and *leave the vaginal opening, as the best and most natural way of drainage.** I also gave in a few words the following reasons: This procedure would

1. Have very much shortened the operation, as most of the time was taken up in securing and placing the stump.

2. There would have been less shock to the patient. Certainly, to cut through such an organ as the uterus must cause a more profound shock than severing the vaginal membranes; besides, the constant traction of the pedicle makes a *continuous* shock. At the end of the second day after the operation there were more evidences of shock in the patient than at the close of the operation, which, no doubt, was due to the strain and nervous tension caused by the constant pulling of the pedicle.

3. This mode of procedure would very much lessen the dangers of the operation, not only in diminishing the shock and shortening the time of the operation, but principally that it *gets clear of the stump, et tous ses douleurs.*

4. The patient would make a more rapid recovery. The vaginal wound will heal very much more quickly and naturally than the encircled stump, and will be attended with less complicating difficulties; besides, it seems to be *nature's natural outlet.* Two weeks after the abdominal hysterectomy I performed in the Woman's Hospital a vaginal hysterectomy for cancer.

The patient not only had a tainted constitution, but was weaker and feebler than the last patient; was not able to sit up and had to be carried to the operating-table. Kolpo-hysterectomy was performed on the 28th of November, and the patient was able to be out of bed on the 15th of December, stronger than before the operation, gradually gaining strength; on the 23d of December left the hospital apparently well, and since has been able to assume the charge of her large family. The case of abdominal hysterectomy was performed on November 15th, but, on account of the conditions consequent upon the treatment of the pedicle, the patient was not able to be out of bed until the 20th of December, or to leave the hospital until the 20th of January.

*Description of the Tumor.*—All that was apparently left of the uterine structure was the thin layer of muscular fibrous tissue, half an inch in thickness, which surrounded and held tightly and firmly a mass of fibroid growths—held them so firmly and compactly that one feeling on the outside could not have imagined that it was not one solid myoma. Between the tumors there were only thin layers of musculo-fibrous tissue; thus the uterus was scarcely more than a thin sac, with intervening structures for holding these tumors.

*The Uterine Appendages—Macroscopical Appearance.*—The right ovary was small, measuring an inch by an inch and a half, shriveled and cirrhotic in appearance, and incased in a mass of adhesions. When the ovary was cut open, almost the entire portion was occupied by a single cyst; only a thin wall of ovarian tissue remained.

*Microscopical Examination.*—The pseudo-membrane around the ovary was crowded with inflammatory corpuscles, and in it were found many newly formed and enlarged blood-vessels resulting from the peri-oophoritis and localized peritonitis. The ovary showed chronic oophoritis with acute relapses, or was in a state of subacute oophoritis. Much of the ovarian tissue was entirely broken down into inflammatory corpuscles; in some places the inflammatory corpuscles were changing to fibrous connecting tissue, and in other places this new fibrous connective tissue was again breaking down into inflammatory corpuscles. No doubt in the frequent attacks of oophoritis in the twenty years of suffering the fibrous connective tissue had been repeatedly broken down into inflammatory corpuscles, and then as repeatedly changed to fibrous connective tissue.

The wall of the cyst was composed of different layers of inflammatory deposits. The innermost layer was in a state of intense inflammation; in the next the inflammatory corpuscles were changing to fibrous connective tissue, and this layer gradually passed into a broad layer of new fibrous connective tissue, which in some places extends to the periphery of the ovary, and this new fibrous connective tissue was again breaking down into inflammatory corpuscles and joining the inflamed pseudo-membrane. In one place there was a narrow portion of normal cortical substance, and in this little island, amid the sea of desolation, are seen securely lodged three normal ova, but no possible chance for these little life-cells to ever fulfill their physiological destiny; yet Nature always does her best to perform a function or to perpetuate life.

While in many places severe inflammation extended to the periphery, the most intense inflammation was near the pelvis, where many of the arteries show arteritis and endarteritis, some entirely obliterated, others in a state of waxy degeneration, the endothelium being changed to fibrous connective tissue.

The left ovary is only a thin membranous sac, half an inch in diameter; under the microscope this proves to be a cyst wall

* "Medical Record," December 24, 1887.

with different layers of inflammatory deposits; no normal ovarian tissue and no ova were seen. The Falloppian tubes, when examined under the microscope, are like sacs flattened out by pressure; the thin walls contain a layer of newly formed epithelial cells which are filled with inflammatory corpuscles. The folds of the mucosa have entirely disappeared. This pathological condition of the tubes gives evidence of long-continued chronic disease; probably at one time it was hydrosalpinx.

Case II.—H. S., a Swede, called to see me on January 17, 1888. Forty years of age, twice married; lived with her first husband fourteen years, with the last has lived three years; never had any children. The menstrual periods recurred every two or three weeks, lasting from eight to ten days, the flow hæmorrhagic. Examination showed a uterine myoma extending from the cervix to an inch of the ensiform cartilage, and larger than the uterus at term. The lower portion of the tumor was hard and firm, filling tightly all the space between the cervix and pubic bone, pushing the cervix far back and up, from which position it could not be moved in the least, and it was quite as impossible to pass a sound into the uterine canal. Beneath this portion of the tumor the bladder spread out; a sound in the bladder passed directly down to the cervix.

The growth had evidently existed for many years, but was becoming more and more a source of distress and oppression, exhausting her by its own weight, interfering with her breathing, and was such a burden that she could with difficulty turn from side to side in bed, and frequently had to rise from her bed and stand up to find relief. Its enormous size incapacitated her for any kind of employment; she could not bend over, and if she was much on her feet the pressure gave her neuralgic pains in her limbs, of which she has frequently had most severe attacks, "rolled on the floor in agony," and found relief only by hypodermic injections of morphine. From time to time she has consulted several well-known practitioners. They all told her the tumor could not be removed; that the attempt to remove it would cause her death.

She said she would rather die than endure the constant torment; that "often she has felt that she must kill herself." She was ever conscious of its presence; waked at night with a distressed agony of mind only to find it there. It was such a mental distress that even her well-balanced mind and strong nervous system seemed ready to give way. She was becoming a wreck mentally and physically. Her emaciated body was only a framework to support and transport the growth. Naturally a strong, vigorous woman and from a long-lived family, now, at the age of forty, she is old and worn out, reduced in health, strength, and flesh, and is failing rapidly. Her husband says she has failed more during the last six months than for three years previously.

Some say "such tumors do not kill, that they have a limited active existence, and of themselves they rarely shorten life," etc. Certainly in this case the tumor was killing the patient, rapidly exhausting her life-powers, interfering with every vital function, and rendering every organ abnormal. It had existed for many years and was still in a state of active growth. Emmet tells the history of many when he incidentally remarks of one of his patients: "The tumor gradually increased in size, and in a few years after she died of exhaustion."

Two or three years ago a young woman about thirty-seven years of age placed herself under my care. I found a uterine myoma, six to nine pounds weight, closely wedged into the pelvis and growing upward and backward; a fistula had opened from it into the colon or rectum, and she was obliged to take morphine to control the action of the bowels. Examination of the kidneys also showed serious disturbances, probably from pressure. Even at that time, though she was still so young, yet such injuries or bad conditions had the tumor produced that the case was then considered hopeless—*too far gone for an operation*. Professor B. F. Dawson, who kindly saw the case with me, coincided in that opinion; so also did Dr. Charles Lee. A few weeks ago this same patient called again to see me. General ascites had developed, the action of the bowels was scarcely controlled by large daily doses of morphine, and the growing tumor had caused yet more severe nephritis. The woman was certainly dying of the fibroma,* and hundreds of others have died from the same cause, even though the name of some incidental disease may have filled the death certificate.

I have another case, a larger tumor, but it grows up into the abdomen, consequently does not work as much evil or give as much distress; and though this patient also is in the prime of life and has a strong, vigorous constitution, yet the tumor even now renders her almost helpless. If she works a little she must lie down and rest; she suffers pain, the tumor exhausts her, and is rapidly doing its fatal work.

Mann says: "That fibroid tumors do cause death even before reaching a great size, I have had several opportunities of observing. When they by their presence, through pain and suffering were gradually wearing out the life of the patient, and making that life, while it did last, not worth living."

I do not believe a woman can have a uterine fibroid, however small, without having direct and sympathetic troubles, for the tumors not only may produce various uterine misplacements, with the accompanying evils and distresses, but they encroach upon normal structure, derange, change, and destroy it, disturb normal functions, are a constant irritation to the organic system of nerves, and, by sympathetic troubles and reflex conditions, the injuries they produce are more than we can measure or calculate; they render the whole being physically and morally incompetent. Nature is intolerant of them, and the patients are worn out by the disorders resulting from the fibroids. Greig Smith says: "They set up great irritation of the uterine mucous membrane." Professor Rose, of Berlin, says: "By their large size, they encumber the thoracic organs in their functions. Dilatation of the right ventricle results, with also atrophy of the diaphragm. Repeated attacks of ascites bring orthopnœa and danger of death from asphyxia." Thomas says: "They in some way interfere with hæmatosis and the functions of the ganglionic nervous system. They disorder the mind, produce dangerous mental depression and anxiety, and disturbance of the functions of nutrition and secretion, which slowly drag the patient down to death." Goodell says: "Nothing worries a woman more than the discovery of a tumor in the abdomen. By sheer brooding I have seen one woman become insane and another go into a decline." A pregnant woman has to carry her burden only a few months and all the time with a happy idea, an assured prospect, that it will soon end and she will have inexpressible joy; she is happy and comforted; her very soul holds communion with the little being, yet even for that short time, and with such joyful anticipations, she is wearied

* At one time the patient could have been cured by hysterectomy and before that a yet simpler operation might have saved her years of suffering; but now its continued growth will soon end her life.

and worn out with the burden; but a woman with a fibroid tumor—ah! she has all the time the *dead* burden. No hope of relief, no anticipation, only a sickening prospect, gloomy forebodings, and the saddest of possibilities! "Such a misery," said to me a patient who had carried the burden for many years, "let people who say it is nothing, carry it for one week!"

H. S. was admitted into the Woman's Hospital of Brooklyn, February 5th. Operation performed February 16th. As she lay on the operating table under ether, the body seemed a mere skeleton: the monstrously large and nodulated tumor filled the whole abdominal cavity, extending up to and under the ribs. A small exploratory incision was made first midway between the umbilicus and down to the pubes. I passed my hand in and around to free adhesions, then by the help of Tait's screw, with the left hand beneath, the mass was lifted out of the abdominal cavity. The right tube was greatly enlarged, presented the appearance of a coiled-up and adherent mass of intestine; the left tube was also adherent, its fimbriated extremity closed, and the tube filled with pus. The broad ligaments were tied off and the temporary rope clamp * thrown around the tumor, a great portion of which was cut away, then Kœberlé's clamp was screwed on lower down, when other portions of fibroids were enucleated. The pedicle, thus secured, consisted of a mass of tumors, one of them three inches in diameter, all closely packed, reaching to the cervix. I knew that to make a pedicle of the mass would not only endanger the patient's life, but render the operation unfinished and imperfect, so I decided at once to proceed as in vaginal hysterectomy for the removal of this portion. Dr. Charles N. D. Jones took charge of the abdominal wound, temporarily closed and covered with aseptic gauze, and greatly assisted me by forcibly pushing down the cervix with the contained tumor. I separated the vaginal attachments, carefully preserving the bladder and ureters intact. Still the large size of the tumor would not allow it to come down sufficiently to secure the broad ligaments, so while I was clamping the vaginal opening I requested Dr. Jones to clamp the broad ligaments from above. The size of the tumor rendered it necessary to deliver it through the abdominal opening. The large forceps which clamped the broad ligaments were left on, projecting through the abdominal wound; by the side of these was placed the drainage-tube. Several smaller forceps were left in the vaginal wound, the peritoneal cavity was washed out, the abdominal wound closed and dressed, the vaginal wound left open for drainage and treated as in vaginal hysterectomy.

By thus removing the cervix, or the entire uterus, we not only got clear of the stump, but of the great mass of loose tissue which surrounded it and which, if it had remained, would doubtless have produced the most serious consequences, and which is probably an explanation of why the report has so frequently to be made of death on the ninth, twelfth, or fourteenth day from abscess near the stump. I do not see how in this case, with every precaution, the formation of an abscess could have been prevented in so much loose tissue. Even if all the fibroids had been enucleated there would still have been a great pocket of loose tissue. Schroeder says: "The difficulties of the case become very numerous when we have to remove a fibroid developed in the lower part of the uterus and extending into the cellular mass of the pelvis. If the tumor is enucleated there remains a cavity. If I do not expect a very abundant secretion from it I leave the walls of the cavity simply to close upon each other and drop the whole into the abdomen." Possibly just such cases increased Schroeder's mortality list.

It was marvelous in this case to see how much more rapid was the convalescence of the patient than it would have been had not the stump been removed. Case I, reported in this paper, with the stump in the abdominal wound, looked as she lay in bed as if she was constantly held down by a ton weight which made her almost helpless and motionless; but this patient, pinioned by no stump, moved easily from side to side, was extremely light and agile in all her movements, actually got out of bed on the seventh day (without our knowledge, however) and after the eleventh day could sit up occasionally, and when necessary go to the water-closet. Keith says: "The average time of convalescence in the extraperitoneal cases was forty-one days; of the intraperitoneal method, three weeks." This patient was practically well on the twelfth or fourteenth day, had an excellent appetite, and had gained in flesh and strength. No such results could possibly have been secured if the stump had been left.

On the eighth day the patient menstruated, the blood seeming to ooze from the internal surface of the vagina, and the flow lasted five days. The tumor weighed thirteen pounds and a half. Nothing apparently was left of the uterus except the little undeveloped cervix and the comparatively thin layer of fibro-muscular tissue which surrounded the mass of tumors, and held them so firmly and solidly that, even on closely examining the naked tumor, there was no other appearance than one solid formation.

On cutting the capsule or thin wall of the uterus, the great mass unfolded itself, and to have crowded it back into the same compass would have been an impossibility. The upper third was an oblong solid tumor, measuring 9½ inches in diameter, and there was a mass of separate, round, solid tumors, measuring 2½, 3½, or 4 inches in diameter. One tumor, 3½ or 4 inches in diameter, filled the space commencing at the internal os, leaving, so far as could be perceived, not the least trace of a uterine canal, and agglutinated to this were several smaller fibromata; this was the mass that on first examination was perceived in the pelvis, and which pushed the cervix far backward and upward and prevented the entrance of the sound. It was also the mass that was finally removed by separating the vaginal attachments and broad ligaments.

*The Appendages—Macroscopical Appearance.*—Right tube measured ten inches in length, was coiled upon itself, and filled with bloody serum. The closed, fimbriated extremity was four inches and three quarters in circumference. Left tube, five inches in length, was filled with pus, and its closed, fimbriated extremity was adherent to the left ovary. The right ovary was atrophied and hidden in the folds of the right tube; the left ovary was much enlarged and contained a hæmatoma two inches in diameter.

*Microscopical Examination—Right Tube.*—The wall of this tube consisted almost entirely of dense, fibrous connective tissue, its muscle being transformed into this tissue. A few remnants of muscle fibers had become waxy, and were breaking down into inflammatory corpuscles.

The epithelium of the mucosa had entirely disappeared;

* Dr. C. N. D. Jones's modification of Tait's temporary clamp. See "New York Medical Journal," June, 1888.

no remnants of it were left, as it was entirely changed to fibrous connective tissue, almost cicatricial. There were many newly formed blood-vessels with thick walls, and the newly formed fibrous connective tissue was crowded with inflammatory corpuscles.

The left tube was five inches in length and filled with pus. Almost the entire muscular structure of this tube also had disappeared or was changed to fibrous connective tissue, and this new tissue was crowded with inflammatory corpuscles which, in many places, formed abscesses. The few scattered bundles of smooth muscle left were in a state of intense inflammation and beginning ulceration.

Also, in the left tube, the epithelium of the mucosa was entirely destroyed and the mucosa was crowded with inflammatory corpuscles. Only a few blunt remnants of the folds of the mucosa were left, and these were in a state of intense inflammation. Amid these thickly crowded inflammatory corpuscles were seen in every part coarse bundles of fibrous connective tissue, showing that the mucosa had previously been invaded by a plastic inflammation of which probably there had been repeated attacks. Also in the mucosa, or in the previously formed tissue, there were seen many newly formed blood-vessels.

The ovaries also gave evidence of extensive changes from long-existing disease. Not a vestige of normal ovarian structure was seen, nor could an ovum be found in either ovary. Though the pathological changes showed long-existing chronic disease, yet portions of the ovary were in a state of acute inflammation.

There must be some connection in the way of cause and effect between disease of the uterine appendages and a fibroid tumor or uterine myoma. In both of the cases here reported the disease of the appendages had existed many years—probably twenty. Both patients were sterile for that length of time. The fibroid in each, twenty years ago, was small, probably did not exist, and *would not, in either case*, have been a cause of sterility, nor could it in either case have produced the disease of the appendages; but the disease of the appendages, which was probably acquired in early married life, would have produced the sterility, and probably had such a disturbing effect upon the nutrition and circulation of the uterus that *it may in each case have caused the growth of the tumor*. If the prepuce is narrow, the prostate may be obstructed, and an enlarged prostate may produce kidney disease. May not an obstructed or diseased tube have equally a disturbing effect upon the nutrition of the uterus?

Of two cases of myofibroma of the uterus, the histories of which I reported not long ago,* one had an intermural tumor, the other had two subperitoneal fibroids. Both women had been sterile for eight or nine years. Both had had disease of the uterine appendages for about that time—one, chronic ovaritis and pyosalpinx; the other, chronic ovaritis and interstitial salpingitis. The fibroid in either case eight years ago would not have caused the sterility; they were at the time very small, if they existed at all; but the disease of the appendages would have caused sterility, and quite probably this disease of the appendages caused during this period the development of the fibroid.

Yesterday, July 16th, a woman called to see me suffering from a uterine myoma, very large and filling the pelvis, and one large movable subperitoneal growth. She is forty-four years old, has been married twenty-four years, and never has had any children. Since marriage, menstruation has always been accompanied with pain—pain commencing two or three days before the flow, showing that it was due to the diseased appendages. In this case also we see that a possibly small fibroid twenty-four years ago would not have caused the sterility; probably no fibroid existed at the time, but the sterility would have been caused by the disease of the appendages, which did exist at that time, and that this disease of the uterine appendages may have caused the growth of the uterine fibroid.

In almost every reported case of hysterectomy for uterine myoma, when the appendages are referred to, they are mentioned as being in a state of disease, and in many instances when they are supposed to be normal the microscope would doubtless reveal a condition of long-existing disease and degeneration. Mann, speaking of a case of hysterectomy for fibroid tumor, says: "There was no chance of removing the ovaries, as they were bound down in a mass of adhesions." Drysdale, reporting a case of hysterectomy, says: "Beneath, the uterine tumor was adherent to the broad ligaments and the ovaries." Martin says of a case: "Ovary adherent; dropsy of the Falloppian tubes." Dr. M. Price reports of one of his cases: "Double tubal and ovarian disease." Professor Ed. Rose, of Berlin, says of a case: "The right tube was adherent to the right side of the pubis, fixing the uterus, and contained an intra-canalicular hæmatoma." In every instance in which I have removed the uterine appendages for a bleeding fibroid I have found the appendages so much diseased that, on that account, their removal was desirable. In removing the uterine appendages for diseased conditions, I have frequently been surprised to find in almost every instance the uterus enlarged more or less, either from hyperplasia or an incipient fibroid growth, more likely the latter condition—are they similar in nature?—and the removal of the diseased appendages not only prevented the evil which their diseased condition would do the health, constitution, and general system, but also the injury they would do to the *uterus itself, in changing its structure or developing a fibroid growth.*

The question may be suggested, Why not have tried electricity or Apostoli's method in these cases? I reply: 1. It would probably have been attended with equal or more danger. 2. The results would have been more uncertain and more incomplete.

We can not think of electricity being so harmless and inoffensive when Apostoli calls it "a double-edged agent," and says "the negative pole is a dangerous weapon, having strong power of producing congestion," and that "the manipulations in the operations of galvano-puncture will always be dangerous in incautious hands."

W. S. Playfair says: "It is a very double-edged weapon, and capable of doing much harm."* Woodham Webb says: "The negative pole has dissolvent and destructive

* "Medical Record," Nov. 23, 1886. "Am. Jour. Obst.," March, 1888.

* "Brit. Med. Jour.," January 11, 1887.

powers," and "When the cavity of the uterus can not be reached by a sound, pass the disintegrating current through the diseased structure, and new punctures may be made from time to time on suitably presenting parts of the tumor." "New punctures!" Do we recognize the gravity and imminent danger of such a proceeding? The "British Medical Journal" well says: "Every application of electricity may be looked upon as a major operation." Apostoli says further, in his address before the British Medical Association: "All the attempts of his predecessors in the electrical cure of fibromata were defective in ways; the current was set in motion in ignorance of its intensity and with an imperfect knowledge of the best means of employing it, and by a method often dangerous from the galvano-puncture being made above the pubes and through the abdominal integument." W. Webb, who pursues a parallel line of thought with Apostoli, says: "The intensity of the current they put in action was insufficient, uncertain, and insecure, and, in the hands of all who tried it, the operation was painful, dangerous, and empirical." Engelman gave expression to the same thought before the American Gynæcological Society in 1886, saying: "The electrical current was used without any knowledge of its greatly varying quantities, and without any knowledge of dose." A writer in the "Medical Record" of July 7, 1888, in an article favoring "The Treatment of Uterine Fibroids by Apostoli's Method," says of the old treatment: "It was purely empirical and wholly unscientific."

Apostoli continues: "With these imperfections and dangers in view, I originated a new and rational way of using electricity, for the purpose of employing high intensities of current and enormity of doses, either in the cavity of the uterus or the substance of the fibrous deposit."

But this "new and rational way" seems very similar to "the old defective ways"; it employs the same "galvano-puncture made through the abdominal integument," which Engelman says is "invariably accompanied with danger and suffering," and from which, he says, "have occurred cases of peritonitis, perimetritis, and death"*; and it employs the "bare metal electrode in the cavity of the uterus," by which, as A. D. Rockwell says, "it is possible to inflict much damage," remarking "that it can not often be necessary to deal so heroically with the delicate tissues in the interior of the uterus."† W. H. Baker says that in some conditions "the sound in the cavity of the uterus is exceedingly dangerous"; and Engelman also says that he "would not advise it," and that he had "not followed Apostoli's method, for he had made prominent the use of the sound in the cavity of the uterus." Of "high intensities" the writer in the "Medical Record" just quoted says: "This enormous dosage is liable to do great harm, and for the average American woman it is too high"; and then he gives various other directions, which, as he says, "are entirely at variance with Apostoli." The advantage of "high intensities," according to one writer, is "the saving of time, and thus making electricity of service in pauper clinics."

* "American Gyn. Trans."

† "New York Medical Journal," November 12, 1887.

Even with this "new and rational way," "of high intensities and enormity of doses," we still think the dangers attending "galvano-chemical cauterization, intra-uterine or parenchymatous," may be greater than a surgical operation for the removal of a myoma. There is the same danger of infection, danger of shock from sudden interruption of the current,* danger of hæmorrhage, danger of inflammation,† danger of unseen internal injuries, of wounding the intestine, the peritonæum, or some larger blood-vessel; "the risk," as Apostoli says, "of opening a vesico-vaginal fistula, or wounding an important vessel." The needle may go where, and puncture what structures! It is working in the dark. Apostoli advises, "in case of any unusual hæmorrhage, immediately dilate the vagina with the expanding speculum, and, if necessary, put forceps on the bleeding part"; but, before "the vagina can be dilated by the expanding speculum," a wounded artery in the abdominal cavity may be rapidly pouring forth its flood-tide of life.

Then, again, there are the untold dangers from what they call "the disintegrating process, or ulterior changes," produced by that "dangerous weapon, the negative pole." Apostoli asserts that "it sets up a subsequent process of disintegration." How wide, or how lasting, or how fatal? What power controls it? Who can set bounds to it, and say "Thus far"? Who can keep its destructive disintegrating process *inside* of the tumor? And, if this current can check the growth and "disintegrate" the solid fibroid, how much more may it affect neighboring and finer structures! It is "dissolvent and destructive"; may not the intestine be internally injured thereby?‡ We set the force at work; it is out of sight, and among the living structures! What is it doing, and how does it act? Baker says: "My opinion is that electrolysis establishes an interstitial inflammation of the connective tissue." If it does, it produces a sad condition. And has the operator the power to limit or end, when and as he chooses, this "interstitial inflammation"? Baker says further: "And in its resulting cicatricial contraction the muscular fibers are compressed, so that fatty degeneration occurs, then absorption, and the growth diminishes." "A happy combination!" as Mark Twain says.

Another writer asserts that it is by "uterine contractions and gradual shrinkage by compression and malnutri-

* Certain conditions may suddenly interrupt the current and cause a severe and dangerous shock.—"Brit. Med. Jour."

A shock would inflict damage on many.—A. D. Rockwell.

Shock caused by the sudden making or breaking a current may prove quite serious.—Engelman.

† Hæmorrhage may be caused by careless puncture or by injudicious use of the negative pole; inflammation may follow the use of strong currents injudiciously applied to sensitive parts.—Engelman.

‡ Since writing the above I have noticed the following case reported as treated by galvano-puncture: At the autopsy "the larger lobe of the fibroid was cut open; it displayed a uniform surface, white and cartilaginous; no marks or traces of the electrodes that had repeatedly penetrated the growth. The evidences of general peritonitis were very marked; coagulated lymph, partly organized, was plastered over the tumor and intestine. *Portions of the intestine* were almost *black* and *gangrenous*." Thus the finer structures were more affected than the tumor.

tion of the tumor." * Franklin H. Martin, in explaining the action, says † that "he believes that electricity, powerfully concentrated in passing through the tissues, has some destructive effect on the trophic nerves, or nerves that carry trophic influences, thereby cuts off the power of nutrition in the tissues, and causes progressive or rapid atrophy of the tissues under their control." Why may not the "atrophic" effects of the current affect the trophic nerves of the carrying blood-vessels, and exert destroying or atrophic influences on the finely constructed intestine? How do we stay the force? Is there a landmark or a demarkation beyond which it shall not pass? Again, we are told that "the stanching effect from hæmorrhage is due to the cutting off of the supplementary circulation." ‡ Why may it not cut off the supplementary circulation of other structures? How can it "atrophy," or have some destructive effect upon the trophic nerves, and affect the "supplementary circulation" only of the hard, insensible tumor, and not similarly affect neighboring vital organs?

(*To be concluded.*)

## REMOVAL OF A SPINA BIFIDA WITH THE KNIFE.

*RECOVERY.*

By Z. H. EVANS, M. D.,
BAY CITY, MICH.

On March 27, 1888, I was called to see the six-year-old son of G. F., who was suffering from a spina bifida of the size of an orange, involving the second and third lumbar vertebræ (Fig. 1). He also presented the club-feet so often seen in connection with this deformity. His physical development and general condition otherwise were all that could be desired. During the conversation with the mother she remarked that this disease was peculiar to the family; that two of her sisters had given birth to children with spina bifida, her child being the fourth. Upon examination of the tumor, I found it attached by a broad base and quite painful on pressure, especially on the left side. There also existed at the base of the tumor on the right side a small opening through which pus was constantly discharged, rendering a dressing necessary two or three times daily in order to keep the parts clean and free from smell. A probe passed into this opening came in contact with dead and detached bone. After enlarging the opening sufficiently to admit the finger, it was found that the sac was lined throughout with small scales of bone, and contained necrosed tissue. This accounted for the discharge of pus and led me to believe that I had encountered one of those rare cases of false spina bifida in which Nature had so far effected a cure as to close the opening in the spine and cut off all communication with the cord. I therefore deemed it advisable to remove the tumor, with the view of freeing the patient from the annoyance of the constant discharge of pus.

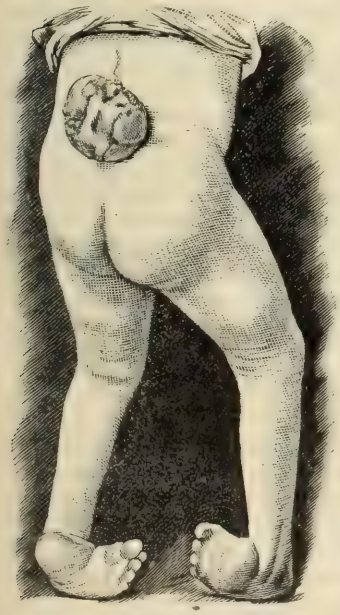


Fig. 1.

On the 17th of April, with the assistance of Dr. Carrow, Dr. Minar, Dr. Hoxter, and Dr. Elliott, the operation was begun by making an incision on the right side of the tumor well down its base. A similar one was then commenced on the left side, but the knife had only passed through the skin when a smart flow of spinal fluid occurred, convincing all present that instead of a false spina bifida, we had a true one to deal with. The removal of the tumor was accomplished as quickly as possible, and we found on examination that it contained two sacs, that on the left side containing the meninges of the cord and having an opening of the size of the end of a lead-pencil leading down to and through the cleft in the spine, which was large enough to admit the end of my thumb and exposed the cord to view; while that on the right was occupied by small fragments of bone, pus, and necrosed tissue. Four deep sutures were now passed and made to include the spinal membranes on either side, so that when drawn up they would bring the opposite surfaces of the wound in close apposition, our hope being in this way to secure plastic union—a result much to be desired. A large pad of cotton was now placed over the site of operation and held in position by means of a wide flannel binder. The shock from the operation was so great that it was necessary to keep the patient on the operating-table, with his feet elevated, for nearly an hour, and to administer frequent injections of brandy. His pulse and respiration gradually improved and he was placed in bed surrounded by warm woolen blankets, and bottles of hot water were applied to his feet. Much to my surprise, I learned from his mother the next morning that he had slept well through the night without anodynes and had eaten his usual breakfast. The patient continued in this condition until the morning of the third day, when he was seized with convulsions, which lasted, however, but a short time. Bromide of potassium, in five-grain doses, was ordered to be given every two hours in the event of a return of the convulsions; but as they did not recur the drug was not administered. Owing to a constant discharge of spinal fluid, it was necessary to change the dressing of the wound night and morning, thus retarding the healing process. The discharge continued for about three weeks, after which period it gradually grew less in quantity as the wound contracted, filling in the opening in the spine with the products of inflammation. Three months have now elapsed since the operation was performed and the patient has completely recovered from its effects (Fig. 2). His back is entirely free from pain and tenderness on pressure, and I consider him well so far as his spina bifida is concerned. Antiseptics were not used.



Fig. 2.

In his work on surgery, Mr. Erichsen states that he has never known other than a fatal issue to follow the removal of a spina bifida with ligature, scissors, or knife, while Gross, Hamilton, Wyeth, Drewitt, Holmes, Treves, Hewitt,

* "Am. Jour. Obstet.," December, 1885.
† "Medical Record," December 17, 1887.
‡ "Brit. Med. Jour.," March 24, 1888.

and a host of other brilliant stars, both ancient and modern, are equally positive on this subject. I therefore claim for myself the credit of being the first to record a case of extirpation of spina bifida with the knife in which the patient survived the immediate and remote effects of the operation. In this connection I wish to state that if I should ever be called upon to remove another spina bifida, I would, after excluding the cord from the sac, clamp the tumor at its base by means of a suitable clamp, exerting sufficient pressure to cut off all communication with the cord. Then with one stroke of the knife I would remove the tumor just above the clamp, leaving a sufficient quantity of tissue above the blades of the clamp to admit the sutures, which should be inserted very close together and through the entire thickness of the tissue embraced between the blades. When adjusted, the sutures would effectually seal the wound against the escape of spinal fluid and exclude the air from contact with the spinal membranes, thus obviating, to a great degree, the danger of exciting inflammation in these delicate structures. The operation performed in this manner is practically the subcutaneous removal of the tumor, and, in the opinion of the writer, would, in well-selected cases, afford a greater chance for the recovery of the patient than is given by any method of removal hitherto described.

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## ON THE ADVISABILITY OF EARLY OPERATION IN CASES OF PTERYGIUM, COMBINED WITH LOSS OF ACUTENESS OF VISION.

By F. W. MARLOW, M. D., M. R. C. S. E.,
PROFESSOR OF OPHTHALMOLOGY IN THE MEDICAL DEPARTMENT OF THE UNIVERSITY OF SYRACUSE, ETC.

I believe it is not generally known, at any rate I have been unable to find any record of the fact, that pterygium produces in some cases marked diminution of visual acuteness before it encroaches upon that part of the cornea which lies directly in front of the pupil. In those text-books in which reference is made to the condition of vision in cases of pterygium (and these are in the minority) it is stated that vision is unaffected so long as the growth does not lie directly in front of the pupil, and that, when the growth has extended to this situation, the diminution of vision is in proportion to the amount of obstruction of the pupil.

The following case is one in which I had occasion to work out carefully the refraction before and after operation, and I think it shows that there are at least some exceptions to the foregoing rule:

Mr. E. C., aged forty-seven, a minister, consulted me on February 13, 1888, chiefly on account of recent difficulty in reading sermons while in the pulpit. The left had always been the better eye. He had been suffering from pterygium of this eye for about ten years, and an operation (probably Stellwag's) had been performed five years ago, which did not, however, result in much improvement. He did not attribute the failure of his vision to the pterygium.

When first seen by me the corneal portion of the growth covered the ciliary two thirds of the width of the iris, the pupillary one third, or at the least one fourth, of the width of the iris being visible at its outer side.

*Vision and Refraction.*—R., $\frac{2}{0}$; my. 5 D. $\frac{2}{6}$; slightly improved by −0·5 D. cyl. 180°. L., $\frac{2}{6}$; my., 0·75 D. $\frac{2}{6}$ partly; slightly improved by −0·5 cyl. 180°.

With R. −4 Ds. L. plane glass, he was able to read well at the required distance, and those glasses were prescribed for him.

*February 20th.*—Under cocaine anæsthesia, a broad needle was passed beneath the growth just outside the corneal margin. Into this puncture a secondary cataract knife was passed, with the blunt back of which the separation of the growth from the cornea was gradually completed. A snip with scissors was then made in the conjunctiva along the upper and lower margins of the growth, which was doubled upon itself, the apex being tucked into the chink between the eyeball and the base of the growth, and fastened there by a suture coming out near the caruncle. The edges of the conjunctiva above and below the gap thus left were united by one suture.

*On March 5th.*—L. V. unaided, $\frac{2}{6}$, −1·5 D cyl. 10°, $\frac{2}{5}$ fairly.

The improvement in vision was noticed and remarked upon by the patient before the foregoing test was made.

The obvious explanation of the change in refraction and visual acuteness is that the drag upon the corneal tissues by the pterygium produced irregular astigmatism, and that when the pterygium was removed the regular corneal curve was resumed.

The above-cited case would seem to indicate the advisability of operating in all cases of pterygium in which, while the growth has not yet encroached upon the pupillary area, the degree of acuteness of vision is, nevertheless, below the normal.

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**Acute Gastic Catarrh.**—"Catarrh of the stomach," says the "Lancet," "is perhaps more frequent in infancy than catarrh of any other mucous membrane; it attacks the feeble, the anæmic, the convalescent, and the sufferer from any form of fever, whilst the healthy babe is not exempt. The gastric juice is altered in quality and diminished in quantity; the digestion is consequently impaired, whilst the muscular coat may be paralyzed or too irritable. The treatment should consist more in the avoidance of certain articles than in the administration of drugs. Small quantities of iced water, seltzer, or other effervescing water relieve the thirst; and Jacobi recommends greatly diluted muriatic acid in the proportion of one part to three or ten thousand. Milk should not be given if there be much mucus ejected from the stomach; indeed, it is well to withhold milk entirely for a day or two, and give only whey or some mucilaginous or farinaceous liquid."

**Transplantation of the Cornea.**—"This operation," says the "Lancet," "has been frequently performed, but hitherto without permanent success. Various cases have been recorded by Mr. Power, Sellerbeck, and others, in which the new cornea taken from cat or dog, the eye of which is preferable to that of the rabbit, has formed adhesions and retained its transparency for some days or weeks, but sooner or later the new cornea becomes hazy, contracts to a button, and is finally absorbed or sloughs out, and the patient remains unimproved."

**Deafness treated by Pilocarpine.**—"Pilocarpine would appear, according to Corrado Corradi," says the "Lancet," "to be very serviceable in the treatment of deafness due to labyrinthine derangements, whether associated or not with disease of the middle ear. Large doses may be required. In one case two centigrammes of pilocarpine were injected twenty-four times. Moos has injected from five to eight drops of a 2-per-cent. solution in cases of deafness resulting from diphtheria. Considerable improvement of hearing resulted even in cases in which deafness had existed for three weeks. Care is required lest the pilocarpine should increase the debility of post-diphtheritic cases."

THE
NEW YORK MEDICAL JOURNAL,
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Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, AUGUST 25, 1888.

## OOPHORECTOMY AND THE SEXUAL APPETITE.

THE statement made by Mr. Lawson Tait at a recent meeting of the British Gynæcological Society that the ovaries have no more to do with the sexual appetite than have the front teeth has excited some comment, and has roused the ire and evoked the spirit of sarcasm of some antigynæcologists. If the allegation that the operation of oophorectomy is followed by the loss of the sexual appetite be sustained by facts, the question arises as to whether that fact should constitute a contra-indication to the operation when performed for the removal of diseased ovaries. Moreover, some idea as to the extent and power of the sexual longings of women whose ovaries are the seat of a disease of such a character as to render their removal necessary must be formed before the question as to the anaphrodisiac effect of the operation can be decided upon; or before liability to such an effect can be urged as an argument against the employment of the operation as a means of treatment. If the disease is capable of modifying or destroying the sexual appetite, the condition of the patient in that respect can not be made worse by the operation, and it seems hardly possible that a woman who suffers constant pelvic pain, and whose pelvic organs are in a state of such exquisite sensitiveness as to be intolerant of even the most gentle manipulation, can regard the sexual act as a desirable *finale* to the manifold pains and aches of a day of misery.

Few women who are afflicted with disease of the pelvic organs are to any degree ardent in sexual matters. Indeed, by far the greater number of them complain of dyspareunia, of absence of all desire for or pleasure in the sexual act, or of actual repugnance to it. The same lack of desire and gratification in the act is often observed in women who are apparently free from pelvic disease and who seek medical counsel from a desire to bear children, believing this frigidity to be the cause of their sterility.

If the ovaries be diseased to such an extent that their functional activity is lost, or if the Falloppian tubes are so obstructed or otherwise changed that their usefulness is gone, the physiological action of these organs is arrested; and if the sexual appetite be dependent upon the presence of these organs, and proceeds from them as its source, it can hardly be normal when these are functionally inactive, and exert only an irritating influence on the organism. The removal of the ovaries in such a case could not but be of benefit, and would theoretically be more apt to cause the return of sexual desire which had been destroyed as a result of the pain produced by copulation during the course of the disease. Dyspareunia can but result in great impairment of the sexual appetite, no matter how strong this may originally have been, and this fact certainly lends much force to Mr. Tait's dictum that the removal of the ovaries has no power in itself to destroy sexual desire.

Women, unlike men, are usually dependent on their affections rather than their ovaries in the matter of sexual passion, but even the strong influence exerted by love and a desire to promote the happiness of its object can not change a physically painful ordeal into a pleasure, or induce a feeling of strong desire for such self-sacrifice. We find it difficult to believe, then, that the removal of organs which have been so changed by disease as to cause the destruction of the desire which they are supposed to produce in the individual to whom they belong, can exercise anything but a beneficial effect in so far as sexual matters are concerned. Other considerations in regard to the operation we are not now discussing, but if resulting loss of sexual desire is to be considered one of the chief objections to its employment, we fail to appreciate the force of the argument, or to understand the prominence which has been given to this alleged resulting evil.

## THE WINE OF THE COUNTRY.

THE following paragraph was lately published in the London "Truth": "The Duke of Manchester obtained fair prices for the wines which he sold last week. Schloss Johannisberg Cabinet of the great year 1862 realized 240*s.* per dozen, and the purchaser could get treble the money to-morrow in Germany for it if the wine is in good condition and is really from Prince Metternich's vineyard. Of champagne, the Perrier-Jouet of 1874 went at 280*s.* and 310*s.* per dozen, while Lafitte of 1869 and 1864 was assuredly cheap at 105*s.* and 120*s.* per dozen, respectively, if it were genuine and in fine order."

Considering the character of the newspaper in which this statement appears, together with the fact that it is wine from an English nobleman's cellar with regard to which doubt is expressed, not only as to its good condition, but also, at least as concerns some of it, as to its genuineness—it may well be asked how often our citizens who import so-called Johannisberger, Chateau Lafitte, Chambertin, Chateau Yquem, or Clos de Vougeot, either directly or through persons on whose judgment and honesty they rely, on grounds that it would perhaps tax them to present very convincingly, really obtain the genuine wines known by those names. Very rarely, if ever. And the reason is not that a sufficient price is not paid, but that those wines are produced only in small quantity and are seldom allowed to get beyond the grasp of local potentates. The Americans who think that they get them are not men who are easily deceived in ordinary matters; they are shrewd men of business. To be sure, they are not wine-tasters by profession, and they are therefore obliged to rely on the judgment of others; but in many other affairs also they are in quite as great measure dependent on something else than their own personal knowledge, and, yet, in those things they seldom go astray. In most matters of trade, all but the hopelessly verdant soon cease to

strive for that which is manifestly unattainable: why the purchase of spurious fine wines should persist as a glaring exception is almost inconceivable. The pertinacity with which such men as we have spoken of allow themselves to be deceived (and in turn attempt to deceive their friends) in this matter is hardly exceeded by the gullibility with which the prodigal "transient" selects his wines from a hotel list, although everybody knows that nine tenths of the hotels at which it would be only by chance that one could get a good ale or cider have on their printed lists the names of all the noted wines that we have mentioned.

We should be showing only a moderate degree of sense if we were to cease trying to get these wines and pretending that we had succeeded. In like manner, our wine-growers would be contributing materially to the advancement of their industry, already very creditably developed, if they were to restrict their efforts, for the present at least, to the production of good ordinary wines, and not waste their resources in fruitless attempts to imitate the famous products of a few European vineyards. We are glad to see that this advice is given them most pointedly by Mr. Arpad Haraszthy, the president of the California State Board of Viticultural Commissioners, in his last report to the Governor of that State. Mr. Haraszthy's own success in producing a champagne which, while it is quite unlike the well-known imported brands, is fully their equal is a fitting example to enforce his precept. We are not unmindful of the fact that many of the attempts made in California to imitate fine European wines have been reasonably successful, especially in the case of Tokay. Moreover, we have not the slightest doubt that as fine wines as were ever grown will eventually be grown in California; but they will not be identical with the wines of other countries, and should not have the same names given them. The production of a wine of extraordinary excellence and at the same time of distinctive characteristics is not the result usually of a series of trials made during the life-time of an individual, undertaken with a view to accomplish the object finally attained, and progressing continuously to that end; it is the outcome of circumstances largely fortuitous—in plain words, in great measure a matter of chance. The fine California wine of the future will come into existence in the same way; it must be the wine of the country and not a counterfeit of the wine of some other country, and it will not be made by copying the details of processes that have been found to answer best elsewhere.

Meantime, it is a matter for genuine congratulation that the wine-growers of California have already produced a series of wines that compare favorably with imported wines in palatability, and, beyond all else, that are not contaminated with deleterious adulterants. This latter feature was to be inferred from ordinary tests, but it is pleasant to have it substantiated by methodical chemical examination, such as Dr. Wolff, of Philadelphia, lately applied to various specimens furnished by the California Vintage Company, of New York, a brief account of which we recently published. We trust that these pure and wholesome wines, so advantageous in the dietary of many an invalid and as a substitute for the vile concoctions consumed by the average American citizen, may eventually, as Mr. Haraszthy prophesies, be furnished to our laboring classes at the present price of beer. Then California not only will have given health and wealth to thousands who have sought her shores, but will prove a powerful disseminator of an agreeable antidote, so to speak, to the habit of dram-drinking. Then it will be feasible to export our wines to Europe in large quantities, as Mr. Haraszthy is obliged to confess is not the case at present.

## *MINOR PARAGRAPHS.*

### A ROYAL ROAD TO MEDICAL LEARNING.

Some enterprising and ingenious individuals, apparently impressed with the lamentable fact that the medical profession of America is so poorly supplied with followers, and in view of the need of the community for able and well-educated physicians, have devised a plan by which, as is stated in their circular, "it is extremely easy" to "take the degree of M. D." "Forty-five minutes a day for study suffice," and after a series of examinations, which are had by sending the examination papers to the student, who is to "answer them with few or no abbreviations or reference to books," the candidate for examination honors receives a "diploma-certificate for framing," and is then "qualified for a physician's assistant." The duties of this functionary are not defined, we presume for the reason that the teachers recognize the fact that the graduates of their "college" will achieve greatness as physicians' assistants in divers ways, each according to his individual capabilities, for some may shine in the pantry, while others inscribe their names on the scroll of fame in the stable or the kitchen-garden. Each will find his proper sphere of usefulness, and in his own way will do honor to his Alma Mater. But is not forty-five minutes a day devoted to study an inordinate waste of time, under the circumstances? The assistant will find that familiarity with chemistry is by no means essential to him in his operations on the silver-ware or the boots of his chief, and any man of ordinary intelligence is able to grease a carriage-wheel without a knowledge of the source or physiological action of castor-oil. But it is best to err on the side of overpreparation for the practice of a learned profession than on the other, and so we heartily commend this college to all who are ambitious to become physicians' assistants.

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### UNTOWARD EFFECTS OF CASCARA SAGRADA.

Dr. C. M. Fenn relates in the "Therapeutic Gazette" for August his experience with the use of this drug, which he believes to be "not a harmless laxative, adapted for general and protracted use, but an irritant cathartic, requiring in its use great circumspection and care." As this is at variance with the estimate of the drug in the opinions of most observers, we will quote several of Dr. Fenn's unfortunate experiences in his use of the remedy. He noticed obstinate vomiting, violent cramps, bloody stools, and, in one instance, in which death occurred from cerebral anæmia and valvular disease of the heart, the patient had been taking a strong decoction of the bark, to the effect of which Dr. Fenn ascribes the existence of large patches of ecchymosis found in the mucous membrane of the stomach. This patient was seventy years of age, and very feeble; and the irritant action of the drug upon the gastric mucous membrane was believed to be the exciting cause of the fatal attack of cerebral anæmia. It may be worthy of note that in the greater

number of cases the drug was used in combination, and in cathartic rather than small repeated doses. The latter plan of administration has proved most successful in the experience of most observers, and is rarely accompanied by any disagreeable effects other than a moderate degree of cramping pain.

### "DISTRACTION" IN HIP DISEASE.

Dr. E. H. Bradford, in the "Boston Medical and Surgical Journal," reports two cases of incision into the hip joint, performed for the relief of persistent "night cries." He found that moderate extension of the limb produced marked separation between the head of the femur and the acetabulum. In the adult, distraction of the femur is prevented by the cotyloid ligament when the force of extension is exerted in a direction parallel to the axis of the body, but it can be produced by traction after the limb has been slightly flexed and abducted. In the case of children, as the cotyloid ligament is weak and the acetabulum smaller, as the rim of that cavity is cartilaginous, therefore direct extension will accomplish the result desired, although it fails in the case of the adult.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 21, 1888:

| DISEASES. | Week ending Aug. 14. | | Week ending Aug. 21. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 16 | 4 | 26 | 9 |
| Scarlet fever | 69 | 12 | 91 | 10 |
| Cerebro-spinal meningitis | 3 | 4 | 2 | 1 |
| Measles | 144 | 10 | 121 | 12 |
| Diphtheria | 102 | 27 | 82 | 31 |
| Small-pox | 2 | 0 | 2 | 0 |

**The Mississippi Valley Medical Association** will meet at St. Louis, Sept. 11, 12, and 13, 1888. Dudley S. Reynolds, A. M., M. D., Louisville, president; John L. Gray, M. D., Chicago, Ill., secretary.

The following circular has been issued:

Office of the Chairman of the Committee of Arrangements, Lindell and Grand Avenues, St. Louis, Mo., *July 19, 1888.*

*To the Medical Profession of the Mississippi Valley:* That there should be a thorough appreciation, on the part of the profession, of the mutual interests of medical men in the States of the West and South can not be questioned. Engaged as they are in the management of diseases peculiar to their section, realizing the value of an exchange of ideas between workmen in the same calling and the same field, the doctors of this great valley should at once step to the front and join earnestly in an effort to organize and crystallize the scattered segments of the profession into a strong and harmonious whole.

Knowing as we do that the seat of empire of our country, socially, commercially, and politically, has removed from the Eastern shore, is not the time ripe for accomplishing the same change in the medical profession? Shall not "Westward the star of empire" of our profession take its way?

Recognizing the truths of the foregoing propositions and in earnest thereof, we, the undersigned, cordially invite all members of the profession in the States west of the Alleghanies to meet in St. Louis, Tuesday, Wednesday, and Thursday, September 11th, 12th, and 13th, and become members of the Mississippi Valley Medical Association.

. . . . . .

A good programme is being arranged with a full supply of able papers and interesting discussions.

This is the most desirable time to visit St. Louis, it being during the great exposition and carnival season. All the doctors should bring their wives and families, as there will be ample enjoyments for the latter while the meetings of the society are in progress.

Liberal arrangements will be secured from the various railroad and telegraph companies.

We trust that every member of the profession, eligible, will consider himself and family most cordially invited to St. Louis at the above-mentioned time. Please address the Chairman of the Committee of Arrangements for further information. Procure from your local ticket agents a receipt for full fare paid.

Committee of Arrangements, H. Tuholske, Y. H. Bond, Frank R. Fry, R. M. King, A. H. Meisenbach, H. H. Mudd, Josephus R. Lemen, H. C. Dalton, Spencer Graves, A. H. Ohmann-Dumesnil, Robert L. Thomson. I. N. Love, Chairman.

The following are some of the articles of the constitution of the association:

Art. II. The objects of this association are to foster, advance, and disseminate medical knowledge; to uphold the honor and maintain the dignity of the medical profession.

Art. III. Membership in this association shall be limited to those members of the profession of medicine who acknowledge allegiance to the American Medical Association by signing its code of ethics. No individual who shall be under sentence of expulsion, suspension, or disability from any recognized State, county, district, or local medical society shall be eligible to membership in this association until said disability shall be removed. All applications for membership shall be referred to the committee on credentials. The annual dues shall be $3 in advance.

Art. IV. The regular meeting of this association shall be held annually. The place, with the time of meeting for each successive year, shall be determined by vote of the association.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 12 to August 18, 1888:*

Sutherland, Charles, Colonel and Medical Director. Directed to inspect the medical department at Forts Brady, Mackinac, and Wayne, Michigan; Forts Porter, Niagara, and Ontario, New York; Madison Barracks and Plattsburg Barracks, New York; Fort Preble, Maine; Fort Warren, Massachusetts; Fort Adams, Rhode Island; Fort Trumbull, Connecticut. Par. 7, S. O. 168, Division of the Atlantic, August 16, 1888.

Janeway, John H., Major and Surgeon. Granted leave of absence for one month on surgeon's certificate of disability. Par. 2, S. O. 41, Division of the Pacific, August 8, 1888.

Brown, Harvey E., Major and Surgeon. Upon being relieved by Captain William C. Gorgas, Assistant Surgeon, U. S. Army, to proceed to his proper station, Jackson Barracks, New Orleans, La., reporting in person to the commanding officer of that post for duty. Par. 8, S. O. 187, A. G. O., August 14, 1888.

Cowdrey, Stevens G., Captain and Assistant Surgeon. Granted leave of absence for one month. S. O. 77, Department of Texas, July 25, 1888.

Torney, George H., Captain and Assistant Surgeon. To proceed to St. Augustine, Fla., *via* Palatka, accompany the U. S. troops thereat to Huntsville, Ala., as medical officer, and thereafter return to his proper station (Fort Monroe, Virginia). Par. 4, S. O. 165, Division of the Atlantic, August 13, 1888.

Appel, Daniel M., Captain and Assistant Surgeon. Ordered

to Fort Bliss, Texas, for temporary duty. S. O. 77, Department of Texas, July 25, 1888.

Gorgas, William C., Captain and Assistant Surgeon. Leave of absence granted in S. O. 177, A. G. O., August 1, 1888, revoked, and ordered to proceed to Camp Monte Sano, Huntsville, Ala., and report in person to the commanding officer thereof for duty, relieving Major Harvey E. Brown, Surgeon. Par. 8, S. O. 187, A. G. O., August 14, 1888.

Wood, Leonard, Assistant Surgeon. To proceed from Fort McDowell to San Carlos, Arizona Territory, and carry out the instructions of the department commander. Upon completion of that duty to return to proper station. S. O. 89, Department of Arizona, August 1, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 18, 1888:*

Ferebee, N. M., Surgeon. Detached from the Franklin and ordered to the Naval Hospital, Norfolk, Va.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending August 13, 1888:*

Purviance, George, Surgeon. Granted leave of absence for thirty days. August 13, 1888.

Sawtelle, H. W., Surgeon. Detailed as member of board to select site for quarantine station at San Diego, Cal. August 6, 1888.

Goldsborough, C. B., Surgeon. Granted leave of absence for thirty days. August 10, 1888.

Guitéras, John, Passed Assistant Surgeon. To proceed to Sanford and Jacksonville, Fla., and Way Cross and Du Pont, Ga., on special duty. August 1, 6, 9, 10, 1888.

Banks, C. E., Passed Assistant Surgeon. Granted leave of absence for four days. August 6, 9, 1888.

Peckham, C. T., Passed Assistant Surgeon. Granted leave of absence for thirty days. August 10, 1888.

Urquhart, F. M., Passed Assistant Surgeon. To proceed to Way Cross, Ga., on special duty. August 9, 1888.

Glennan, A. H., Passed Assistant Surgeon. Detailed as member of board to select site for quarantine station at Port Townsend, Washington. August 6, 1888.

Wasdin, Eugene, Passed Assistant Surgeon. Detailed as member of board to select site for quarantine station at Key West, Fla. August 6, 1888.

Williams, L. L., Passed Assistant Surgeon. Granted leave of absence for fifteen days on account of sickness. August 10, 1888.

Stoner, J. B., Assistant Surgeon. To proceed to Norfolk, Va., for temporary duty. August 9, 1888.

**Society Meetings for the Coming Week:**

Wednesday, *August 29th:* Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield).

Thursday, *August 30th:* Cumberland, Me., County Medical Society (Portland).

OBITUARY NOTES.

**Walter L. Ranney, M. D.,** who died on Friday, the 17th inst., was graduated from the Medical Department of the University of the City of New York in the class of 1880. He was a member of the Medical Society of the County of New York, of the New York Academy of Medicine, and of the Society of the Alumni of Bellevue Hospital. His death was due to Bright's disease.

# Letters to the Editor.

THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

Washington, D. C., *August 21, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: Some complaints having reached the committee in regard to the distribution of invitations to the dinner to be given to the foreign guests of the Congress of American Physicians and Surgeons to be held in this city next month, I must beg the use of your columns to say that this distribution was in my hands.

The council of the Congress having expressed themselves as averse to any elaborate entertainment on the part of the Congress, it may be said, in the first place, that this dinner is *unofficial*, and is in the hands of the *members* of the committee, and not of the committee.

As it was necessary, after the matter was decided upon, to act quickly in order that proper invitations might be sent to Europe and answered in time, it was not possible to arrange this distribution so methodically as might have been done had the time been longer.

It was intended that every member of the Congress—that is, every member of any of the constituent associations—should have an opportunity to subscribe. Some circulars were sent directly by me and some of them by such representatives of the associations as I could most readily get at. It is possible that there may have been some accidental omissions, and it is more than possible that at this season, when so many gentlemen are absent from home, some invitations may have gone astray.

Another possibility, which we know to have been in some cases an absolute fact, is that they have been placed in the waste-paper basket.

This note is intended as an invitation to every member of all the associations composing the Congress of American Physicians and Surgeons, who wishes to do so, to send his subscription of twenty dollars to Dr. S. C. Busey, 1545 I St., N. W., Washington, D. C., for a dinner to be given at Willard's Hotel in this city on Monday, September 17th, at 7.30 p. m.

I am, very respectfully,

Robert T. Edes.

# Book Notices.

*Practical Electro-therapeutics.* By William F. Hutchinson, M. D. Philadelphia: Records, McMullin, & Co., 1888. Pp. 9 to 247.

Nothing could better indicate the most essential characteristic of this excellent volume than the inscription on its title-page, "That he who runs may read." The book consists exclusively of practical advice and directions applicable to diseased conditions, divided into chapters on a strictly clinical plan. It admirably accomplishes the author's design as set forth in the following words taken from his preface: "So many letters have been received at different times from different places inquiring for concise directions how to use electricity for this or that disease that it seems as if a work containing nothing but such suggestions, all of them the direct outcome of personal experience, would be useful to the general profession; and with such hope alone—to such an end only—the book is written. As strictly practical in intent, all theories have been avoided; for both

theory and technical terms are uncared for by the busy worker, who is only looking for aid from electricity—not a panacea."

The whole book is stamped with the foregoing purpose. Those conditions in which a given form of electricity has been found to be injurious, or only palliative, or of partial aid, or of aid only after long perseverance, are spoken of as freely as the complete and immediate successes obtainable in other cases. Though the author is keenly alive to the potency for good that there is in this "mysterious force" when properly applied in suitable cases, there is none of a specialist's advocacy or even enthusiasm in his tone. His style is both terse and attractive. He writes from a full experience, with emphasis, and with abundant illustrations from his own practice; in a manner, on the whole, not unlike that of Dr. Hammond, to whom the book is dedicated. The whole volume could be read through in an evening, a thing which any physician who opens its covers at any chapter would, we think, be tempted to do. He would see that for every practitioner there were a number of most valuable employments of electricity which a careful reading of this book would place as much at his command as they are at that of the electrical specialist. Besides the employments in the more strictly nervous diseases, a number of other conditions are noticed in which notably good results are obtained with almost a certainty by the use of certain forms of electricity. Such are dyspepsia, rheumatism, biliary colic, dysmenorrhœa, prostatic enlargement, torpidity of the liver, general nervous agitation, febrile temperatures, sleeplessness, and several skin diseases. Great care is taken at all points to call attention to the errors as regards kind and strength of current and in the technique of application, which are common with careless men or with those just become owners of batteries.

Incidentally the fruits of much excellent thinking and observation relating to the causes of disease are incorporated. The printing is clear and the text free of errors.

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*Proceedings of the New York Pathological Society.* For the Year 1887. Pp. 212.

The first seventy-five pages of this attractive little volume are devoted to Dr. Starr's Middleton Goldsmith lectures, with which our readers are already familiar. Following these are the regular society proceedings, in which we note a decided improvement over those of former years. Not only were the specimens presented rarer and more interesting, but the accompanying histories are clearer and more to the point. There is still a rather dreary succession of descriptions of Falloppian tubes and ovaries, which might imply that the society had a strong gynæcological tendency. There is room for improvement in this particular. On page 161 there is an eloquent tribute to the memory of Dr. Alonzo Clark, an old and honored member of the society. A paper by Dr. Satterthwaite, on "The Diagnosis of Laryngeal Carcinoma by Means of the Microscope," is of special interest. The make-up of the volume is neat, and there is a good index. We congratulate the society on such material evidences of its prosperity, and prophesy its increasing usefulness.

*Anæsthetics:* their Uses and Administration. By Dudley Wilmot Buxton, M. D., B. S., Member of the Royal College of Physicians, London. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xii–164. [Price, $1.25.]

This volume contains the sum of our present knowledge relating to an exceedingly important matter. It includes a history of anæsthetics in the past, continued up to the most recent additions, modifications, and combined methods. Local anæsthesia is accorded one chapter, and the medico-legal points involved receive another. But the main purpose of raising the standard of skill and imparting a scientific understanding of all the details of management contributing to the best results is adhered to throughout. The author's wide experience, as well as his care in collecting and arranging the facts involved, entitles the work to become a standard for both students and general practitioners or surgeons as well. Minute directions are given, and all known safeguards against accident are discussed.

The distinctness of the headings and spacing and the large, clear type make the volume very convenient for instant reference.

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*The National Formulary of Unofficial Preparations.* First Issue. By authority of the American Pharmaceutical Association. Published by the American Pharmaceutical Association, 1888. Pp. ix–176.

Physicians will find this book a repository of a great number of formularies in increasing demand, and can be assured as to the correctness of the proportions and the manipulations called for in each preparation as given here.

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*The Best Surgical Dressing;* how to prepare it and how to use it, with a Consideration of Beach's Principle of Bullet-wound Treatment. By Otis K. Newell, M. D., Assistant Demonstrator of Anatomy at the Harvard Medical School, etc. Boston: Cupples and Hurd, 1888. Pp. 9 to 179. [Price, $1.]

This little work treats of the manifold advantages of the use of iodoform as a dressing for wounds, whether these be clean and aseptic, suppurating, or of a character due to specific constitutional disease. The author maintains that the development of septic germs is effectually prevented by the action of iodoform, although its power to destroy them is but slight. The drug acts as a "wound police," exerting its influence only when a tendency toward septic action is developed, but in no wise interfering with the progress of the normal healing process. Therefore iodoform is the ideal antiseptic, as it acts only when the necessity for action is present, and is of value on account of the very quality which has been instanced as an argument against its utility as an antiseptic—its insolubility in the secretions of the wound—as this insures its constant and unvarying antiseptic action.

The author deprecates the use of excessive quantities of the drug, on account of its poisonous nature. He believes that its antiseptic action is due to the generation of iodine in the nascent form. The book contains a translation of Dr. Mikulicz's treatise on the use of iodoform in surgery, as well as an account of the method of treatment of gunshot wounds advocated by Dr. H. A. H. Beach, of Boston, with the histories of a number of cases in the management of which that method of treatment was employed. The book is worthy of the careful perusal of the surgeon.

## BOOKS AND PAMPHLETS RECEIVED.

Section of Contractured Tissues Essential before Mechanical Treatment can be Effectual. By Lewis A. Sayre, M. D., of New York. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

Announcement of Gross Medical College of Denver. Medical Department of the Rocky Mountain University. Session of 1888–'89. Denver, Colorado.

Abdominal Surgery. By Hal C. Wyman, M. S., M. D., Professor of Surgery and Operative Surgery, Michigan College of Medicine and Surgery, etc. Detroit: George S. Davis, 1888. Pp. 87. ["The Physicians' Leisure Library."]

A Contribution to the Normal and Pathological Anatomy of the Vocal Bands. I. Cystic Growth. II. Glandular Apparatus. By Dr. C. M. Desvernine (Havana), etc. [Published in Spanish in the "Crónica Médico-quirurgica," of Havana, and rewritten in English by the Author.]

The Limitations of Electrolysis as a Therapeutic Agent in Organic and Spasmodic Stricture of the Urethra, with Cases. By F. Tilden Brown, A. M., M. D. [Reprinted from the "Journal of Cutaneous and Genito-urinary Diseases."]

Epitome of the Cranial Nerves (after the German of Heiberg). By Dr. Wheelock Riler, Rochester, N. Y.

# Reports on the Progress of Medicine.

## OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

**Diffuse Hyperostosis of the Greater Wing of the Sphenoid.**—Smith ("Arch. of Ophthal.," xvii, 1) reports a case of this nature occurring in a woman, aged forty-four, who visited him on March 10, 1887, complaining of constant lacrymation of the right eye, which was more noticeable during the menstrual periods; and that the lids of the right eye were puffy at times. The epiphora disappeared after division of the upper canaliculus and syringing of the lacrymal passages with a solution of bichloride of mercury (1 to 4,000). It was noticed that the right side of the face was slightly prominent. In October, 1887, she again appeared, saying that vision had begun to fail in the right eye shortly after her first visit, and the lids had become permanently swollen and prominent. An examination showed marked bulging outward and forward of the whole right temporal region, with exophthalmus forward and inward, and constant epiphora. The patient stated that when five years old she had been gored by a cow, the horn penetrating somewhere near the right eye, and producing a strabismus which lasted for six months. There was complete atrophy of the right disc, due probably to strangulation of the optic-nerve trunk at the optic foramen. The end of the cow's horn must have penetrated the right orbit, reaching the orbital surface of the greater wing of the sphenoid, as the sequel showed. An incision was made from the external angular process of the frontal bone downward along the border of the orbit, across the malar bone, curving backward beneath the malar process of the superior maxilla. The periosteum was separated from the outer wall of the orbit as far toward the apex as possible, and a solid mass of bone was felt projecting from the orbital surface of the sphenoid. The external angular process of the frontal bone was separated from the malar bone and the malar process was sawed away. The upper end of the incision was then extended backward from the superciliary ridge, and the flap, with the malar bone, was detached by breaking the zygoma. The contents of the orbit were then removed, leaving the cornea and conjunctiva *in situ*. The bony tumor filled nearly one half the orbital space, and was readily removed in chips and shavings, as it proved to be spongy in structure. It was simply a thickening or hypertrophy of true bony tissue. It was removed for a space of about two inches upward, downward, and inward, and a drainage-tube was introduced and brought out beneath the malar bone. The separated parts were then readjusted, the cut and broken bony surfaces were united with sutures of chromicized catgut, and the external wound was united by sutures. The wound healed by first intention, and not a drop of pus was seen. The stitches were removed on the eighth day, and the patient was sent home soon after, the only symptom remaining being a slight dizziness.

**Report on the First Series of One Hundred Successive Extractions of Cataract without Iridectomy.**—Knapp (*ibid.*) devotes considerable space to a description of the method of operating. The flap should measure fully two fifths of the corneal edge of the limbus conjunctivæ. A conjunctival flap is somewhat in the way during the operation, but acts favorably on the closure of the wound. The peripheric location of the corneal section does not in itself favor the occurrence of prolapse of the iris. In expelling the lens, the pressure should be made through the cornea on the lower portion of the lens, directly toward the center of the globe. In this way the flap rises, tilts forward, and the lens passes through the pupil with the least bruising of the iris. It is best to attempt the removal of the pupillary portion of the outer capsule in all cases where the center of the capsule is thickened. The removal of the cortex is best done by following up the escaping cataract with the spoon. The speculum should be removed as soon as the lens is out. During and immediately after the operation the eye is to be irrigated with Panas's solution. After the reduction of the iris a few drops of this solution are to be injected into the anterior chamber by passing the nozzle of a lacrymal syringe along the entire wound canal. Prolapse of the vitreous occurred in five cases, and of the iris in twelve cases, in four of which the prolapse disappeared spontaneously in the course of some months. There was one case of suppuration. Iritis or posterior synechiæ occurred in twenty cases, but only two of these caused obstruction of the pupil. Discission of the posterior capsule was required in fifty-four cases.

**Keratitis Bullosa.**—Taugemann (*ibid.*) reports a case of this rare disease in a man aged thirty, who for a week complained of severe pain in both eyes. There were three or four vesicles on each cornea, quite large and filled with a clear fluid. The patient had had previous attacks of a similar nature, in which blisters formed on the "sight" and passed away again. The chief complaint was an intense burning sensation and some redness of the ocular conjunctiva. Tension was normal. The patient was well and strong, but gave a malarial history. On the next day some new bullæ had formed. Large doses of quinine were followed by disappearance of all the symptoms of irritation and of the bullæ.

**Pathologico-anatomical Investigations of the Eyes of Diabetic Patients.**—Kamocki (*ibid.*) reports some interesting observations made on the eyes of four diabetic patients, the eyes being enucleated after death. He found the posterior pigmentary layer swollen and softened. the pigment cells being arranged in layers, transparent, and distended like balloons. The pigment appeared to be rolled up in a ball and crowded together with the nucleus against the cell-wall. In some places the cells had ruptured and had united with others to form cystic spaces. In another case the picture resembled a piece of fine lace, The rarefaction of the pigment in these cases yields conclusive evidence of the presence of its two layers. The gradual transition of the posterior layer of the iris into the *pars ciliaris retinæ* was very evident, as was also the evolution of the anterior layer into the pigment epithelium of the ciliary body. In the lens Kamoki found commencing proliferation of the intracapsular cells, formation of vesicle cells, and absorption of water by the nucleus of the lens, with consequent loosening of its fibers. These he regards as three successive phases in the formation of cataract. It is remarkable that such excessive œdema should exist in a disease presenting so many conditions favorable to the excretion of water. The cause of this is probably to be found in the softening and swelling of the capsule, thus permitting an abnormal degree of diffusibility.

**Overexertion of the Accommodation and its Results.** — Schoen (*ibid.*) considers that most of the so-called physiological excavations have no right to the name, but that they are due to dragging of the vaginal processes of the optic nerve and lamina cribrosa from overexertion of the accommodation. The appearance of an excavation in those eyes upon whose accommodation great strain is made points to the accommodative process as its cause, and Schoen thinks that the diagnosis of spasm of accommodation can invariably be made in every case of well-pronounced excavation with red margins around the papilla. This overexertion of the accommodation is especially connected with the ætiology of glaucoma and equatorial cataract. Microscopical examinations of eyes with hypermetropic refraction, with the hypermetropic ciliary muscle and the so-called physiological excavation, have convinced him that it is not at all uncommon to find localized inflammatory proliferation of the capsular epithelium directly behind the equator of the lens corresponding to the insertion of the middle zonular fibers, and a similar proliferation corresponding to the insertion of the anterior zonular fibers, and that very often at this point the lens begins to participate in the process in the form of incipient cortical cataract. At

the two points, therefore, where in the accommodative circle different structures are intercalated—viz., the optic nerve and lens—we find in eyes whose accommodation has been greatly overexerted alterations which can only be explained as having been caused by a dragging on the fibers of the muscle of accommodation.

**An Apparatus for the Determination of Refraction and Acuteness of Vision.**—Plehn (*ibid.*) has devised an instrument for this purpose, consisting of two convex lenses, united in a short telescope-like instrument. The latter consists of two pieces, one sliding within the other, and in each piece is fixed a plano-convex lens of five centimetres focal distance. The lenses have their convex sides turned toward each other, and at first the distance between them equals the sum of the two focal distances. In this adjustment of the apparatus, called the zero position, rays falling upon one lens parallel to its axis will, after passing through it, intersect at the common focal point, and will emerge from the round lens again parallel. By altering the relative positions of the lenses, rays entering parallel may be made to emerge with any degree of either divergence or convergence. The instrument in its simple form has two serious defects: first, the variability of the visual angle, and, secondly, want of uniformity in the division of the scale. If, however, we place the instrument before the eye in such a way that its nodal point coincides with the focus of the ocular, we obtain not only a scale short and uniformly graded, but also a constant visual angle for all conditions of refraction. This may be done by fitting upon the ocular end of the tube a cap thirty-eight millimetres long, provided with a round central opening. The patient should never be allowed under any circumstances to adjust the apparatus. Before beginning the examination, the instrument should be set at the zero position and so directed toward the test-types that they appear in the middle of the field. The test-types are to be placed at a distance of at least four metres, inverted and well lighted. The patient is then to cover one eye with the hand, and with the other look through the instrument. If he reads all the letters smoothly, he is either emmetropic or hypermetropic; to decide which, the instrument is fixed at D. 1 by means of an adjusting screw. The highest positive adjustment with which he continues to read the same gives the degree of hypermetropia, measured with reference to the nodal point of the eye. The acuteness of vision is shown directly by the number of the line read. If the patient is emmetropic, he does not read as well with the convex as with the zero position. If the patient is myopic, we turn to the weak concave adjustments and try successively stronger negative adjustments until no further improvement of the vision results. The weakest negative adjustment with which it is possible to obtain this most distinct vision gives the degree of the myopia. The near point for emmetropes and myopes is given from the strongest negative adjustment with which it is possible to read without diminution of the visual acuteness. If, instead of the spherical lenses, we employ in the apparatus two plano-convex cylindrical lenses of five centimetres focal distance, it can then replace all the cylindrical test-glasses. The instrument must admit of rotation on its long axis to allow of the determination of the direction of the meridians. We must then determine that adjustment of the apparatus with which the gray sectors disappear, and all look equally sharp and black.

**Small Orbital Osteoma successfully removed with the Chisel.**—Knapp (*ibid.*) reports a case of this nature occurring in a boy, aged thirteen, who had a swelling in the upper and inner corner of the left orbit, which had been noticed for two months, and had steadily increased in size, but without any pain or discomfort. Under the skin, just behind the orbital margin, was a tumor as large as a cherry-stone, of marble hardness and slightly uneven surface, immovably connected with the roof of the orbit. A curved incision two centimetres in length was made through the skin and subcutaneous tissue down to the bone, and this incision was subsequently enlarged two millimetres on each side. The periosteum was detached from the tumor all around with a small gouge. The osteoma was then grasped with toothed forceps by an assistant, a small straight chisel was applied to the base of the tumor, and a few strokes with the ox-hide mallet detached the tumor as a whole, without opening the frontal sinus. The cavity was then carefully washed out with Pana's solution of the biniodide of mercury, and carefully closed with a continuous silk suture. The result was recovery by primary union, the suture being removed on the tenth day.

**Three Cases of Abscess of the Frontal Sinuses and Orbits.**—Pettesohn ("Ctrlbl. f. prakt. Augenh.," February, 1888) reports as follows: The first case was that of a young woman, aged eighteen, who, two days before she applied for treatment, was attacked by pain in the right eye and a swelling and redness of the upper lid. Examination showed immobility of the swollen and reddened upper lid, slight exophthalmus forward and downward, with limited motility inward and upward, and the presence of a soft, slightly resisting tumor in the inner and upper angle of the orbit. There was no chemosis of the ocular conjunctiva. Pus was seen in the upper part of the middle nasal meatus. An incision was made upward and inward just beneath the orbital arch, and a large quantity of pus evacuated. The exophthalmus gradually receded, and the patient was discharged cured in six weeks.

The second case was that of a young woman, aged twenty-two, who had suffered from a fœtid nasal discharge for four weeks. Twelve days later the entire left side of the face became swollen and reddened, which condition in three days disappeared, leaving a circumscribed swelling in the supero-nasal angle of the orbit, with swelling of the upper lid. An incision was made through the upper lid, and a large quantity of pus was evacuated from the orbit. It was found that the abscess existed originally in the frontal sinus, and had broken through the wall into the orbit. The patient eventually recovered.

The third case was that of a man, aged thirty-one, who had been attacked, on the week before applying for treatment, by a severe pain in the right side of the forehead. On the next day there had appeared a distinct tumor in the supero-nasal angle of the orbit, and swelling of the upper lid. The swelling became so tense that in a few days the patient could not open his lids. He had a discharge from the nostrils for nearly two months. A deep and long incision was made just beneath the eyebrow in the direction of the frontal sinuses, and a large quantity of pus was at once evacuated and carious bone discovered. This patient also recovered.

**The Visible Blood-current in newly formed Corneal Vessels.**—Friedenwald (*ibid.*) calls attention to the advantage of Hartnack's so-called globular lens in observing the blood-current in vascular keratitis. Looking through this lens, there may be seen small red columns which are separated from each other by colorless spaces. The latter are longest in the smallest vessels, and the red columns also vary constantly in length and position, advancing and receding, and are evidently veins, from the direction in which the blood moves steadily forward.

**A Case of Posterior Lenticonus.**—A case is reported (*ibid.*) of this kind occurring in a boy aged ten. The right eye showed a moderate degree of concomitant divergent squint, and could count fingers at three metres and a half. In the left eye vision was normal. The boy usually saw single, but with a red glass before one eye he had crossed diplopia. A prism of 30° for the distance and one of 37° degrees for the near point caused fusion of the two images. The left eye was emmetropic, and the media were perfectly clear. In the right eye the ophthalmoscope showed, in the center of the usual red reflex, a smaller circular figure, limited by a changeable dark ring. Its diameter was about double that of the encircling bright ring, and the whole somewhat resembled in appearance a drop of oil. A diagnosis of posterior lenticonus was made.

**Replacing the Lid Margin in Trichiasis of the Upper Lid.**—Hotz ("Kl. Mntsbl. f. Augenheilk.," March, 1888) recommends the following operation: The skin of the lid is incised on the level of the upper border of the tarsus, and, by excision of a strip of muscular fibers of the orbicularis muscle, the upper edge of the tarsus is laid bare. The remainder of the *pars ciliaris* of the orbicular muscle, together with the skin of the lid, is dissected from the tarsus as far down as the roots of the cilia. Immediately above the roots of the cilia a transverse incision is made through the tarsus toward the posterior angle of the edge of the lid. Above this incision and parallel to it a second incision is made, a varying distance from the first, but obliquely, so as to join it at the posterior angle of the edge of the lid. In this way a wedge-shaped piece of tarsus is removed, and the edge of the lid may then be turned upward around its posterior angle, and fixed in a position perpendicular to the conjunctiva. Three or four sutures are then introduced, the needles first passing through the lower margin of the incision in the lid, then through the upper edge of the tarsus, and finally

through the upper edge of the incision in the skin. After all bleeding has ceased and the wound has been thoroughly cleansed, the sutures are to be tightened and tied.

**Erythropsia.**—Valude ("Arch. d'ophthal.," March–April, 1888) draws the following conclusions in regard to initial and subsequent attacks of erythropsia: Assuming the presence of a retina prepared for erythropsia by the extraction of the lens, and assuming also, in addition, the presence of a general susceptibility or a general neuropathic state, the optical apparatus for the reception of visual impressions, exposed to an unaccustomed luminous irritation, or to the dazzling produced by a mydriatic, or to excessive fatigue, undergoes an ultra-physiological excitement and exhaustion, in which the sensitiveness for colored rays of the greatest refrangibility is lost, and remains for red alone. The characteristic tendency of erythropsia to reappear on the slightest pretext shows that the real origin of this phenomenon must be sought in the predisposing causes, aphakia and general nervous state.

## SURGERY.

By MATTHIAS L. FOSTER, M. D.

**The Cystoscope in the Diagnosis of Obscure Vesical Disease.**—This subject is attracting much notice, not only in foreign countries, but in our own, and a description of the apparatus of Nitze and Leiter appeared in the Journal not long ago. An element of uncertainty regarding its range of utility is evident, some writers seeming to think it will be the means by which, in the not far distant future, diseases of the bladder will be universally recognized, while others are of the opinion that its use will become restricted to the small number of cases which can be otherwise diagnosticated only by digital examination or not at all.

Sir Henry Thompson ("Brit. Med. Jour.," April 14, 1888) thinks the instrument will be most useful in cases of small, bleeding tumors, respecting the presence and extent of which it is often difficult to arrive at an accurate conclusion. In these cases there are repeated attacks of hæmaturia, which may develop two or more years before the loss of blood becomes considerable, and may be for a long time without pain or difficulty in micturition. The usual method of diagnosis is to find a shred of the growth under the microscope; but this does not tell whether the growth be large or small, single or multiple. Without this instrument it has been at times necessary to make a perineal incision to obtain these data, and with it, it may be still necessary in a certain number of cases, but in others these facts may be learned by its means. It may sometimes, though rarely, be of use in cases of cancerous growth. In cases of impacted calculus or of foreign body in the bladder it may be very valuable. In the urethra it is best not to employ it too freely, as there are few cases where it will be of advantage; but it may be of use in cases of localized congestions or papillomatous growths requiring the action of some caustic. The use of the instrument taxes the bladder and urethra more severely than does the ordinary operation of sounding for stone, and should not be resorted to unnecessarily, but only when other means of diagnosis have failed.

E. Hurry Fenwick (*ibid.*) calls attention to the great advantage gained by a visual examination in certain cases of reno-vesical disease over digital exploration through the perinæum. The value of this instrument as a means of diagnosis is shown by a number of cases which he reports. It will prove important in the differential diagnosis of symptomless hæmaturia and pyuria, as the ureters can be seen and examined as to the nature of their efflux. He has seen a jet of bloody urine squirt from a ureter into an artificially cleared medium, showing the source of the hæmorrhage. It may be useful in estimating the advisability of suprapubic removal of prostatic intravesical growths (MacGill's operation). It may assume a prognostic position as our visual knowledge of the bladder in the living subject is increased, showing what growths are removable and what should be left alone. It may be a means of deciding between the boutonnière and the suprapubic operation for vesical growths; those which are single, lightly pedicled, and close to the urethra may be well treated by the perineal incision, while those which are multiple, subsessile, or springing from dimples in the mucous membrane require the wider access afforded by the *sectio alta*.

Nitze (*ibid.*, April 21st) describes fifteen cases of vesical tumors diagnosticated by means of this instrument. In nine cases the cystoscopic appearances were confirmed, the size, position, and form having been correctly told. In six cases operation was deemed inexpedient, or was refused by the patient. In most of these cases a careful examination of the urine had been made, but in only two cases had villous tissue been found. Rectal palpation and examination with the sound had given negative results in all cases in which either had been tried. The only method which can compare with cystoscopy in giving information regarding the size and nature of a vesical tumor is digital exploration through a boutonnière, or the high section. The superiority of the cystoscopic method lies in the smaller amount of inconvenience it causes the patient, the cutting method not being free from danger and requiring narcosis, while the introduction of the cystoscope is similar to a simple catheterization.

Harrison (*ibid.*, May 26th) thinks the chief value of the cystoscope will be found, not in supplanting other means of diagnosis, but in providing the additional link which in certain cases is necessary to make the chain of evidence complete. Ulcerous and tuberculous surfaces may be seen in the bladder, which otherwise could not be demonstrated, and vesical growths may be detected at an early period. In the diagnosis of stone and stricture there is little left for it to accomplish.

**Drainage of the Bladder as a Means of arresting Hæmorrhage from a Vesical Tumor.**—Mr. Southam ("Lancet," May 26, 1888) reports a case which illustrates the beneficial effect of drainage of the bladder in arresting hæmorrhage from a vesical tumor when the patient is in so low a condition from the anæmia induced by profuse and long-continued loss of blood as to render it doubtful whether he would recover from the severer operation of removal or not. The patient had had profuse, continuous hæmaturia for six months, had been confined to his bed for a month, was too weak to raise himself, and exhibited the signs of extreme anæmia. Ice applied over the pubes and in the rectum, together with large doses of ergot and iron, had no effect on the bleeding. Perineal urethrotomy was performed in the usual manner. The finger introduced into the bladder found a sessile growth about the size of a Tangerine orange. The bladder was washed out with hot boric-acid solution and a rigid lithotomy-tube was left in the opening. The operation was followed by a complete arrest of the bleeding. The bladder was washed out daily with boric-acid solution, the tube was removed in a week, and the wound was closed on the twenty-third day. Improvement was rapid. There was no sign of a recurrence of the hæmaturia five weeks later. Mr. Southam considers the arrest of the bleeding to be due to the fact that the bladder is put in a state of physiological rest by drainage, as it is not excited to contraction by the presence of urine. This contraction is an important factor in the production of the hæmorrhage, as every contraction, by interfering with the return of blood from a vascular growth like a papilloma, must produce in it a condition of extreme congestion, which is probably only relieved by a giving way of the thin-walled vessels of the villous processes, and consequently by hæmorrhage into the interior of the bladder. The relief thus obtained is of necessity only temporary.

**Suture for the Bladder.**—The method of suturing the walls of the bladder after suprapubic lithotomy devised by Brenner, and called by him "Schnürnähen" or "lace suture," is thus described by McArdle ("Dub. Med. Jour.," June, 1888):

"After separating the mucous from the muscular coat, a thread was passed around the wound in the bladder through the submucosa, two or three millimetres from the border of the wound. A second thread was now passed through the muscular layer, going around the wound in the same way, being further from the wound at its angle. The sutures were then drawn and tied in the order of introduction, so that all the walls of the bladder were collected into a dense mass at the point of opening." In experiments on dogs it was found that the bladder thus closed withstood much higher fluid pressure than after button or ordinary double suture. This suture was advocated for cases where the bladder wall was thinned and softened. Brenner claimed among other advantages that the bladder became functionally active at once, that the wound surface was small and healed quickly, that the scar was thick and solid, and only two small threads were left in the wound.

**Hæmaturia.**—A valuable article on the diagnosis of the cause of hæmaturia is given by Berkeley Hill ("Brit. Med. Jour.," May 26, 1888). It is only a symptom and may indicate a trivial injury or a dangerous and rapidly fatal condition. The multitude of causes is rapidly dealt with, being divided into general and local. The kidney is probably the most frequent source of bloody urine, but the signs are frequently negative, and often the diagnosis can be made only with difficulty. The necessity is evident for a surgeon to be posted on all causes which will produce hæmaturia in order to distinguish those needing surgical treatment, and as a brief *résumé* of these the article is excellent.

Dr. Oliver (*ibid.*) relates a very unique case of hæmaturia. A young lady was suddenly seized with high temperature, with no symptoms to account for it, and hæmaturia. Neither was influenced by drugs, but at the end of thirty-five days terminated in recovery. The urine was at times deep black, plentiful, acid, of normal specific gravity, passed without pain, and at no time contained clot, pus-cells, or casts. The explanation offered is based on the fact that the patient's brother was suffering at the time with typhoid fever. She had been exposed to the same influences and was seized at about the same time. Hence it is suggested that in her case the kidneys bore the brunt of the typhoid poison, or that, as the result of the poisoned condition of the blood, the walls of the renal vessels allowed it to escape.

**Catheterization of the Ureters.**—In order to determine which kidney was affected in a case presenting the symptoms of pyelitis, Axel Iversen ("Ctrlbl. f. Chir.," 1888, No. 16) performed suprapubic cystotomy, and by means of an electric light passed a catheter into each ureter. The urine collected from the left ureter contained much pus, while that from the right was clear, thus demonstrating the pyelitis to be on the left side. Nephrectomy was not performed because an examination of the urine from the right ureter revealed the presence of organic disease of the right kidney.

**Insertion of the Ureter into the Intestine.**—Tuffier ("Ann. des mal. des org. génit.-urin.," April, 1888), in view of the proposed method of treatment of extroversion of the bladder by securing the ends of the ureters into the lower part of the intestinal tract, made two experiments on dogs to determine its practicability. The most careful antiseptic precautions were observed, but in each case the animal died of general peritonitis from perforation, one on the third and the other on the fifth day. In each case the ureter was found full of pus and the kidney intensely inflamed, showing that a very dangerous nephritis was liable to be occasioned by the operation, which developed with a formidable rapidity.

**Jejunal Enterectomy for the Closure of an Artificial Anus.**—Sinclair ("Brit. Med. Jour.," June 2, 1888) records a case with a very interesting history. The patient, a farm laborer sixty years of age, stated that eighteen months before coming under observation he had been acutely ill with a swelling in the groin. This swelling burst, something black escaped, and then the contents of the intestine issued freely. Evidently a femoral hernia had sloughed at this time, leaving an artificial anus surrounded by a dense cicatricial mass. A moderate amount of fæces passed by the normal channel, but the condition of the parts seemed to contra-indicate all milder measures. Enterectomy was therefore resorted to and successfully performed as recommended by Sir William MacCormac.

**Hepatic Surgery.**—Tiffany ("Am. Jour. of the Med. Sci.," June, 1888) narrates two cases of hepatic surgery, one an abscess of the liver, the other removal of biliary calculi from the gall bladder through an incision made through the substance of the liver itself. The points he makes are the ease with which hæmorrhage from the liver is controlled by pressure, and the method he employed of shutting off a portion of the surface of the liver from the peritoneal cavity by stitching the parietal peritonæum at the edge of the wound in the parietes to the visceral peritonæum by a close, continuous suture, so that the operation could be performed irrespective of the peritoneal cavity.

**Suppurating Hydatid Cyst probably connected with the Liver.**—Daly ("Lancet," May 19, 1888) reports the occurrence of an enormous cyst in the abdomen of a man aged twenty-one years, a fish packer, which he aspirated repeatedly, removing large quantities of fluid, as much as thirty-six pints having been removed at one time. The fluid reaccumulated rapidly. At first the fluid was sweet, with a specific gravity of 1·006, and, on standing, turned from a brown to a greenish color. It contained a large amount of bile and albumin. The bile diminished at each aspiration, and finally disappeared. The fluid thereupon became purulent and laparotomy was resorted to. It was found to be a hydatid cyst, and was probably once connected with the liver, as was shown by the presence of bile in the fluid at first, although the liver was never made out to be enlarged, either before or after the operation. The case shows the non-advisability of repeated aspirations of cysts when they quickly refill.

**Results of Excision of the Knee Joint in Two Cases after the Lapse of Twenty Years.**—Lee ("Lancet," April 21, 1888) gives these results of two operations performed by him in 1867: The first case, that of a boy twelve years old, who had suppuration in the knee joint and abscess of the head of the tibia, with caries and necrosis of portions of the bone. Excision was performed. In July of the next year a small piece of dead bone was removed from the upper part of the tibia. At present the bony thickening about the knee is greater than is usual after excision. The patient has perfect use of the muscles of the leg and foot and can walk all day. The leg is nine inches shorter than the other. This deficiency is supplied by a patten attached to a laced boot. In walking it may be seen that there is something not quite natural in the action of the foot, but otherwise there is no limp or peculiarity in his gait. The other case was one of strumous abscess in the knee joint of a boy seven years old. The joint was excised in March, 1867. In 1868 the joint was movable to some extent in every direction. The fibrous tissue between the ends of bone and a nodule of bone from the head of the tibia were removed. In 1879 he could walk or work all day. The limb was six inches shorter than the opposite one. Flexion and extension were perfect, while lateral motion was absent, apparently on account of little buttresses of bone thrown out on each side of the head of the tibia. This case shows how firm and manageable a support the play of the muscles of the leg and foot can give, and also shows that when excision of the knee has not left the leg in a condition to afford a firm support for the body, a second operation may be performed with a reasonable prospect of success, and that, if solid union should not ultimately take place, a very useful movable joint may result.

**Suture of Internal Semilunar Cartilage to the Head of the Tibia.**—Allingham ("Brit. Med. Jour.," May 26, 1888) maintains that in acute cases of dislocation of the semilunar cartilage the usual treatment by rest, pressure, etc., should be employed, but when these have failed, operative measures should be adopted. He describes the following operation performed on a young man a year after accident: A vertical incision two inches long was made over the internal aspect of the joint, the center of the wound being over the internal cartilage. The finger introduced into the joint fixed the cartilage in position, where it was secured by a stitch of stout catgut, passed with a strong needle mounted on a handle through the periosteum at the head of the tibia and through the semilunar cartilage, and tied tightly. The joint was washed out with carbolic lotion, the cut edges of synovial membrane carefully united with buried catgut sutures, and the skin-wound closed with silver wire. No drainage-tube was inserted. Antiseptic dressings were applied and the limb was fixed on a splint for three weeks. The result proved excellent. In future cases he proposes to employ a transverse instead of a vertical incision, as by this means a better view of the joint will be obtained.

**Ogston's Operation for Genu Valgum.**—This operation is perhaps not so familiar as to render it useless to repeat Professor Ogston's description, quoted by Mr. Davy in the "Lancet" for May 5, 1888:

"The patient was chloroformed, the knee flexed as far as possible, and the thigh turned outward. A long and strong tenotomy knife was introduced through the skin, three inches and a half above the tip of the internal condyle on the inner side of the thigh, and so far back as to be opposite the ridge of bone running between the linea aspera and the condyle. Its blade was carried forward, downward, and outward over the front of the femur, with its cutting edge directed to the bone. When its point could be felt under the skin in the groove between the condyles, where the patella would normally have been lying in the flexed position of the limb, the cutting edge was pressed against the bone, and the soft parts and periosteum divided by one slow, firm movement in withdrawing the knife. The external wound thus made was about on

third of an inch long, and formed the entrance to a subcutaneous tunnel, running obliquely over the front of the femur, and ending in the cavity of the joint. Adams's saw for subcutaneous division of the neck of the femur was introduced into the tunnel, and the condyle sawn off by directing the edge of the saw straight backward. The position of the saw could be exactly controlled by feeling its point working gradually backward in the groove between the condyles. As soon as it was estimated that the condyle was almost entirely separated, and that the saw had arrived near the popliteal space, the saw was withdrawn. The knee was completely extended, and then, with the hands, and the operator's knee as a fulcrum, the patient's knee was forcibly straightened by bending the leg inward. The remaining connections of the condyle with the femur gave way, and instantly the leg became as straight as a healthy limb."

Mr. Davy gives a table of sixty-four of these operations which he has performed, and describes a combination saw and tenotome which he employs. He is of the opinion that in young subjects this is a safe and efficient remedy for genu valgum. It requires dexterity and a minute attention to detail. Absolute rest should be given the joint, and nothing except the evidence of serious mischief should induce the surgeon to interfere with the leg and splint until three weeks after the operation.

**Rickety Deformities of the Lower Extremity.**—Owen ("Practitioner," April, 1888) directs attention to the value of forcible straightening (*redressement forcé*) of the limb under the influence of an anæsthetic with the hands and knee of the operator as a means of treating such of these deformities as are not likely to be amenable to treatment by the gentler method. When the bone is too solid to yield to this and osteotomy is to be performed, he urges the use of a rather short, narrow, and thin saw (keyhole saw), in preference to the osteotome and mallet, as less dangerous. In knock-knee he makes a longitudinal incision, three fourths of an inch long, on the outer side of the thigh a little above the condyle, opens a passage with a raspatory, inserts the saw, and saws the bone from a half to three quarters of the way through. However great an antero-posterior or lateral curvature may be in childhood, he considers removal of a wedge-shaped piece of bone superfluous.

**Osteoplastic Resection of the Foot.**—Sir William McCormac ("Lancet," May 5, 1888) reports a very satisfactory result in a case of suppurating arthritis of the ankle joint treated by resection according to the method devised by Mikulicz and Wladimiroff. The object of the operation is to preserve the toes and metatarsal bones, which, after removal of the tarsus and malleoli, are brought into a straight line with the leg, and the toes bent at a right angle, thus producing an artificial pes equinus. A broader surface of support is provided than after either Syme's or Pirogoff's amputation, and there is some elasticity of the foot left. Usually the limb will be an inch longer than the other. The patient upon whom Sir William operated a year ago can stand or walk with comfort. The sensation in the foot appears perfect, and the toes are mobile. Sir William is of the opinion that the operation will prove better adapted to cases of injury than of disease, but his experience would tempt him to perform it again in any case in which the bones of the heel and soft parts covering them were extensively damaged or diseased, the anterior half of the foot remaining healthy.

**"Bone Setting."**—Under this heading Mr. Penny discusses ("Brit. Med. Jour.," May 26, 1888) a mode of treatment of fibrous ankylosis of joints much practiced by the persons known as bone setters in England. The motto of these people seems to be, "Here is a stiff joint, it must be moved." In spite of their ignorance regarding the pathology of joint disease, they cure a large number of cases of lameness, and do damage in only a small number. Fibrous adhesions often occur in joints which have been sprained and treated properly in the earlier stages. These may be as fine as threads, or may form broad bands, in either case restricting the motion of the joint and causing muscular spasm. The joint remains to a greater or less extent useless and painful under various methods of treatment until a bone setter is called, who says "a bone is out," gives the joint a wrench, a crack is heard, and the joint moves freely afterward. This, Mr. Penny is convinced, is the correct treatment for this class of cases. Some inflammation may ensue in a certain number of cases, but it is not of a character likely to be serious. If serious trouble should arise it would have to be met in the usual manner. He considers a large number of so-called hysterical joint affections to be cases of adhesions, and declares that he meets with less hysteria and more definite pathological lesions every year.

**Fracture of the Olecranon.**—Lloyd ("Lancet," May 5, 1888) describes a case of fracture of the olecranon in which a wedge-shaped fragment was driven downward and forward into the great sigmoid notch, thrusting the humerus out of the articulation, and by its presence preventing the reduction of the dislocation. The humerus was also fractured just above the condyles. This rare combination of injuries resulted from a fall, the patient striking on his olecranon with the elbow joint acutely flexed. Excision of the joint had to be resorted to.

**Resection of the Upper Third of the Humerus.**—Hurd and Christian ("Ann. of Surg.," June, 1888) publish the results observed in a case of exsection of the head and upper third of the humerus performed by Dr. McLean twenty-five years ago. The patient had the upper third of the humerus shattered by a rifle-ball in a battle in 1862. Ten days later the head and five inches of the shaft of the bone was removed. For some years, at infrequent intervals, the track of the wound suppurated and discharged small pieces of necrosed bone. In 1887, without the use of apparatus, the patient could use the arm to feed himself, button his clothes, and perform other complicated acts. He could raise the arm toward the scapula and move it slightly backward, but could not bring the humerus forward on the chest. The muscles normally attached to the upper portion of the humerus had lost their insertion, and were for the most part atrophied from disuse. Considering the extent of bone excised, the wide latitude of voluntary motion preserved is remarkable.

**Wiring Fractures of the Patella.**—Axford ("Annals of Surg.," July, 1888), after calling attention to the facts that very good results are frequently obtained after fractures of the patella by non-operative treatment, and that such operations as wiring the fragments are not devoid of danger to life and limb, brings forward a variation of the operation. He first tries to limit inflammation and effusion into the joint as far as possible by elastic pressure and the application of cold for the first forty-eight hours after the accident. Then, if the effusion be so great as to prevent the approximation of the fragments, it must be removed by aspiration. If the fragments will not then come together he frees the bony attachment of the patellar ligament according to Bergmann's plan. If the prepatellar aponeurosis presents an obstacle to union and can not readily be removed by manipulation, "there can be no objection to passing a tenotome into the joint for the purpose of clearing the fractured surfaces." After the fractured surfaces are correctly placed in apposition, two drills are introduced and made to traverse the bone in the long axis of the limb. The perforation thus made serve to carry the wires, which, passed in this manner, do not enter the joint. Attention to detail and antisepsis is necessary to insure success, but it is held that the minimum amount of danger is incurred and a reasonable chance for bony union is secured.

**Cerebral Surgery.**—Mr. Barker ("Brit. Med. Jour.," April 14, 1888) records at some length the history, symptoms, and treatment of a case in which he trephined and drained away the products of an intracranial inflammation believed to have been a localized meningitis about the island of Reil. From the history it may be inferred that some cerebral or meningeal lesion had existed for a number of years. In January, 1888, acute symptoms appeared in connection with an exacerbation of a chronic suppurative otitis from which the patient had suffered since childhood. The mastoid cells were opened, but no products of inflammation were found. Other forms of intracranial disease were excluded in the following manner: Plastic phlebitis with thrombosis by absence of rigor, the inclination of the temperature to fall rather than to rise, and the absence of swelling in the course of the jugular vein; pyæmia by the same facts, as well as by the absence of secondary deposits and the general aspect of the patient; subdural abscess by the absence of a rigor, the course of the temperature, and by the absence of œdema in the soft tissues; cerebellar abscess seemed improbable from the history, the character of the ear mischief, and absence of caries; abscess in the temporo-sphenoidal lobe seemed insufficient to account for the symptoms exhibited.

An opening was made in the skull over the fissure of Rolando, the lower edge being two inches and a half above the Sylvian fissure. A

hollow needle introduced at the lower border downward and inward found thick, yellow serum. Another opening was then made, one inch and a half above the base line, Reid's measurement, and one inch and a quarter behind the center of the bony meatus of the ear. Through the middle of this opening a hollow needle, pushed inward and forward an inch and a half, evacuated nearly half an ounce of fluid. A drainage-tube was inserted and the patient made a steady recovery. In order to demonstrate the correctness of his inference that this was the product of a localized meningitis about the island of Reil, he performed an exactly similar operation on the cadaver, inserting pegs to the depth of, and in the direction of the punctures. These were found on section to come almost in contact in the space overlying the island of Reil. An ounce of fluid among the convolutions over the island of Reil would press them apart and form a space which the needles could empty without coming into contact with them. If the collection of fluid had been a temporo-sphenoidal abscess it would not have been reached by the first puncture, or, unless very large, by the second. It is an interesting case as bearing on the treatment of meningitis by operation.

**Cephal-hydrocele.**—Southam ("Brit. Med. Jour.," May 12, 1888) records a case of traumatic cephal-hydrocele, a somewhat rare complication of simple fracture of the skull. The patient, six months of age, had fallen down stairs, and was picked up unconscious. Some hours later he was drowsy, had right ptosis, with slight conjugate deviation of eyeballs toward the right side. A fracture was found running across the right occipito-parietal region, causing an oval depression two inches and a half long by an inch wide. After a few days the symptoms disappeared and the child was discharged from the hospital, apparently quite well, on the eleventh day. Four days later he was brought back. A distinct swelling was found over the site of fracture, elevated three fourths of an inch above the surrounding surface, oval, soft, fluctuating, and pulsating synchronously with the anterior fontanelle. It was partially reducible by pressure, and grew full and tense when the child cried. The skin over it was normal. Pressure, applied by means of a pad and bandage, succeeded in effecting a perfect disappearance of the tumor in a month's time.

**Cerebral Injury from a Fall.**—Ireland relates the following history of an unusual case ("Edin. Med. Jour.," June, 1888): A lady was thrown from a carriage, striking on the left side of the head. She was picked up unconscious, in a state of collapse, with blood running from the mouth, nostrils, and the left ear. There was a bruise above the left ear, injury to the zygoma, ecchymosis and swelling of both eyelids, external strabismus of the left eye, and complete paralysis of the right arm and leg. The paralysis gradually improved, and the patient regained consciousness nineteen days after the accident. Paresis of the left side of face, childish intelligence, and pain in the left eye were now noted. The nerves affected seemed to be the third, sixth, seventh, and perhaps the ninth. Improvement was slow, but at the end of two years she had made a good recovery. The only trace of paralysis which remained at that time was a slight drooping of the left eyelid, which became worse when the patient was fatigued. Certain events were completely effaced from her memory.

If these symptoms were due to a fracture of the base of the skull it must have been very extensive. Dr. Ireland is inclined to think that in this case there was no fracture of the base of the skull, but that the symptoms were due to bruising of the cerebral tissues and pressure from effused blood.

**Buboes.**—Culver ("Jour. of Cutan. and Gen.-Urin. Diseases," June, 1888) protests against the routine use of the scalpel in the treatment of buboes as avoidable in certain cases, while the scar which remains after operation may in the future lead the patient into unpleasant family relations.

Non-suppurating buboes occurring with gonorrhœa are to be treated by a few days' rest in bed, with the leg raised and the thigh flexed, with application of cold, a mild cathartic, and an alkaline mixture.

The diagnosis should be made when possible between adenitis and periadenitis, because, in a certain number of cases, the former may be aborted by prompt treatment. In adenitis the gland is at first broader, with distinct outlines, not fluctuating; the surrounding tissues are hard, not doughy, not very œdematous, little reddened, and only slightly painful on pressure. In periadenitis the gland is not easily outlined, the area of swelling is greater, more doughy, pits on pressure, and sometimes fluctuation can be detected. If a case of adenitis is seen early a brisk cathartic should be administered, followed by a good tonic and chloride of calcium in doses of five to fifteen grains three times a day. Of the therapeutic action of this drug little is known, but it acts with marked effect on glandular swellings of various origins. Locally, green soap should be rubbed on night and morning, or a solution of iodine in collodion, ℥ j to ℥ j, should be painted over and around the swelling. Burning, blistering, and the injection of antiseptic fluids are not approved. If these remedies do not succeed in determining resolution it is best to hasten suppuration and to open by a vertical incision instead of the ordinary longitudinal one, or to aspirate and wash the cavity out. In the periadenitic variety early and thorough suppuration should be sought and the cavity cleaned out in the same manner. If, in this variety, the gland does not suppurate, it is best to remove it. Chancroidal buboes probably can never be aborted, hence suppuration should be hastened by poultices, while the patient is given tonics, good living, laxatives, and opium. As soon as pus appears the bubo should be aspirated, the cavity irrigated and thoroughly distended with a 1-to-1,000 solution of corrosive sublimate every day, and gentle pressure maintained by means of a spica bandage. If this method is correct, a specific abscess is converted into a non-specific ulcer, the walls of the cavity are ready to heal by adhesive inflammation, and in a few days will heal without further suppuration or tissue necrosis.

**Observation of the Pupil in the Administration of Chloroform.**—Dr. Neilson ("Jour. of Anat. and Physiol.," January, 1888) states, as the result of a large number of experiments and of clinical observations, that, 1, the effect produced by chloroform on the pupil is at first dilatation, varying in degree and duration, then contraction, as the narcosis becomes profound, and dilatation again when the sensibility is returning. If the administration be still continued with the pupil strongly contracted and motionless, the pupil will dilate suddenly and completely. This dilatation of the pupil will be coincident with a state from which it will be difficult or impossible to resuscitate the patient, and is the dilatation of asphyxia. 2. So long as the pupil dilates in response to excitation by pinching, etc., the patient is not sufficiently narcotized for the operation to be proceeded with, unless the latter is slight and does not require complete anæsthesia. 3. When the pupil becomes strongly contracted and immobile no more chloroform should be given until it begins to dilate again. If then further anæsthesia be required, a little more chloroform should be given till the pupil again contracts. 4. The occurrence of emesis causes dilatation similar to but more sudden than that which happens when sensibility is returning, and the efforts of vomiting have the effect of arousing the patient.

**Angeio-sarcoma of the Trachea.**—A patient operated on by Schrötter in 1867 and again in 1873, died in 1887, twenty years after the first operation ("Wiener med. Presse," No. 21, 1888). On autopsy a tumor was found at the fifth tracheal cartilage, which proved under the microscope to be an angeio-sarcoma.

**Sebaceous Tumors.**—Robertson ("Brit. Med. Jour.," June 2, 1888) recommends that the following treatment be followed when patients object to the usual mode of treatment. He claims marked success for the method. "With a cataract knife (Graefe's) puncture the cyst and gently squeeze out the contents; then introduce a very small piece of nitrate of silver. On the following day, by means of a pair of forceps, the capsule of the cyst can be withdrawn, just like the shell of a bean, without any portion being left adherent. In no case has there ever been any return of the growth or any ill effects following the operation."

## OBSTETRICS.

By ANDREW F. CURRIER, M. D.

**Bacteriological Investigations upon an Extra-uterine Fœtus, together with Theoretical Observations concerning the Bacteriological Condition and Destiny of a Dead Fœtus which remains within the Body.**—Bayard Holmes ("Ctrlbl. f. Gyn.," June 2, 1888). The author took a portion of a fœtus which had been removed from a dilated Fallopian tube, the fœtus having been dead two months at the time of its

removal, and made his experiments. Ten portions were placed in nutrient gelatin and kept there for a month. In only one did any change occur, and in that a colony of *Bacillus subtilis* developed within twenty-four hours. This specimen had been contaminated either during or after the operation. The other nine specimens showed that the tissues were free from bacteria and their spores. It is evident from the foregoing that the dead tissues of a fœtus in the abdominal cavity of the mother will not give rise to suppuration in the absence of pathogenetic bacteria. The changes which are probable are that there will be an increase of white blood-cells in the circulation of the mother with a gradual wearing away of the fœtal parts, or there will be mummification or calcification. Suppuration of the fœtus can only take place in case there are pathogenetic microbes in the circulation of the mother, but the statistics of Bandl, Hecker, and Parvy show that this is of common occurrence. The fœtus may become infected in three ways: (1) by some means occurring before its death, (2) by simple, self-infection, (3) by infection through contiguity of pus microbes or their spores, proceeding from an old collection of pus. The last mentioned is the most common method by which infection is accomplished—that is, suppuration must occur most frequently through the medium of the tubes. If such a collection of pus is discoverable in the vicinity of an extra-uterine fœtus, antiseptic drainage should be carried out as in any other abscess cavity. This will frequently be the case when the fœtus is destroyed prematurely, or when the ovisac is aspirated.

**The Cæsarean Section and its Position with Reference to Artificial Abortion, Turning and Perforation in connection with the Narrow Pelvis.**—Leopold ("Ctrlbl. f. Gyn.," May 12, 1888). The author's views and those of his assistants are embraced in this publication, the work being based upon the abundant material of the Dresden Maternity. The first section is edited by L. Korn, and treats of artificial abortion, based upon the history of forty-five cases in which abortion was produced on account of narrow pelvis. In thirty-five of these cases the mothers made uninterrupted recoveries, in nine there was fever lasting from one to three days, and one died from sepsis. Korn's opinion is that, in the equally faulty pelvis, with *conjugata vera* to 7·5 centimetres, and in the pelvis without transverse contraction, with *conjugata vera* to 7 centimetres, artificial abortion should be produced between the thirty-second and the thirty-sixth weeks of pregnancy. If this point has been passed, one should wait for the action of the natural forces, and, if these fail, the practice should be turning and extraction, or forceps and perforation. On the last point Löhmann speaks decisively, analyzing five thousand nine hundred and sixteen cases of labor, in which there were one hundred and seven in which internal turning was performed. His plan in the equally faulty pelvis with *conjugata vera* to 7·5 centimetres, and in the shallow pelvis with *conjugata vera* to 7 centimetres, if the children are only of the average size, is to leave the case to the natural forces. Should operative procedures be necessary, then turning and extraction, or possibly forceps and perforation, are to be practiced. Should a woman with such a pelvis become pregnant a second time, artificial abortion should be performed, the prognosis being bad for the child.

Präger gives an account of more than seventy-one craniotomies which have been performed in the Dresden Maternity during the past four years. His conviction is that craniotomy, performed antiseptically, shows far better results than the Cæsarean section under similar precautions, of course with reference to the mother's life.

The chapter on the Cæsarean section is by Leopold. During the last four years this operation has been performed twenty-three times in his service. He raises the question whether, with modern improvements, we are justified in substituting in all cases this operation for that of perforation. It must ever be remembered that Cæsarean section means laparotomy, and must ever be a very serious operation even in the most skillful hands. It is indeed a fine thing to be able to save both mother and child by operative measures; but, if the indications for such measures are not clear, one should perforate, and do it at an early stage of labor. The comparative statistics of the various operations performed in Leopold's service are as follows:

Artificial abortion gave a maternal mortality of 2·2 per cent. Turning and extraction, 4·8 per cent. Perforation, 2·8 per cent. Cæsarean section, 8·6 per cent. Of the fatal cases which resulted from infection there died from artificial abortion 2·2 per cent., from turning and perforation 0, from perforation 0, from Cæsarean section 4·3 per cent. The foregoing figures indicate that the greatest number of mothers die from the Cæsarean section. With reference to the children, after artificial abortion 66·6 per cent. were saved, after turning and extraction 59 per cent, and after Cæsarean section 87 per cent. With reference to the latter operation, attention is called to the fact that improvement in the suturing of the uterus is still possible, whereby the possibility of future conceptions shall not be removed nor endangered.

**Creoline in Obstetrical Practice.**—Baumm ("Ctrlbl. f. Gyn.," May 19, 1888). The result of this author's investigations is given in the following conclusions:

1. Creoline in the form of lotions, uterine and vaginal injections, is adapted for the prevention and treatment of puerperal diseases, quite as well as the antiseptics which have been in use up to the present time.

2. Perineal tears and injuries to the mucous membrane heal surprisingly well by treatment with this agent.

3. Cracks and excoriations of the nipples do not heal as well under one half per cent. applications of creoline as with weak sublimate solutions—1 to 8,000 to 10,000.

4. The absence of poisonous qualities in creoline is not yet positively determined. If a stronger than a two-per-cent. solution is used upon mucous membranes and parts which have a very sensitive epidermis, violent burning will be caused which may lead to the development of erythema. For disinfection of the hands a two-per-cent. solution of creoline is decidedly more pleasant than sublimate or carbolic-acid solutions. The want of transparency of creoline solutions forms an objection to its use for holding instruments, especially needles. Elastic catheters are attacked by creoline in the same way that they are by carbolic acid. The hæmostatic influence of creoline has not yet been determined. Two-per-cent. solutions have been found very effective in destroying *pediculi pubis*, which is an important fact for lying-in institutions. Creoline is also a very cheap antiseptic and is worthy of the attention of obstetricians and of further investigation.

**The Relation between Mental Disease during the Puerperium and Puerperal Infection.**—Hansen ("Ctrlbl. f. Gyn.," May 19, 1888). The aim of this paper is to show that puerperal infection, which is supposed by most modern writers to have an influence only in occasional instances in producing the puerperal psychoses, has a very decided influence. Until Fürstner's paper (1875) it was not supposed that puerperal psychoses had any particular symptomatic importance; he, however, described an insanity with hallucinations of puerperal women, and the author accepts his description of the disease as it is commonly seen. The author has succeeded in collecting 49 cases of puerperal psychosis, of which 21 came under his personal observation. In not less than 42 of the 49 were there evidences that puerperal infection had been at work, the evidence being obtained by personal communication with the physicians and midwives who had attended the cases. Of the 42 cases in which infection was traceable, 12 had a fatal issue. The pathognomonic sign in the 42 cases of infectious psychosis was acute mania with hallucinations. The hallucinations caused great motor restlessness and anxiety with a subsequent stage of depression or stupidity, in which there was often an exacerbation of the first stage. No boundary-line could be drawn between febrile delirium during the puerperium and puerperal psychoses. While the latter may occur in some cases in the febrile stage, in others before the occurrence of fever, and in others in the post-febrile stage, we must seek for a universal cause for them, whether fever be present or absent. In seven cases in which puerperal infection could not be shown there were two cases of eclampsia with mania and hallucinations of short duration. In the other five there were simple melancholy, hysterical mania, etc. With the exception of the eclampsia, there was no ætiological factor of importance excepting the puerperal infection. The important suggestion in connection with this subject is that prophylaxis is all-essential.

**The Influence of Nutriment upon the Supply and the Nutritive Character of Woman's Milk.**—Zaleski ("Ctrlbl. f. Gyn.," May 26, 1888). The author found, by analysis of a portion of milk which was taken from a wet-nurse, that it contained six per cent. of fat, or double the usual quantity. Further investigation showed that the child who was suckled

by this nurse was in a very bad condition of nutrition, diarrhœa and loss of weight supervened, and it was found that the milk which was given was scarcely digestible. It was believed that all these disturbances were due to too great concentration of the milk, the nurse being fattened by a too free use of beer and too little exercise. A change of diet, moderate use of meat, dilution of the beer with water, and abundant exercise in the open air led to a diminution in the quantity of fat in the milk and an increase in milk-sugar. From that time the child began to improve and thrived well subsequently. The conclusions which were drawn from this case and from experiments upon cows and other animals were:

1. Woman's milk which is very rich in fat can have a very harmful effect upon the nutrition of the child who feeds upon it.

2. A diet which is composed almost exclusively of albuminous elements will increase to a perceptible degree the fat in woman's milk, diminish the quantity of milk-sugar, and has a bad effect in other ways; a similar result may follow the use of alcoholic liquors.

3. By proper diet and nutriment a desired condition of the milk which is indispensable for the proper nutrition of a child can be obtained within certain limits.

4. The influence of the general condition upon the milk supply is the same in human beings as in animals.

5. The fat in milk is probably obtained, to a considerable extent, either directly or indirectly, from albuminous foods.

**A Case in which the Death of the Fœtus occurred before the Rupture of the Membranes; Cæsarean Section while the Mother was Moribund; Schultze's Method of Resuscitation practiced, the Autopsy revealing an Abundance of Air in both Lungs.**—Wiercinsky ("Ctrlbl. f. Gyn.," June 9, 1888). The foregoing long title gives a brief and comprehensive account of the facts brought out in the author's paper. The conclusions reached are the following:

1. The air which was found in the child's lungs reached them exclusively by the exercise of Schultze's method, for while it was within the uterus no air could have been obtained, the membranes being intact, and after its birth it did not once breathe. Those who saw the child immediately after it was removed by the Cæsarean section believed that it was born dead.

2. By means of Schultze's method air can be forced into the stomach, and even into the upper portions of the small intestine.

3. The fœtal apnœa in this case was uninterrupted; in other words, the child while within the uterus made no attempts at breathing of a dyspnœal character, for, as the autopsy showed, the large vessels in the thoracic cavity were almost empty, and all the air-passages were free from foreign matter.

4. This case shows, in support of clinical experience, that when the mother's blood is deficient in oxygen the fœtus will die asphyxiated before the mother.

5. An autopsy upon a child who has died slowly from suffocation *in utero* shows rather a universal œdema with serous transudation into the serous cavities, than the conditions which usually characterize asphyxia—namely, repletion of the heart and the venous system, hyperæmias, ecchymoses, etc.

**A Contribution to the Anatomy of Extra-uterine Pregnancy.**—Berry Hart ("Ctrlbl. f. Gyn.," June 16, 1888, and "Edinburgh Med. Jour.," October, 1887.) The author had the great good fortune to be able to make frozen sections upon the bodies of two women who died during extra-uterine pregnancy. In the first case laparotomy was performed ten hours before death, but the abdomen was quickly closed when the operator found that the ovisac had ruptured at a low point in the posterior layer of the broad ligament, development having proceeded between the rectum and the vagina. The pregnancy had nearly reached the sixth month. The author removed the bony pelvis with its contents *in situ*, and after freezing it made three sections through it, a median, a right, and a left side—all in a sagittal direction. The median section included the fœtus and placenta in a sac, which was bounded above by the folds of the right broad ligament, below by the basal connective tissue of that ligament and the paraproctal tissue. The top of the sac lay in the plane of the superior strait of the pelvis. The placenta, 8·7 centimetres long and 4·1 centimetres thick, lay above between the folds of the ligaments, the fœtus being under it. The left section showed the uterus and a large hæmatoma between the peritonæum and the rectum, also the rupture at the lower portion of the posterior layer of the broad ligament. The uterus contained a well-formed decidua. The left tube and ovary were intact. The preparation also showed that the ovisac, originally tubal, had developed between the layers of the broad ligament into the connective tissue between the rectum and peritonæum, and that before its rupture it was entirely extraperitoneal.

In the second case, that of a prostitute, seven sections were made in a sagittal direction through the pelvis, abdomen, and thorax. They showed hypertrophy of the wall of the left ventricle of the heart; very high position of the diaphragm, caused by the ovisac, which was pushed upward by the abdominal walls, and dilatation of the left ureter and the pelvis of the left kidney. The small intestine was compressed to the left side. The distended transverse colon and the mesentery were adherent to the abdominal wall and below to the ovisac. In this case also the ovisac was entirely extraperitoneal, encroaching upon the connective tissue. It occupied a large portion of the abdominal cavity, especially upon the right side, and extended upward as far as the second lumbar vertebra. The uterus lay displaced to the left in front of the ovisac; between the latter and the abdominal wall was a double layer of peritonæum. The peritonæum was stripped from the entire posterior and a portion of the anterior wall of the uterus; from the fundus strips of tissue proceeded to the inner wall of the ovisac. On the left side a small peritoneal fold surrounded the left tube and ovary; on the right side these organs formed a portion of the posterior wall of the sac. The peritonæum extended in front of the uterus to the upper border of the symphysis; under it lay the bladder, only the lower portion of the anterior surface of the uterus being covered by peritonæum. The fundus of the uterus, showing no trace of peritoneal covering, extended to the ovisac. The layers of the right broad ligament were unfolded to an enormous extent, while on the left side the peritonæum extended from the fundus laterally upon the ovisac. Douglas's pouch lay at the point of junction of the fourth and fifth sacral vertebræ. On the right side of the body the cæcum and peritonæum were pushed high up. The ovisac had at its upper portion unstriped muscular fiber and peritonæum, below only connective tissue. The uterus was much enlarged, being seven inches and three quarters long, the cervix long as in cases of prolapse. Between the cervix and the posterior wall of the pelvis lay the fœtus, the placenta being above it. The latter was a smooth, oval mass, partly attached to the anterior abdominal wall, where it was bared of peritonæum, and partly to the peritonæum. On the right side between the placenta and the sac-wall was a large cavity filled with gas and decomposing blood, and at the upper limit of the cavity the rupture had taken place. The fœtus weighed two pounds and four ounces, and was probably in the eighth month of development. The placenta had undergone degenerative changes. The author expresses his views on extra-uterine pregnancy, based upon these studies, as follows: Tubal pregnancy may be intra-ligamental, described by Werth, or subperitonæo-pelvic, described by Dezeimeris. As the fœtal sac enlarges, the peritonæum is more and more unfolded, until the sac lies entirely in the abdominal cavity. When this situation is reached, the author suggests the name subperitonæo-abdominal gestation for the condition, and he has not yet seen sufficient evidence to believe that ovarian or intraperitoneal gestation occurs. In the subperitonæo-abdominal form the placenta undergoes changes which endanger the life of the fœtus. In the treatment of such cases reference should be had chiefly to the interests of the mother. The placenta should be allowed to remain *in situ*, though a ligature may be thrown around it to favor its separation.

**On the Management of Fibromyomata complicating Pregnancy and Labor.**—Phillips ("Brit. Med. Jour.," June 23, 1888). The course of pregnancy, labor, and the puerperium may be modified by fibroids in the following ways:

1. During pregnancy their presence may induce a premature termination, for a tumor in the uterine wall materially interferes with the regular development of that organ.

2. They may set up localized peritonitis, which will produce adhesions with various organs—that is, intestines, liver, and rectum. They may cause such intense pain and distension as to necessitate operative interference at an early period of pregnancy.

3. A tumor may mechanically obstruct the passage of the fœtus through the pelvic canal, and may thus even occasion resort to the Cæsarean section or the Porro-Cæsarean operation.

4. Frequency of fœtal malposition is very common, and leads to increased infant mortality.

5. After the birth of the child the placenta may be found adherent to the tumor, rendering manual delivery necessary, and consequent bruising of its substance. Placenta prævia is more frequently found as a concomitant of fibroids.

6. Uterine contraction after expulsion of the placenta may be more or less inefficient, owing to the presence of the tumor, and hæmorrhage may result. Involution is also much delayed.

7. Morbid softening and disintegration may take place either before or after labor, leading to peritonitis and its attendant evils. Torsion of the pedicle and subsequent gangrene of the tumor have been observed.

Lefour's thesis in 1880 published reliable accounts of 300 cases in which pregnancy had been interfered with by myomata. The author has collected 59 additional cases since that date, in which no operative interference was attempted, and 47 others in which an abdominal operation was performed.

The methods of treatment during the early months of pregnancy are the assumption of the genu-pectoral position, enucleation *per vaginam*, induction of artificial abortion, and reposition of the tumor during anæsthesia. To these methods may be added the graver ones of myomotomy and "Müller's ablation." The first of these is permissible (1) when the fibroid is attached in an accessible situation; (2) when its presence is causing either intolerable pain or discomfort from distension. Five cases of this operation have been found by the author, 2 of which were fatal. Of the method denominated "Müller's ablation"—that is, abdominal section with the removal of the tumor and the uterus containing the non-viable fœtus—19 cases are recorded, 7 of which were fatal. Of the 19 cases, 13 were treated by the extraperitoneal method with 9 recoveries, and 6 by the intraperitoneal method with 3 recoveries.

Concerning the treatment of fibromyomata during fœtal viability, Lefour found 6 cases in which labor was induced, 1 mother dying and 1 living child being born. Premature induction of labor for such cases is strongly urged by Playfair, while Mundé, Braxton Hicks, and Lomer report each a case in which the tumor (fibroma of the cervix) was removed *per vaginam* during labor.

Comparing the dangers of the Porro-Cæsarean operation with those of Cæsarean section, 6 principal ones appear as the causes of death in the latter—namely, peritonitis, metritis, hæmorrhage, septicæmia, shock, and intestinal obstruction—while in the former they are peritonitis, septicæmia, shock, and intestinal obstruction. Of the 66 cases in Lefour's table, in which labor terminated without assistance, 32 ended fatally. Of 35 cases of version, 21 were fatal. The fatal results after forceps operations were 25·9 per cent., and after embryotomy 55·5 per cent. The fœtal mortality after version was 77·7 per cent., all of which facts show how dangerous fibromyomata are as a complication to pregnancy and labor.

**The Relation between Albuminuria and Disease of the Placenta.**—Wiedow ("Ztsch. f. Geb. u. Gyn.," xiv, 2) remarks that Simpson rendered an opinion in 1860 that albuminuria could cause disease of the placenta and subsequent death of the fœtus, and that it had been observed in several successive pregnancies in the same woman. This opinion is shared by Tait and Tyler Smith, and cases are narrated in support of the opinion. Other authors, including Winckel, Lachapelle, Litzmann, Lange, Braun, and Wieger, have observed the co-existence of albuminuria and placental disease with death of the fœtus, but have not decided that there was a causal relation between them. Recently, Fehling has reported the histories of five women in which the placenta was the seat of the so-called white infarctions, there was miscarriage with the extrusion of a dead fœtus, and these conditions were complicated with nephritis. The author also contributes six cases which sustain the views of Fehling. The opinions of authors in regard to the origin of the white infarctions referred to vary. Simpson, Rokitansky, and d'Outrepont consider that they are the result of inflammation; Meckel and Scanzoni regarded them as representing the final stages of an effusion of blood. Hegar and Maier regard the condition as an interstitial placentitis. Ackerman considers it a coagulation-necrosis resulting from periarteritis of the vessels of the placenta, and Küstner a coagulation-necrosis of all the tissues which take part in the formation of the placenta. The author looks upon the white nodules in the placenta as the product of a coagulation-necrosis of the epithelium of the villi rather than as a product of fibrin. It is much more difficult to decide as to the relation between the placental disease and albuminuria. It can not be a merely accidental one, for the number of such cases is too great. In general, one must agree with Simpson and Fehling that the placental disease is the consequence of albuminuria. Clinical histories and post-mortem findings sustain this view in many cases. Opposed to it are the facts that in most of the reported cases the kidneys are only such as one is accustomed to find during pregnancy; also that even in cases in which the kidneys are seriously diseased we may find normal placentæ. In some cases the first evidences of kidney disease do not appear until after the death of the fœtus. In other cases the expulsion of the fœtus follows immediately after the appearance of albuminuria, and we find changes in the placenta the beginnings of which we must refer to a period long anterior to the occurrence of the clinical symptoms. If nephritis is assumed as a cause, it is also unintelligible that in cases of twins one placenta is diseased while the other remains healthy. It might be assumed in those cases in which the fœtus has died that after its death certain substances were transferred to the mother's circulation which produced the kidney disease, but this is purely an hypothesis. Without being able to reach a positive conclusion, it may also be assumed as possible that it is not a causal relation which subsists between the two diseases, but only one of time, and this may serve as a clew to further investigations.

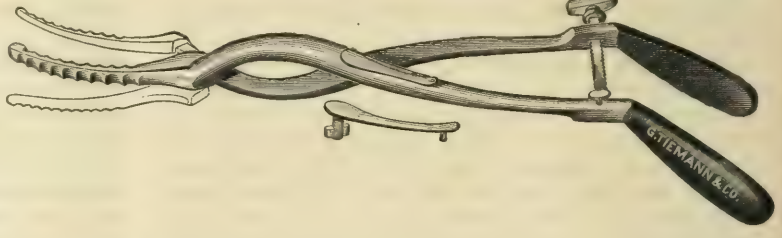
## New Inventions, etc.

### UTERINE DILATOR.

By William H. Wathen, M. D.,
Louisville.

At the meeting of the Ninth International Medical Congress, September, 1888, I read a paper on rapid dilatation of the cervix uteri, and exhibited a dilator of my device. In explaining its superiority, I made the following statement:

"It is claimed for Goodell's dilator that, the blades being parallel, it dilates all parts of the canal equally. This is true in theory only, for the elasticity of the blades is greatest at the ends, while the greatest resistance is in the upper part of the cervix, so that when the external os is dilated an inch and an eighth, the internal os is dilated not more than an inch. The reverse should be true, for the part that most needs to be acted upon is generally near the uterine body. My dilator is more powerful, less complicated, and will not slip out of the uterus so easily when expanding, and when it dilates the external os seven eighths of an inch, the internal os will be open about an inch."




This dilator, as now manufactured by Messrs. Tiemann & Co., has been much improved, and to its superior qualities has been added a principle that makes it as perfectly aseptic as it is possible to have any

surgical instrument. The blades are held together by a modified French lock that admits of the instrument being separated into its different parts in a few seconds, so as to be easily cleaned and made aseptic. This is the only dilator that is made after this fashion, and, as the handles are of vulcanized rubber, hermetically sealed over the steel, there is no place where it is possible to have poisonous matter retained after any reasonable degree of surgical cleanliness.

# Miscellany.

**The American Association of Genito-urinary Surgeons** will hold its second annual meeting in Washington on the 18th, 19th, and 20th of September. The programme contains the following announcements:

"Pyæmia as a Direct Sequel of Gonorrhœa," by Dr. Roswell Park, of Buffalo, N. Y.; "Clinical Observations on Gonorrhœa, with Special Reference to Ætiology, Duration, and Treatment," by Dr. John P. Bryson and Dr. Edwin C. Burnett, of St. Louis, Mo.; "Retrojections in Gonorrhœa," by Dr. Edward R. Palmer, of Louisville, Ky.; "Local Treatment of Chronic Urethral Discharges," by Dr. Frederick R. Sturgis, of New York; "On the Relation of the Prostate to Chronic Urethral Discharges," by Dr. J. William White, of Philadelphia, Pa.; "The Diagnosis and Treatment of Chronic Urethritis, with Demonstrations of Instruments," by Dr. Oberländer, of Dresden, Germany, to be read by Dr. John A. Fordyce (by invitation); "Connection between Masturbation and Stricture of the Urethra," by Dr. Samuel W. Gross, of Philadelphia, Pa.; "The Curability of Urethral Stricture by Electricity: an Investigation," by Dr. Edward L. Keyes, of New York; "On the Radical Cure of Stricture of the Urethra by Dilating Urethrotomy," by Dr. Fessenden N. Otis, of New York; "The Prognosis of Stricture based on Thirty Years' Death Record at the London Hospital and the Practice at St. Peter's Hospital," by E. Hurry Fenwick, F. R. C. S., of London, England (by invitation); "Some Points on the Ætiology of Stricture of the Urethra," by Dr. Robert W. Taylor, of New York; "The Operative Treatment of Hypertrophy of the Prostate, with Stereopticon Demonstrations of Specimens, etc.," by Dr. Francis S. Watson, of Boston, Mass.; "Prostatotomy for Enlarged Prostate at the Age of Forty-two Years," by Dr. Abner Post, of Boston, Mass.; "The History of the Filaria Sanguinis Hominis: its Discovery in the United States, and especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis," by Dr. William M. Mastin, of Mobile, Ala.; "Clinical Observations on Diseases of the Testicle," by Dr. L. Bolton Bangs, of New York; "Case of Removal of Both Testicles for Recurrent Carcinoma," by Dr. Frank W. Rockwell, of Brooklyn, N. Y.; "Some Points in the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and other Instruments," by Dr. Alexander W. Stein, of New York; "Demonstration of a Perfected Evacuator and an Improvement in the Method of Removal of Débris from the Bladder," by Dr. Fessenden N. Otis, of New York; "Stone in the Bladder in Connection with Splenic Leuchæmia," by Charles Williams, F. R. C. S., of Norwich, Eng. (by invitation); "Litholaplaxy in Male Children," by Surgeon-Major Keegan, of Indore, Central India (by invitation); "Case of Perineal Section for Traumatic Retention—Unusual Condition of the Bladder," by Dr. J. Edwin Michael, of Baltimore, Md.; "Operations on the Kidney," by Dr. William H. Hingston, of Montreal, Canada; "On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis," by Dr. George Chismore, of San Francisco, Cal.; "Case of Nephro-lithiasis, complicated with Hydro-nephrosis, in which Lumbar Nephrotomy was performed," by Dr. Frank W. Rockwell, of Brooklyn, N. Y.; "Malignant Tumors of the Seminal Vesicles: Two Cases with Specimens," by Dr. John P. Bryson, of St. Louis, Mo.; "Case of Bowel ending in the Urethra of a Child Four Weeks Old—Relief by Operation," by Dr. Arthur T. Cabot, of Boston, Mass.; "Unusual Case of Urethral Calculus," by Dr. Harvey G. Mudd, of St. Louis, Mo.; "The Congenital Anomalies of the External Urethral Orifice," by Dr. C. Kaufmann, of Zürich, Switzerland (by invitation); "The Prophylaxis of Syphilis," by Dr. Prince A. Morrow, of New York; "Syphiloma of the Vulva," by Dr. J. Nevins Hyde, of Chicago, Ill.; "The Value of the Tolerance of the Iodides as a Diagnostic of Syphilis," by Dr. J. William White, of Philadelphia, Pa.; Papers by Dr. Félix Guyon, of Paris, France, Dr. Freund, of Strasburg, Germany, and others.

**The Lehigh Valley Medical Association.**—The eighth annual meeting was held at Paxinosa Inn, the new summer resort situated on a hill some six hundred feet above the Delaware River, just north of Easton, Pa., on Wednesday, the 15th inst. The beauty of the view, excelling in some respects those of the far-famed Water Gap, was a surprise to most of the visitors and a source of continual enjoyment. The view was almost unique in that it extended in every direction and afforded variety as well as beauty. Leaving the ladies to enjoy the beauties of nature, the members of the association, to the number of sixty or seventy, assembled in the parlor of the inn. The address of the retiring president, Dr. W. B. Erdman, of Macungie, treated largely upon quackery. Those entering the profession from purely sordid motives, having failed to recognize the principles on which permanent success was founded, would either miss their aim and fall by the wayside, or, abandoning all pretense of regular and honorable conduct, would embark upon the vessel of quackery. The speaker then proceeded to make a study of this sort of person, showing that he thrived in the days gone by, that he still continued to thrive, using the old ways or inventing new ones, as the success of his ventures might demand. He attributed the success of quackery to the lack of knowledge on the part of the people, and the influence of novelty and mystery these "isms" produced. It was the duty of the true physician to aid in correcting this abnormal condition of affairs; this he could do, in part at least, by thoroughness of preparation, honesty of purpose, and integrity of character.

The annual address was delivered by Dr. T. J. Mays, of Philadelphia, who selected for his subject "The Treatment of Lung Cavities." Dr. Mays stated that he selected this subject because of its frequency and of the prevalent idea that nothing could be done for it. He began by giving a clear statement of the pathology of the subject condition. As to treatment, it must be remembered, as cardinal principles, 1, that it, as well as the disease of which it formed a part, was inherently a process of necrosis, of mortification; 2, that not only its size but its existence depended on the degree of local and constitutional resistance. It was stated, as a rule, that a patient with a quiescent cavity was more desirable than one who had an infiltrated lung. The special indications for treatment, as enumerated, were: 1, fever; 2, anorexia; 3, wasting; 4, harassing cough and expectoration; 5, loss of sleep; 6, diarrhœa; 7, hæmoptysis. Among the antipyretics, antipyrine was recommended, although inhalations of certain antiseptics acting upon the inflamed part often had a favorable influence upon the fever. Ichthyol administered through a respirator, in a strength of 25-per-cent. aqueous solution, was spoken of with favor for this purpose. Alimentation should be made a matter of careful study; here often the cook assumed the greatest importance. The morning cough, which was so often apt to be distressing and fatiguing, would continue until the cavity was emptied. A position in which the head was lowered—as if one were tying a shoe—would often hasten its removal. For hæmoptysis the use of the fluid extracts of hamamelis and geranium—one part of the former to three of the latter—in teaspoonful doses every hour or two, or oftener if necessary, was especially commended. Pulmonary gymnastics were mentioned to be urged as a very great aid in treatment.

Dr. George N. Best, of Rosemont, N. J., was elected president for the ensuing year, and the executive board was instructed to arrange for a winter meeting, more especially for the discussion of medical subjects; this it afterward did, the meeting to be in Allentown late in January. The business portion of the session finished, there remained the social reunions, so highly enjoyed on these occasions, and the dinner, which a country doctor uniformly enjoys if it is good and uniformly praises if there is a bountiful supply. Suffice it to say that the enjoyment was only limited by the appetite, and the praise was unstinted. And as the afternoon 'buses took them to their trains, there was a feeling of gratulation that Paxinosa Inn seemed to promise such an excellent retreat for the convalescent or the fatigued.

**The American Dermatological Association** will hold its twelfth annual meeting at Willard's Hotel, in Washington, on the 18th, 19th, and 20th of September. The programme contains the following papers: Address, by the President, Dr. I. E. Atkinson; "The Electrolytic Decomposition of Organic Tissues," Dr. G. H. Rohe; "The Value of Salicylic Acid in Dermatology," Dr. Heitzmann; "Hereditary Dermatoses," Dr. J. C. White; "A Report of Four Cases of Dermatitis Herpetiformis," Dr. J. E. Graham; "Dermatitis Herpetiformis, with Notes of Three Cases," Dr. H. W. Stelwagon; "Personal Observations on Skin Diseases in the Negro," Dr. R. B. Morison; "Note of a Case of Filaria Medinensis," Dr. A. Van Harlingen; "So-called Acne Anthracoide Iodopotassique," Dr. R. W. Taylor; "Note relative to the Vegetative Lesions induced by Ingestion of some of the Iodine Compounds," Dr. J. N. Hyde; "Notes on some Unusual Cases of Skin Disease," Dr. W. A. Hardaway; "A Contribution to the Clinical History of Alopecia Areata," Dr. A. Van Harlingen; "The Non identity of Lichen Planus and Lichen Ruber," Dr. G. H. Fox; "The Question of Relationship between Lichen Ruber (Hebra) and Lichen Planus (Wilson)," Dr. A. R. Robinson; "Multiple Pigmentary Sarcoma," Dr. E. B. Bronson; "Dermatitis Plantaris and Palmaris," Dr. L. Duncan Bulkley; "Raynaud's Disease and Symmetrical Gangrene in Late Syphilis," Dr. R. W. Taylor; "The Relations of Framboesia to Syphilis and Tuberculosis of the Skin, with Report of a Case," Dr. P. A. Morrow; "Kraurosis of the Vulva (Breisky)," Dr. C. Heitzmann; "Molluscum Contagiosum, a Clinical Report," Dr. H. W. Stelwagon.

**The Honorary Degree of LL. D.** — According to the "Glasgow Herald," the Senatus Academicus of the University of Glasgow unanimously resolved to confer the honorary degree of Doctor of Laws on the following gentlemen, in connection with the meeting of the British Medical Association: Sir William Aitken, M. D., F. R. S., Netley; Thomas Clifford Allbutt, M. D., F. R. S., Leeds; Professor Ball, Paris; John T. Banks, M. D., D. Sc., Dublin; Fordyce Barker, M. D., New York; Professor Benedikt, Vienna; Thomas Bridgwater, M. B., M. R. C. S. Eng., Harrow; John Macintyre, M. D., Odiham, Hants; Inspector-General Maclean, M. D., C. B., Netley; James Morton, M. D., President of Faculty of Physicians and Surgeons, Glasgow; Surgeon-General Munro, M. D., C. B., London; Frederick William Pavy, M. D., F. R. S., London; Sir George H. Porter, M. D., Dublin; David Yellowlees, M. D., Royal Asylum, Gartnavel.

**Quarantine Laws and Regulations.**—Dr. John B. Hamilton, Supervising Surgeon-General of the Marine-Hospital Service, has issued the following circular for the information of persons concerned in the execution of quarantine laws:

SECTION 4792, REVISED STATUTES OF THE UNITED STATES.

The quarantines and other restraints established by the health-laws of any State, respecting any vessels arriving in, or bound to, any port or district thereof, shall be duly observed by the officers of the customs revenue of the United States, by the masters and crews of the several revenue-cutters, and by the military officers commanding in any fort or station upon the sea-coast; and all such officers of the United States shall faithfully aid in the execution of such quarantines and health-laws, according to their respective powers and within their respective precincts, and as they shall be directed, from time to time, by the Secretary of the Treasury. But nothing in this Title shall enable any State to collect a duty of tonnage or impost without the consent of Congress.

NATIONAL QUARANTINE ACT.

AN ACT to prevent the introduction of contagious or infectious diseases into the United States.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That no vessel or vehicle coming from any foreign port or country where any contagious or infectious disease may exist, and no vessel or vehicle conveying any person or persons, merchandise or animals, affected with any infectious or contagious disease, shall enter any port of the United States or pass the boundary line between the United States and any foreign country, contrary to the quarantine laws of any one of said United States, into or through the jurisdiction of which said vessel or vehicle may pass, or to which it is destined, or except in the manner and subject to the regulations to be prescribed as hereinafter provided.

Sec. 2. That whenever any infectious or contagious disease shall appear in any foreign port or country, and whenever any vessel shall leave any infected foreign port, or, having on board goods or passengers coming from any place or district infected with cholera or yellow fever, shall leave any foreign port, bound for any port in the United States, the consular officer, or other representative of the United States at or nearest such foreign port, shall immediately give information thereof to the Supervising Surgeon-General of the Marine-Hospital Service, and shall report to him the name, the date of departure, and the port of destination of such vessel; and shall also make the same report to the health officer of the port of destination in the United States, and the consular officers of the United States shall make weekly reports to him of the sanitary condition of the ports at which they are respectively stationed; and the said Surgeon-General of the Marine-Hospital Service shall, under the direction of the Secretary of the Treasury, be charged with the execution of the provisions of this act, and shall frame all needful rules and regulations for that purpose, which rules and regulations shall be subject to the approval of the President, but such rules and regulations shall not conflict with or impair any sanitary or quarantine laws or regulations of any State or municipal authorities now existing or which may hereafter be enacted.

Sec. 3. That it shall be the duty of the medical officers of the Marine-Hospital Service and of customs officers to aid in the enforcement of the national quarantine rules and regulations established under the preceding section; but no additional compensation shall be allowed said officers by reason of such services as they may be required to perform under this act, except actual and necessary traveling expenses.

Sec. 4. That the Surgeon-General of the Marine-Hospital Service shall, upon receipt of information of the departure of any vessel, goods, or passengers from infected places to any port in the United States, immediately notify the proper State or municipal and United States officer or officers at the threatened port of destination of the vessel, and shall prepare and transmit to the medical officers of the Marine-Hospital Service, to collectors of customs, and to the State and municipal health authorities of the United States weekly abstracts of the consular sanitary reports and other pertinent information received by him.

Sec. 5. That whenever, at any port of the United States, any State or municipal quarantine system may now or may hereafter exist, the officers or agents of such system shall, upon the application of the respective State or municipal authorities, be authorized and empowered to act as officers or agents of the national quarantine system, and shall be clothed with all the powers of United States officers for quarantine purposes, but shall receive no pay or emolument from the United States. At all other ports where, in the opinion of the Secretary of the Treasury, it shall be deemed necessary to establish quarantine, the medical officers or other agents of the Marine-Hospital Service shall perform such duties in the enforcement of the quarantine rules and regulations as may be assigned them by the Surgeon-General of that Service under this act: *Provided*, That there shall be no interference in any manner with any quarantine laws or regulations as they now exist or may hereafter be adopted under State laws.

Sec. 6. That all acts or parts of acts inconsistent with this act be and the same are hereby repealed.

Approved April 29, 1878.

[Extract from Quarantine Act of August 1, 1888.]

AN ACT to perfect the quarantine service of the United States.

(This was published in our issue for August 11th, p. 167.)

[Extract from Regulations of the Marine-Hospital Service. Approved by the President April 24, 1885.]

GOVERNMENT OF NATIONAL QUARANTINES.

322. At ports where quarantine may be established by the Secretary of the Treasury, every vessel, before being permitted to enter, shall present to the collector of customs satisfactory evidence either that said

vessel had not, at any time during a period of thirty days immediately preceding its arrival, touched at or communicated with any foreign port where cholera, yellow fever, or small-pox was known to exist in an epidemic form; that there had not been at any time during that period any case of contagious disease on board; and that said vessel does not convey any person or persons, merchandise, or animals affected with any infectious or contagious disease, or that the said vessel has been thoroughly cleaned and disinfected by the quarantine officer, and is free from infection at the time of entry. The certificate to that effect, of the medical officer of the Marine-Hospital Service, or other agent of the Treasury Department designated by the Secretary of the Treasury to act as quarantine officer for the United States at the port, shall be accepted by the collector of customs as satisfactory evidence, and the medical officer or agent referred to shall, before granting such certificate, satisfy himself that the matters and things therein stated are true.

323. Vessels coming from a foreign port or country where cholera, yellow fever, or small-pox is known to have existed in an epidemic form within thirty days preceding their arrival, and vessels or vehicles conveying any person or persons, merchandise, or animals affected with any contagious disease, or having had on board at any time during the thirty days preceding their arrival any case of contagious disease, shall not enter any port of the United States until such disinfection or other precautionary measures shall have been performed as prescribed by these regulations, and the certificate of the medical officer of the Marine-Hospital Service, or other designated agent of the Treasury Department, shall, in such cases, as in the cases referred to in the preceding paragraph, be accepted by the collector of customs as satisfactory evidence of compliance with said regulations.

324. For the purposes of necessary disinfection of a vessel and its cargo, and of the clothing and baggage of persons on board, the said vessel shall be required to repair to and cast anchor at such place as may be designated by the Secretary of the Treasury, at each port respectively, to be known as the United States Quarantine Station.

325. The disinfection, and other precautionary measures referred to in paragraph 323, shall be carried out under the direction and supervision of the United States quarantine officer at each port respectively, and shall consist of, first, the isolation and treatment of the sick; second, the disinfection of all clothing and baggage liable to be infected; third, the removal of the cargo from the vessel to open lighters, and its thorough disinfection by chemical agents, by exposure to free currents of air, or by burning, as the case may require; and, fourth, the cleansing and fumigation of the vessel, or such other methods of disinfection as may from time to time be adopted by the Department.

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[Extract from Regulations prescribed for the information and government of the Consular Officers of the United States. Approved by the President and promulgated by the Secretary of State, February 3, 1888.]

## THE QUARANTINE SERVICE.

Section 2 of an act entitled "An act to prevent the introduction of contagious or infectious diseases into the United States," approved April 29, 1878, provides—

"That whenever any infectious or contagious disease shall appear in any foreign port or country, and whenever any vessel shall leave any infected foreign port, or, having on board goods or passengers coming from any place or district infected with cholera or yellow fever, shall leave any foreign port bound for any port in the United States, the consular officer, or other representative of the United States at or nearest such foreign port, shall immediately give information thereof to the Supervising Surgeon-General of the Marine-Hospital Service, and shall report to him the name, the date of departure, and the port of destination in the United States, and the consular officers of the United States shall make weekly reports to him of the sanitary condition of the ports at which they are respectively stationed."

The object of the foregoing section of the law is to secure timely advice of the outbreaks of cholera and yellow fever, and of the probable transportation of the poisons of these preventable diseases in vessels bound for the United States; and consular officers for the United States are directed to put themselves into communication with the health authorities of their respective stations, and from the information obtained from such authorities, or from other reliable sources where no regularly constituted health authorities exist, to prepare and transmit by the mails to the Department of State, for the information of the Surgeon-General of the Marine-Hospital Service, on forms prescribed by the Department, weekly reports of the appearance, progress, or termination of cholera, yellow fever, small-pox, plague, or typhus occurring in their respective localities, and are further instructed to include in said reports information in relation to the prevalence of other preventable diseases, as diphtheria, enteric and scarlet fevers, etc., the prevailing disease or diseases in port, if any, and, when practicable, the annual death-rate per one thousand of the population as shown by the official record of deaths for the week reported. Special interest should be taken in the healthiness of vessels, reporting those arriving from or departing to the United States in a bad sanitary condition; also reporting the facts of any serious sickness or unhealthiness of seamen in port, or of crews arriving from or departing to the United States.

In the event of the outbreak of Asiatic cholera, yellow fever, or Asiatic plague, or other contagious disease in epidemic form, the Department must immediately be advised by cable or telegraph of such outbreak, using such abbreviation as the Department may from time to time direct.

The following cipher and abbreviations should be used:

"Cholera"—meaning cholera has appeared.

"Yellow"—meaning yellow fever has appeared.

The name of a country—meaning that the disease has made its appearance at several places in the country named.

The name of a vessel—meaning that the vessel named has departed from the place whence the dispatch is sent, bound for a port in the United States.

"Poison"—meaning that the vessel referred to, though leaving a then healthy port, has on board passengers or goods (baggage) coming from a district infected with cholera or yellow fever.

When cholera or yellow fever has appeared at several places in a country, name the country only after the word "cholera" or "yellow," as the case may be; if it has appeared at the place only from which the dispatch is sent, do not repeat the name of that place in the body of the dispatch, but if at any other particular place, name it.

In a dispatch announcing the departure of a vessel to a port in the United States, the port of departure will be understood to be the place from which the dispatch is sent; hence the name of the port of departure need not be repeated. In the body of a dispatch the name of the vessel should be given first; second, the name of the country, when applicable; third, the day of departure, omitting the day of the month and of the year, as they will be understood without saying; fourth, the name of the port of destination (the importance of observing this order will appear obvious when it is understood that many vessels bear the names of ports in the United States); fifth, the name of the disease, "cholera" or "yellow," as the case may be, should be given, provided the Department has not been already advised of the outbreak of the disease. When advice has once been given of the appearance of cholera or yellow fever at a certain port, the name of the disease need not be repeated in dispatches announcing the subsequent departure of vessels from that port.

When the name of a vessel is given without stating whether it is a steamer or sailing-vessel, it will be understood to be a steamer; if the vessel is a sailing-vessel, its proper designation should be prefixed. The sender of the dispatch should sign his last name only.

The consul will give to every master of a vessel bound to a port in the United States a bill of health, on the form prescribed by the Department, giving full information of the number of persons on board such vessel at the time of sailing, and the sanitary condition of the vessel so far as known, and also the sanitary condition of the port of departure at the time. At such ports as may from time to time be designated by the Department, a physician will be employed or detailed to make the necessary inspection of the vessel, her passengers, crew, cargo, and ballast. In case the master of any vessel shall refuse to receive a bill of health, the fact shall be immediately reported to the Department by cable, if necessary.

When a vessel having received a bill of health touches at any other

port while *en route* to the United States, the consul at such port shall *visa* the bill of health, and note thereon such changes as may have taken place since its original issue.

Monthly reports of the bills of health issued must be made to the Department on the regular forms.

## REGULATIONS FOR THE GOVERNMENT OF OFFICERS OF THE REVENUE-MARINE SERVICE.

The Secretary of the Treasury issued the following circular, under date of June 4, 1888:

In order to assist local authorities in the maintenance of quarantine against the introduction of infectious diseases, as provided in section 4792, Revised Statutes, the act of April 29, 1878, and appropriation acts authorizing the President to maintain quarantine at points of danger, the President has determined to establish, by means of the vessels of the Revenue Marine, a national patrol of the coast of the United States, so far as it may be practicable under existing law and consistent with the performance of the other duties confided to that Service.

You are accordingly directed to cruise, actively, with the revenue steamer under your command upon the outer lines of your cruising-grounds, and to exercise special vigilance in speaking all vessels arriving from foreign ports, or from infected ports of the United States, directing your inquiries, first, as to the port from which the vessel sailed, and, secondly, as to the health of those on board at the time of departure, during passage, and at the time of hailing; and should the information gained indicate a condition of contagion or infection in the vessel or crew, or that the vessel has left a port at which contagious or infectious diseases were prevailing, her master will be directed to proceed for examination to the outer quarantine station provided for her port of destination.

The following regulations will be observed relative to the inspection of vessels:

If a vessel be found with sickness on board, or in a foul condition, she will be directed to proceed to the quarantine station hereinbefore indicated, and the Revenue-Marine officer will immediately notify the proper quarantine officer. In such case no person will be permitted to board the vessel until the medical officers in charge of the quarantine shall have given the usual permit.

Should the pilot or master of a vessel, when hailed, report cases of recent or present sickness on board, the revenue officer will not board, but will send her immediately to quarantine.

Quarantine officers will be recognized as follows, viz.:

Medical officers or acting assistant surgeons of the Marine-Hospital Service in charge of Gulf, South Atlantic, Cape Charles, or Delaware Breakwater Quarantines, or any officer of said service on duty at any port on the interior rivers, the Great Lakes, or Pacific coast, and all quarantine officers acting under proper State or local authority.

Special regulations to aid local quarantine authorities will be promulgated hereafter should occasion require.

## LOCATION OF NATIONAL QUARANTINES.

Delaware Breakwater.

Cape Charles; Hospital at Fisherman's Island; boarding station near Thimble Light.

Sapelo Sound; Blackbeard Island.

Near Key West. (Site not yet determined.)

North Chandeleur Island, Gulf of Mexico (act of March 5, 1888).*

San Diego, Cal. (Site to be determined.)

San Francisco, Cal. (Site to be determined.)

Port Townsend, Wash. (Site to be determined.)

**The Health of Boston.**—During the week ending Saturday, August 11th, the following numbers of cases and deaths from infectious diseases were reported to the Board of Health: 18 cases of diphtheria and 7 deaths; 6 cases of scarlet fever and 1 death; 18 cases of typhoid fever and 2 deaths; 1 case of measles. There were also 28 deaths from consumption, 3 from pneumonia, 3 from whooping-cough, 7 from heart disease, 5 from bronchitis, and 8 from marasmus. The total number of deaths was 228, against 213 in the corresponding week last year.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality" for the month of July, the whole number of deaths reported was 519, including 3 from alcoholism, 7 from cerebro-spinal meningitis, 32 from cholera infantum, 4 from croup, 3 from dysentery, 7 from diphtheria, 6 from diarrhœa, 1 from erysipelas, 12 typhoid fever, 4 from malarial fever, 1 from leprosy, 1 from pyæmia, 7 from whooping-cough, 1 from syphilis, 3 from scarlet fever, and 2 from small-pox.

* The old station at Ship Island will be used until the new buildings on the Chandeleur shall have been completed.

## ANSWERS TO CORRESPONDENTS.

*No. 220.*—Beard and Rockwell's "Treatise on the Medical and Surgical Uses of Electricity." Loring's "Text-book of Ophthalmoscopy."

*No. 221.*—The instrument was described in the "New York Medical Journal" for April 9, 1887, page 393.

*No. 222.*—Three editions. The fourth edition will be issued early in the coming autumn.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# A DILATING BULBOUS URETHROTOME (AND URETHROMETER),

ADAPTED TO STRICTURES OF BOTH LARGE AND SMALL CALIBER.

By W. B. ROGERS, M.D.,

PROFESSOR OF THE PRINCIPLES AND PRACTICE OF SURGERY AND CLINICAL SURGERY IN THE MEMPHIS HOSPITAL MEDICAL COLLEGE, MEMPHIS, TENN.

NEARLY four years ago I presented at a meeting of the Tri-State Medical Association of Missouri, Arkansas, and Tennessee a urethrotome and urethrometer combined. This instrument was of my own invention, and while at that time it had fulfilled all the requirements of such an instrument, in some six or eight operations, in my hands, yet it was new, and required a longer period of probation before its claims of superiority could be reasonably well pressed upon the profession.

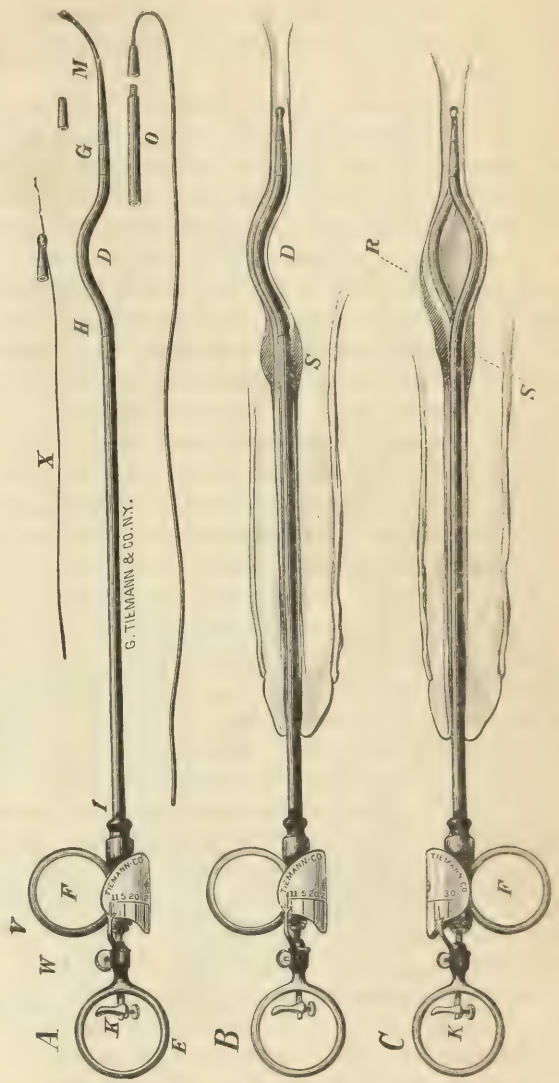
Time has passed—the test has been made in more than a hundred cases, both in private practice and at my college clinics, and I am prepared to urge its claim of superior merit. Laying aside any discussion of stricture of the urethra and its treatment, a brief consideration of urethrotomes in general is the present object of this paper. It can be briefly summed up that urethrotomes that are made to cut during their introduction are not safe in cases of stricture of very small caliber, especially if complicated by false passages, hence the preference by the profession for an instrument that cuts from behind forward. So far as I am posted, those instruments which incise during withdrawal, and which possess dilating powers, both with and without a bulb, are of such diameter that the stricture must be first dilated with some other instrument before the urethrotome can be used, and such being the case, these urethrotomes possess only an imaginary advantage over those cutting during introduction, because the latter can deal safely with strictures of large caliber.

The advantage of a bulbous instrument, wherein the bulb is formed behind the stricture, is readily appreciable to any one. The instrument I offer retains this feature, and the bulb is formed on a plan entirely different from any I have ever seen, and by such mechanism as enables the instrument, when ready for introduction, not to exceed in size a No. 4 steel sound; yet, when the bulb is formed, the measure is that of the largest male urethra. The size of this bulb can be increased or diminished at will; hence the caliber of the urethra, as well as that of the stricture, is easily taken all along its course—a urethrometer combined with the urethrotome.

The instrument is conical and is prepared for the use of the filiform guide, and will safely follow whenever the guide will pass. No preparatory dilatation is needed—a proceeding claimed by way of apology for other larger instruments to be beneficial, and which claim it is difficult to appreciate.

The dilating feature is a *sine qua non* to any urethrotome's permanent favor with the urethral surgeon.

The bulbous enlargement on this instrument is wedge-shaped, with its apex directed toward the stricture, so that during the periods of incision the wedge continues to insert itself—to dilate the stricture—hence, in the most exact sense of the word, it is a urethrotome which incises while dilating. It is suitable for strictures of both large and small caliber,




because the cut can be made at any stage of the forming of the bulb, and the stricture can be incised on all sides by rotating the instrument.

A careful study of the excellent drawings furnished by Tiemann & Co., who make the instrument, will show the mechanism of the instrument as well as how it is used.

Fig. A shows the instrument with its points and guides.

Fig. B shows its passage along the urethra to the bladder, before the bulb is formed.

Fig. C shows it during withdrawal. The bulb which was formed in the bladder detects the stricture at S, while R is the blade for incising the stricture.

Returning to A, the instrument will be seen to consist of a shaft, I H, a curve, H D G, and a curved point, M. This point M may be unscrewed just in advance of G, and replaced by the straight point O, to which is attached the

soft catgut guide; or the point M may be replaced by the short point, tunneled for the whalebone guide X—after Gouley. The shaft I H is six inches long, cylindrical, with a uniform diameter equaling that of No. 4 English scale, while the curve gradually diminishes in diameter to the size of No. 3. The point O tapers to the filiform guide. Thus we form an instrument which can be safely pressed to the bladder through any stricture whose opening can be passed by the guide.

The shaft I H consists of two cylinders—a solid one, with ring handle E, inclosed by hollow one with ring handle F. Along the curve the two cylinders become solid half-cylinders, with their flat surfaces opposed, thus forming a solid whole cylinder. At G the hollow cylinder of the shaft receives the solid one. The instrument having been passed well into the bladder by means of the ring handle, F, the hollow cylinder of the shaft is rotated, causing a separation of the two half-cylinders of the curve, thus forming (in the bladder) a skeleton bulb of any desirable diameter up to that of the full-sized male urethra. The diameter of the bulb at any stage of its formation can be seen as the arrow-point plays over the meter-plate opposite ring handle, F. It will be seen in Fig. C that as the instrument is withdrawn we approach the stricture at S with the point of a wedge whose base corresponds to the greatest diameter of the bulb. With this wedge we keep the stricture well on the stretch. At R is seen the blade for incising, the handle of which is at K. The blade lies concealed and sheathed between the two half-cylinders of the curve, and can be made to protrude and cut to the depth of one line or less. This incising may be performed with a bulb of any size, and at one razor-like sweep, or by nicking, then dilating, and repeating. The latter is preferable, since by this method we cut only through the depth of the cicatrix when the bulb glides on. That it does incise the healthy (?) urethra both behind and in front of the stricture may be urged as an objection, which, however, is more theoretical than real, since longitudinal incisions are not followed by contraction of the canal.

During the introduction of the ordinary steel sound the point is liable to be arrested by folds of the membrane lining the canal, or by spasm of the "cut-off" muscle; hence the skilled surgeon, to detect a stricture of large caliber, relies on the grasping or "biting" during withdrawal; but to the hand unfamiliar with this "biting" a stricture may escape detection, and the period at which it is most amenable to treatment be allowed to pass. With this instrument and the bulb formed in the bladder, the merest novice in urethral surgery can hardly fail to detect the slightest degree of constriction.

It is not maintained that a cure must necessarily follow simple incision with this urethrotome, but it is maintained that the instrument can be safely passed through any urethra admitting the filiform guide; that it detects and locates the stricture during withdrawal; that it stretches or dilates steadily while the blade nicks fiber after fiber of the stricture through its entire thickness; that, besides being a urethrometer, it can take the place of a series of conical sounds or dilators, and thus be used in the after-treatment.

# TWO CASES OF REMOVAL OF UTERINE MYOMA:

## ONE, SUPRAPUBIC HYSTERECTOMY; THE OTHER, COMPLETE HYSTERECTOMY.

*A New Method of disposing of the Stump.*
*Microscopical Examination of the Appendages.*
*Remarks on the Treatment of Uterine Myoma by Electricity.*

By MARY A. DIXON JONES, M. D.,
SURGEON TO THE WOMAN'S HOSPITAL OF BROOKLYN.

(*Concluded from page 205.*)

Are the contractile cicatrices from the positive cauterizing and consequent narrowing of the uterine canal to be desired, or are they beneficial? They are produced for the purpose of arresting hæmorrhage; but hæmorrhage may depend upon other causes than the sanguineous exudation or excessive secretion of the interior of the uterus.

And there are yet other dangers; even the great Apostoli speaks of "a fatal error of diagnosis." He says: "I did not recognize the presence of a suppurating ovarian cyst, which caused death from peritonitis." By surgery this unexpected condition could have been managed, and the patient saved. He says of another case: "Death was due to a puncture made too deeply! The consequence was intraperitoneal gangrene! Then "a puncture made too deeply" may cause "intraperitoneal gangrene"? He confesses to having "excited or aggravated in the course of five years ten perimetric phlegmonous inflammations"; and how many perimetric phlegmonous inflammations have been excited by less skillful hands? Says Knowlsly Thornton: "We do not fully appreciate the dangers of the method. I know of one case in which rapidly fatal pyæmia followed a few applications in the hands of one experienced in the use of the method." The journals tell us of narrow escapes, and even such careful manipulators as the Keiths record the history of a serious case of cellulitis of which the gravity is not lessened by attributing it to the carelessness of the patient.* Dr. Champreys said, at the meeting of the London Obstetrical Society, June 21, 1883, that "he had heard of wide-spread suppuration and septicæmia, and of death after the employment of this method, and regretted that these cases had not been reported." A physician, in the American Gynæcological Society, says: "I operated in one case, and set up a pretty smart attack of peritonitis by introducing one needle through the abdominal wall"; there was also reported by another physician at the same meeting "an enormous pelvic abscess caused by electrolysis." Another said: "Peritonitis and pelvic abscess are precisely the dangers liable to follow the use of electricity by abdominal puncture."†

Apostoli also speaks of "errors of practice" from the too violent or too intense use of the negative pole in the case of subacute or perimetric inflammation, and says: "I acknowledge having been sometimes unsuccessful, and my failures I shall recount at length in a work now in preparation, and will devote a chapter to needful precautions," remarking that "he has already enlarged upon the dangers

* "Brit. Med. Jour.," March 23, 1888.
† "Am. Gyn. Trans.," 1887.

elsewhere." If all should "write a book," and "recount at length their failures" and "enlarge upon the dangers," I suppose that even the world itself could not contain the books that should be written."

But, with all the stupendous dangers and terrific possibilities, Apostoli says: "It is very easy of application, since it only requires an elementary acquaintance with the principles and practice of electro-therapeutics. It is simple, for it is ordinarily nothing more than a skillful uterine therapeutical soundage." Mundé says: "It requires no prolonged study of the mysteries of electricity, no special knowledge or experience as an electrologist." But, when you think of making punctures in a sick woman's abdomen "for a depth of from three to four inches, according to the size of the tumor," it would seem to require a profound knowledge of something. The "Lancet," February 25, 1888, says: "The technical knowledge required consists in the knowledge which those accustomed to pelvic and abdominal tumors possess, and which electricians as electricians do not possess. Are we, then, to expect the appearance of a new hybrid—the 'electro-gynæcologist'"? Playfair says: "Cases should be treated by gynæcologists, and not left to professional electricians; as well leave ovariotomy to the cutlers who made the instruments used in the operation." Engelman says: "Attention to the minutest details are necessary to the safety of the patient; when the highest intensities are used, we must apply the electrical current with the utmost circumspection."

And there are yet other and unknown dangers, some unrecognized bad condition produced by the current that has a tendency to end in or produce such after ill results. Apostoli tells of "seven who had had the current applied, and afterward put themselves into the hands of six most eminent surgeons, and not one of the seven recovered from the operation." What deadly influence had resulted from the use of the current, or what abnormal change had thereby been produced? Was there an "atrophy" of some vital part, "a dissolvent" or "destructive" process, or was there a "cutting off of the supplementary circulation of some life structures"? Lawson Tait reports in the "British Medical Journal," December 17, 1887: "I have recently operated (in addition to one previously alluded to), which has been made worse by electrical treatment." Also in the "British Medical Journal" of July 14, 1888, he says that "he had that day operated on a lady who had been treated by electricity for months, not only without benefit, but with absolute detriment." In the "American Journal of Obstetrics," March, 1888, a case of, as the writer, Dr. Victoria Scott, calls it, "a mass of interstitial and subperitoneal fibroid tumors." It states that "January 8th an insulated needle was inserted for five minutes with the negative pole in the tumor. January 18th, needle was again inserted for thirteen minutes to the depth of half an inch. February 6th, uterus was swollen around the site of the puncture, and more tender than usual; full feeling in the pelvis; constant bearing down." What injury was done? Was perimetric phlegmonous inflammation excited, or intraperitoneal gangrene? A short time after this the patient was operated on, in Pennsylvania University Hospital, by one of our most successful and best-known American gynæcological surgeons, and "the patient died thirty-six hours after"; the writer of the article says: "Fallen a victim to the surgeon's knife!" Not so; if the true history was known, it would say: "A victim to the puncture-needle." Apostoli says: "A puncture made too deeply produces intraperitoneal gangrene," and the operator confesses that, "in making the second puncture, the needle was introduced too deeply, and set up some inflammation." But for the previous electrical treatment, this hysterectomy might have been a happy success, as many others have been.*

Dr. L. Byrne, of St. Mary's Hospital, Brooklyn, presented to the New York Obstetrical Society, December 20, 1887, the histories of two cases of "laparo-hysterectomy." One was for sarcoma of the uterus, entirely successful; the other was for uterine fibroid, certainly a much simpler case, but it had been treated by electricity; so it resulted fatally. Is there no lesson or warning in all this? The surgeon says in his report, "being convinced that no advantage but some risk would attend further electrolytic treatment"; and he has since written me that "the patient had been treated for a short period by electrolysis, but without any satisfactory results; probably a result that proved deeply unfortunate. E. Cutter, in his remarkable series of cases published in the "American Journal of Obstetrics," February, March, and April, 1887, reports a case:

Woman, forty years of age, pedunculated fibroid ("of which," Sir Spencer Wells says, "it would be idle to suggest electricity, as myotomy would be the work of minutes, and the risk scarcely worth mentioning"). The general health of the patient was good; face and complexion healthy. Electrolysis was thoroughly applied several times, but the tumor was in no way affected, diminished, or softened; the patient's breath became very short, and an excessive serous vaginal discharge prostrated her. Life became a burden. Laparotomy was resorted to, but apparently she had been so injured by the previous electrical treatment that she died in fourteen days. The operation *per se* seemed entirely successful. The record says there was so little shock that the pulse was in no way disturbed, and after the operation the patient desired to see the tumor, and asked for the details of the operation.

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* Dr. V. Scott says in the same article: "The time has come when many in the profession are ready to severely criticise the surgeon who dares to remove either the ovaries or the uterus for the relief of this trouble, and it may be in the near future that such an operation will be considered as one of malpractice, and the operator punished accordingly."

Professor T. G. Thomas says: "He who allows death to occur from uterine fibroids without offering the patient the chance of safety possible from gastrotomy, is assuming a responsibility far greater than that which would attend our honest and well-directed efforts to save life."—*Op.*, p. 548.

The London "Lancet" of February 25, 1888, says: "It is by no means true that it has been demonstrated beyond doubt that electrolysis, when properly performed, is the most certain, safe, and successful (*sic*) way of dealing with fibroid tumors that we possess."

One case Dr. Scott reports: "Patient, thirty-four years old; a large submucous intra-uterine fibroid and a fibroid tumor, about the size of a walnut, protruding posteriorly from the fundus. . . . Patient desires to be kept under treatment till the menopause; visits the office weekly." Suppose the menopause is delayed till she is sixty, is she to visit the office weekly for thirty years on account of a tumor the size of a walnut?

Another case reported by the same writer:

Woman, forty-eight years of age, with lobulated fibroid tumor of the uterus. General health pretty good, and does not suffer from hæmorrhage. Apparently this was a very favorable case for operation, and the operation in itself would have been attended with the most happy results; but electrolysis was used; one electrode was introduced into the uterus *per vaginam*, the other introduced through the abdominal parietes. At the second operation both electrodes were passed through the abdominal parietes. Eleven more operations. Report says: Patient benefited by the treatment, the tumor became smaller, then it enlarged, hardened, and increased in size, and finally had to be removed together with the uterus. The patient lived thirty-six hours.

Dr. Cutter, however, gives the case of a woman forty years old, having a pedunculated fibroid, attended by no hæmorrhage; four applications of electricity were made, after which abdominal section was resorted to, for the reason that the tumor might be ovarian; tumor was removed, and patient recovered. "But," says Dr. Cutter, "this case is counted as one in which galvanism had no effect, because laparotomy was resorted to before relief was obtained." If galvanism had had its effect, would the patient have recovered? Dr. James Hunter reports one case in which electrolysis was thoroughly tried on a large uterine fibroid. He says: "I had subsequently to remove the uterus, and the patient recovered. I examined the uterus and found no evidence of any effect on the tissue of the fibroid by the current." In this case also "galvanism had no effect."

The galvanic puncture is more to be dreaded and produces more serious complications than the tapping of ovarian cysts, and seems to have a tendency to end in more disastrous results. I think a question to be asked of all who apply to be relieved of the miseries of a uterine fibroid is, Have you had any electrical treatment, or the galvanopuncture? and if they have had, surgeons would be wise if, in many cases, they would, on this account, refuse to operate.

An operation to relieve a uterus enlarged by a fibroid is certainly a great responsibility. T. A. Emmet says: "To remove the uterus when enormously enlarged by a fibroid growth is unquestionably one of the most formidable operations a surgeon can be called upon to undertake." But every step can be taken with thoughtful, far-seeing intelligence, all probabilities and possibilities weighed, emergencies carefully provided for, and using every care and precaution, knowing that the procedure, if successful, will add years to a life which is now "not worth living," and the increasing miseries of which can not be much longer endured. The two operations here reported were undertaken with the dangers and difficulties full in view, guarding against the dangers as much as possible, and with a thorough design to relieve suffering, save life, and restore to health. "Looking, therefore, at the difficulties and dangers of abdominal surgery and at the avowed impotency of the greater part of medication in cases of fibroma," surgery was elected as the best treatment for these two cases, as less dangerous than electrolysis, and as giving more perfect results. Greig Smith says: "From the point of view of immediate mortality, it is as justifiable as any other major operation." The "British Medical Journal" says: "It is an operation not attended with high mortality in experienced hands." M. D. Mann says: In some cases "supravaginal hysterectomy affords nearly as good a chance of success as does ovariotomy in a simple ovarian cyst."

Apostoli speaks of "surgical insecurity and therapeutical insufficiency"; but has not the electrical treatment both "insecurity" and "insufficiency"? In the same series of cases referred to, Dr. Cutter's first direction seems to savor of insecurity. He says "the fibroid must be penetrated deeply in the direction which the operator deems most desirable, and if the pulse becomes accelerated, the respiration hurried, the face pinched, the countenance Hippocratic, and the skin sweaty and cold, it was thought time to stop!"

"The first case, where a regular and determined effort was made to try the effects of electricity upon a uterine fibroid to arrest its growth: The patient, thirty-six years old. Tumor, extending midway between the pubes and umbilicus, weighs four pounds, and entirely free from adhesions."

In the case of such a tumor in so healthy a person, simply removing the uterine appendages, which doubtless were diseased, would have been sufficient, and would have saved the patient all future suffering. Certainly removing the tumor by hysterectomy, with proper care and precautions, would have seemed to be a safe operation; but electrolysis was elected, punctures were made into the tumor through the abdominal walls, and death resulted soon after. Without any electrical treatment the woman would probably have lived many years, at least until worn out with the growth.

Another case: Woman twenty-eight years old, a fibroid of the uterus. First operation: electrodes penetrated the abdominal parietes; a copious discharge of bloody serum followed the introduction of the electrodes, which flow continued for twenty-four hours through the punctures, after the electrodes were withdrawn. Second operation followed by pain in the abdomen, vomiting, hebetude, headache, fever, prostration, etc. Third operation: symptoms more severe, pain greater, and more prostration. The patient was confident that the tumor was lessened in size, but the symptoms of profound exhaustion and extreme weakness recurred soon after, with an asthenic type of typhoid fever which ended her life in about four weeks. The author well says: "When we consider the ordinary result of punctured wounds of the peritonæum it is certainly remarkable that no more patients have perished under the present operation."

Another case: Woman fifty years of age. The tumor had existed for a year. The electrodes were passed through the abdominal walls, and the current continued for five minutes. The next day she had chills, was bloated and swollen in the abdomen, and died six weeks after. Another case: Woman fifty years of age, with a hard abdominal uterine tumor, had two applications of the battery, and thought she had improved and the tumor diminished in size. Third operation: fluid of a sanguinolent character copiously exuded through the punctures; death occurred fourteen weeks after. Woman forty-five years old; eight or ten small, freely moving lobes could be readily felt in the abdomen. Five operations. One electrode was passed through the rectum into the tumor about four inches; the other electrode was passed into the most prominent lobe on the right side of the navel; the current was continued for ten minutes, and was followed by pain and prostration. Second operation: one electrode was introduced through the rectum and the other into

a lobe farther to the right of the navel. "There was some difficulty in penetrating the lobe, as it slipped away from the hold" (showing that it was a pedunculated fibroid with no adhesions and very easy to have managed surgically). The current was continued for ten minutes, and was followed by prostration and distress, quicker pulse, pain in site of the abdominal punctures, slow and irregular breathing, and universal tenderness; pulse, 120 to 130; temperature, 103° to 104° F.; nausea, and finally delirium. Death eleven days after operation. The author again remarks: "When the deep penetration of the abdominal cavity is considered, it appears remarkable that more deaths have not occurred."

Woman forty-one years old; fibro-myoma of the uterus. Both electrodes were six times plunged through the abdominal walls into the tumor to the depth of three or four inches, and the current each time continued for five or ten minutes.

Was there much security in such a procedure? An attack of peritonitis followed, from which she died.

Patient twenty-four years old, health not much disturbed, able to go through her daily duties as domestic: First operation; the electrodes were thrust into the tumor at two points, six inches apart, to the depth of four inches; galvanic current maintained five minutes. Returning to consciousness, she complained of severe pains through the abdomen. Three other operations were repeated in the same manner. Patient said "she was sure the tumor was smaller, because her clothes seemed much looser about her." Two more operations; death a year after. Patient forty-three years old; tumor size of six months' pregnancy; second introduction of the electrodes was followed by profuse hæmorrhage, loss of appetite, and strength. "Death ensued from prostration."* Patient thirty-eight years old; had noticed an enlargement of the abdomen for three or four years; the battery was used; thought she was better, but afterward died.

Of the next case the writer says: "As to the effects of electrolysis, they were not encouraging." He reported some cases as "diminished in size." Dr. T. A. Emmet said "he did not doubt that there had been many successful cases on record, but he had not been so fortunate as to see one." At the meeting of the New York Obstetrical Society, January 18, 1887, was reported the history of "a case of fibroid tumor of the uterus. An insulated platinum sound was introduced into the uterus, connecting it with the positive pole of the battery, while a smooth, round steel needle, properly insulated, was introduced through the posterior cervix into the tumor. A current from eighteen cells of a zinc carbon battery was passed for twenty minutes. Two days after, operation was repeated with thirty cells; she grew gradually weaker and died a month after. At the autopsy the tumor was found to be universally adherent, and a large portion of its interior was found to be disintegrated."

Dr. T. A. Emmet thought that whenever electrolysis was sufficiently effective to cause disintegration of the tumor, it generally caused the death of the patient. Dr. J. Byrne said: "Several years ago I applied the galvanic current to a large fibroid, fifteen séances being held. I thought I did more harm than good."

As to its "insufficiency" Apostoli says: "There are cases where there is no possibility of satisfactory treatment, owing to an apparently absolute intolerance of high intensities of current."

2. He says: "I have met with the same intolerance in some hysterical subjects in cases of very irritable uterus."

3. "In cases of perimetric and interstitial inflammation."

4. "The class of cystic fibromata."

5. "Tumors with a tendency to malignant degeneration." He says: "I have recorded three such instances; in them intra-uterine galvano-cauterization generally proved useless." And in how many more may it prove useless? He continues: "Something more is demanded, and we must seek in galvano-punctures means more powerful, more efficacious."

6. Baker says: "So long as there is any acuteness present in the inflammatory process, just so long would it be hazardous to attempt any manipulative interference." And Mundé remarks: "It should be used only in chronic conditions." Also, Apostoli emphasizes the special danger whenever there is any trace of perimetric inflammation present." (Are there any cases of fibroid tumor where there is no peri-uterine inflammation present?)

7. Engelman says: "Tumors with a large portion of muscular structure are less liable to be treated satisfactorily by electricity." (Shall we remove the tumors, and, if the muscular structure does not predominate, use electrolysis with assurance of success?)

The "insufficiency" of electrolysis is especially seen in that it is of no avail in all cases of "multiple fibroids." At a meeting of the New York Obstetrical Society two members of the society said "that multiple fibroids were not suitable for electrolysis," one remarking: "In order to obtain electrolytic action, one electrode must be in the mass." The other said that "he had never treated multiple fibroids by electrolysis, for the method would prove too tedious, owing to the necessity of treating each fibroid by itself, seeing that it was essential to insert one pole in the growth." One of these gentlemen, Dr. John Byrne, of St. Mary's Hospital, Brooklyn, has since written me: "Whatever benefit may possibly follow such treatment in cases of simple fibroid, I would have no confidence in it whatever for multiple fibroids." If this is true, it follows that electrolysis is insufficient in a large majority of cases of fibroid tumors, for probably most fibroid tumors are "multiple fibroids," as in an expression incidentally used by Bantock, in reporting five successful hysterectomies to the British Gynæcological Society: "The uterine body being enlarged by a number of small fibroids." The two tumors reported in this paper, though apparently each was one single solid tumor, yet each consisted of a number of separate independent growths; one had ten, the other had twenty-two nodular masses; so, for each of these cases, electrolysis would have had entire "insufficiency." And fur-

* In striking contrast to such cases are the numerous reports of hysterectomy safely performed and the health of patient entirely restored. As in London "Lancet," February: "A tumor measured nine inches transversely; hysterectomy; patient's temperature never above 100·6° F." "Lancet" of March: "Uterus irregularly enlarged as in the sixth month of pregnancy; woman failed from loss of blood; uterus and mass removed; temperature never above 100° F. Patient entirely restored and able to pursue her vocation."

ther, as Apostoli says, "the electrode must enter only two centimetres"; and, as the member of the Obstetrical Society says, "it is essential to insert the pole into the growth"; and as some of the imbedded tumors were many inches away, how was it possible to effect proper electrolytic treatment in these two cases, especially as no human prescience could, in the living subject, have told how many fibroids there were, or how located?

9. Sir Spencer Wells, in his late address before the Brighton and Sussex Medico-chirurgical Society, published in the "British Medical Journal," May 12, 1888, says: "There are conditions of fibroid tumors in which it would seem to be almost idle to suggest electricity. In a polypoid growth from the mucous surface of the uterus I should not think of any slow or gradual process. Neither does it appear very probable that a subperitoneal outgrowth from the body or fundus of the uterus could be in any degree affected by any current that could be made to reach it. Myotomy would be the work of minutes, and the risk scarcely worth mentioning. Even large solid tumors, the removal of which means the removal of a great part of the uterus, have been successfully removed by myself and by others, and success has increased with experience."

10. The "insufficiency" is seen in the uncertainty and incompleteness of the results. Apostoli says: "When the treatment is fully carried out, the tumor will undergo a manifold reduction in size—a reduction appreciable by the touch, and demonstrable by internal measurement. The further diminution of the tumor will continue for months, varying in amount from one fifth to one half of the original volume." He says again: "Our therapeutic resources carry us as far as the sensible reduction of fibroid tumors, and not to their total absorption." So, after all the treatment, the tumors are still there. As Sir Spencer Wells says, "the women are not radically dispossessed of their tumors." The "British Medical Journal" says: "A solid tumor can not be conjured away. Its atoms are indestructible."

Thus, in the last case I have reported in this article, "if the treatment had been fully carried out," lasting years probably, and "after several months' improvement," and with the best results, the patient would still have a tumor that would weigh six pounds and three quarters or ten pounds and four fifths. Would this be very gratifying, or justify submitting to the dangers and uncertainties of electrolysis? Are there not *incompleteness* in the results and *insufficiency* in the treatment? Will any one pretend to say that with a fibroid tumor weighing six pounds and three quarters, or ten pounds and four fifths, the patient will be cured or be very comfortable? Would any man accept the situation and consent to carry within him for unnumbered years a weight of six or ten pounds and glorify it as "a cure"? If a tumor one half or one fifth of the original size is left, are not the results incomplete and the treatment insufficient? Thomas Keith, in his article on treatment of fibroids by electrolysis, says: "The tumor in every case was reduced in size; in one case the tumor had gone down two thirds."* In the twenty-six cases of hysterectomy for fibroid which he reports in the same paper there were two tumors which weighed twenty pounds each. Now, if by electrolysis these tumors had been reduced two thirds, like "one of his cases," each patient would still have been left with a tumor that weighed six pounds and two thirds. But we notice that twelve of the cases in which he thought proper to perform hysterectomy, in each the tumor weighed less than six pounds and three quarters, or less than the tumor which would have been left in these "cured women." Two of the tumors which he removed by hysterectomy weighed five pounds each, two weighed four pounds, three weighed three pounds each, one weighed two pounds and a half, and one, one pound.* So twelve of the cases on whom he saw proper to perform hysterectomy were less afflicted than the one he had brilliantly cured. Keith says "all were reduced in size"; it was only "one in whom the tumor had gone down two thirds." So if the two patients who each had a tumor weighing twenty pounds had had the tumors reduced one half or one fifth (Apostoli's best results), each of them would have been left with a tumor weighing ten or sixteen pounds, and with the awful possibility of its increasing!

The *insufficiency* of electrical treatment is shown also in the uncertainty of permanent improvement. Keith said, "should the improvement be permanent," as if he did not know, and then adds: "He has Apostoli's word that if the treatment be carried out long enough, such is generally the case." But Apostoli says: "More time and observation are needed before coming to complete conclusions." The "British Medical Journal" says: "It will be interesting to see if, in Apostoli's cases where large tumors have been reduced in size, the reduction will prove permanent and will not render fresh sittings necessary within three or four years." A case reported in the "American Journal of Obstetrics," p. 266: "Tumor diminished one third. Two years after, tumor returned to its former size." Another case, p. 271: "The electrodes were passed into the tumor six times; tumor sensibly diminished. At last report it had increased in size again." P. 275: "Arrest of growth of tumor continuing about two years, when it increased in size again." P. 376: "Tumor very much lessened in size; one half as large in bulk." Last record: "Tumor larger than ever." P. 380: "Tumor behind the uterus seemed smaller." Last record: "I heard that the troubles had returned and she lives in distress." P. 381: "A movable, multilobar, soft, round tumor, extending from the pubes to above the navel; had repeated galvanic punctures; tumor consolidated." Last record: "Tumor enlarged to twice its usual size." P. 388: "Tumor diminished and softened; subsequent increase of tumor." Another case: "Electrodes passed repeatedly into the tumor three inches deep. In six months death from the recurrence of the bad symptoms. A fibro-myoma extending upward into the abdomen as far as the umbilicus; three times the electrodes were made to penetrate the tumor to

* "British Med. Journal," Dec. 10, 1887.

* In Schroeder's Frauenklinic I saw a woman with a uterine fibroid about the size of a cocoa-nut. Schroeder did not think it worth while to perform hysterectomy, yet I am sure Schroeder would say that hysterectomy as an operation has done great good.

the depth of four inches. Tumor became sensibly diminished in size; soon after, a return of all the previous bad symptoms; her condition grew rapidly worse till she was relieved by death." Of many cases that are now published as triumphs and cures there may be yet a future history, as W. H. Baker, in his late experience of fourteen cases, says of one of them: "There is now some indication of returning growth accompanied with suffering."

And in many other instances can we be as sanguine of cure as the operator would seem to hope? As the "British Medical Journal" says: "Many uncured cases may be reported as cured"; * and says elsewhere of the report of a case by one physician: "We can not share the author's confidence about the partial cure of an ovarian sarcoma with perimetritis by electricity; a sarcoma is not always easy to recognize, even when exposed by abdominal section. Electricity may some day be made to cure malignant tumors, but first we must be sure both of the electricity and the tumor." The same journal remarks: "As long as results are questionable, men have a right to oppose and object; nor are they in any way bound to make trial of experiments, the value of which has not been impressed upon their convictions."

The insufficiency is further seen in the great uncertainty of even definite improvement. So often the report is in the language of one, "the tumor was not arrested"; or, as a case reported by A. D. Rockwell: "Patient, thirty-three years old, had repeated applications of electrolysis; electrodes passed through the abdominal, etc. *No impression made on the tumor.*" The same writer says in the "New York Medical Journal," November 12, 1887: "Electrolysis will fail utterly to accomplish what previous experience has given us every reason to expect; at one time it will relieve, at another fail to do so." He says further: "I do not believe a more extended experience will fully confirm all that has, with so much enthusiasm, been maintained by some of Apostoli's followers. It is not a universal means, and we must not make it a panacea." The report from Doléris's clinic is: "No matter what the intensity of the current employed, neither disappearance nor marked diminution in size of the tumor has been noted. When diminution in size seemed to follow, careful measurement showed that it was illusory, there being simply a downward displacement of the tumor." Steavenson, who has charge of the electrical department of St. Bartholomew's Hospital, London, in an address before the Brighton and Sussex Medico-chirurgical Society, speaking of uterine fibroids, said: "The tumors do not disappear as rapidly or as completely as we have been led to expect, or perhaps as British gynæcologists supposed would be the case. I do not think the electrolytic treatment will supplant the necessity for abdominal section or removal of the uterine appendages in such cases as those in which these operations would be appropriate. In the use of electricity we have a means of treating fibroid tumors which is superior to any we have formerly employed short of their entire removal."

Dr. W. H. Baker, of Boston, calls it "the more slow and inexact method," and at a meeting of the American Gynæcological Society said: "The operation of hysterectomy is now too well established as a means of cure for large subperitoneal and interstitial fibroids, and, in the hands of a few, is too successful for me to offer as a substitute electrolysis." Also in the same society Dr. Chadwick, of Boston, remarked, after an address by Apostoli, "that he had followed the author's method of treatment during the past six months, but had not met with satisfactory results." In one instance the size of the tumor was definitely reduced after a few applications; in another, after eighteen applications, there was no appreciable change; in two instances pain and fever were produced, and two cases terminated fatally.* Dr. James B. Hunter said: "I had the pleasure of seeing Dr. Cutter operate and of seeing a number of his cases afterward, together with Dr. Thomas, some years ago, and we failed to see a case which was actually cured, and there were some who suffered considerably from the treatment. I can say that I have never seen any case permanently cured by galvanism." † Dr. John Williams, president of the London Obstetrical Society, justly remarked before that society and as reported in the "British Medical Journal," June 30, 1888: "The literature of the subject was not inconsiderable, but it was very disappointing, for it mainly consisted in the discussion of instruments and the mode of using them. Dr. Apostoli, in particular, has published little else except a series of general assertions and sweeping statements. In his later work on chronic metritis and its treatment by electricity there was much about instruments and many sweeping assertions, but not a single case in support of the latter. The method has thus been put to the test by its founder, and with very unsatisfactory results."

Bantock said "there was much assertion as to what this treatment was going to do, but little evidence of what it had done." Playfair said "it did good for a time."

One medical journal has asked, "if the electrical treatment of fibroids is going to supplant all the methods, or is it an ephemeral fashion practiced in good faith, but soon to be extinguished by the mere fact of bad results?"

What this marvelous unseen element may do, how much this mystic power may be utilized in gynæcological electrotherapeutics, we can not say. One writer argues that "this mysterious fluid may do much good, for it has power sufficient to shatter the firmest structures of God or man by an instantaneous flash." But we know that when "it shatters the firmest structures of God or man" it does not in any way annihilate, dissolve, or disintegrate them, or make them disappear. It splits the tree and kills the man, but neither man nor tree are in any way reduced in size; none of their particles are conjured away. The young man who died instantly by touching the end of the electric-light wire was just as large and just as substantial after his unwonted electrolytic treatment as before. The fatal electrolysis had no effect in dissolving, disintegrating, or reducing the size of any organ in his body, but "the dangerous negative pole" killed him effectually. We hope that this powerful agent

* "British Medical Journal," July 14, 1888.

* "Medical News," September 24, 1887.

† "Amer. Gyn. Trans.," 1887, p. 372.

may be intelligently controlled and utilized in therapeutics, for we gladly welcome any means of relieving suffering humanity.

## A CASE OF SUPPURATIVE PERICARDITIS TREATED BY ASPIRATION,

*With Some Remarks on a Series of Fifty-six Cases of Pericarditis, and References to Paracentesis Pericardii.**

By EDWIN T. DOUBLEDAY, M. D.

Concerning the signs of pericarditis, the diagnosis, the prognosis, and the treatment, it is unnecessary to speak, as you are well acquainted with them. However, I shall take the liberty of prefacing the history of the case with a few remarks on the history of the disease, and that of a series of fifty-six cases of pericarditis.

Galen was the first to notice the presence of pericardial effusions in animals, and wondered if such a condition ever existed in man. From his time until the seventeenth century but little progress was made in either the diagnosis or treatment of pericarditis; then Vieussens gave the first description of it as a disease. Shortly afterward Riolan, the younger, recommended trephining the sternum and puncture of the pericardial sac for the relief of effusion. He was followed by Senac and Van Swirton. The operation, however, was not thought well of by all, as Morgagni said it should not be done on account of its danger and the difficulty in diagnosis. Romero was the first to do the operation successfully in 1819. In Barcelona, Launec proposed the injection of the sac with some irritating material after puncture. Arau did this with success, but was obliged to repeat the operation several times before a cure was effected.

The discovery by Collin in 1824 of the presence of a friction sound in some cases of pericarditis marked a further advance in the diagnosis of that affection. In the middle of this century there was considerable interest manifested in paracentesis of the pericardium, and Trousseau and Lessegen in 1854, and Vernay in 1856, wrote able articles about it.

I shall now call your attention to some facts gleaned from a series of 56 cases of pericarditis collected from the New York Hospital case-books. My apology for this imposition upon your good nature is that some of these facts have a direct bearing on operation on the pericardium. Of these 56 cases, 39 occurred in males and 17 in females. This is doubtless due to the fact that the lord of creation is more exposed to weather in earning his daily bread, and more addicted to the cup which cheers—and inebriates—than the female portion of the race. Pericarditis is most prevalent between the ages of twenty and thirty years, as 25 cases—over 44 per cent.—of the 56 cases occurred between these limits. One case occurred in a child of eleven months, and one in an old man of seventy-two years. The average duration of the disease, as near as can be ascertained, was thirty days and four fifths in the cases which recovered, and thirty-four days and five sixths in the fatal cases. Thirty-two cases ended in death, and 24 cases recovered. Effusion, as proved by the pulse, dyspnœa, and physical signs, took place in 28 cases—just 50 per cent. Of these, 16 cases died and 12 recovered. Twenty-five cases were complicated by rheumatism, 11 cases by chronic nephritis, and 5 cases by both rheumatism and nephritis, making 41 cases, or 73 per cent., in which complications existed. In 13 of the rheumatic cases the patient was suffering from an attack of rheumatism at the onset of the pericarditis. A cardiac valvular lesion was present in 18 cases, and in 6 of these the lesion was evidently coincident in time with the pericarditis. Acute pleurisy occurred in 16 cases. Other complications were fatty heart, catarrhal pneumonia, and cirrhosis hepatis. In only 3 cases did the disease seem idiopathic. In 9 cases the fluid in the pericardial sac was purulent. Eight of these died and one recovered. In the case that was cured, the fact of the fluid being purulent was discovered by aspiration. This proves that cases of purulent pericarditis may recover.

Aspiration was performed in four cases. Two cases were much benefited by it, but in the other two no effect was noticed. It is worthy of note that in the case of the child eleven months old, six ounces and a half of pus were found in the pericardial sac on autopsy.

There is no difficulty in the actual performance of either aspiration or drainage of the pericardium; but the reasons why one or the other is not performed more frequently are as follows: First, three fourths of the cases of pericarditis occur as complications, and most of these do not require or are beyond operative help. Secondly, the average medical man is much averse to any interference with the pericardium under any circumstances, and, as a result of this, some patients die from the large amount of serous effusion who could be saved by aspiration, and some die with purulent effusion who might be saved by drainage.

Case.—T. E., aged twenty-six, single, born in the United States, colored, and a cook by occupation, first came under observation on June 20, 1883. His mother died of heart disease, but there was no other family history bearing on the case. He had never been sick before, so far as he could remember. On May 23d, without a chill, he was suddenly seized with pain in the left side, cough, mucous expectoration, and fever. Pain was felt over a circular area four inches in diameter, with its center one inch to the left of the nipple. The pain was increased by a cough or a deep breath. When first taken sick he had no dyspnœa, but this soon became quite marked on exertion. The pain and cough continued, but he thought the fever had left him when first seen. He had not been a heavy drinker, and specific history was denied.

When first seen his temperature was normal, respiration 32, pulse 114. Respiration was very labored. The pulse was almost imperceptible in the radial arteries. The patient was well nourished. There was slight œdema of both ankles. On physical examination, the voice was distant, and vocal fremitus was absent from a point four inches below the scapular angle to its base on both sides of the chest. An exploratory puncture with a hypodermatic needle failed to find fluid on either side of the chest. Owing to the weak condition of the patient, further examination was postponed, but, as there was evident dullness on the left side anteriorly, a hypodermatic needle was inserted in the fifth intercostal space, two inches to the left of the

* Read before the Hospital Graduates' Club, December 16, 1886.

sternum, and six ounces of purulent fluid were withdrawn. He was ordered a drachm of the infusion of digitalis and five grains of carbonate of ammonia every three hours. The pulse gradually improved, and in a few hours the dyspnœa passed away.

The next day the temperature was normal, the respiration 28, and the pulse 108. He was aspirated as before twice, and 51 ounces of purulent fluid removed. Whisky was added to the medication. He remained in the same condition until June 27th, a period of six days, when an attempt at aspiration was made, but only two drachms of pus were obtained. This was probably due to a faulty aspiration. The dyspnœa began to return, and on the next day was urgent; the pulse was imperceptible in the radial arteries and the extremities were cold. Aspiration was again resorted to, and 51 ounces of purulent fluid were withdrawn. The needle was inserted this time in the fifth intercostal space, three inches and a half outside of the nipple-line. The dyspnœa passed away, and the pulse returned to the extremities after the operation. He had passed about 35 ounces of urine in the twenty-four hours up to this time. The digitalis did not seem to increase the amount of urine excreted. On July 1st he passed only 10 ounces of urine, and the temperature rose to 100° F. The pulse was then normal.

Two days after, he was aspirated in the sixth intercostal space, in line with the nipple, and 46 ounces of pus were withdrawn. The amount of urine excreted increased to 30 ounces. The former medicines were discontinued and he was given Lugol's solution, ♏iv, twice a day.

On physical examination, over a semicircular area with a radius of four inches, with its center at the ensiform cartilage and its lower border an inch and a half above the umbilicus, there was marked dullness on percussion and absence of vocal fremitus, voice and respiration in a line parallel with one drawn from a point two inches below the scapular angle downward. During the next few days the temperature was very irregular, subnormal in the morning and 103° F. in the afternoon. Respiration 32 to 58, pulse 100 to 130. On July 3d an aspirating needle was inserted in the sixth intercostal space, half an inch outside the nipple-line, and 50 ounces of pus were withdrawn. The fluid then ceased to flow, and the needle was pushed in an inch farther, when 33 ounces of clear serum were withdrawn. The serum evidently came from a left hydrothorax. On July 9th 11 ounces of pus were withdrawn, and on July 11th it was recorded that the patient felt quite comfortable. The heart impulse was absent and its sounds could not be heard at any time. I have purposely omitted the somewhat lengthy records of the examinations of the lungs, as they show nothing but occasional attacks of hypostatic congestion and slight hydrothorax. On July 12th 36 ounces of pus were withdrawn. The needle was inserted in the sixth intercostal space, half an inch outside the nipple-line. On July 17th ten ounces and a half of clear serum were withdrawn from the right side of the chest. On July 19th the temperature was only 96° F., and the pulse was imperceptible at the wrist and in the temporal artery. Aspiration was repeated, and 27 ounces of pus were withdrawn, after which the patient rallied somewhat, and the pulse returned to the temporal arteries. From this date the patient gradually sank, and on July 24th died of heart failure. The pulse disappeared from the radial arteries eight hours before death.

At the autopsy, fourteen hours after death, the peritonæum contained a little more than nine ounces of clear serum. The left pleural cavity contained ten ounces of serum and flocculi of fibrin. There were old and recent adhesions at the apex of the left lung. The right pleural cavity contained fifty ounces of fibrinous serum, and no adhesions were present. The right lung was œdematous, and an infarction an inch in diameter and conical in shape was situated in the base of the lower lobe. A large vessel leading to the infarction contained a firmly adherent clot. The parietal pericardium was much thickened and firmly adherent to the chest-wall. The pericardial cavity was much distended and contained nine ounces and a half of pus. The mural pericardium was thickened. The heart was larger than normal, its tissue was fatty, and the endocardium was slightly thickened. The kidneys were congested, but were otherwise normal.

I would call your attention especially: First, to the fact that the patient never had any symptoms either of rheumatism or nephritis. Secondly, that the pericarditis was probably idiopathic. Thirdly, to the almost entire absence of fever while the case was under observation. Fourthly, to the large amount of pus withdrawn at one time, fifty-one ounces. Fifthly, to the fact that over seventeen pints of pus were withdrawn from the pericardium in thirty-four days' time.

As showing the effort that Nature makes to cure these cases, I may cite one mentioned by Wyss, in which there was a pyopericarditis followed by the formation of a fistula lasting for years. The patient finally died of an attack of acute pericarditis.

I believe that in cases of pericarditis where there is a distant and muffled heart-sound, with a weak and rapid pulse and dyspnœa, an exploratory puncture with a hypodermatic needle should be performed; that, if pus is present, the pericardium should be thoroughly aspirated; and that if, after two aspirations, the pus reaccumulates, an operation should be performed to establish drainage, and the cavity be washed out, if this be deemed expedient. Of course, in aspirating, the physician must take the risk of converting a serous into a purulent inflammation, as sometimes takes place in cases of pleurisy, even when the best antiseptic precautions are taken.

In cases in which drainage or washing out of the pericardium is employed, I think it would be well to prevent the pressure of the air upon the heart, as in fourteen cases of pneumopericardium, ten died from either sudden heart failure or asphyxia. This might easily be done by the use of a rubber bulb, with a valve opening outward, on the end of the drainage-tube, or by keeping an aspirator attached to the end of the tube and by occasionally turning the ratchet, so as to keep up a slight vacuum.

18 West Sixteenth Street.

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## GANGRENOUS TONSILLITIS.

### FATAL HÆMORRHAGE.

By E. B. CRAGIN, M. D.

Although ulceration into the carotid artery, or one of its branches, with fatal hæmorrhage, is spoken of in some of our standard works on the practice of medicine as a possible termination of suppurative tonsillitis, such a result is so infrequent that I take the liberty of reporting a case which occurred under my observation while house physician at the Roosevelt Hospital:

W. J., colored, male, aged forty-five, of American parentage, was admitted to the hospital on August 13, 1887, with the following history: He was able to work until about a month before, when he began to be troubled with weakness of his knees, frontal headache, dyspnœa, and cardiac palpitation, these symptoms continuing until the present time. He had had a slight cough, and had vomited occasionally. For the previous ten days had had sore throat, but the feeling of weakness from the knees down had been his chief complaint. The patient denied the alcoholic habit; he had had gonorrhœa twice previous to 1871; also had had a venereal sore, not followed by secondary symptoms; he had had right hemiplegia in 1876, from which he had recovered, but had "stiffness" of the leg and wrist. He had had measles, scarlatina, varioloid, whooping-cough, and intermittent fever when young. There had been no pulmonary, renal, or cardiac symptoms previous to his present illness. On admission, the patient was fairly well nourished; the lips were a little anæmic; the pupils small, but reacted to light; the tongue was moist; the appetite poor; bowels irregular; micturition frequent; and both feet and the right leg were œdematous. Pulse 88, regular, incompressible. Respiration 15. Temperature 96·8°.

Physical examination of the lungs was negative; the heart apex was in the fifth intercostal space, nipple line; impulse feeble; no murmur. Hepatic dullness began at the fourth space, nipple line; there was tympanic resonance at the sixth space. The patient was rebellious against the use of the tongue depressor, and little was seen in the pharynx.

The urine was pale amber, alkaline, 1·012; large amount of albumin; no sugar.

Ordered aconite and belladonna. Potassium chlorate mouth-wash. Milk diet.

*August 18th.*—Œdema has subsided; feet are still painful; the "sore throat" has nearly disappeared. Temperature has been subnormal since admission, for the first two days being 97° F. or below. The pulse has not been above 96, most of the time below 90.

*August 20th.*—On morning rounds, the patient said that he felt very much better. On going to another ward, I was suddenly recalled to the patient, and found blood gushing from his mouth and nose.

I was told that at first he expectorated bloody pus. An unsuccessful attempt was made to reach the source of the hæmorrhage by the finger inserted in the mouth; ergot was administered, but, in less time than it takes to relate it, the patient was pulseless. Infusion of a saline solution into the right radial artery was performed, but without avail, and at 12 M. the patient died.

*Autopsy.*—The brain was not examined. The lungs were normal. The heart was apparently normal, but several small areas of calcareous deposit were present just above the aortic valves. The spleen was small and firm; the kidneys were slightly enlarged, capsule not adherent, their surface was finely nodular, and the cortex thickened and pale, with its markings rather indistinct. The intestine was normal, but pale in color. The liver was three pounds and a half in weight, and firm in consistency. The stomach was nearly filled with a clot of blood, but its mucous membrane was apparently normal. A large ulcerated area was found in the pharynx, occupying the site of the right tonsil and extending for some distance on the post-pharyngeal wall; to this a large slough was attached by one extremity. The odor was very offensive. In the portion of this ulcerated surface formerly occupied by the right tonsil were visible the open mouths of two small vessels, which were evidently the source of the hæmorrhage.

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# THE SHADY AND THE SUNNY SIDES OF THE PRACTICE OF MEDICINE.*

By J. M. FARRINGTON, M. D.,
BINGHAMTON, N. Y.

When I was a student of medicine, Professor E. R. Peaslee—than whom no more erudite scholar, cultured Christian gentleman, and thoroughly qualified medical teacher it was ever my privilege to know—in one of his lectures to the graduating class, said in substance as follows: "Gentlemen, you will go from these halls to your respective fields of labor filled with enthusiasm and an earnest desire to relieve suffering humanity; yet, peradventure, the first important case which shall be intrusted to your care, and for which you may have done all that human skill could accomplish, has proved at last to be a fatal one; and although by your assiduous and anxious care and earnest sympathy you may have almost worn out your energies, nearly given your life for that of your patient, and have deserved the *highest* commendation, the *warmest* gratitude of the family and friends, and *liberal* compensation, instead of these—which are to a certain extent compensating returns—you may receive only censure and curses. Don't despair. It will be hard for you to bear, but never mind; sometimes you will get a great deal of credit when you did not deserve it, and the account in the long run will balance up all right."

I have no doubt you may each recall events in your own experience which illustrate the truth of this statement. Reflections upon experiences of this character have led me to present a few thoughts upon a subject that I presumed would come in as an agreeable diversion from the grave consideration of the weightier matters that have occupied this session.

There are many persons found in every walk in life, and representing every form of business, including each of the learned professions, who have had at times a feeling come over them that their merits were not appreciated—that the world failed to recognize their abilities and the efficiency of their labors. Now, while this frequently may be true, yet, as a general rule, the average estimate made by the community in which the individual lives is a *fair* estimate of his character and capabilities.

To all general rules there are, however, exceptions, and the medical profession in this rule *is* the exception. Physicians are usually estimated correctly by their peers, but not always by the laity (to use a church term for the general public who are not medically educated). For these laymen however intelligent and disposed to judge aright, have not the knowledge requisite to make the estimate. They see a man who writes M. D. after his name, who assumes to treat disease and to a superficial observer succeeds. Without qualifications, either natural or acquired, he takes the responsibility and assumes the care of patients afflicted with grave maladies, and, shall I say fortunately for him, the curative powers of Nature and the self-limited character of

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* Read before the Third District Branch of the New York State Medical Association, June 17, 1886.

most diseases enables the charlatan to hold up his head, conceal his ignorance, and pass himself off as a qualified practitioner of medicine. If it has been the lot of any of you gentlemen to practice in a community where one of your rivals was a mountebank of the character I have described, and you have been subjected to the mortification of seeing such a character supported and defended by good and respectable citizens, you have known *one* of the clouds that help to make the shadows of professional life.

Again, it pains me to allude to another shadow of *greater* dimensions that most medical practitioners have encountered, especially in their early professional life, when their susceptibilities were tender and they were conscientiously striving to secure professional success—a good reputation and financial support. While it was mortifying to them to see men without culture and preparation selected as attendants in place of physicians of real merit who had carefully qualified themselves to assume professional responsibilities, yet it was a *greater* grief, a more *severe* blow to them to be "wounded in the house of their friends." Jealousy, envy, and ill-will find root in the hearts of physicians as well as in those of the rest of mankind. Yet how unfortunate it is for the honor of our profession when the public voice gives utterance to expressions like this—ofttimes, alas, *too* true—"See how these doctors (not love, but) *hate* one another!" Probably none of us will live to witness that good time when "the lion and the lamb shall lie down together and a little child shall lead them," but I trust we shall live to see manifested more brotherly love among medical practitioners who are representatives of a common faith, and who desire to advance the honor of our loved and chosen profession. I confess to you that in the early years of my professional career I suffered deeply from the unprofessional conduct of some of my neighboring medical brethren; yet, nevertheless, I strictly observed the code of ethics (given to us by our fathers), in *spirit* as well as in letter, and the result proved the truth of the old adage "that honesty *is* the best policy" *ultimately*, although the reverse seems often for a time to be true. For these same medical gentlemen, who once sought and conspired to do me harm, afterward became my best friends, and gave me their confidence when adversity or affliction made them want a reliable friend and a professional adviser. To the young men of this Association I would earnestly say, Keep perpendicular, treat your neighboring practitioners as you would like to be treated, encourage professional courtesy and brotherly love, and make a firm resolve that, let others do as they will, "as for me, I will serve the Lord" by obeying the behests of an enlightened conscience.

There is but one other shadow to which I shall allude, and that will complete all I have to say about the *shady* side of the practice of medicine.

There are clouds of sorrow that burst upon our poor humanity from which physicians are not exempt, else they would not be mortal; but I am to speak only of those matters which especially cloud the life of medical men. This shadow is the one alluded to at the outset of my paper.

When we have carefully, thoroughly, and intelligently given our time, thought, and best energies to the treatment of a case, medical or surgical, and the result has been unfavorable, to receive censure rather than reward is hard for us to bear, but we must be resigned to the result if we have done our whole duty. We can bear to sit still and be calm, and let the hurricane roar about us if we have within the voice of an approving conscience—

"For one self-approving hour whole years outweigh
Of stupid starers and of loud huzzas;
And more true joy Camillus exiled feels
Than Cæsar with a senate at his heels."

Now we will leave the shades and shadows and turn to the brighter highway, where the sun shines all aglow, the air is bright and balmy, and the flowers bloom in profusion—all tending to cheer and comfort us in our arduous and responsible duties. As day is the opposite of night, so is sunshine the opposite of shadow; and as we have dwelt upon those things that constituted the shady side, we have but to turn to the opposite and we *have* the sunny side.

*First*, I would speak of appreciation. If we possess merit, it is not only a satisfaction to know it ourselves, but to have it recognized by others. It brings cheer to our pathway in the midst of the broken rest of gloomy nights, in the midst of the study and the anxiety attending the care and treatment of intricate cases, in the sorrowing scenes of suffering and final parting that it is our lot often to witness; to have the afflicted ones turn to us with *confidence* for the services we are able to render, to mitigate human suffering, to prolong life, and often to bring hope and assurance of recovery when all had seemed to them but blank despair; to listen to their expressions of heartfelt gratitude, which often, like the services we render, can not be estimated in the *cold currency* of dollars and cents. Still farther and beyond the appreciation of individuals is the public's judgment of the value of a good physician so well portrayed in Homer:

"The spouse of Helen, dealing darts around,
Had pierced Machaon with a distant wound;
In his right shoulder the broad shaft appear'd,
And trembling Greece for her physician fear'd.

"To Nestor then Idomeneus begun:
'Glory of Greece, old Neleus' valiant son!
Ascend thy chariot, haste with speed away,
And great Machaon to the ships convey;
A wise physician skilled our wounds to heal
Is more than armies to the public weal.'

"Old Nestor mounts the seat; beside him rode
The wounded offspring of the healing god;
He lends the lash; the steeds, with sounding feet,
Shake the dry field, and thunder toward the fleet."

Happy must that physician be who merits and receives such recognition. The late Dr. Austin Flint, whose unexpected death America mourns, was an illustration of the highest type of a physician whose merits were recognized everywhere, and who furnished a fitting example for us all to follow. While true appreciation is by all desired, and brings with it honor and reward, there is, besides this, a feel-

ing of profound pleasure and sweet satisfaction that comes to the heart of the medical man who in the line of duty finds himself able to follow, though ever so humbly, in the footsteps of the Great Physician who while upon earth went about doing good.

Ours is indeed a God-like profession. Let us, my brethren, strive, each in the circle of his influence, to exalt it by individual examples of unselfish devotion to its interests; and, though some of us possess but small talents and a narrowly bounded field of labor, when the individual contributions of each member shall be added to the common fund, we may thus unitedly wield a power, so tersely stated by Homer, that shall be "more than armies to the public weal."

In conclusion, thanking you for the kind attention you have given to the reading of this hastily prepared paper, permit me to give it as my opinion, formed deliberately after the experience of many years of professional life and labor in the varied duties of general practice, that—though there are shadows that fall upon the pathway of the busy physician, some of them so dense and dark as almost to bring discouragement and possibly cause him, in a fit of despondency, to regret the choice he made when he selected his life vocation—after all, over and beyond all these, the seasons of sunshine are far greater; and when the balance-sheet is struck, the *sunny side*, with its cheering rays of genial warmth all aglow with love, gratitude, and just appreciation, will make the shadows fling back their shade and sink into comparative insignificance.

If there be among my hearers one who feels that he has traveled long in the shadows of professional life, I would say to him, "Be of good cheer, my brother; the day-dawn will yet appear, and in its effulgent brightness you will yet bask in the sunshine of professional success." "Perseverance conquers all things." Be true, be courageous, and you will yet wrest victory from apparent defeat.

I have great faith in the influence of this our new State Association to inaugurate a state of things that will lessen the *shadows* and increase the *sunshine* for the true and honorable medical practitioner.

## Correspondence.

### LETTER FROM PARIS.

*The Influence of Germs contained in the Air on the Healing of Wounds.—The Congrès de la tuberculose.—Tuberculosis of Mucous Membranes.—Inspection and Quarantine of Tuberculous Animals.—Perihepatic Tubercular Abscess.—Laryngeal Phthisis.—The Absence of Physicians' Signs in Paris.*

Paris, *August 18, 1888.*

Professor Leon Le Fort, Surgeon to the Necker Hospital, and the only prominent French surgeon who attended the Washington Congress, does not believe that the union of wounds by first intention is prevented by exposure to the air. In 1871 Lister first applied to surgery the discoveries of Pasteur—that is, in regard to the ferments—believing that the microbes present in the air acted upon the blood-serum and plastic lymph and caused suppuration. He then gave the world his celebrated doctrine, and tried to destroy these ferments by means of a spray of carbolic acid in the air, and by the use of dressings containing the same substance on the wounds. It was soon thought that the air contained special forms of microbes which caused all the difficulty in the healing of wounds. Dr. Le Fort, however, has always contended that the air has no influence whatever upon the healing process, and he has never admitted that it can be the means of propagation of purulent infection, either puerperal or surgical, maintaining that this is only and solely caused by direct transportation of the contagion germs from a person who is already ill to those who are well by means of the fingers, instruments, sponges, etc. In order to demonstrate his theory, M. Le Fort undertook to show that even the air in hospitals has no bad effect on open wounds. For several months he has not used dressings after his operations, *allowing all wounds to be in free contact with the air.* Among his cases were three amputations of the leg, one amputation of the thigh, one resection of the elbow, an amputation of nine toes, and other similar operations—in all of which the wounds healed by first intention without the slightest suppuration. In all these cases the surfaces of the wounds were scraped lightly, both during and after the operations, at different periods, and cultures were made of the matter removed. These procedures gave most curious results, which Professor Le Fort intends to communicate to the Academy of Medicine in the autumn, on his return from his summer vacation, and of which we will keep your readers informed. In any case, it would seem from these experiments that Lister's doctrine is not so well founded as many think, and it is at least quite possible that, if we cut our nails close and operate with clean fingers and instruments, we can disregard the character of the surrounding atmosphere. The essential conditions to success are perfect cleanliness on the part of the surgeon, the patient, the sponges, and everything else used. The impurity of the air may be ignored as possessing no power to influence the result.

The first session of the *Congrès de la tuberculose* opened here on the 25th of July, with M. Chauveau as president and with Dr. Villemin and Professor Verneuil as vice-presidents. A number of *présidents d'honneur* were named from various countries, those from the United States being Dr. A. Jacobi and Dr. Page. Professor Chauveau, in his opening address, spoke very highly of M. Villemin and of the fact that he first demonstrated the inoculability of tuberculosis in animals, while he gave every credit to Koch for having discovered the bacillus. He finished by hoping that the congress would go on with the good work until it could check the ravages of the terrible plague of phthisis, and increase the duration of life and happiness on earth. Dr. L. N. Petit, the secretary-general, read the long list of societies which had given their names in support of the object of the congress. The only American one was the Academy of Medicine of New York. The first important communication made to the congress was that of Professor Cornil, on "Tuberculosis of the Mucous Membranes." He said that the penetration of the bacillus by simple contact with the mucous membranes was a most important point, and he found that it was not at all necessary that an excoriation, fissure, or any lesion should be present in order to permit the bacillus to enter the system, simple contact being sufficient, as had been shown by experiments made by Chauveau, Villemin, Gerlach, Collinger and others. M. Cornil had repeated experiments made by these observers and had made some guinea-pigs swallow a few drops of a cultivation of the tubercular bacillus. Following its effects on the intestine, it was noticed after fifteen days that there were tubercles, visible to the naked eye, on the mucous membrane. In studying the uterus, cases were seen in the human subject in

which the os uteri alone was involved, in women who had no pulmonary or peritoneal lesions. This would lead to the conclusion that contagion is really possible through the sexual function, from the male to the female. To establish this, Dr. Cornil introduced into the vaginæ of a number of guinea-pigs several drops of a cultivation of Koch's bacillus. This was done by means of a smooth glass tube, so that no erosion of the mucous membrane was produced. After periods varying from six to thirty-two days the animals were killed and preparations were made of the vaginal and uterine mucous membranes. Those of the first period showed catarrhal inflammation of the neck of the uterus, with great collections of lymphatic cells; later on, about the fifteenth day, this catarrhal inflammation was increased and the formation of small tubercular follicles could be seen to have occurred; and thirty-two days after the injection the tubercles were quite plainly visible. These experiments prove that *the infection of the uterus by the vagina is possible if the bacillus is introduced into it.*

Professor Nocard spoke on the dangers to which we are exposed in making use of the meat and milk of tuberculous animals and of the means of preventing it. As to milk, it would seem that it is after the lesions have involved the glandular tissue that it becomes unwholesome, but, as it is almost impossible to tell exactly when the cow's udder is infected until toward the last stage of the infection, M. Nocard thought that the greater part of the milk sold in large cities must be more or less dangerous; and, as boiling it was the most simple and effective means of prevention, he would say: "Mothers, never give any milk to your children without having boiled it first." He makes an exception in favor of goats' milk, as these animals do not seem to have tuberculosis, while cows are quite subject to it. From Toussaint's studies, this disease is *totius substantiæ* —that is to say, that it invades every portion of the organism; the tissues and fluids alike possess the germ of the affection. The only remedy, then, is for the officers of the law to seize the entire animal as well as its milk and to exclude both from the market when the existence of tubercular disease in the animal is suspected. Even the skins of such animals should not be allowed to be used until they are thoroughly disinfected, and certainly milk coming from tuberculous cows ought not to enter the circulation. In France the animals pass under a strict inspection by veterinary surgeons, and strict laws are being enforced to keep diseased animals out of the markets. It is not, however, believed that the meat of such cattle is very dangerous to health, as experiments made by feeding cats on such meat do not prove that tuberculosis results therefrom. In any case, however, it would be well to have tuberculosis assumed as a reason for prohibiting the use of the meat of such animals until means are found of making it non-injurious, and all dairies should be placed under the watchful care of experts who can judge of the health of the cows which furnish the milk. It will only be by a system of quarantine and elimination by inspection, to be required by law, that the danger to man caused by the existence of tuberculosis in animals can be removed.

The proportion of tubercular animals is not large—only about 6 per cent.—so that commercial interests would not suffer if they were seized by the inspectors. It is somewhat curious to note that, in regard to the phthisis of fowls, M. Moulé states that tuberculous liver is quite common in all the *Gallinaceæ*, and that persons mistaking such livers for fatty ones eat them with pleasure, while in reality they are full of the bacilli —quite a warning to the eaters of *pâté de foie gras.*

Professor Lannelongue called the attention of the congress to *perihepatic tubercular abscesses*, and instanced several cases in order to prove that phthisis of the liver exists, and has its origin on the surface of the organ. It is quite distinct from tubercular granulation of the substance of the liver. The question of the use of a diet of raw meat and blood in the treatment of tubercular patients was discussed by several observers. Dr. H. De Villeneuve thought that, like any exclusive alimentation, it was bad; the indication was rather to increase appetite by sufficient doses of strychnine and arsenic, and to satisfy it by varied food. If any, however, wish to use raw meat and blood, advise them to use that of the goat or sheep rather than that of other animals. Clarification of wine, etc., should be made with the same blood. Many other interesting papers were presented by M. Hanot, M. Landouzy, Professor Verneuil, and others, but we search in vain for some practical point that would help the general practitioner to cure his patients who already have tubercular disease. It is perhaps too much to ask of any congress to find a certain cure for any disease; so that, although from a therapeutical point of view we find the congress lacking, we can not but admire its foundation, and we hope that, under the lead of Professor Verneuil, who is called the "greatest physician of all our surgeons," its deliberations will yet lead to some practical result. Very many facts in regard to the theory and pathology of phthisis, and of its prophylaxis, etc., were brought forward, and from a scientific point of view these were certainly well discussed, so that if the influence of the congress is strong enough to cause tuberculosis to be included among the contagious diseases in the sanitary regulations, and inspection of animals be thereby enforced, it will already have done an important work, and we can look forward to its next session, to be held after two years' time, under the presidency of M. Villemin, in hopes that the therapeutics of phthisis will then be improved. While upon this subject, let us mention the appearance of an important work called "Phthisie laryngée," by Dr. A. Gouguenheim and M. Tissier, one of his internes. This is a large volume in octavo, with designs and three chromolithographs showing the parts involved. Dr. Gouguenheim is physician to the Lariboisière Hospital, where he has the largest laryngological clinic in Paris. Laryngeal phthisis is one of the most difficult of studies, as its forms so resemble those of syphilis and other diseases that simulate tuberculosis that a complete monograph on the subject is interesting.

One of the rather curious facts in regard to medical customs in France is the difficulty a stranger has of finding a physician's house, notwithstanding the fact that Paris has as large a proportion of physicians as any other city—not excepting some American ones. The greater number display no sign, and when you know that in Paris one house is as like another as two peas, it is easy to imagine the trouble of finding the right house when on the search for a doctor. Not only is there no "shingle" on the front door, but there is not even one on the door leading to the office—not even a card to show the stranger who lives in the *appartement.* We were told the other day of an American's search for a celebrated French specialist's office. He had the world-wide known name well enough, but could not pronounce it as they do here. However, by writing it, he found the boulevard, and, fortunately, he had the right number, but here again his troubles began, as he did not understand the polite "concierge's" instructions as to which floor the doctor occupied. Nothing daunted, our Yankee friend mounted the stairs, hoping to find at least the family name on a little silver plate on the door, but, alas! after mounting seven flights he could see no sign. Determined not to be beaten, however, he wrote the name on a paper, and, commencing at the first floor again, he conscientiously rang at all the doors until he found the right one. Among all the thousands of physicians who practice in Paris, *not one*—except the English and Americans who practice here—has his name on his own door, nor on the street door. Among the cheaper class of physicians will be found a small

sign saying "*Docteur en médecine de 1 à 3 heures*," but no name is given; and as to the better class, not the slightest indication is given that they live in a house. It is a curious Parisian custom.

## LETTER FROM LONDON.

*The Annual Meeting of the British Medical Association.—The General Addresses.—Dr. Macewen's Address on Cerebral Surgery.—Dr. Tidy's Lectures to Barristers on Forensic Medicine.*

London, *August 14, 1888.*

The annual meeting of the British Medical Association, which was held in Glasgow last week, must be considered to have been a decidedly successful one in all respects. There was a large attendance of members, a considerable number of papers were presented, on several of which there were good debates, the general addresses were of exceptional interest, the weather was fine, and there was plenty to be seen both in the town of Glasgow and the surrounding country.

Professor Gairdner was president of the meeting, and in his opening address traced the career of the physician as a student of nature from the earliest times down to our own day. The addresses in medicine and surgery were delivered respectively by Dr. Clifford Allbutt and Sir George Macleod. Dr. Allbutt devoted the time allotted to him to what he aptly called the *novum organum* of medicine—*i. e.*, the classification of disease, dealing with it under the heads of heredity, the historical method, the geographical method, and the experimental method. I shall content myself with saying that he delivered a most thoughtful essay on an exceedingly difficult subject.

Sir George Macleod selected a much easier theme, and passed in review the progress made in the art of surgery during the past half century. The two epoch-making discoveries of this period —viz., anæsthetics and antiseptics—first occupied his attention, and he was able to refer with natural pride to the fact that it was in Glasgow that the first principles of the aseptic treatment of wounds were formulated. Passing, then, to practical surgery, he referred to the bloodless character of operations at the present time as a great contrast to those of bygone days, and to the important position now occupied by operations for excision of joints. Lithotomy and lithotrity, ovariotomy, cerebral surgery, the treatment of strangulated hernia, and the surgical treatment of pulmonary and renal affections also came in for due attention, as well as the surgical uses of electricity, and Apostoli's method of treating uterine fibroids.

It is the custom at the meetings, in addition to these three addresses, to have one other general address, the subject being determined by the choice of the person appointed to deliver it. This year Dr. Macewen was invited to give an account of his recent investigations in surgery. Dr. Macewen has been working at cerebral surgery for over twelve years, and he had therefore an amount of material at his disposal which I suppose no other operator could equal from his own resources alone. The first case which came under his observation, in which an operation seemed to be called for, occurred in 1876, when a man presented the signs of a cerebral abscess in the situation of Broca's convolution. The friends refused to allow an operation, but after the death of the patient Dr. Macewen was permitted to do the operation he had advised, when the accuracy of his diagnosis, both as to the abscess and its situation, was proved. Three years later he performed his first operation on a boy who had motor symptoms from an extravasation of blood in the neighborhood of the fissure of Rolando, the patient recovering without a bad symptom. Since that date he has performed many operations, but none, perhaps, in which a more brilliant diagnosis was made than in the following instance: A man who had had an injury to his head about a year previously suffered from deep melancholy, homicidal impulses, and pain in the head. Before the accident he had been quite healthy. There were no motor phenomena, but on minute inquiry it was discovered that immediately after the accident and for about two weeks he suffered from psychical blindness. Physically he could see, but what he saw conveyed no impression to his mind. An object presented itself before him which he could not make out, but when this object emitted the sounds of the human voice he at once recognized it to be one of his fellow-workmen. By eyesight he could not tell how many fingers he held up when he placed his own hand before his face, though by the exercise of his volition in the act, and by other sensations, he was cognizant of the number. In the same way he could not read, for he saw the letters, but they conveyed no meaning to his mind. These phenomena, however, gave the key to the hidden lesion in his brain. On operation the angular gyrus was exposed, and it was found that a portion of the internal table of the skull had been detached from the outer, and had exercised pressure on the posterior portion of the supra-marginal convolution, while a corner of it had penetrated and lay imbedded in the anterior portion of the angular gyrus. The bone was removed from the brain and reimplanted in proper position, after which he became greatly relieved in his mental state, though still excitable. He has made no further allusion to his homicidal tendencies, and is now at work.

Dr. Meymott Tidy has been delivering a course of lectures on forensic medicine to barristers, and the course has been so successful that it is intended to make its repetition an annual event. Our barristers are not nearly so well informed in matters pertaining to medicine as they might be, and it will certainly be to the advantage of the public that those who intend to practice at the common-law bar should have some instruction in such matters. I hope that Dr. Tidy will be stimulated to continue the publication of the work on legal medicine which he began some years ago, but of which only two out of six volumes have as yet seen the light.

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**Rickets and Syphilis.**—According to the "Lancet," "Comby does not agree with Parrot's proposition that rickets only arises as the ultimate manifestation of syphilis. The 'geographical' tongue, the scarred buttocks, eroded teeth, and natiform skull are signs of an extinguished syphilis, according to Parrot and others. Hereditary syphilis attested by these marks would cause osteophytes, gelatiniform atrophy, and spongeoid tissue, which suggest rickets. Comby contrasts rickets with syphilis. In the former, rarefaction of tissue occurs; in the latter, condensation and softening. Scars and dental lesions are common in syphilis, rare in rickets; corneal lesions are generally scrofulous; lingual desquamation is not peculiar to syphilis. If infants who have been impregnated with syphilis are provided in due course with suitable food, they will not become rickety. In the ætiology of rhachitis, syphilis holds the same position as measles, variola, scarlatina, typhoid fever, and broncho-pneumonia."

**Pseudo-Tabes.**—"The imagination is not more fertile" (says the "Lancet") "than is nature itself in the production of infinite variety in disease. Contemplate a few steps in the recent progress of neurology and this statement will not appear exaggerated. Remember how disseminated sclerosis was distinguished from paralysis agitans; how we were shown that tabes dorsalis could exist without disease of any part of the cord; how there are cases of pseudo-sclerosis described by Westphal in which no sclerosis could be found after death; and now we have an equally good authority (Pitres) describing in the 'Archives de Neurologie' a case in which progressive locomotor ataxy was believed to exist for ten years, yet at the necropsy and microscopical examination neither sclerosis of the posterior columns of the cord nor disease of the spinal roots or spinal nerves could be detected."

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## IS SUPPURATION IN WOUNDS CAUSED BY GERMS PRESENT IN THE AIR?

THE experiments by Professor Le Fort, mentioned by our correspondent, whose letter will be found in another column, seem to furnish strong evidence that the aseptic healing of wounds is to be gained by the exercise of care and cleanliness at the time of operation, rather than by the elaborate use of antiseptics, either during the operation or in the subsequent dressings of the wound. It is a well-known fact that wounds which have been treated after a manner which violates every rule of antiseptic surgery will often heal by first intention without suppuration, while precisely similar injuries, treated after the most approved antiseptic methods and with the exercise of the most punctilious care to prevent the most wily germ that ever roamed the air from adopting the wound as a locality favorable for the planting of a vineyard and fig-orchard, as well as a proper place in which to obey the Divine command to increase and multiply, will frequently present every variation of septic action, from simple non-union of the wound to general pyæmic infection. In by far the greater number of cases the wound treated after the primitive method, without antiseptic measures, but which heals without suppuration, is the property of a patient who is treated in the pure air of the country or in that of his own home, while the carefully protected lesion, which fails to withstand the subtle septic influence, is usually a thorn in the flesh of some hospital patient, and is surrounded by an atmosphere supercharged with the germs of various diseases.

Exceptions occur in both classes, as is to be expected; and this inconsistency in the behavior of wounds has caused a division of surgeons into three parties—one holding the opinion that neglect of ultra-antiseptic measures evinces a reckless and criminal disregard of human life, another scoffing at the theory and practice of antiseptic surgery and maintaining that bad results are due rather to constitutional causes than to the action of germs, and a third party following the tenets of an agnostic creed, neither neglecting nor strictly conforming to the rules aid down by ritualistic antiseptic surgeons. Hospital statistics are overwhelmingly in support of the first faction, whether this be a result of the use of antiseptics or of simple cleanliness and improved methods of operation. It is also but just to state that the second party is largely composed of those worthy practitioners who live in the memory of "the good old times when etc.," and numbers among its forces but few of the progressive surgeons of to-day. Each party can produce powerful clinical evidence in support of its own particular dogma, and each can point to unfortunate results following the treatment of its rival. In the matter of argument, or the manipulation of statistics, the disciples of strict antisepsis hold the balance of power, for they can point with pride to their good results, and explain their failures by the assumption that some minute detail of the system must have been neglected, thereby vitiating the influence of all the other precautions. Every bad result in the practice of their adversaries is regarded as a triumphal vindication of the antiseptic theory, while every success is regarded as a simple coincidence due to inexplicable causes. Thus they are possessed of an adjustable and general-utility argument, which savors much of the "heads I win, tails you lose" variety of logic, which is highly exasperating to their opponents. Moreover, their statistics are largely taken from hospital records, while those of their opponents are mainly drawn from cases in private practice. The main argument of the latter disputants is based on the statement that cleanliness, and not the use of chemical antiseptics, is the true principle to be followed in surgery, and they accuse the surgeons of the former school of substituting elaborate antiseptic methods of dressing, etc., for operative skill and sound judgment. In other words, that, misled by the brilliant results of the antiseptic method, they operate in unsuitable cases, and with too little attention to technique and operative dexterity.

It is certainly true that the most approved antiseptic methods are much more simple at the present time than in former years, and that the tendency among surgeons is to do away with the complicated dressing, and to depend more on disinfection at the time of operation, than upon the raising up of antiseptic ramparts around the wound during its after-treatment, although this is still vigorously advocated and practiced. More and more stress is laid on the necessity of absolute cleanliness of hands, sponges, instruments, etc. Lawson Tait has established the fact that dexterity, scrupulous cleanliness, rapidity of operation, and the exclusion of all unnecessary fingers from the peritoneal cavity have more to do with success in laparotomy than the most elaborated antiseptic measures when not accompanied by operative experience and skill; and not only this, but also that the free use of antiseptics in abdominal surgery has a tendency to prevent rather than to promote recovery.

It is to be hoped that Professor Le Fort will be enabled to cast some light on this obscure subject, which is of such paramount importance to the surgeon and to the community at large. If he be able to show by his experiments that suppuration in wounds and general septic infection is always due to direct inoculation and not to contact with contaminated air, he will have accomplished a work second only to that of Lister, who originated the modern principle of good surgery, even though his specific treatment be proved unnecessary or faulty.

## PLAY AS A MEANS OF DEVELOPMENT.

POPULAR ideas concerning play are extremely vague, even among those who look upon it as a pleasant kind of trifling. Although a real activity, it differs from work in two essentials —the motive that prompts it and the object to be attained by it. Will inspires the worker, and a given result is the object of his efforts. Play is an instinct with the child, and has develop-

ment for its object. This instinct is an inherent impelling force that causes all the muscles of the body and various faculties of the mind to be exercised in sufficient measure, but never in excess. It gives a large share of education and training, and prepares the young for future work. Nature never leaves what is necessary for continued existence to be supplied by the unaided wisdom of man. The young animal is an incomplete animal, in process of being made. Its future power of supporting an independent existence depends upon the manner in which that process is carried out. After the immediate support of life, the great aim Nature has in view is to complete the animal mechanism, to bring it to its required size, and to give to every part its full measure of strength. Growth and development go on side by side; although correlative, they are not the same. To compare their united efforts to the building of a house, growth may be likened to the placing of the stones or other material in position, and development to the cementing of them together, thus giving strength and durability to the structure. A suitable supply of building material is essential for the process of growth to be carried on, and that is all it requires. For development, exercise in response to proper stimuli is imperative. Without this functional activity there can be no development. Air, light, food, raiment, and shelter furnish the proper conditions for growth. Something more is required for development or growth in functional activity, as it may be called; and that something is play. A child may grow rapidly while confined to bed, waste being reduced to the minimum and nearly all nourishment being applied to the building up of the body. But strength by no means keeps pace with this growth; development has been suspended for a time. It is a well-known fact that continued or frequent attacks of sickness rendering confinement of this kind necessary have an appreciable effect upon the ultimate strength of the man. Other things being equal, the power and usefulness of the man are in proportion to his capacity and opportunity for spontaneous play during childhood. Not long since a party of newsboys, boot-blacks, and other street urchins were given a day of fresh air upon a model farm by a number of well-meaning business men, who piloted the motley crew to their destination. The boys hung around like limp dish-cloths, in spite of their steel-trap smartness, incapable of joining in any out-door sport. Those who had them in charge endeavored to initiate them into the mysteries of foot-ball, climbing trees, scaling fences, pitching hay, etc. But all to no purpose; they had no following, only idle spectators, a line of lads incapable of using more than certain sets of muscles. The outlook for these boys' future is certainly the reverse of encouraging. The absence of spontaneous, all-round play in early childhood debars them from future advancement to any great extent. Their only hope lies in the possibility of some happy eleventh hour, that kind provision of Nature when, a man being needed, the occasion may mold out of one of these a laborer to dig in the vineyard.

What is play? It is not work, assuredly. "The lambs play always, they know no better," says the wise little maid in the poem, as if lambs, whether human or brute, had any other business in life! Play may be defined as all voluntary exercise prompted by natural inclination and producing pleasure. It is a preparation for work, and ceases as an instinct when maturity is reached and the animal has to work for its living. The great variety and apparent aimlessness of motion in play is explained by the requirements of the muscles and the faculties and the necessities of the future. Any small object in motion is a temptation to a kitten. The frisky animal crouches, springs, and seizes the unoffending ball or spool as if it were indeed a sweet morsel to be devoured. Not present circumstances but future necessities regulate its movements. So, too, with the gambols of the pup, of the duckling, and probably of young animals in the wild state. Seemingly bent on amusement only, they are diligently practicing all the arts upon which they must subsequently depend for subsistence.

Play is imitative. The cat teaches her young how to play, converting paw, tail, or head into an improvised mouse or bird. In the child, play is progressive as well as imitative; and this element of progress distinguishes man from the lower animals, our little ones from their humbler cousins. The presence of a mentality capable of thinking about its own thoughts marks the gulf fixed between the sports of the human young and that of other vertebrates. Mind is not a homogeneous entity, but a collection of organs or faculties. The combined action of these faculties produces our thinking or intellectual powers. Mind is developed, not as a whole, but in faculties (so called), one succeeding the other, and each disclosing its own individual quality and growing according to its opportunities for exercise. It is not alone mind as a whole that needs exercise, but every separate organ of mind. The infinitely varied and constantly changing play of childhood accomplishes this end. Imagination and the constructive and inventive faculties unfold under the influence of this impelling and regulating force. The will—the power of controlling and regulating mental action—is weak in the child; consequently, the automatic activity of the faculties is but little interfered with by voluntary effort, the attention being carried away by whatever attracts it most; and thus a fairly equal development is secured. Children of special gifts are early attracted to certain forms of play, and will leave companions not interested in the same varieties to carry out their inclinations by themselves if necessary. Of Mr. Dalton's one hundred and eighty men of science, nearly all showed a marked preference at a very early age for pursuits approaching in general characteristics those in which they afterward attained distinction. "The child is father to the man." If we were only wise enough to see it always, and prevent the genius that is born from dying in its infancy for want of sympathy and guidance! Newton, Swift, Johnson, Scott, Byron, and many others were dull at routine amusements and routine tasks, but glowing and alive when engaged in their own peculiar chosen pursuits, with the result shown in their after-career. The "play" of Thomas Edward, the Banffshire naturalist, differed materially from that of his neighbors. In spite of chidings and beatings, the poor child of six (who worked from 8 P. M. till 6 A. M. in a tobacco factory)

would roam the woods for the greater part of the day in search of "sinfu' beasts," as his lizards, newts, snakes, and other bright-eyed pets were called. And that dull lad, Walter Scott, rehearsed so well and dramatically the tales learned from the bordermen that his presence among his companions in the class-room interfered seriously with their enjoyment of grammatical exceptions and the rule of three.

"Deep meaning often lies in childish play," says the good Schiller. Deep meaning *always* lies in childish play, says the modern investigator along the lines of physical psychology. The boast of the Jesuits—that they care not who has the child afterward, if they may direct him till the age of seven—means simply that the guidance and inspiration of play-days have the greatest possible influence for all time upon the body, the mind, and the will. Companions educate more than the schools, and the home more than companions. Shall we play with our children, or leave their voluntary activities to blind chance? Shall the dumb mothers exceed us in wisdom? Let us dare to be children again with children, for their sake and our own. The burdens of life could not be borne except for an underlying gayety of heart that we share to a greater or less extent with them. Always is the contemplation of human nature unfolding an inexhaustible mine of interesting discovery. Originality alone is interesting, and where is it to be found as in the child, with his shining morning face, his thousand and one quaint capers, and his endearing little ways? It would be an old and dreary world if there were no children in it to bring hope and forward-looking thoughts. Those who miss the fresh, cheering companionship of a newer generation lead a life from which the best is left out. To voluntarily relinquish to others or to chance the supervision of play-days—and school-days and experiment-days as well—means great risks for the future and fewer joys for the present. Self-interest, humanity, and science all point in the same direction. We must play with our children, and cease to leave a matter so important to chance.

## *MINOR PARAGRAPHS.*

### "BETTER THAN NOTHING."

The following extract from the "Lancet" is worthy of special notice: "The public is sorely in need of 'a new set of images,' according to Lord Beaconsfield. Conventional language, however, dies hard; and the satire of 'Tancred,' though of forty years' standing, has not succeeded in laughing down 'last not least'; 'crowned with success'; 'leave no stone unturned,' and replacing them by fresh equivalents. 'Wise saws,' too, would be all the better for revision, if not for actual readjustment; nay, even more so than the usages of speech; for they assume a certain wisdom, and even authority, insomuch that we are often duped and dominated by them. Mr. Goschen, on a memorable occasion, has shown how many abuses, how much *laissez-faire* legislation, owe their longevity or actual existence to the phrase 'after all,' the germ of a great deal of the practical torpor that intrenches itself behind 'let well alone.' For medical men there is another phraseological offender, almost as mischievous in the sphere of health as its congener, 'after all,' is in that of politics. At this season, when a temporary break in routine life hurries off so many citizens to the foreign health-resorts or watering-places, there is no phrase so frequent on the lips of the holiday-taker as 'better than nothing.' The overwrought curate or fagged lawyer runs abroad to this or that fashionable 'kur,' to take so many baths or daily beverages or massages as the case may be, and if it is suggested that the course is insufficient, or the time spent over it too short, the answer is very apt to be 'Yes; but it is better than nothing.' Now, there is a very grave risk in such proceedings—a risk to which the non-medical public seem but little alive. Like every other therapeutic agent, a mineral water, whether as a beverage or as a bath, must be taken, when indicated, in certain proportions, under certain conditions of time and circumstance, and subject to certain modifications during the course. Repeatedly the home physician has to treat cases of chronic disease in which all the symptoms have been seriously complicated through the disturbance wrought on the patient by foreign mineral waters used just often enough, or just long enough, to worry the system—to set in operation a series of blood changes which, before they result in the expected good, must complete a certain well-understood cycle. A powerful alterative, in fact, has been commenced by the patient, but it has not been followed up to its proper issue—it has been arrested in its course, so as to be operative only to complicate, not to cure. This is peculiarly the case with those waters that contain arsenic in varying proportions, the partakers of which, having received benefit from them once, resort to them again often on their own account, and think a few days of their use, if not all that could be wished, at least 'better than nothing.' The same may be said of the massage. A sufferer from incipient atheromatous degeneration goes abroad to put himself under some well-known *masseur*. He has twelve days at his disposal, and he employs them in a dozen operations at the hands of the powerful manipulator. He does not realize that the accelerated metabolism—the histolytic waste—caused by the *masseur* is in excess of his power to repair it, and, deceived by a certain immediate sensation of lightness or nimbleness, he perseveres to the twelfth day, and returns home to find himself in the condition of an athlete who has been overtrained, with perhaps permanent damage done to the walls of the heart. 'Better than nothing' in his case has been 'worse than none at all.' He had much better have kept out of the *masseur's* hands than have undergone a daily recurring series of muscular exhaustions more depressing than a three hours' brisk walk each day would have been. As with the mineral water so with the massage; a graduated interval has to intervene between each dose or each operation. Time must be given to the system to recover from the shock of the new series of conditions imposed on it. But the duration of this interval, as, indeed, the resort to the 'kur' in the first instance, can be regulated with safety by the physician alone, whose painful experience it often is to fight a losing battle in attempting to retrieve the *dyscrasiæ* or the systemic exhaustion induced by the patients acting on the fallacious half-truth involved in 'better than nothing.'"

### THE CAUSE OF CANCEROUS INFECTIVITY.

Dr. James Braithwaite, in the "Lancet," thus explains the phenomenon of the spread of cancerous disease: Vitality is only comparative, and the different cells which enter into the construction of the various parts of the organism are of varying degrees of vitality. A malignant growth springing from the epithelium may originate in several ways, but penetration of the basement membrane and lodgment of cells beneath this, no capsule being formed, are essential to its further development in contiguous tissues. These cells, so placed, are possessed of more vitality than those of which these tissues are composed.

Hence their growth is rapid and their power to invade more remote structures is increased. A few of these hardy, vigorous cells pass through a lymphatic vessel, and effect an entrance into a lymphatic gland. They are then located in the midst of a structure which is designed to deal with effete matter of little or no vitality. As a consequence, their vitality overpowering that of the gland cells, the newly arrived cells flourish at the expense of the normal elements of which the gland is composed. If this view, therefore, be correct, the whole question of infectivity hinges upon the following points: 1. The certain fact that life is comparative in amount, and that a varying quantity exists in different tissues and cells of the same individual. 2. The probability that, just as decreased nourishment causes decreased vitality, so increased nourishment will cause increased vitality or life fluid in cells. 3. The probability that, as the cells of various tissues require different and varying forms of nourishment, so an increase in the food of one especial ingredient may cause an increase in the life fluid of one especial set of cells. 4. The probability that, when cells of different degrees of life compete for space, those of a higher grade will displace those of a lower grade, other circumstances being equal. 5. In the case of epithelium cells thus competing, their inherent peculiarities assist this competition in a remarkable degree.

### THE RELATIVE INDICATIONS FOR THE USE OF ANTIPYRINE AND ACETANILIDE.

Dr. Robert Parke, in the "Lancet," concludes that the use of antipyrine or of acetanilide should be governed by the character of the affection which is to be treated. Antipyrine is the indicated remedy in sthenic cases, while acetanilide will act most effectively in cases of the asthenic type. He is inclined to attribute the evil results which have been reported as due to the administration of antipyrine to the asthenic character of the disease, rather than to personal idiosyncrasy, to which they have been ascribed by other observers. He favors the plan of administering large doses at long intervals, when either of the drugs is used in the treatment of hyperpyrexia.

### PHYSOSTIGMA IN TRAUMATIC TETANUS.

Mr. Belcher ("Lancet," August 18, 1888) reports success in the treatment of a case of tetanus by the extract of physostigma. The disease resulted from a lacerated wound of the hand, and exposure to cold. Pharyngitis and stiffness of the muscles of the neck were followed by the symptoms of tetanus. In five days' time ninety-six grains of the extract of physostigma were taken by the patient, in doses of from one to two grains every hour, and in nine days forty-eight grains were taken. No paralytic symptoms appeared during the course of the disease.

### GANGRENE FOLLOWING THE HYPODERMATIC INJECTION OF COCAINE.

Dr. Johnston, of Georgia, reports in the "Medical News" the history of a case of ingrowing nail, for the relief of which he removed a wedge of tissue, using half a grain of cocaine hypodermatically as an anæsthetic. After thirty-five minutes the patient became cyanosed, with rapid, feeble, and irregular action of the heart, and disappearance of the radial pulse. The use of ether hypodermatically and of amyl nitrite gave immediate relief, but, on changing the dressing on the following day, the tissues at the site of operation were found to be in a state of dry gangrene, being cold, bloodless, blackened, and mummified. The patient recovered in about two weeks' time under appropriate treatment.

### ELECTRICITY IN INFLAMMATORY DISEASE OF THE UTERINE APPENDAGES.

Dr. E. H. Grandin, in the "Medical Record," advocates the employment of the galvanic current in cases of perimetric inflammation not characterized by recurrent attacks of peritonitis or the manifest physical signs of pyosalpinx. He has not found it necessary to employ currents of high intensity, but has had more satisfactory results from the use of weak currents of long duration. Galvanism should be used until all tenderness on pressure of the vaginal vault has disappeared, the positive pole being inserted in the vagina, with the negative pole placed on the abdomen, and made to cover a large area. After the tenderness has disappeared the faradaic current should be used. The uterus should be supported by means of a tampon in the intervals between the sittings, which should be held every other day. By these simple measures many patients may be saved the dangers and mutilation of oophorectomy.

### THE CÆSAREAN SECTION.

In the "Medical News" of August 25, 1888, an editorial on this subject gives the following interesting statistics: During the first six months of the present year there have been reported twenty-six cases of the improved Cæsarean section—nineteen in Europe with three deaths, and seven in America with the same number of deaths. Two of the deaths in the United States were of patients hopelessly diseased at the time of operation, and the third was at the time profoundly narcotized with morphine. Sixteen operations, performed after the method recommended by Sänger, with one exception, have been done in the United States since the beginning of 1887, with eight deaths. Five cases were *favorable*, with one death; nine were *unfavorable*, with five deaths; and two were *hopeless*, with two deaths. Fourteen children were saved. In this country the high percentage of mortality may be explained by the fact that in almost all the cases in which the operation was performed the patients were exhausted by prolonged attempts to deliver *per vias naturales* before the operative measures were employed, or were the subjects of incurable disease. The lesson which is to be learned from this fact is plain—success depends on prompt and decisive action. At present, statistics show that hospital cases recover in larger proportion than those operated upon in private houses.

### ABDOMINAL SECTION AND DRAINAGE IN PUERPERAL PERITONITIS.

Dr. Woodward reports, in "The Boston Medical and Surgical Journal," the history of a case of purulent peritonitis, treated by abdominal section and drainage, with recovery of the patient. The operation was done six weeks after parturition, and the abscess, which had been at first circumscribed, had ruptured into the cavity of the peritonæum on the day before the operation. A solution of hydronaphthol, and subsequently boiled water, were used in the irrigations.

### ABDOMINAL SECTION IN ADVANCED EXTRA-UTERINE GESTATION.

Dr. Robert P. Harris, of Philadelphia, records in "The American Journal of the Medical Sciences" a table of thirty operations for the removal by abdominal section of the living and viable fœtus in extra-uterine gestation. Five of the mothers recovered, and eleven of the children lived for six months or longer. Four of the maternal recoveries occurred in the last

ten operations, and in two cases it is known that the children are now alive and well at the ages of six and eight years. Many of the maternal deaths were undoubtedly the result of delay in operating, due to the patients' unwillingness to submit to the operation, and of the exhausted condition of the patient due to prolonged pseudo-labor. If the conditions are such that the placenta can be removed and the hæmorrhage arrested by ligation of the blood-vessels, this should be done; but when its attachments are such that the ligation of the placental vessels is impracticable, the organ must be left *in situ*, and dependence be placed on drainage and irrigation.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending August 28, 1888:

| DISEASES. | Week ending Aug. 21. | | Week ending Aug. 28. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 26 | 9 | 37 | 6 |
| Scarlet fever | 91 | 10 | 78 | 22 |
| Cerebro-spinal meningitis | 2 | 1 | 2 | 1 |
| Measles | 121 | 12 | 97 | 10 |
| Diphtheria | 82 | 31 | 59 | 24 |
| Small-pox | 2 | 0 | 0 | 0 |

**Back Number Wanted.**—If any subscriber to this journal has a copy of the issue for January 2, 1886, which he does not care to retain, and will mail it to the office of the journal, he will confer a favor on another subscriber who wishes to complete his file.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 19 to August 25, 1888:*

Vollum, Edward P., Lieutenant-Colonel and Surgeon. Leave of absence extended two months. Par. 17, S. O. 192, A. G. O., August 20, 1888.

Alexander, Richard H., Lieutenant-Colonel and Surgeon. Detailed a member of Board to meet at San Carlos, A. T., August 28th, to select a site for a new post at that place. Par. 1, S. O. 44, Division of the Pacific, August 15, 1888.

Smith, Joseph R., Lieutenant-Colonel and Surgeon, Medical Director, Department of Dakota. To inspect Forts Pembina, Totton, Buford, Abraham Lincoln, and Yates, Dakota Territory. Par. 4, S. O. 77, Department of Dakota, August 13, 1888.

Heger, Anthony, Surgeon. In addition to his other duties, to attend to the duties of the Medical Director, Division of the Atlantic, during the absence of Colonel Charles Sutherland. Par. 4, S. O. 170, Division of the Atlantic, August 18, 1888.

Wright, Joseph P., Major and Surgeon. Detailed as a member of Army Retiring Board, Fort Leavenworth, Kansas vice A. A. Woodhull, Major and Surgeon, U. S. Army, relieved. Par. 10, S. O. 190, A. G. O., August 17, 1888.

Woodhull, A. A., Major and Surgeon. Relieved from duty with Army Retiring Board, Fort Leavenworth, Kansas. Par. 10, S. O. 190, A. G. O., August 17, 1888.

Ainsworth, Fred. C., Captain and Assistant Surgeon. To proceed to Atlanta, Ga., and inspect the new Army Hospital at that place. Par. 18, S. O. 192, A. G. O., August 20, 1888.

Maus, Louis M., Captain and Assistant Surgeon. Having completed rifle practice at Camp S. B. Luce, Fisher's Island, N. Y., to return to his proper station (Fort Schuyler, New York Harbor). Par. 3, S. O. 171, Division of the Atlantic, August 20, 1888.

Owen, W. O., Jr., Captain and Assistant Surgeon, Fort Leavenworth. To report for temporary duty to the Commanding Officer, Fort Gibson, Indian Territory. Par. 1, S. O. 104, Department of the Missouri, August 20, 1888.

Mason, Charles F., Assistant Surgeon. Ordered to Fort Washakie, Wyoming Territory, for duty. Par. 5, S. O. 190, A. G. O., August 17, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending August 25, 1888:*

Simons, Manly H., Surgeon. Detached from the Constellation and ordered to the Naval Academy.

Russell, A. C. H., Passed Assistant Surgeon. Detached from the Constellation and ordered to the Naval Academy.

Dickson, S. H., Passed Assistant Surgeon. Detached from the Marine Barracks, Washington, D. C., and ordered to the U. S. S. Richmond.

Cordeiro, F. J. B., Passed Assistant Surgeon. Ordered to the U. S. S. Mohican.

Farwell, W. G., Surgeon. Detached from the U. S. S. Saratoga and ordered home to wait orders.

Dickinson, Dwight, Surgeon. Detached from the U. S. S Portsmouth, and ordered home to wait orders.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending August 27, 1888:*

Sawtelle, H. W., Surgeon. Directed to proceed to San Diego Cal., and inspect Service at said station. August 17, 1888.

Hutton, W. H. H., Surgeon. To proceed to Way Cross, Ga., and assume charge of inspection and fumigation stations. August 18, 1888.

Urquhart, F. M., Passed Assistant Surgeon. To report to Surgeon Hutton for special duty. August 19, 1888.

Geddings, H. D., Assistant Surgeon. Appointed an assistant surgeon August 18, 1888. To report to Surgeon Hutton for special duty. August 19, 1888.

Wertenbaker, C. P., Assistant Surgeon. Appointed an assistant surgeon, August 18, 1888. Assigned to duty at the Port of Norfolk, Va. August 20, 1888.

Stoner, J. B., Assistant Surgeon. To proceed to Charleston, S. C., for temporary duty. August 20, 1888.

Guitéras, John, Passed Assistant Surgeon. To proceed to St. Mary's River, Fla., and establish and take command of refuge camp at that point, the camp to be known as Camp Perry. August 22, 1888.

**Society Meetings for the Coming Week:**

Monday, *September 3d:* Medico-Chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *September 4th:* Elmira, N. Y., Academy of Medicine; Buffalo, N. Y., Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Franklin (quarterly) and Niagara (Lockport), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore, Md., Academy of Medicine.

Wednesday, *September 5th:* Harlem Medical Association of

the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Bridgeport, Conn., Medical Association.

Thursday, *September 6th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Obstetrical Society of Philadelphia.

Friday, *September 7th:* Practitioners' Society of New York (private); Baltimore, Md., Clinical Society.

## Obituaries.

**Thomas T. Sabine, M. D.,** professor of anatomy in the College of Physicians and Surgeons, died on Thursday, August 23d, at the house of his father, Dr. Gustavus A. Sabine, in East Twenty-fourth Street. The deceased was graduated from the College of Physicians and Surgeons in 1864, after which he served on the surgical house staff of the New York Hospital. At about the termination of that service he was attacked with pulmonary hæmorrhage, and thereafter was a chronic invalid, although at times, for months together, his wonderful power of will enabled him to attend to duties that many a stronger man would have been unable to get through with. During the score or more of years that his battle with disease lasted he served as a surgeon to Bellevue and St. Luke's Hospitals, but he never fairly engaged in private practice.

Dr. Sabine was of slender build, but his power of endurance was very great. Mentally, he was quick of comprehension and logically precise. Before his graduation in medicine he was recognized as an anatomist of uncommon attainments, and he subsequently taught anatomy with a clearness and impressiveness rarely equaled. As a surgeon, he was an accurate diagnostician and a clever operator, and his opinion was much sought for in consultation. He seldom contributed to medical literature, but his graduation thesis was published. It was not alone in professional matters that his opinion was held in high esteem; the quickness of his perceptions, the unerring precision of his judgment, and, above all, his unconcealed detestation of shams caused great deference to be paid to him on all scientific, literary, political, and social questions. He was a brilliant man intellectually, a keen but kindly critic, phenomenally astute in his estimate of men, and a delightful companion. Everybody who knew him, even casually, was his admirer and feels a personal loss in his untimely death.

### OBITUARY NOTES.

**George D. Townshend, M. D.,** of Roxbury, Mass., died at Norfolk, Va., on Monday, August 20th, in the forty-seventh year of his age. The deceased was born in Providence, R. I., and in 1865 was graduated from the Department of Medicine of the University of Pennsylvania, in which institution he was for several years demonstrator of anatomy and surgery. He was a member of the Norfolk, Mass., District Medical Society, of which he was at one time secretary and librarian.

**John N. Freeman, M. D.,** of Brooklyn, died at Omaha, Neb., on Saturday, August 18th, at the age of sixty-three. The deceased was graduated from the Medical Department of the University of the City of New York in 1860. He was a member of the Medical Society of the County of Kings, of the New York Pathological Society, the Brooklyn Pathological Society, the New York Obstetrical Society, and had been an attending surgeon to St. John's Hospital, Brooklyn.

**William H. Page, M. D.,** of Boston, died at Los Angeles, Cal., on Wednesday August 22d, at the age of sixty-one. He was born in Rochester, N. H., and was graduated from Harvard Medical School in 1853. During the civil war he served as a surgeon in the army, in which capacity he was noted for his physical endurance and devotion to duty. He was a member of the Massachusetts Medical Society and was at one time City Physician of Boston.

## Letters to the Editor.

### THE EXPLORING NEEDLE IN DIAGNOSIS.

Randlemann, N. C., *August 22, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: Your issue of August 18th contains an able and timely article from Hermann M. Biggs, M. D., on "The Accidents incidental to the Use of the Exploring Needle for Diagnosis." It is seldom that we see a question stated so ingenuously. Being on the negative side, he makes the *dangers* to appear prominently; at the same time he defends the use of the exploring needle, and concedes to it all the importance its *proper* use merits. He cites four cases of general peritonitis resulting from puncture of a distended gall-bladder; to these I wish to add another.

On April 24, 1888, Dr. D. A. Stanton called me to see Mrs. B., aged sixty, who had been sick for several weeks. The diagnosis of an impacted calculus, with distended gall-bladder, was made. A quart of sweet-oil, to be taken in twenty-four hours, was prescribed. This did no good, and on May 3d puncture of the gall-bladder was suggested, with a view to further operative interference. Every antiseptic precaution was observed. Immediately after withdrawing half a syringeful of tarry bile, the patient complained loudly of severe pain in the region of the puncture. Collapse came on; the pulse could hardly be felt; the extremities were cold; there was clammy sweat and a hard tympanitic abdomen. After an hour the patient rallied, but died of peritonitis one week later. The needle used in this case was about twice as large and long as a small hypodermic needle.

J. W. Long.

## Book Notices.

*The Abortive Treatment of Specific Febrile Disorders by the Biniodide of Mercury.* By C. R. Illingworth, M. D. (Ed.), M. R. C. S. London: H. K. Lewis, 1888. Pp. 24.

From the adoption of the germ theory to the germicidal treatment of all the specific fevers a short syllogistic bridge seems, at a first glance, to give easy passage, and many therapeutic wayfarers have ventured on its span, closing their eyes to the vertiginiferous chasm beneath them, to reach an insecure footing on the distal brink. The author of the little book before us jumps to the conclusion that because the biniodide of mercury appears, in laboratory experiments, to be the "most potent of germicides," it must therefore act as a panacea for every malady hypothetically ascribed to germs, from plague to pertussis, overlooking, apparently, the circumstance that, even granting all his premises, an inevitably mortal dosage of the drug in question would be required to satisfy the minimum bactericidal estimate of the microculturists. Forasmuch, moreover, as his treatment prescribes the additional free adminis-

tration of iron, chlorate of potassium, and stimulants, the reader is left in doubt as to the amount of credit to be assigned to the biniodide in the recovery. At all events, probably few practitioners will regard chicken-pox and mumps as tests of the life-preserving efficacy of this irritant medicament. To one of the author's statements we must take serious exception in the interest of public health, namely, that patients with scarlet fever may be allowed to associate with unprotected persons "at the end of the tenth or twelfth day" if the throat is free from inflammation. His other opinions on uncertain subjects we must concede his right to hold.

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*Ptomaines and Leucomaines*, or the Putrefactive and Physiological Alkaloids. By VICTOR C. VAUGHAN, Ph. D., M. D., Professor of Hygiene and Physiological Chemistry in the University of Michigan, and FREDERICK G. NOVY, M. S., Instructor in Hygiene and Physiological Chemistry in the University of Michigan. Philadelphia: Lea Brothers & Co., 1888. Pp. viii–13 to 316. [Price, $1.75.]

THIS book can not fail to prove interesting and profitable to the majority of the members of the medical profession in this country. The subject is comparatively new—in fact, this is the first treatise on it of American authorship. The authors were well qualified for their work both in the matter of original research and in a careful study of the literature of the subject. While many pathologists will fail to agree with them in the statement that bacteria only become injurious by generating animal alkaloids or extractives, it must be confessed that such a theory gives a simple and rational explanation of the process of infection. In a few instances it may be considered as demonstrated that a morbid process is due to an alkaloid and that the bacterium would remain harmless were it not for the resultant alkaloid, but this does not prove the universality of the rule.

The general tone of the book is scientific, and it nowhere manifests the polemic spirit so noticeable in some of the recent books on the same subject. Liberal space is given to a consideration of tyrotoxicon, but, as this substance was discovered by Dr. Vaughan, it is proper that its history and properties should be fully set forth in this book. On the whole, this volume may be considered as the fullest treatise on the subject in the English language, and to those who wish to know the present status of the ptomaine question it will be of great service. It is unquestionably the duty of every physician to have a general knowledge of the movement of events in this new department of pathology, for the signs of the times point to the development in the near future of important practical results from the study of the animal alkaloids.

## BOOKS AND PAMPHLETS RECEIVED.

Commonwealth of Pennsylvania. State Board of Health. Camp Hygiene. Addressed to Medical Officers of the National Guard of Pennsylvania.

A Case of Extra-uterine Pregnancy; Embryo destroyed by a Twenty-milliampère Current without Interruptions; together with Remarks on the Best Method of Using Electricity for this Purpose. By A. H. Buckmaster, M. D., of Brooklyn. [Reprinted from the "Medical News."]

Ninth Annual Announcement and Catalogue of the Northwestern Medical College, St. Joseph, Mo., Session of 1888–'89.

Report on the Progress of Genito-urinary Surgery. Some Points in the Management of Urethral Stricture. The Specific Microbe of Gonorrhœa. By E. R. Palmer, M. D., Professor of Physiology and Pathological Histology, Medical Department, University of Louisville. [Reprinted from the "American Practitioner and News."]

Proceedings of the Sanitary Convention held at Albion, Mich., December 6 and 7, 1887, under the Direction of a Committee of the State Board of Health and a Committee of Citizens of Albion. [Supplement to the "Report of the Michigan State Board of Health" for the year 1888.]

Renal Tenesmus. By Nathan Bozeman, M. D.," etc. [Reprinted from the "Medical Record."]

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# Reports on the Progress of Medicine.

## OPHTHALMOLOGY.

BY CHARLES STEDMAN BULL, M. D.

**Spontaneous Hæmatoma of the Orbit.**—Panas ("Arch. d'ophthal.," March–April, 1888) contributes the history of a new case of this rare affection for the purpose of strengthening the belief that spontaneous hæmatoma of the orbit may be a reflex vaso-paralytic manifestation occurring in dyspeptics and dependent on dyspepsia. The lesions of the vascular walls do not alone suffice to explain the hæmorrhages. If a young person is dyspeptic he may have reflex congestive attacks in any part of the body, and these hæmorrhages will be the more frequent the more diseased are the vascular walls. It may not be malapropos to inquire whether the frequent attacks of epistaxis so common among the young are not indicative of dyspepsia in those who suffer from them. In regard to orbital hæmatoma, it is probably more logical not to open the orbital clot, but trust to its gradual absorption, though early interference may be demanded to avoid a loss of function in the optic and ciliary nerves from compression by the clot.

**Coloboma of the Iris and Macular Chorioiditis.**—De Lapersonne (*ibid.*) concludes that the hypothesis of a defect of obliteration of the ocular cleft is by no means a satisfactory explanation of the origin of coloboma of the iris. He thinks it probable that this originates in the same way as do the cases of irideremia and other congenital anomalies of the iris, such as polycoria, corectopia, etc. All these lesions are caused by diathetic inflammation of the initial period of intra-uterine life, and are rather embryonic than fœtal lesions. They are explained by the production of plastic exudations, demonstrated anatomically by Deutschmann, and which end either in arrest of development or in atrophy of a part of the already formed iris.

**The Value of Erythrophleine in Ophthalmology.**—Panas (*ibid.*) has been experimenting with this new so-called anæsthetic, and from his observations draws the following conclusions: 1. As a local anæsthetic, erythrophleine is much less valuable than cocaine. 2. Although its anæsthetic action is much more lasting than that of cocaine, the inflammation and sharp pain accompanying its application render its use improper in ophthalmic surgery.

**Remarks on Two Deep Abscesses of the Orbit.**—Terrier (*ibid.*) makes some practical observations on two rather unusual abscesses of the orbital cavity. In one case the abscess resulted from an osteo-periosteitis of the internal wall of the orbit. There was no strumous or syphilitic diathesis, but fifteen years before the patient had received a violent blow upon the front part of the head which caused a severe hæmorrhage followed by violent dental neuralgia. The blow probably caused a lesion of the nasal mucous membrane on a level with the orbito-nasal wall, which was followed by inoculation of the wound by communication with the external air through the nasal cavities, and by suppuration and caries of the bone, with elimination of the sequestra. In the other case the patient had had a small abscess or furuncle of the left eyebrow, which had healed without treatment. Shortly afterward a focus of inflammation appeared at the inner angle of the opposite eye, caused doubtless by inoculation with the discharge from the furuncle by the finger of the patient. The superficial abscess became deep, and this condition was still further aggravated by trophic disturbances in the cornea, and by exophthalmus.

**An Operation for Pterygium.**—Hobby ("Amer. Jour. of Ophthal.," April, 1888) suggests the following operation as an improvement on

the usual methods of operating for the relief of pterygium: The conjunctiva is to be incised along the upper margin of the pterygium and connected with a vertical incision made from the margin of the cornea upward. The pterygium is then to be separated from the cornea, and a vertical incision downward is to be made, starting from the corneal margin. The incisions in the conjunctiva are then to be extended to the base of the growth, joined, and the pterygium then carefully dissected off. With a strabismus hook the conjunctiva is to be freely detached from the sclera, so as to secure coaptation without strain. The upper flap of the conjunctiva is then to be brought down and secured by two stitches. This method secures the change of the axis of the pterygium so that it becomes tangential to the lower margin of the cornea; and, secondly, the whole cicatrix is removed from the exposed portion of the eye, and is covered by the lower lid.

**Panophthalmitis without Open Wound.**—Rallaud ("Rec. d'ophthal.," April, 1888) discusses at some length the possibility of the occurrence of panophthalmitis without the existence of any open wound, and the manner of the entrance of external microbes through the medium of the respiratory passages—that is, the nasal meatus and the lacrymal duct. He also considers the subject of the existence of germs in the healthy eye. It is a fact which can not be denied, that the internal tissues of the eye may be invaded by a suppurative process without communicating with the external air by means of an open wound of the eye or of any other part of the body, and even in the absence of any general infecting disease. This panophthalmitis is the result of two causes: 1. The presence of germs which have entered the eye from without through the medium of intact respiratory passages; and, 2, a disturbance of nutrition, transforming the media of the eye into a soil favorable for the multiplication and development of microbes.

**Pathogeny and Treatment of Progressive Myopia.**—Ruiz and Koenig (*ibid.*) present the three following propositions for acceptance: 1. The visual accommodation is not, as has hitherto been believed, a simple matter of muscular contractility for near vision and of inertia for distant vision. There is an active force, still more powerful perhaps, destined to flatten the lens and to counterbalance the action of the first. This force resides in the layer of longitudinal fibers of the chorioid mentioned by Müller and Schweigger. 2. The complications of progressive myopia—such as posterior staphyloma, liquefaction of the vitreous, and detachment of the retina—are simply the consequence of the exaggerated contraction of the longitudinal muscular layer of the chorioid. 3. To prevent the increase of a myopia and preserve vision, the ordinary therapeutic methods are insufficient. The attention of scientific surgeons should be directed to the consideration of the subject, that they may decide whether extraction of the transparent lens in cases of external myopia is not necessary to prevent further complications and to avoid the destruction of vision.

**A Form of Granular Conjunctivitis due to Syphilis.**—Goldzieher ("Ctrlbl. f. prakt. Augenh.," April, 1888) reports two cases of granular conjunctivitis which he thinks were due to syphilis. In these two syphilitic patients there was a marked diffuse infiltration of the conjunctival mucous membrane, which appeared like a pale colloid infiltration, entirely destitute of blood. In the midst appeared a mass of granulations resembling trachoma granules. Both lids were thickened, especially the lower. In the first case there was in addition a subacute iritis, and in the second case a parenchymatous inflammation of the cornea, and incipient inflammation of the uveal tract. In both cases the lymphatic glands were swollen, in the second case both general lymphadenitis and inflammation of the testicles were present. In both cases, after a systematic mercurial treatment, the inflammatory symptoms in the eyeballs disappeared, as did also the peculiar appearances in the conjunctiva, without any local treatment.

**Quinine Amblyopia.**—Lopez ("Rec. d'ophthal.," February, 1888) reports a case of this kind occurring in a man aged forty-six. Five months before Lopez saw him he had in the same day two very serious attacks of pernicious malarial fever, accompanied by coma, distortion of the mouth, and a very high temperature. For this he was given during the twenty-four hours 20 grammes, or 320 grains, of the bisulphate of quinine. When he regained consciousness on the next day he was totally deaf and blind. The hearing power soon returned, but the blindness remained complete for ten days before any improvement began. Subsequently, the malarial fever having again appeared, he took additional doses of quinine, and the sight again became much worse. The patient had a hypermetropia of D. 6, the tension was normal, and V. = $\frac{1}{3}$. When Lopez examined him he stated that he saw everything through a thin blue cloud, and that at times his vision was entirely obscured. There was paresis of accommodation. He recognized colors, but sometimes mistook green for gray and violet for blue. The visual field was narrowed to less than 20° in all directions, and upward it was absolutely limited to the point of fixation. The pupils were sluggish. The media were clear. The optic discs were ashen gray, and the arteries on their surfaces were very small and were lost a short distance beyond their margin. The improvement in vision during the five months succeeding the beginning of the attack was very slight.

**Further Experiments with Erythrophleine.**—Alt ("Amer. Jour. of Ophth.," March, 1888) finds that Merck's preparation of this drug has an undoubtedly anæsthetic effect on the conjunctiva and cornea, but differs in its action from cocaine. Even in a weak solution it causes great pain and irritation, and, although a diminution of sensibility is felt much more quickly than with cocaine, it requires much more time to produce full anæsthesia. The anæsthesia produced by erythrophleine lasts much longer than that produced by cocaine. It does not influence the accommodation, and has no influence on the sphincter of the pupil, unless it be to cause a slight myosis.

**The Influence of the Removal of the Punctum Proximum and Greater Correction with Convex Glasses in Hypermetropia.**—Culbertson (*ibid.*) suggests that the principle of removing objects in proximal vision might be advantageous in hypermetropia as well as in myopia, and that a fuller correction might be given primarily without the danger of inducing artificial myopia when the convex correcting glass is applied. He believes that a successful result is attained by the diminution of accommodation induced by removal of the object from the eye, the convex glass performing the office of the ciliary muscle, and by the relaxation of the latter, diminishing the asthenopia. This plan succeeds best in those whose age endows them with an amplitude of ciliary-muscle power, and in whom the relation of this force to the degree of hypermetropia can no longer be sustained or compensatory.

**An Operation for Simple Forms of Entropium.**—Allport (*ibid.*) suggests the following operation: A needle armed with a double thread should be inserted into the skin, midway between the external and internal canthus, and just below the upper boundary of the tarsus. The lid meanwhile should be held away from the eyeball and slightly downward by forceps. The needle should be forced directly through the lid, and on its emergence from the conjunctiva it should be pulled through until about three inches of thread remain on the outside of the lid. The needle should then be inserted into the lid from the conjunctival surface and forced again directly through the lid. On emerging on the outer side of the lid it should be pulled through and the suture snipped. The track of the two sutures should be side by side and about two lines apart. The loop of the suture should include skin, muscle, tip of tarsus, and conjunctiva, and its two ends should be tied tightly and securely. Five sutures like this should be inserted, and the lid then dressed in the ordinary way. The sutures are allowed to remain in position for a week or ten days.

**Photographing the Eye.**—Cohn ("Ctrlbl. f. prakt. Augenh.," March, 1888) believes that the main difficulty in photographing the eye has been overcome by the discovery of the so-called "lightning-powder." He has found that an almost infinitesimal quantity of this powder suffices for the best pictures. The action of this powder is so extremely rapid that the pupil of the eye which is dilated in the dark only begins to contract as the instantaneous photography by the light of the powder is completed. Cohn has succeeded in taking most perfect photographs of congenital pupillary membrane, of congenital coloboma iridis, and of the normal pupil, showing its actual size in the dark.

**The Use of Creolin in Ophthalmic Practice.**—Purtscher (*ibid.*) advises the employment of a 1-per-cent. solution of creolin in simple conjunctivitis, phlyctenular conjunctivitis, papillary trachoma, blennorrhœa of the lacrymal passages, all the varieties of ulcerative keratitis, even with hypopyum, and parenchymatous keratitis. He believes that it possesses powerful antiseptic properties. Three or four drops of the

solution may be used several times a day. It is absolutely without any poisonous qualities.

**Atrophy of the Optic Nerves associated with Dropping Fluid from the Nostril.**—Emrys-Jones ("Ophth. Rev.," April, 1888) reports a case of this kind occurring in a man, aged sixty-five, who was first seen on January 21, 1887. For twelve years he had suffered from a chronic influenza. For the last three years the discharge had not been so profuse, and from this time he dated the failure of his vision. He had had no headache for twenty years. There was no hereditary history. His sense of taste was normal, but his sense of smell was not acute. The soft palate and the nasal mucous membrane were removed. There was no thyreoid enlargement and no proptosis. There was more discharge from the left nostril than from the right, and at least half an ounce of fluid came away during an hour's time; at night there was no discharge. In the right eye, refraction hypermetropic, V. = $\frac{6}{6}$; color perception normal; irregular concentric narrowing of the field; and a white and atrophic optic disc. In the left eye, V. = counting fingers on temporal side, with marked concentric narrowing of the field and a pale atrophic optic disc. The fluid did not reduce Fehling's solution. When boiled it became cloudy, and when acetic acid was added after boiling, the precipitate became flocculent. A slight precipitate was produced by the addition of ether and absolute alcohol. It contained chlorides and traces of sulphates.

**Movable Masses of Pigment in the Anterior Chamber.**—Bock ("Kl. Mntsbl. f. Augenheilk.") reports a strange condition occurring in a man aged nineteen. He was admitted to the hospital for a pneumonia affecting the right lung. While there it was noticed that there were some dark bodies floating in the anterior chamber of which the patient knew nothing. In the right eye there was a cloudy cornea, and strabismus divergens, dating from an attack of measles in his third year. The patient died from gangrene of the lung, and the left eye was subsequently examined. Upon the inner surface of the cornea, near the angle of the anterior chamber, there were several small black bodies, which were readily removed. On examination, they were found to consist mainly of pigment cells, resembling the polygonal cells on the posterior surface of the iris. On the anterior capsule of the lens there was a ring of pigment granules corresponding to the circle of the sphincter iridis. Outside of this ring there were several small patches of pigment on the capsule. Bock regards the case as a congenital anomaly, probably one of defective involution of the pupillary membrane, with abnormally developed pigmentary excrescences on the margin of the pupil.

**A Singular Anomaly of Motility of the Eyelids and Eyes.**—Adamük (*ibid.*) reports the case of a woman, aged forty, who manifested the following strange phenomenon: With every movement of the jaws in eating, the eyelids were widely opened and the upper lids lifted up, while the eyes became more and more prominent, until they were finally entirely uncovered and exposed to view. When the patient ceased chewing, the eyes gradually receded, and the lids regained their normal position. There must have been a peculiar relation of the orbital veins to the chewing or masticating muscles, and in all probability the anomaly in question was the result of a venous stasis. The phenomena were not noticed during speaking. The condition had existed for many years and had increased in severity.

**Argyria of the Conjunctiva.**—Grossmann ("Ophth. Rev.," June, 1888) reports a case in which the left eye of a patient showed an almost black discoloration of the ocular and palpebral conjunctiva. Grossmann cut a number of small pieces out of the conjunctiva, the examination of which showed no trace of color in the epithelium. The coloring was exclusively confined to the elastic fibers, which were stained a deep brownish black, and which in teased specimens gave beautiful pictures. In some places solitary and agglomerated grains of a deep black pigment were visible. A careful examination showed that these grains of pigment were nothing but old elastic fibers, stained and broken up into a granular detritus.

**Some Points in the Physiological and Pathological Conditions of the Pupil and Accommodation.**—Jessup ("Ophth. Rev.," June, 1888) decides from his own investigations that there are no radial fibers in the iris capable of dilating the pupil. The fact that the mydriatic nerves are vaso-constrictor as well would tend to point to a change in the muscular fiber, since when the pupil is widely dilated the muscular fiber would not be so well supplied with blood. The short ciliary or myotic nerves may be traced by the lenticular ganglion to the third nerve, and to its origin from a column of nerve-cells in the anterior part of the central gray matter below the aqueduct of Silvius, beneath the anterior corpus quadrigeminum and the posterior commissure. Fibers of the third nerve pass through the red nucleus, and on emerging run through the horizontal bundle of fibers, which probably connect the two third nerves, as stimulation here gives rise to contraction of both pupils. The mydriatic nerve course is much longer than the myotic, owing to its communication with the spinal cord. The mydriatic center of Waller and Budge is described as situated in the lower cervical and upper dorsal regions, and is connected with the fibers of the second dorsal nerve. There is a center situated in the medulla oblongata connected through the spinal cord with the second dorsal nerve, as stimulation of the medulla gives rise to mydriasis if the rest of the mydriatic tract be intact.

**Sudden Blindness due to Lesions of both Occipital Lobes; Cortical Anopsia.**—Chauffard ("Rec. d'ophthal.," March, 1888) reports four cases, one of them under his own care, of this interesting disease. He considers it proved that pure hemianopsia of cerebral origin, without other sensory or motor symptoms, is due to destruction of a certain region in the occipital lobe. The appearance of the group of symptoms known as cortical blindness occurs at two different periods. The first lesion appears accompanied by a more or less pronounced hemianopsia. Then occurs the second lesion, symmetrical with the first, but in the opposite hemisphere, and complete anopsia follows. These two attacks are separated by a very variable period of time, during which the optical faculties often seem to have recovered their power. Simultaneous lesion of both occipital lobes is very exceptional. Whatever may be the method of production of the anopsia, the symptoms are always as follows: Absolute blindness even for luminous sensations; preservation of the so-called optical memory; integrity of the fundus of the eye; pupils of equal size, moderately dilated, and reacting, though somewhat sluggishly, to the reflex stimulus of light.

**Curability of Detachment of the Retina by Aspiration of the Subretinal Fluid.**—Galezowski (*ibid.*) draws the following conclusions from his own observation and experience: 1. Detachment of the retina is not an incurable disease. 2. The detached retina may regain its functions, at least throughout a certain extent. 3. Aspiration of the subretinal fluid without suture may cause an improvement in the patient's vision. 4. Aspiration with application of a suture only succeeds in a very limited number of cases.

**New Forceps for the Extraction of a Piece of the Anterior Capsule.**—Armaignac (*ibid.*) has modified his former forceps by giving to the extremity of the teeth, or biting-part, a double curvature like a bayonet, the first at right angles of one blade toward the other, the second from before backward, the curved forceps being held vertically with the concavity of the blades forward. When the forceps are held tangential to the lens, with the teeth grasping the capsule, the blades are in a plane anterior to the iris, and therefore can not grasp it when the teeth are closed, because the iris projects between the branches and still leaves an interval of more than a miliimetre and a half.

**Ophthalmic Migraine and Astigmatism.**—Martin ("Ann. d'oc.," March–April, 1888) gives the results of his observations on twenty cases of migraine with reference to the connection between this disorder and astigmatic errors of refraction. He recognizes the various forms of ophthalmic migraine admitted by Charcot. A partial contraction of the ciliary muscle was observed in all cases. A unilateral ophthalmic migraine corresponds to a unilateral partial contraction, or is localized on the side of the strongest contraction. Sometimes a unilateral ophthalmic migraine may exist in a patient with ordinary bilateral migraine. Bilateral ophthalmic migraine is accompanied by bilateral contraction. In seventeen of the twenty cases, correction of the refractive error was produced by the contraction. In those cases the contraction was spasmodic. The astigmatic theory of ophthalmic migraine is based upon the following facts: 1. The constancy of the astigmatic contraction. 2. The localization of the unilateral migraine on the side of this contraction. 3. The beneficial effect of cylindrical glasses.

**A New Practical Ophthalmometer.**—LeRoy and Dubois (*ibid.*) give the following description of their new ophthalmometer: A system of two plates of thick glass, with parallel thick surfaces, mounted in a cubical box, is placed in front of the objective of a telescope. These plates rotate round a common axis, so that when inclined upon each other they double the image of a point into two images as far from each other as may be desired. A screw, the movement of which influences the corresponding plate, arrests each of the needles in the desired position. The telescope consists of an achromatic objective of about twelve centimetres and a powerful ocular. Upon its longitudinal barrel is fixed a graduated transverse rule, and the length of the tube is so determined that the distance of the object is about three hundred and forty millimetres. This rule carries two sights, the images of which, reflected by the cornea, should be observed through the telescope. One of these sights consists of a white rectangle framed in black, while the other consists of a similar rectangle carrying seven stripes, alternately black and white, five millimetres in width. These sights are enameled and marked on a traveler. The cubical box is fixed to the telescope by a smoothly gliding ring, on the posterior border of which is a notch. A pin penetrating this notch assures to the box such a position that the axis of rotation of the plates is normal to the rule. The telescope revolves easily on its own axis, and carries a needle, parallel to the rule, which moves in front of a semicircle graduated at distances of five degrees, and indicates the inclination to the horizon of the meridian under examination. Either of the notches in the anterior borders of the cubical box and the superior border of the rule, placed at zero, forms a plane of direction which passes through the object. This plane and line of direction allow of placing the object at the point of fixation approximately, without the necessity of looking through the telescope. The telescope may be elevated or lowered on a hollow column or support, which rests on a solid tripod. Finally, a Placido's disc is added to the apparatus for the examination of irregular cornea, and when in use occupies the position of the cubical box.

**Binocular Astigmatism.**—Culbertson ("Amer. Jour. of Ophth.," May, 1888) offers the following explanation of binocular astigmatism: In binocular vision, when astigmatism is present, the distance is so great in remote vision that the visual axes are each parallel to the same perpendicular and to each other, and when the ocular muscles are harmonious in action, objects are seen in normal form. So will near vision be perfect in astigmatism, provided this due balance is maintained in these muscles. In proximal vision, the interni, inferior oblique, and superior and inferior recti muscles must exercise increased force and act in concert. If these muscles so act, there can be no binocular astigmatism which requires recorrection after each eye has been separately corrected, or in proximal vision. But if these muscles are not harmonious, then, the plane of the rays of light remaining the same—that is, vertical—and the axis of rotation of the eye at its upper extremity inclining to the right or left, it follows that the relation of the axis of the cylinder must be made to correspond with the modified position of the defective corneal meridian. In distant vision the ocular muscles may or may not be harmonious, but, if these are normally balanced in action when accommodation is at rest, this relation may be modified in near vision, and the axis of rotation so changed as to demand a recorrection for near and binocular vision.

**The Treatment of Gonorrhœal Conjunctivitis.**—Burchardt ("Ctrlbl. f. prakt. Augenh.," May, 1888) recommends the following method and instrument for exposing as large a portion as possible of the palpebral and ocular conjunctiva to local treatment: He has devised a pair of forceps, one blade of which ends in a broad plate, which is placed flatly upon the external surface of the upper lid. The other blade ends in a transverse, smooth gold clasp, about 1·5 millimetres wide and 14 millimetres long. This is passed beneath the mucous membrane of the lid. The blades are then fastened together in this position by means of a spring. As the plate is broader than the clasp by eight or nine millimetres, the free edge of the plate furnishes a transverse line of support, around which the lid turns over or becomes everted, while the other end of the forceps is forced upward toward the upper orbital margin. This exposes a large extent of the mucous surface of the lid, and to a certain extent the mucous membrane covering the eyeball, and admits of the employment of free cauterization.

**The Treatment of Dislocated Cataracts.**—Galezowski ("Rec. d'ophthal.," May, 1888) from his experience draws the following conclusions: 1. Subluxated and luxated cataracts form a variety of complicated cataracts which should be operated upon with the least possible delay in order to prevent the occurrence of consequent inflammatory symptoms. 2. The method of operating which is to be preferred to all others is the extraction by making a simple flap without iridectomy. 3. The section should be made upward, of medium length, and somewhat away from the corneal margin. 4. The curette or spoon used in extracting the dislocated lens should be relatively large and deeply hollowed.

**Blennorrhagic or Gonorrhœal Iritis.**—Despagnet (*ibid.*) reports two cases of this rather rare form of iritis, and makes the following remarks: Gonorrhœal iritis is a tolerably rare disease, and is generally preceded by an arthritis, usually of the knee, though it may occur in any articulation. The iritis may precede the arthritis by several days. There are some very rare cases in which the arthritis is entirely absent. Despagnet has seen three such attacks of iritis in the same patient without any arthritic complication. The first attack was accompanied by hypopyon, and the second by gelatinous exudation in the anterior chamber.

**Carbolized Spray in the Treatment of Diseases of the Eyelids.**—Sédan (*ibid.*) advises the use of carbolized spray, which he has found particularly beneficial in the treatment of conjunctival granulations. The solution he employs for all affections of the lids consists of a decoction of 25 grammes of coca-leaves in 258 grammes of filtered water, to which is added 1 gramme of carbolic acid. The apparatus he employs is the ordinary vaporizer sold by perfumers. The spray is used at a lukewarm temperature for five or six minutes every half-hour.

**The Relation of Myopia to Astigmatism.**—Chavel (*ibid.*), in a preliminary paper upon this subject, has determined to his own satisfaction that there is no constant relation between the inclination of the astigmatic meridians and the situation of the crescent of chorioidal atrophy met with in myopic eyes, and that the dimensions of this crescent have absolutely no connection with the existing degree of astigmatism.

**Perioptometry and Chromatopsia.**—Gillet de Grandmont ("Arch. d'ophthal.," May–June, 1888) describes a perimeter of his own invention, which he uses in his investigations, as follows: It has four arms, which form two semicircles of about thirty centimetres radius. The eye of the patient being placed, by means of a head-rest, at the center of this circumference, is thus placed at an equal distance from the point of fixation indicated by a white button situated at the point of decussation of the arms, and from their four extremities. These perimetric arcs rotate round a horizontal axis, and thus may occupy all the meridians of a sphere. The registering apparatus is connected with the arcs by means of a crank, which moves a parallelogram. Whenever the arcs incline, the crank and the parallelogram cause the plate on which the peripheral field is to be inscribed to rotate the same number of degrees. In this manner the scheme or cartoon presents its different diameters successively to the dry points which perforate it. We thus obtain a distinctly defined figure upon the card-board. On each of the arcs is an index or traveler, which moves from the point of fixation to the free end of the arc. These travelers are moved by wires which are separately rolled each upon its own drum, the rotation of which is controlled by a winch. When this is turned, all the travelers advance together, but each drum and each index may be stopped by pressing the finger upon a little key-board of four keys, appropriately marked right, left, up, or down. The head-rest may be detached from the perimeter, placed upon any tripod-stand, and employed in various ophthalmological investigations in which it is necessary to hold the head immovable. The measuring of the chromatic peripheral field, or the extent of the visual field for colors, presents some difficulties, due to the luminous impression which precedes the sensation of color. To obtain a polychromatic field, we place upon the indices colors different from each other, and which the patient has not previously seen. The travelers are then advanced by means of a crank until the patient has named each of the colors which they carry. This is repeated four times, changing the colors each time on each index, and thus the field for the different colors is marked out. This must be done rather rapidly, as

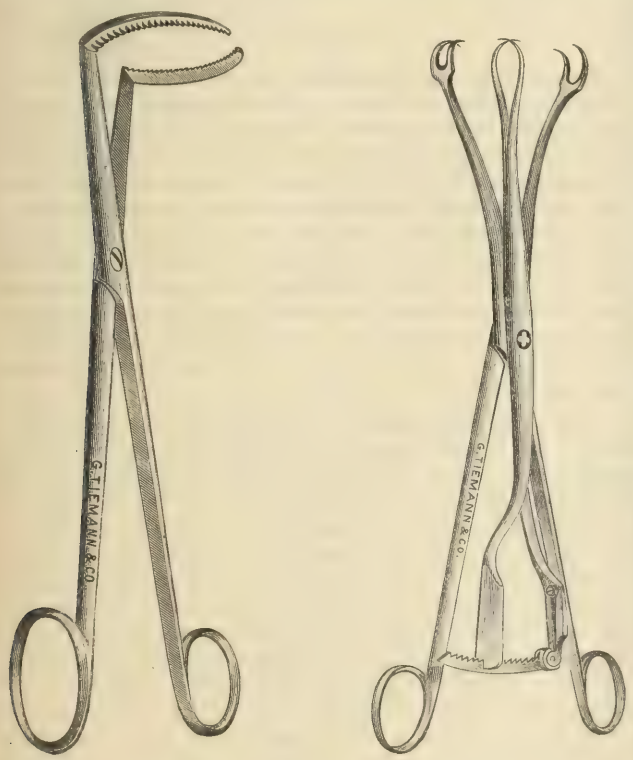
the retina soon loses its sensitiveness for colored luminous impressions. The author's registering chromatoptometer consists of a revolving disc carrying the following ten colors: violet, ultramarine blue, dark green, light green, light yellow, dark yellow, orange, carmine, lake red, and white. These colored surfaces are two centimetres square. A lid or diaphragm, descending by means of a toothed rack along the diagonal of the parallelogram, uncovers successively a square of variable extent, of which the size is indicated by a sliding-gauge. As this diaphragm descends, it carries with it a dry point which registers as it stops on the scheme or card which has been introduced into the apparatus. Thus the value of central chromatic vision is completely established.

## New Inventions, etc.

### SERRATED SCISSORS AND COMPOUND TENACULUM FOR AMPUTATION OF THE CERVIX UTERI, AND FOR THE REMOVAL OF PEDUNCULATED AND SESSILE TUMORS FROM THE CERVIX.

By William H. Wathen, M. D.,
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I devised these instruments in the fall of 1877, and have used them since in amputations of the cervix uteri and for the removal of tumors from the cervix. It will be observed that the scissors is made after the fashion of an ordinary scissors, bent at right angles on the flat, with the blades slightly curved on the edge and finely and sharply serrated. It cuts by a rotary motion; and an indurated cervix, or a hard fibroid tumor with a base two inches in diameter, may be removed by




it in a few minutes, with no more hæmorrhage than usually follows the use of the écraseur. It affords the best and the safest means to perform these operations, and in amputations of the cervix, the mucous membrane of the intra-cervical and the extra-cervical tissues may be brought together and will leave no open wound to absorb septic matter, or to heal by granulations, and probably cause cicatricial contraction of the canal such as often follows amputations by the écraseur or the galvano-cautery. This scissors has recently been much improved by Messrs. Tiemann & Co., and has been made more powerful and more aseptic. But it is necessary to have a strong double tenaculum forceps, so that the cervix or tumor may be held steady while being removed by the rotary or sawing motion of the scissors. I have improved the ordinary tenaculum by combining with it another, to be introduced into the os in amputations of the cervix and fastened into the tissue of the cervical canal. By this means we may remove a cone-shaped piece by pulling down the intra-cervical tissue before introducing the outer teeth of the tenaculum into the vaginal mucous membrane of the cervix; and by pulling gently on the tenaculum during the process of amputation, the excavation into the uterus will thereby be increased. There is no necessity of dividing the mucous membrane high up, and therefore the danger of cutting into the peritonæum is relatively less. With this scissors and tenaculum the excision may be performed without risk of wounding any part of the vagina. The tenaculum, as manufactured by Messrs. Tiemann & Co., can be immediately separated into its four parts, so as to be perfectly cleansed and made aseptic.

## Miscellany.

**Quack Advertisements in Religious Newspapers.**—When a wrong is assailed in general terms, the assault is apt to be interesting to those who participate in it, and perhaps to those who witness it; but there is some danger that it may not accomplish very much. This truth is illustrated by the results which have so far followed the attempts of various medical journals in this country to abate the evil of quack advertisements in religious newspapers. These attempts have been approved and applauded by medical men, and those who made them knew they were discharging a useful office. But the religious newspapers have not been cured; and, indeed, they do not seem to have improved materially.

One of the reasons for this is, no doubt, the fact that the attack has not been sufficiently sharp on any portion of the line to break it, and that, while the whole religious press bore the brunt of the assault, no one part experienced any special inconvenience from it.

What is now needed, we believe, is that the force of public opinion should be concentrated upon conspicuous offenders, and that an attempt should be made to compel them to regard the principles of honor and decency which they have so long violated. This is a method which is far from pleasant, but it is our honest opinion that no kindlier one will effect the object.

That our readers may understand why we say this, we inform them that we took the trouble to send our editorial of December 31, 1887—which we intended to be temperate, though plain-spoken—to the editor of almost every religious paper in the United States, and that by personal correspondence we have endeavored to enlist the self-respecting religious papers on the side of right in this matter. Some good has been accomplished. A few of the religious papers have expressed themselves as we hoped they would. More than this, a number of our medical contemporaries have added their efforts to ours, while the Medical Society of the State of Arkansas has issued a series of resolutions against the evil of false and misleading advertisements in religious newspapers, and these resolutions have been approved and indorsed by the American Medical Association.

We were glad to note, also, in the "Reporter," June 9, 1888, that a representative religious body—the General Assembly of the Presbyterian Church—at its last meeting, in Philadelphia, received and, we believe, indorsed an overture of a like character.

This much is cause for thankfulness. But much more remains to be done. How much, may be judged from the fact that, in spite of all we have said, one of the most influential Presbyterian papers in the land persistently continues to publish advertisements which any man of common sense would know to be absolutely and unblushingly false. In a recent issue of this paper there were no less than seven advertisements which deserve to be characterized in this way, including sure

cures for deafness, cancer, fits, and consumption! And the difficulty of dealing with cases of this kind may be estimated when we state that the editor of the "Reporter" has made a special attempt, by writing personally to the editor, who is also the owner, of the paper referred to, to induce him to correct the wrong he was committing.

Another illustration is furnished by one of the representative papers of the Methodist Church—a paper which is, we believe, directly governed by the ruling body of that church. The "St. Joseph Medical Herald," in May, 1888, speaking on this subject, says that this paper "sells the columns which should be filled with religious matter to the vilest impostors and most indecent advertisements of which the country can boast." This is strong language; but it is fully warranted by the circumstances.

We appreciate the good work done by religious papers, and it is for this reason that we wish to see them freed from a reproach which interferes with their usefulness and injures the cause of religion. We have tried to bring this about in a way which should not give needless offense. But, as we believe that no reform is ever accomplished without somebody being hurt, we shall not hesitate, when next we take this subject up, to lay our hands on particular religious papers and say plainly to the editor of each: "Thou art the man!"

We do not now take this step, because we hope that some to whom this charge would apply to-day will clear themselves before the time arrives to make it.

We beg our medical contemporaries to join their efforts to ours to cure this evil as gently as may be possible, but with all the firmness that may be necessary; and we beg our religious contemporaries to make our cause their own, so that we may seem rather to offer counsel to those who wish to know what is right than to formulate censure against those who choose to do what is wrong. Physicians and the clergy are usually sympathetic with, and helpful to, each other; and it would be a pity if the religious papers were to maintain an attitude which invites the distrust and—it must be said—the contempt of those who should be their best friends.—*Medical and Surgical Reporter, August 18, 1888.*

**The Congress of American Physicians and Surgeons.**—The following circular has been issued:

"Washington, D. C., *August 27, 1888.*

"My Dear Doctor: In view of the fact that frequent inquiries are made of the Committee of Arrangements by medical men and others in regard to the character of the organization now known as the Congress of American Physicians and Surgeons, which will hold its first triennial session in Washington, September 18th, 19th, and 20th, it may be proper to state that several years ago the American Surgical Association passed a series of resolutions declaring it expedient that the special medical societies in this country should adopt some plan of organization by which they should be brought together at certain stated periods, and invited the other societies to co-operate with it in perfecting such a scheme. This invitation was accepted by the several societies, and in October, 1887, a committee of conference, composed of delegates from each of the societies, assembled in this city and agreed upon a plan of association, which was subsequently considered and accepted by the societies constituting the Congress as now organized. This plan consists simply of the agreement that the medical societies named shall hold their usual annual meetings at the same time in this city every third year, and that an executive committee, composed of one member of each society accepting the agreement, shall arrange for one or more general meetings for the consideration of such medical subjects by such physicians and surgeons as it may select, to be followed by such general discussion as time may permit. The present Executive Committee is also charged with the duty of devising and submitting a plan of permanent organization, which will be considered at a preliminary meeting on Tuesday morning, September 18th. There is no membership in the Congress proper. Membership belongs exclusively to the several societies constituting the Congress. Each society prescribes its rules for admission of candidates, and transacts its business according to its own method. The Congress, as such, does not in any manner interfere with the autonomy of the several constituent societies.

"The guests are men of distinction in some special department of medical science, who have been invited by some one of the constituent societies to attend its meetings, and perhaps to present a paper on some chosen subject. They are guests of a society, not of individual members. The Committee of Arrangements has not claimed or exercised the privilege of naming guests, nor has it conceded the privilege to individual members. At its suggestion, the Executive Committee has invited the heads of the government bureaus of medicine, the president of the last International Congress, and several citizens to whom it was indebted for courtesies. In the event there should be present from abroad any medical man who may not have been specially invited, the Committee will hold itself bound by ordinary courtesy to include him in the list of guests.

"The meetings of the Congress and of the societies will be open to the profession. Any medical man who may choose to attend has the privilege of doing so; but the privilege of taking part in the discussions will be limited to the members, guests, and those who may be invited to do so by the societies respectively. The invitation to attend the meetings and engage in discussion will not, however, entitle one to the privileges of a guest.

"Members and visitors must avail themselves of the ordinary excursion rates of railroad fare.

"The postmaster of this city has arranged facilities for the distribution of the mail at the office of registration, in Willard's Hotel. Letters must be addressed to 'The Congress of American Physicians and Surgeons.'

"It may be added that the Committee of Arrangements declines to make any provision for, or to have anything to do with, any exhibit of pharmaceutical preparations and medical and surgical appliances.

"I assume the responsibility of making the foregoing statement for the information of those concerned, and to avoid confusion and misunderstanding. And it gives me great pleasure to announce that the meeting in every aspect promises to be a conspicuous success.

"Yours truly,

"Samuel C. Busey, M. D.,

"*Chairman Committee of Arrangements.*"

**Creolin and Bacillus Pyocyaneus.**—"Dr. Klamann, writing in the 'Allgemeine medicinische Central-Zeitung' on Creolin Dressings," says the "Lancet," "gives some cases in which *Bacillus pyocyaneus* was found in the dressings, and cultivations of it obtained. This, however, did not appear to interfere with the healing of the wounds, but Dr. Klamann says that he never found this organism when gauze impregnated with corrosive sublimate or carbolized cotton-wool were used. He remarks that when a creolin lotion containing more than 2 per cent. is used for moistening the dressings they become unbearable from the pain produced. Latterly he has confined himself to dry creolin dressings, and is well satisfied with the results obtained. In case of burns he uses creolin oil of the strength of 1 per cent., and finds that this acts exceedingly well."

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending August 24th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending August 4th corresponded to an annual rate of 16 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 9, and the highest in Manchester, viz., 21·9 in a thousand. Small-pox caused 2 deaths in Preston, 1 in Oldham, 1 in Sheffield, and 1 in Hull. Diphtheria caused 3 deaths in Manchester.

*London.*—One thousand three hundred and nine deaths were registered during the week, including measles, 29; scarlet fever, 18; diphtheria, 19; whooping-cough, 25; enteric fever, 9; diarrhœa and dysentery, 121; simple cholera and choleraic diarrhœa, 4. Diseases of the respiratory organs caused 167 deaths; different forms of violence, 49; and 6 suicides were registered. The deaths from all causes corresponded to an annual rate of 15·9 in a thousand. In greater London 1,593 deaths were registered, corresponding to an annual rate of 15 in a thousand of the population. In the "outer ring" 9 deaths

from whooping-cough, 16 from diarrhœa, 5 from diphtheria, and 5 from measles were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending August 4th in the sixteen principal town districts of Ireland was 18·2 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 0, and the highest in Kilkenny, viz., 29·6 in a thousand. In Dublin 143 deaths were registered, including whooping-cough, 11; enteric fever, 4; scarlet fever, 3; and diarrhœa, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending August 4th corresponded to an annual rate of 15·9 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Perth, viz., 6·4, and the highest in Aberdeen, viz., 18·7 in a thousand. The aggregate number of deaths registered from all causes was 402, including measles, 3; scarlet fever, 3; diphtheria, 2; whooping-cough, 5; fever, 3; and diarrhœa, 22.

*Marseilles, France.*—Eight hundred and ninety deaths were registered during the month of July, 1888, including sporadic cholera, 1; small-pox, 9; enteric fever, 37; scarlet fever, 1; diphtheria and croup, 28; and measles, 45. The consul stated in his report, dated August 6th: "The health of the city is remarkably good for mid-summer. The one case of sporadic cholera is only an ordinary event here."

*Catania, Italy.*—Four hundred and thirty-eight deaths were registered for the month of June, 1888, including small-pox, 77, and enteric fever, 10.

*Ceara, Brazil.*—One hundred and thirty-four deaths were registered for the month of June, 1888, including 2 from yellow fever.

*Montevideo.*—Four hundred and thirty-nine deaths were registered during the month of June, 1888, including 79 from small-pox.

*Malta and Goza.*—Three hundred and seventy deaths were registered during the month of June, 1888, including measles, 2; whooping-cough, 7; diphtheria, 1; enteric fever, 1; dysentery, 4.

*Hong-Kong, China.*—In response to a cablegram from the Department of State, "Does cholera exist in Hong-Kong?" the consul replied as follows, under date of August 15th: "No cholera, Hong-Kong."

*Havana, Cuba.*—Twenty-six deaths from yellow fever are reported for the week ending August 10th.

*Cairo, Egypt.*—The consul-general, in his dispatch dated July 23, 1888, states that "on the night of the 15th of June a heat-wave spread itself over Egypt, and it has since remained continuously. In a residence of three summers here I have experienced nothing comparable to it. The days have given air like that from the blast of a fiery furnace, while the nights have been intolerable from heat. The death-rate throughout Egypt, which was already very high, suddenly mounted toward figures of decimation, and the destroyer has been reaping a great harvest of the dead. For the first week of this very hot weather the death-rate rose in Cairo from a little over 40 to 76·8. The next week it was 71·6, the next 79·1, succeeded for the fourth week by 77·7. These figures present the average. In Bodlac and Darb-el-Ahmar, two quarters of the city, the death-rate was respectively 103 and 86·5, in one case more than decimation, in the other very nearly decimation. Truly no Indian death-rate, except in periods of wide-spread and most fatal epidemics, reaches the present record in the Egyptian capital.

"For five years past the health of Cairo has been growing worse, and yet during these years a special detail of English sanitary experts has been supervising a Khedival sanitary department, the main object of which has been to look after the health of the most crowded Egyptian communities. The sanitary administration costs the Egyptian Government annually about $200,000, not inclusive of publications and police service. The health of the large cities grows worse every year. The heavy summer death-rate begins earlier in Cairo than in Alexandria. Just now a decidedly increased mortality is prevalent in the latter, and, following precedent, it will be much greater in August. Last year the death-rate at one time in Alexandria was about equal to what it now is in Cairo. In some of the smaller cities the mortality has this year been greater even than the Cairo average, and about Damietta there has been typhus fever of a very fatal character. The rise of the Nile produces great humidity, and during August, September, and October no abatement of sickness may be hoped for. By the 1st of November a pleasing change comes, and from then until in the spring the temperature will be mild, the climate delightful, and health, for Egyptians, fairly good. It is gratifying, even under this burning sun and in hearing of these never-ending songs of death, to know that a season will come against which but few if any complaints may be entered."

July 25th: "The average death-rate for the week ending July 19th, as shown in the health bulletin, reaches 97·2, while in Darb-el-Ahmer quarter it amounted to 126, and in Bodlac quarter to 100. Total deaths in this city were 685.

"The average maximum temperature for the same week was 106·5° F.; extreme heat, 114·5°. The average minimum temperature was 72·3°; the extreme minimum, 72·2°. The observations are taken at the Khedival Observatory, at Abbaseieh, two miles north of Cairo, where the unobstructed sea-breezes produce a lower temperature than in the city or south of it. Were it not for the great relief in temperature at night, existence would be unendurable."

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever | Diphtheria. | Measles. | Whooping-cough. |
| Paris | August 4. | 2,260,945 | 781 | .. | .... | 1 | .... | 7 | 2 | 27 | 20 | 4 |
| Glasgow | August 4. | 545,678 | 184 | .. | .... | .. | .... | 3 | 1 | 1 | .. | .... |
| Warsaw | July 28. | 444,814 | 220 | .. | .... | 13 | .... | .... | 7 | 3 | .. | .... |
| Calcutta | July 7. | 433,219 | 163 | 10 | .... | 1 | .... | .... | .. | .. | .. | .... |
| Amsterdam | August 4. | 389,916 | 127 | .. | .... | .. | .... | .... | .. | 1 | .. | .... |
| Rome | June 23. | 300,467 | 204 | .. | .... | .. | .... | 6 | .. | 4 | .. | .... |
| Rome | June 30. | 300,467 | 213 | .. | .... | .. | .... | 3 | .. | 2 | .. | .... |
| Copenhagen | July 31. | 300,000 | 118 | .. | .... | .. | .... | .... | 3 | 3 | .. | .... |
| Munich | July 28. | 275,000 | 172 | .. | .... | .. | .... | 1 | 6 | 5 | .. | .... |
| Palermo | August 4. | 250,000 | 82 | .. | .... | .. | .... | .... | 2 | 1 | .. | .... |
| Belfast | August 4. | 227,022 | 87 | .. | .... | .. | .... | .... | 3 | 1 | .. | .... |
| Genoa | August 4. | 179,623 | 85 | .. | .... | .. | 1 | .... | .. | 1 | .. | .... |
| Stuttgart | August 4. | 125,510 | 31 | .. | .... | .. | .... | .... | 1 | 2 | .. | .... |
| Bremen | July 28. | 122,000 | 35 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Havre | July 28. | 112,074 | 70 | .. | .... | 2 | .... | 10 | 3 | .. | .. | .... |
| Havre | August 4. | 112,074 | 70 | .. | .... | 1 | .... | 14 | .. | .. | .. | .... |
| Pernambuco | July 17. | 110,000 | 84 | .. | .... | .. | 1 | 3 | .. | .. | .. | .... |
| Pernambuco | July 24. | 110,000 | 92 | .. | .... | .. | 1 | 1 | 1 | .. | .. | .... |
| Pernambuco | July 31. | 110,000 | 92 | .. | .. | .. | 1 | 1 | 1 | .. | .. | .... |
| Barmen | August 4. | 109,000 | 36 | .. | .... | .. | 1 | .... | .. | .. | .. | .... |
| Leghorn | August 5. | 94,423 | 35 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Cadiz | August 4. | 65,028 | 37 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Guayaquil | July 15. | 30,000 | 49 | .. | 3 | 1 | .... | 1 | .. | .. | .. | .... |
| Curaçoa | July 28. | 25,000 | 6 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Vera Cruz | August 9. | 23,800 | 19 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Gibraltar | July 29. | 23,631 | 14 | .. | .... | .. | .... | 1 | .. | .. | .. | .... |
| Kingston, Can | Aug. 18. | 16,216 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Antigua | July 29. | 15,847 | 18 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Sagua la Grande | August 4. | 15,605 | 17 | .. | 2 | .. | .... | .... | .. | .. | .. | .... |
| Cartagena, Cola | July 28. | 13,000 | 10 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Matamoras | August 4. | 12,000 | 10 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Laguayra | July 28. | 7,428 | 2 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| San Juan del Norte | July 9. | 780 | 1 | .. | .... | .. | .... | .... | .. | .. | .. | .... |

UNITED STATES.

*Ship Island Quarantine Station.*—The medical officer in charge reports the arrival, August 13th, of the American barkentine Joe Read, from Havana *via* Apalachicola, Fla. "Her bill of health was foul, and her steward was left sick in Havana, with 'symptoms of yellow fever,' about four hours before she left that port."

*Brownsville, Tex.*—The Secretary of the Treasury received a telegram from the collector of customs, Brownsville, Tex., as follows:

August 14th: "State health officer proclaimed quarantine against Matamoras yesterday, on account of arrival of cargo and passengers direct from Vera Cruz. No sickness known to be among passengers or on vessel. Customs officers at Brownsville, Santa Maria, and Brazos have been instructed to assist State officers."

*Cape Charles Quarantine Station.*—Acting Assistant Surgeon Clark son telegraphed:

August 18th: "Sick seaman on steamship Athens, died same day (August 17th). Diagnosis not positive. No others sick. Will use every precaution. The vessel is now in quarantine."

*Orlando and Sanford, Fla.*—The mayor of Orlando and the mayor of Sanford telegraphed, August 18th, "there is no yellow fever in Orlando and Sanford or Orange County," and asked investigation, as their mails are threatened to be cut off.

*Manatee, Fla.*—Surgeon Murray telegraphed:

August 18th: "Manatee—total, 25 cases; none since 11th. Village fumigated, and bedding cleaned. Palmetto—1 case 15th; for 16th, 2;

17th, 2. No connection with Manatee cases. Restrictive measures adopted."

*Tampa, Fla.*—Dr. J. P. Wall telegraphed:

August 18th: "Only 1 mild case since last report. Eleven cases in all, in 8 of which diagnosis positive. Three deaths with black-vomit. Another fever, probably mild dengue, here. Only 1 case of yellow fever under treatment."

August 20th: "Outlook better."

*Jacksonville, Fla.*—Dr. Neal Mitchell telegraphed:

August 17th: "Official bulletin for 24 hours ending 6 P. M.—New cases, 4—total number of cases to date, 32; total number of deaths to date, 4."

August 18th: "Official bulletin for 24 hours ending 6 P. M.—New case, 1; death, 1; recovered, 2; under treatment, 18—total number of cases to date, 33; total number of deaths to date, 5. Fever assuming a more severe type."

August 19th: "Official bulletin for 24 hours ending 6 P. M.—New cases, 5, one being an African; death, 1; under treatment, 22. Number of cases to date, 38; total number of deaths to date, 6."

August 23d: "Official bulletin for 24 hours ending 6 P. M.—New cases, 16; deaths, 2; recoveries, 2; under treatment, 43. Total number of cases to date, 70; total number of deaths to date, 10."

August 24th: "Official bulletin for 24 hours ending 6 P. M.—New cases, 14; deaths, 2; recoveries, 1; under treatment, 54. Total number of cases to date, 84; total number of deaths to date, 12."

*Other Places in Florida.*—A sanitary inspection is now being conducted under the direction of this Bureau, with a view of obtaining definite information from other places in Florida, and removing, if possible, restrictions from places not infected.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Varioloid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
| New York, N. Y.... | August 18. | 1,532,060 | 802 | .. | .. | .. | .. | .. | .. | 8 | 8 | 40 | 13 | 24 |
| Chicago, Ill..... | August 18. | 800,000 | 339 | .. | .. | .. | .. | .. | .. | 9 | .. | 9 | 8 | 4 |
| Brooklyn, N. Y.... | August 11. | 793,960 | 366 | .. | 2 | .. | .. | .. | .. | 3 | 1 | 17 | .. | 4 |
| Baltimore, Md..... | August 18. | 431,879 | 224 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 5 |
| Boston, Mass..... | August 18. | 415,000 | ..... | .. | .. | .. | .. | .. | .. | 2 | 1 | 7 | .. | 3 |
| San Francisco, Cal. | August 10. | 300,000 | 98 | .. | .. | .. | .. | .. | .. | 2 | .. | 3 | .. | .... |
| New Orleans, La... | August 11. | 248,000 | 109 | .. | .. | .. | .. | .. | .. | 1 | 1 | 11 | .. | .... |
| Buffalo, N. Y..... | August 11. | 230,000 | 136 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Buffalo, N. Y..... | August 18. | 230,000 | 135 | .. | .. | 1 | .. | .. | .. | 1 | 1 | 3 | .. | .... |
| Pittsburgh, Pa..... | August 18. | 230,000 | 96 | .. | .. | .. | .. | .. | .. | 6 | 1 | 4 | 1 | 3 |
| Washington, D.C .. | August 18. | 225,000 | 110 | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | 5 |
| Cleveland, Ohio.... | July 21. | 225,000 | 140 | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | 2 |
| Cleveland, Ohio.... | July 28. | 225,000 | 151 | .. | .. | .. | .. | .. | .. | 3 | 1 | 3 | 1 | 2 |
| Louisville, Ky..... | August 18. | 200,000 | 60 | .. | .. | .. | .. | .. | .. | 4 | .. | 1 | .. | .... |
| Milwaukee, Wis ... | August 18. | 195,000 | 78 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Kansas City, Mo.... | August 18. | 180,000 | 59 | .. | .. | .. | .. | .. | .. | 11 | .. | .. | .. | .... |
| Minneapolis, Minn. | August 17. | 180,000 | 79 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |
| St. Paul, Minn..... | August 18. | 175,000 | 49 | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | 1 | .... |
| Rochester, N. Y.... | August 18. | 120,000 | 68 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| Detroit, Mich..... | August 18. | 116,340 | 98 | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | ... |
| Richmond, Va..... | August 11. | 100,000 | 51 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Denver, Col..... | August 17. | 96,000 | 33 | .. | .. | .. | .. | .. | .. | 6 | .. | 4 | .. | .... |
| Columbus, Ohio ... | August 18. | 93,000 | 33 | .. | .. | .. | .. | .. | .. | 6 | .. | .. | .. | 1 |
| New Haven, Conn. | August 18. | 82,000 | 32 | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .... |
| Toledo, Ohio ..... | August 18. | 80,000 | 21 | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .... |
| Nashville, Tenn.... | August 18. | 65,153 | 24 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| Fall River, Mass... | August 18. | 65,000 | 36 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Cambridge, Mass... | August 18. | 64,079 | 26 | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | 2 |
| Charleston, S. C.... | August 18. | 60,145 | 50 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 |
| Evansville, Ind .... | August 16. | 53,000 | 20 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Lynn, Mass..... | August 18. | 50,000 | 22 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Oakland, Cal ..... | August 11. | 50,000 | 16 | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .... |
| Manchester, N. H.. | August 18. | 41,000 | 23 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Galveston, Texas.. | August 10. | 40,000 | 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Mobile, Ala..... | August 18. | 40,000 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| E. Saginaw, Mich.. | August 20. | 34,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Burlington, Ia..... | August 15. | 30,166 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Davenport, Ia..... | August 20. | 30,084 | 10 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .... |
| Altoona, Pa..... | August 11. | 29,546 | 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Salem, Mass..... | August 18. | 29,000 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Yonkers, N. Y..... | August 18. | 27,500 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| New Bedford, Mass | August 18. | 26,845 | 25 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Auburn, N. Y..... | August 18. | 26,000 | 9 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Haverhill, Mass.... | August 18. | 25,000 | 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Jackson, Mich..... | August 8. | 22,500 | 16 | .. | .. | .. | .. | .. | .. | 1 | .. | 3 | .. | .... |
| Newport, R. I..... | August 16. | 20,466 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |

**Myopia.**—According to the "Lancet," "a very sensible decree has just been issued by the Austrian Minister of Public Instruction, forbidding the use of books printed with small type in public schools, as short-sightedness is so prevalent among school-children in Austria. Scientific supervision might very properly be given to school-books in this country, attention being especially directed to the size of the type, length of line, and spacing of letters and lines. In the works published by the 'Clarendon Press' no fault can be found in these respects, and, speaking generally, the school-books of this country are well printed. The chief fault in German books is their adherence to the very dazzling Old English shape of the letters, which certainly severely tries the eyes by necessitating very close attention, and the evil effects of this is aided by the paper being coarse and by the light supplied being usually insufficient."

## ANSWERS TO CORRESPONDENTS.

*No. 223.*—Twenty-two grains of salicylic acid and eight grains of prepared chalk are mixed and divided into six powders (of five grains each) or ten powders (of three grains each). One to be given every two to four hours. In a private communication the author states that he has found them of avail only in the non-inflammatory serous diarrhœas of infants. For further particulars, see the "Proceedings of the Medical Society of the County of Kings," September, 1880, page 223.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### THE IMMEDIATE REPAIR OF LACERATIONS OF THE CERVIX AND PERINÆUM.*

BY ARTHUR B. TOWNSHEND, M. D.,
ASSISTANT SURGEON TO THE WOMAN'S HOSPITAL IN THE STATE OF NEW YORK.

EACH of the several specialties has certain fields wherein the lines between it and some of the other specialties can only indefinitely be drawn; and of these none are less clearly so drawn than those between obstetrics and gynæcology. Therefore, by entering a region where these two so intimately blend that an arbitrary limit by time is the only one, it is hoped to interest more than by following one of the more clearly defined and strictly gynæcological problems. Two of the injuries that may take place at childbirth may, I hope, be profitably discussed. It is not the object to discuss the rare injuries that come forward more as curiosities than matters of particular moment, but those that any of us may and probably all have seen while attending cases of confinement.

In looking over the case-books of the Woman's Hospital, one could not help being struck with the frequent occurrence of the diagnosis of lacerated cervix and perinæum —so much so as to make one seriously wonder if nearly all of the babies tore their way into the air instead of passing, as we are wont to believe, through apertures which Nature intended should be ample for their passage. Be the intention as it may, it is true that a very large proportion take the former method. That some degree of abrasion is the rule, and in the cases of primiparous women the necessity, all will admit, but there are still a very large number of practitioners, and even some who think themselves especially well versed in obstetric art, who say that they very seldom see lacerations worthy of particular attention, and so give them none, wondering where so many women who had them could have come from. These good men go on congratulating themselves on their good results as compared with those of the men who do see these lacerations, and the gynæcologist reaps his (we hope to come) harvest when the patients of these men fall in his way. The men who do not see lacerations due to parturition are the men who do not look for them, or, looking blindly, do not recognize them.

No statistics of value can be given at the present day that will give even a reasonable approximation in percentages of the number of lacerations to the number of children born; but I am satisfied, from the statements, written and spoken, of authorities on these matters, and from the results of my own examinations in dispensary and private practice, that the ratio is a vastly greater one than ever enters the mind of the general practitioner, even though obstetrics occupy much of his time.

If it should be said to be one half, or one third, or one quarter, by calling it in question you would undoubtedly have the advantage in that one could produce no proof—at east, perhaps, none you would admit; but at the latter figure one might rest, knowing that you could not safely contradict him. It is probable that lacerations of the cervix uteri occur more frequently than those of the perinæum, and also are much less frequently noted at the time, for it has been my fortune to see comparatively very few cervices of women who had borne children in which that fact was not perfectly apparent without information on their part.

That all of these were of considerable or sufficient extent to need operative interference is not meant, but it is meant that a very large number were such, and certainly a larger number than the one fourth mentioned would in no wise answer the ordinary text-book description of a cervix with a small oval opening of the cervical canal. In many of the cases, too, in which such a description would seem to be near the truth, a careful examination will reveal the presence of a scar running for some distance into the cervical tissue, and the finger will recognize the familiar cicatricial line—the finger being by far the safer guide, for even though, by an ocular examination, there is seen as perfect and shapely a cervix and os as any plate can depict, the tear in the cervical tissue may have not united to any degree, and a large plug of hardened scar-tissue may fill the gap, with the mucous membrane so nicely covering Nature's bad result as to perfectly deceive until the finger detects the error, and this will be verified when a section is made in the operation for its removal.

Of the causes which, singly or in combination, lead to tearing of the cervix, except perhaps by enumerating some of them, it is not the purpose here to speak: for, whether from undue size of the head, faulty presentation, too rapid dilatation, the use of forceps, the presence of cicatrices from previous tears, etc., the engendered condition is the same, and its conduct can be considered without reference to its cause; neither will the many conjectures and much-talked-of ways of possibly preventing all or any part of these causes need mention here.

It very often happens that we are made aware of the laceration in the cervix while the head of the child is forcing an exit through it; in some cases, before there is a tear, one may be very sure there will be one, and possibly may make out its probable location, to be confirmed after delivery.

As quickly as may be after the delivery a careful examination should be made of the margin of the os with the finger, and one can easily satisfy himself of the location and probable extent of any laceration or lacerations. This is especially necessary when there is bleeding not to be accounted for by other causes, as it is not unlikely that a vessel of sufficient size to cause very considerable loss of blood may be torn while time is being wasted with ergot and efforts to excite uterine contraction. This most often happens when an old cicatrix is torn across and the mouth of the vessel fails to contract in the hardened tissue.

Pressure with the finger at the base of the tear, if possible from the inside toward some firm portion of the pelvis, may often cause the stoppage of the hæmorrhage, and once stopped, it seldom starts again. The injection of very hot water, perhaps with the idea of arresting hæmorrhage

* Read before the Hospital Graduates' Club, March 17, 1887.

higher up, no doubt often checks that from the cervix as well, without our definite knowledge of it. It is presumptive evidence, however, when a uterus is firmly contracted and we can distinctly feel an extensive laceration, that there is need of examining farther and more carefully at its bottom if the bleeding is still taking place. It is seldom, fortunately, that bleeding to an alarming extent will occur; however, if there be any, it will be much better to examine immediately with a speculum, and, if its source be found, proceed to arrest it.

If the necessary appliances are to be had—and there is seldom such stress of time as to make their procurement impracticable—by far the better method is by means of the suture, silver or catgut, and to close the tear completely at the same time. If these are not to be had, a light tampon with a pad of styptic cotton should be employed, after the bleeding has been controlled by pressure.

Some members of the profession strongly advocate the immediate suture of all lacerations of the cervix by silver wire, and claim very beneficial results. It is not the custom of by far the larger portion of obstetricians, even when possessed of gynæcological skill, nor do I believe it ever will be. A far better time for this is when the patient has recovered from the effects of the labor; when repair is certain and easy, since repair at the time of labor in the kind of tissue dealt with must be both difficult and uncertain. A large proportion of the lacerated cervices that come under observation at periods of some length subsequent to the time of injury are found to have suffered loss of tissue from sloughing, caused by pressure between the head of the child and the harder portions of the pelvis. It is also more than likely, in many cases where the tear at the time of labor would seem small, that sloughing takes place to an extent that leaves the cervix in a worse condition than would result in other cases from a far greater but a cleaner tear. The labors in which lacerations of the cervix have taken place are, other things being equal, those in which the mother is put under the greatest strain from exhausting efforts to force open an unyielding os, and in many cases the loss of blood will have added to that strain upon her about all that she could bear. An operation will necessarily add another and considerable element to that strain, which of itself would in most cases be sufficient to deter the careful man from taking the chance. Again, taking into consideration the necessary pain inflicted if the operation be done without an anæsthetic, or the further element, though perhaps small, of the depressing effect of one, as one must needs be given if the perinæum be torn and sensitive at the same time, these several reasons seem to me to fully fortify the position taken against the immediate operation, and it is difficult to see how any of these conditions can ever be so changed as to warrant the procedure, except in the very limited number of instances before mentioned.

If one sees a number of these cases he can not help being struck with the fact that Nature tries to be very kind to a torn and bruised cervix, and will often be surprised in seeing a pretty well preserved organ where the only thing in his mind's eye was a sadly distorted relic. Then, if she has not been able to accomplish all you desire in her first effort, give her another opportunity by doing a careful operation before the time when the long list of often very curious reflex symptoms shall have established themselves, and an irritated and discouraged nervous system has been broken under the strain. This will accomplish with very slight risk what you would have been very unlikely to have accomplished at all with considerable risk.

After so much of what should not be done, a few words will suffice for what should be done. In the after-treatment of injuries from labor is one of the places where antisepsis shines most conspicuously, not, however, by the use of any particular germicide, or even of any, but antisepsis in its broader and better sense of the utmost cleanliness. Given the most perfect conditions to start with, we still have here a state of affairs offering the most beautiful breeding-ground for the things we know only enough about to thoroughly fear, and as yet to attempt in these cases imperfectly to prevent their development—a partially closed cavity constantly filled with disintegrating tissue, and often the resultants of sloughing as well. The vaginal douche offers the means of preventing sepsis, and too much care can not be enforced to make this thorough and frequently repeated, and for extra safety to contain some one of the accepted antiseptics. It should be given at least twice daily, forcing with moderate strength a continuous stream of water at a temperature as hot as may be borne during ten minutes' time. When symptoms of septic infection develop, increase the frequency to one douche every two or three hours, or even every hour if need be, forcing the water to the fundus of the uterus.

In the discussion of puerperal septicæmia very little stress is ordinarily put upon the part a lacerated cervix may play in the matter, and existing trouble is all referred to absorption taking place in the fundus. That this view is sometimes inaccurate is made manifest by the fact that simple vaginal injections will promptly reduce the temperature in a great many cases in which the internal os is so small as to preclude the entrance of any amount of the injected fluid.

Naturally, in cases in which absorption is taking place higher up, the cervix will be equally well cleansed at the time by the intra-uterine douche, and a regard for safety will indicate that this be employed. The result most to be feared in extensive lacerations of the cervix is not a septicæmia endangering life, but a sufficient absorption, in connection with the mechanical violence, to produce extensive cellulitis in the uterine supports and appendages, chiefly in the broad ligaments, and thus to render convalescence painful and tedious.

Too much stress can not be laid on the necessity for keeping patients with such lacerations in bed until this condition has passed; as a month, or even two, lost at this time, counts for nothing as against the years of suffering from chronic cellulitis, should that unhappy process be allowed to assert itself. In the acute stage, complete rest and the use of hot water will in a few weeks produce results which can only be attained in a greater number of months if any mistake in this regard should be made.

Important as the care of lacerations of the cervix may be under some circumstances to the obstetrician, and interesting as they are to the gynæcologist at a later period, it is when lacerations of the perinæum occur that the attendant to the lying in chamber must combine these two offices and put into practice sufficient of operative gynæcology to render the aid of that specialist for its further after-treatment unnecessary. In other words, the problem is one of simple surgical restoration of parts injured, and the obstetrician's work has ended for the gynæcologist's to immediately begin.

That a laceration of the cervix might be overlooked, or, if looked for hurriedly, should not be seen amidst the excitement of the lying-in chamber, is not strange, and after the conclusions drawn it may be forgiven, but not so in regard to the laceration of the perinæum.

Here the condition of affairs in some most important particular is very materially changed, and it can be easily shown that the conclusion from these conditions must be changed also. The most cursory examination reveals the condition of the perinæum, and, without loss of time and with the minimum of pain to the patient, the nature of its tear, if it be so unfortunate as to have one, may be precisely made out. Under the best light to be obtained, separate the limbs widely, open the labia carefully, and sponge the parts clean. If you have previously given an anæsthetic, continue its administration until the matter of the necessity of employing the suture is determined. So far as the question of immediate operation is concerned, three degrees of laceration are to be considered: 1. A simple tear of the mucous membrane longitudinally at the base of the hymen and perhaps extending into the vagina and outward toward the skin for a short distance, but involving only the mucous membrane. 2. Tears involving the separation of the fascia and muscles comprising the so-called perineal body to any extent greater than that of the first degree, and not involving the sphincter ani. 3. Tears extending through the sphincter ani, and perhaps the wall of the gut. The first of these needs no treatment except the maintenance of cleanliness; it will promptly take care of itself quite as well as it can be cared for.

The reasons for operation in the second and third conditions which make it proper here and wrong in the cervix are these: The tear is clean, and very rarely does it happen that any loss of tissue takes place. The results of the operation are eminently satisfactory as to the restoration of the parts to their natural condition, and in cases of the second class the operation is easily and quickly done.

In the third class the condition is such as to make the performance of the operation imperative, even at the risk of continuing the administration of the anæsthetic, of increasing the shock, or of anything except immediate danger to the life of the woman.

There are few more vexing operations in surgery than that for the repair of a complete laceration of the perinæum during a period far removed from the time of injury, when the sphincter ani has contracted and has become to any degree atrophied—a condition which takes place in a very short time. The great advantage of a careful closure of the tear at the time it occurs, when the ends can be easily brought together and kept there, admits of no argument, and any man would be deserving of the severest censure who does not make every effort to attain that result.

There is at the present time an animated discussion taking place as to the nature of these tears, chiefly as to their direction and as to what tissues are torn, and upon these observations several quite different operations for the repair of the injury at a period remote from its occurrence have been devised. The problem at the time of its occurrence is, however, in most cases a very simple one, and the direction of the lines of the tear which it is necessary to coapt admits of no debate. These are by no means exactly in the median line, and may run at various angles, but in nearly all cases the tear is essentially in the axis of the vagina, and its closure is accomplished by a single line of sutures.

Although the word immediate has been constantly used in this connection, it has not been used with the idea that the closure is best accomplished immediately after the tear, but in the sense of closure before a time requiring fresh denudation of the torn surfaces. This time is one of considerable latitude, and must be governed by the conditions surrounding each case. If the tear be a simple one, and the patient be in good condition also, an anæsthetic having been given in the latter stages of labor, then by all means operate at once. In by far the greater number of cases, however, it will be found that this happy combination of circumstances does not exist, and further action had better be delayed. In the single case of hæmorrhage from a large vessel in the perinæum is this delay precluded.

In many cases the tissues become œdematous before the tear takes place, and if sutures were introduced they would be of no avail, as they become so loosened within twenty-four hours that no coaptation can exist.

The appearance of the laceration at the time of its occurrence is always exaggerated, especially if it be of the first and second class, on account of the great distension which the parts have suffered, and the most careful examinations fail to exactly determine its depth. In a tear of the first degree, with the perinæum so thinned that it seems but a thick band of tissue, a simple tear through the mucous membrane may make it appear as though nearly severed. In a day or two afterward, when the perinæum has regained its tone, the simple character of the tear is shown, and a useless operation has been avoided.

Furthermore, for the same reason mentioned in the case of laceration of the cervix, the woman has by this time borne enough. It is, however, best always to state the necessity for further procedure, and there will then be no misgivings on the patient's part when such proceeding is subsequently carried out.

Results show that there is nothing lost by reasonable delay. On the contrary, much is to be gained, and, though differences of opinion exist at present, certainly the tendency of the best practice must be in the line indicated.

In from twenty-four to forty-eight hours' time after the confinement the swelling will usually have disappeared, and the tissues will have so far regained their tone as to make it easy to introduce the sutures and to produce perfect coaptation; should the parts yet be swollen, wait until the

made out. Especially is this desirable if the sphincter ani be involved.

If for any reason the time must be extended until granulation is taking place, and the edges begin to be encroached upon by the new mucous membrane, refresh them slightly with scissors and scrape lightly the surface of the wound. As to the choice of material for suture in any simple case, either silk or catgut will answer, but catgut is preferable; but if there be much traction, and in all cases of the third class, dependence is much more wisely placed in silver wire for the deeper sutures, and either of the others for superficial ones if they be necessary to the perfect closure of the wound.

In tears of the second degree a straight needle of about an inch and a quarter in length, used in a simple needle-holder, answers every purpose.

Beginning at the upper end of the wound, and far enough from the edge to insure a firm hold in the mucous membrane, encircle the base of the wound, if necessary, bringing the needle out at the bottom of the wound, passing it in again at the same place, and bringing it out on the opposite side. Then continue with interrupted sutures sufficiently close together to prevent the lochia from entering the line. If at the crest of the perinæum tension exists, insert one or two deeper wire sutures for additional support.

In lacerations of the third class, if the tear extend up the gut, close it to the margin of the anus by catgut sutures introduced from the rectal side, including only the mucous membrane of the rectum and sufficient underlying tissue to secure perfect coaptation. Then, through the skin outside of the torn ends of the sphincter, at a point at least half an inch from the margin of the wound, pass a straight needle, armed with silver wire, obliquely through the sphincter, including the fibers nearest the anus, upward and backward to, but not through, the rectal mucous membrane, bringing it out at a corresponding point on the opposite side. Similarly two or, if necessary, three sutures should be passed through the sphincter, each one at a point higher up the gut than the preceding, until all the fibers of the muscle are in perfect apposition. When the tear in the gut is not extensive, it is better to pass each suture around its upper end. Tighten the sutures thus inserted, and complete the operation as in the case of lacerations of the second degree. If union seems to be firm, the sutures may be removed in ten days. If doubt exists, leave them for two weeks.

The most important point in the after-treatment is in moving the bowels. It was formerly the practice to keep the bowels constipated for a period of from ten days to two weeks, and such is the course pursued at present by many. Many good operations and apparently perfectly united wounds have failed and reopened on account of the passage of scybalous masses, even though the greatest care was taken by the use of copious enemata and breaking up the masses in the rectum.

A better plan is to inject sweet oil on the day following the operation, and to let it remain, repeating this daily, at the same time giving citrate of magnesia or some other condition and moving the bowels daily. As in all other operations about the rectum, this should have been most thoroughly cleaned out before the operation, and the diet following should be fluid and light. The urine should be drawn every six hours; sufficient morphine to insure perfect quiet should be given, and the administration of douches of hot carbolized water twice or thrice daily will render the after-treatment complete. If all these details be carefully and thoroughly carried out, the chances of giving relief from this most deplorable condition are excellent, and you will have the satisfaction of knowing that you have accomplished, if not a brilliant operation, a result as devoutly to be wished for as any in the domain of operative gynæcology.

39 West Thirty-second Street.

## A CASE OF TOBACCO AMBLYOPIA.

By DAVID WEBSTER, M. D.,
NEW YORK.

E. W., twenty years of age, a native of America, a carpenter by trade, consulted Dr. Agnew and myself on the 24th of June, 1878, on account of trouble with his eyes. For the previous six months he had been subject to attacks of "foggy" vision, occurring quite frequently and lasting from three quarters of an hour to an hour. He was also troubled with shooting pains which seemed to run from his teeth up to his eyes. Four days before he had had a solution of atropine dropped into both of his eyes, and again on the afternoon of the day before. The pupils were well dilated and the tension was normal. R. V. = $\frac{20}{100}$; $\frac{20}{50}$ with $+\frac{1}{48}$. L. V. = $\frac{20}{50}$; $\frac{20}{40}$ with $+\frac{1}{60}$.

The ophthalmoscopic examination revealed slight pulsation of the retinal veins of both eyes, but no lesion of the media or fundus of either eye.

The patient stated that he had suffered from "snow-blindness" during the previous winter.

Examination with the worsteds showed that he was color-blind. When he used his left eye he called green brown; when his right eye he called it black.

Upon interrogating the patient in regard to his habits we found that, although not addicted to the use of alcoholic beverages, he had been in the habit of smoking tobacco since he was five years of age. He had also *chewed* the weed most of the time when he was not smoking. He had stopped chewing, however, about a year before, and at this time smoked only ten or twelve strong cigars during the day. So far as could be learned, his habits were otherwise good. He was a hearty eater and slept well. We could not avoid the conclusion that his amblyopia was due to tobacco poisoning, and advised him to abandon the use of the weed and to come to see us again after a certain interval, our object being to see whether simple removal of the cause of the amblyopia would be sufficient to restore good sight. Had it failed we should have resorted to the hypodermatic use of strychnine.

We did not hear from the patient again, however, until August 12, 1882, when his father called at our office to say that his son did not return "because he had recovered his vision very rapidly on giving up the use of tobacco, and had had no trouble with his eyes since."

266 Madison Avenue.

# THE IMPORTANCE OF CAREFUL PHYSICAL EXAMINATIONS IN THE GYMNASIUM,

*With a New Method of recording Sphygmographic Tracings.*

By J. GARDNER SMITH, M. D.,

PHYSICAL DIRECTOR OF THE HARLEM BRANCH OF THE YOUNG MEN'S CHRISTIAN ASSOCIATION OF NEW YORK CITY.

THERE is a question connected with public health which deserves more careful consideration than it has hitherto received. Athletic exercise of various forms has become a great national institution. Whatever may be thought of its spread, and the worship of muscle, one thing is certain: that even those who are unable to sympathize with such pastimes must still accept them as established customs. Their power over the public mind must be conceded. No amount of preaching will lessen their attraction, and no amount of indiscriminate warning by medical authorities, without more particular inquiry, will ever do much to loosen their hold upon the youth of our country and of England.

Heretofore most of the published opinions regarding physical exercise (excepting, of course, the article by Dr. Sargent, of Harvard, in "Scribner's" of 1887, and a few others) have been untrustworthy for these reasons, viz.:

First, they have been the deductions of athletes who knew nothing of medicine and but little of human anatomy and physiology, or of physicians unfamiliar with athletic exercises.

Second, and of great importance, the hearts of men examined and found enlarged after prolonged muscular exertion were not examined before the exertion.

Third, due allowance was not made for the "repeated nervous excitation of the heart" during the exercise.

Fourth, careful clinical observations have not been made of the immediate and direct effect of physical exercise upon the heart and vital organs.

It is with this fact before him that the writer solicits more careful attention on the part of the medical profession to that branch of medical science known as "physical education," bearing in mind at the same time what Socrates said of the sophists: "They do not know, but think they know; I know that I do not know."

The literature of athletics, Grecian, Roman, German, and English, has been up to the present century comparatively barren of carefully studied scientific facts. Of late years, however, since it has been required of the athlete that he possess also a certain amount of cerebral development, if he is to command the respect of his fellows, bodily exercise has been studied with some profitable results. The productions of writers on gymnastics from Plato to Blaikie are worthy a review which can not be comprehended in this article. Our object here is rather to emphasize the importance of a careful physical examination of the individual before and after he enters upon a course of gymnastic training, and of clinical observation of the effect of such exercise. The human body is too important an element in American civilization to be trifled with by men unfamiliar with its anatomy and physiology. Every director of physical training ought to be able to intelligently examine the men who exercise under his direction.

The *importance* of a carefully recorded *physical examination* of men engaging in athletic contests is too apparent to need discussion. In all our gymnasia the opportunity of carefully and repeatedly recording the physical condition of men is available, and ought to be competently and efficiently done in every case. To accomplish the best results, a knowledge of the man's condition and a familiarity with all the various gymnastic exercises and their *physiological effects** must be prerequisites of the "trainer." From one of the ablest of modern discussions† of athleticism (by Assistant Professor Eugene L. Richards, of Yale) we quote the following as expressing the importance of a careful preliminary physical examination: "So far, according to the recollection of the writer, no regular member of a Yale crew, team, or nine, has been permanently injured by participating in a race or match. Still, it is possible that slight injury to a person having organic weakness might result in fatal difficulty. Such an issue might be avoided by the requirement that every candidate for trial should be examined by a competent physician, and, in default of procuring such a certificate of physical soundness, should be excluded from participating in athletic contests." At this time of writing, all undergraduates of Amherst, Harvard, Yale, and Johns Hopkins who participate in gymnastics or games are thoroughly examined by the physician in charge of the respective gymnasia.

Dr. Seaver, of Yale, writes: "I examine all undergraduates, and their measurements are kept on record. . . . The plan is to re-examine the men each year while in college. . . . About 85 per cent. to 90 per cent. are re-examined. Dr. D. A. Sargent, of Harvard, informs me that at present all Harvard students participating in athletics are previously examined; that 87 per cent. of all the students are examined (non-athletic workers included)." From Princeton, Mr. Turner states that "students participating in gymnastic exercises receive physical examination at their own request only, which request is seldom made." Professor Edward Hitchcock, M. D., of Amherst, Mass., the oldest college gymnastic educator, writes me that every student wishing to engage in athletic sports is examined; that "sixty items of each examination are carefully preserved in folio manuscript of their physical condition and inheritance. We try to get the same repeated . . . at the end of the sophomore and at the end of the senior year. This latter is secured in about 90 per cent. of our students." Dr. Hartwell, of Johns Hopkins, informs me that all undergraduates are required to undergo a physical examination by the director of the gymnasium twice a year. The examinations are recorded. In this number are most of those who engage in athletics.

This class of men are very like those who came late under the observation of Dr. Humphrey, Dr. Morgan, Dr. Paget, Dr. Allbutt, and others.

Another class of American gymnasia—those of the

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* By Professor Du Bois-Reymond, University of Berlin, in "Am. Bureau of Education Circular," No. V, 1883. Paper by Edward M. Hartwell, M. D., Ph. D. (of Johns Hopkins), in "Report of Society for Advancement of Physical Education," November, 1886.

† "College Athletics," "Popular Science Monthly," February and March, 1884.

Young Men's Christian Associations—are doing a great deal to advance the physical well-being of young men. In these are seen all classes of men—professional men, students, and representatives of the various trades. In a number of these physical measurements are taken, but the writer knows of but one* (that from which the data of this paper were derived) where the physical condition of every member is ascertained before commencing gymnastic work, and recorded at repeated intervals during the exercise. At this gymnasium such a preliminary physical examination is *required*, and is repeated every three months if the member desires. *The mode* of making the examination varies, as does the manner of recording it, with each examiner.

The writer has examined over seven hundred young men during the past three years at the Young Men's Institute.

These men represent nearly all classes. Some are students; some are sedentary, while others are active. The majority of them represent the various trades and occupations of laboring men. They are somewhat the same class of men as those who came under the observation of Dr. Allbutt,† Dr. Peacock,‡ Dr. Quain,# and others. To report accurately the influence of physical exercise upon these men, it is evident that the preliminary examination is of the utmost importance. It not only reveals the man's muscular deficiencies and general physical condition, but affords data from which to study—

1. *Hereditary Tendencies.*—By ascertaining (*a*) nationality; (*b*) parents' age, occupation, and health, or cause of death; (*c*) the number of brothers and sisters, their health, and the cause of their deaths.

2. *Effects of Various Modes of Living.*—By recording (*a*) number, time, and regularity of meals in twenty-four hours; (*b*) number of hours' sleep and when taken; (*c*) amount of physical exercise taken now and previously, including occupation; (*d*) amount of mental work done now and previously, including the man's education; (*e*) proportion of *out-door* and *in-door life*.

3. *Effects of Muscular Exercise.*—(*a*) Upon the *lung* capacity; (*b*) upon the *heart;* (*c*) upon the growth of muscle.

Such an examination as this enables the "trainer" or the gymnastic educator to intelligently advise a sufficient amount of rest, the proper amount and proper kind of exercise. Furthermore, such an examination affords an opportunity to obtain facts and statistics of value to the medical profession. The early history, and especially the ætiology of certain diseases, which usually come late under the eye of the physician, can be more carefully studied and more accurately stated.

The growth of muscle, influence of heredity, sleep and stimulants, the effect of different forms of gymnastic exercises upon the thoracic and abdominal viscera, all afford ample opportunity for an endless amount of profitable original investigation.

* Young Men's Institute of the Young Men's Christian Association of New York City.

† "St. George's Hospital Reports," 1870.

‡ "Croonian Lectures," Churchill, London, 1865.

# "Medical Times and Gazette," 1872, p. 353.

Besides the usual modes of physical examination, three methods are especially useful and valuable in the gymnasium—viz., mensuration, the use of the spirometer, and of the sphygmograph. Mensuration is of value relatively in studying the growth of muscle and by showing the increase of thoracic expansion and collapse before and after certain periods of athletic exercise.

In this method of examination the length of trunk, depth and width of chest are taken, and together called (for lack of a better name) "vital capacity." The vital capacity becomes a matter of considerable importance in gymnastic training. Repeated observations have been made in the Institute gymnasium during the past three years of men exercising at different times and under different conditions. Some exercised with the chest bound tightly; some before a full meal, and again under the same conditions except after a hearty meal; some at an early and some at a late hour. From these repeated observations I believe it safe to say that the influence of deficient chest expansion upon the vital organs during exercise must be the same whether caused by a naturally small thorax, inelasticity from disuse, from exercise which itself tends to throw the shoulders forward and contract the chest, or from the influence of tight* clothing. These facts alone, it seems to me, are sufficient to emphasize the importance of preliminary and repeated physical examination of gymnastic workers, especially when we consider the liability of organic disease to lie dormant in a person of fairly healthy appearance. To be of most value, the successive measurements should be taken in the same situation by the same person and at the same time of the day. The following statistics were arranged, but not given to the publisher, early in 1887. Since that time a single tape has been used with a spring so arranged as to insure uniform tension; callipers have also been used, and Hutchinson's wet spirometer, as made by Tiemann, of New York, instead of Barnes's dry spirometer, has been employed.

The measurements in the following table (No. I) were made by the writer between October 15, 1885, and October 15, 1886. The instrument used was composed of two steel tapes, riveted to a copper plate, which is easily adjusted to the vertebral spines and held by an assistant. A line being drawn in the center of the sternum vertically, the measurements were taken just below the edge of the pectoralis major. Thus the measurements represent thoracic expansion, and not simply contraction of the pectoral muscles.

The table shows the right side of the chest to be $\frac{4}{12}$ inch larger than the left on extreme expiration, and $\frac{5}{12}$ inch larger on full inspiration. The average expansion of the right chest is $1\frac{2}{12}$ inch; of left chest is $1\frac{1}{12}$ inch. The measurements do not show the same relative increase with age to twenty-three years as does the spirometer test.

The *spirometer* used was *Barnes's dry spirometer*. The average respiratory capacity of 374 men examined by the writer from October 15, 1885, to March 1, 1887, is shown to be 215 cubic inches, which is 15 cubic inches less than

* "British Medical Journal," 1867, p. 161.

the average as given by Hutchinson* (1846). There is seen to be a gradual increase in respiratory capacity from fifteen to twenty-four years of age, the increased average of twenty-two years being due to the capacity of No. 42 (record-book of writer). This man without difficulty filled the spirometer (400 cubic inches) repeatedly. His chest, fully expanded, measured 40½ inches, the right side measuring half an inch more than the left. Another table in this paper shows that Hutchinson's average (230 cubic inches) was reached after these men had practiced specified gymnastic exercises from three to six months for one hour three times each week.

TABLE NO. I.

*Showing relative chest expansion of 199 men, and the chest capacity of 374 men at the time of entering the gymnasium.*

| Age. | No. examined. | FORCED EXPIRATION. Right. | FORCED EXPIRATION. Left. | FORCED INSPIRATION. Right. | FORCED INSPIRATION. Left. | No. examined. | Barnes's dry spirometer. Respiratory capacity. |
|---|---|---|---|---|---|---|---|
| 15..... | 3 | 15¾ | 15⅝ | 16⅝ | 16¼ | 3 | 210 |
| 16..... | 14 | 14⅝ | 14 | 16 | 15½ | 19 | 185 |
| 17..... | 36 | 15½ | 14¾ | 16¼ | 15⅝ | 83 | 195 |
| 18..... | 30 | 15⅝ | 15½ | 16½ | 16⅜ | 46 | 200 |
| 19..... | 22 | 15¼ | 14⅞ | 16¼ | 16⅛ | 35 | 205 |
| 20..... | 14 | 16 | 15⅞ | 17⅛ | 16¾ | 31 | 220 |
| 21..... | 14 | 16 | 15½ | 17 | 16½ | 27 | 222 |
| 22..... | 9 | 16 | 16 | 17⅝ | 18¼ | 25 | 236 |
| 23..... | 15 | 16½ | 15⅞ | 17⅜ | 16⅞ | 24 | 228 |
| 24..... | 15 | 16 | 15¾ | 17⅛ | 16¾ | 22 | 235 |
| 25..... | 8 | 15⅞ | 15½ | 16⅜ | 16½ | 12 | 216 |
| 26..... | 4 | 16⅝ | 16⅜ | 17⅞ | 17⅜ | 11 | 234 |
| 27..... | 3 | 17½ | 16½ | 18½ | 17½ | 13 | 244 |
| 28..... | 3 | 16⅓ | 16⅓ | 17½ | 17⅓ | 7 | 246 |
| 30..... | 3 | 15⅝ | 15⅓ | 16⅞ | 16⅓ | 6 | 216 |
| 31..... | 1 | 17⅝ | 17⅝ | 18½ | 18⅓ | 3 | 225 |
| 32..... | 3 | 17⅓ | 15⅓ | 18⅓ | 17⅓ | 5 | 245 |
| 34..... | 1 | 13¾ | 13½ | 15 | 14⅝ | 1 | 195 |
| 42..... | 1 | 23 | 23 | 24 | 24½ | 1 | 110 |
| Av. age, 24 1/19.. | 199 | 16⅓ | 16 | 17½ | 17½ | 374 | 215 |

The *sphygmograph* as a means of physical diagnosis is of special value in just such study as that upon which this paper is based. Those who use this instrument are greatly indebted to such men as Marey, Mahomed, Pond, Dudgeon, Keyt, and others, who combined mechanical ingenuity with careful study, and developed an instrument which records fairly accurately the story which the pulse writes of itself. Although neither the stethometer, the spirometer, nor the sphygmograph are perfect, yet the records obtained by their use are more valuable than physical observations derived by sight, touch, or hearing. Few men, if any, can retain observations by these latter methods, while observations by the former can be recorded and kept for future comparison. The sphygmograph to be of value requires considerable previous use by the observer. For this reason and others it is but little used in general practice. Dudgeon's is doubtless the most quickly and easily adjusted and most accurate instrument. The paper used to receive the tracing is best glazed on one side. The glazed side should be smoked over burning camphor. The pulse-rate may be ascertained by measurement after the tracing has been made, the instrument having been regulated so as to carry the paper a certain distance per second. After the tracing is properly labeled, which can be done by any sharp-pointed instrument, it can be preserved indefinitely for future study and comparison by varnishing with "Friar's balsam."

The sphygmograph thus records the frequency, force, and regularity of the heart's action. Mr. Myers* believes that this instrument "proves the heart to be overtaxed long before any change can be detected by auscultation or percussion." This statement I believe (although I have only taken 2,500 tracings) to be true to some extent directly, but more especially indirectly, by detecting some slight variation in the corresponding events of the cardiac cycles. This leads in many cases to further careful examination, which often reveals organic or functional trouble that might otherwise have escaped notice.

After the history and numerous muscle measurements have been recorded the chest is examined and a tracing taken with Dr. Dudgeon's instrument. If no organic trouble is found, the subject is allowed to raise himself to the chin on a horizontal bar and to "dip" on a parallel bar as many times as possible; then, after griping the dynamometer with each hand, another tracing is taken and the chest is again examined. This test is made as a means of estimating the amount and kind of exercise most needed by the man under examination.

In the examinations thus far made by the writer, a sphygmographic tracing is taken when the excitement of the examination has "worn off." Then the man rises to his feet, the pulse-rate is taken and verified by the stethoscope placed over the apex of the heart. The effort of rising and standing causes the heart to act more rapidly. In one case this increase was thirteen beats per minute.

The average increase in pulse-rate caused by the effort of rising from the sitting to an erect position was found to be two and ten-elevenths beats per minute.

TABLE NO. II.

*Showing the pulse-rate at various ages, taken while the man was in the standing position.*

| Age. | No. examined | Pulse-rate. | Age. | No. examined | Pulse-rate. |
|---|---|---|---|---|---|
| Years. | | | Years. | | |
| 16..... | 6 | 87 | 27..... | 10 | 79 |
| 17..... | 47 | 88 | 28..... | 4 | 81 |
| 18..... | 19 | 85 | 29..... | 2 | 86 |
| 19..... | 13 | 86 | 30..... | 2 | 79 |
| 20..... | 15 | 83 | 31..... | 2 | 79 |
| 21..... | 13 | 84 | 32..... | 3 | 81 |
| 22..... | 17 | 84 | 33..... | 2 | 85 |
| 23..... | 12 | 89 | 35..... | 1 | 83 |
| 24..... | 8 | 92 | 38..... | 1 | 64 |
| 25..... | 4 | 78 | | | |
| 26..... | 6 | 75 | 25, average. | 187 | Av. 82 |

Table No. II shows the average pulse-rate of 187 men of the ages named to be *82 per minute.* These figures represent the pulse-rate of fairly healthy men standing in the erect position. The re-examination of these men after three to five months of gymnastic exercise shows the average pulse-rate to be 79⅓ per minute.

While the number of re-examinations thus far made is not sufficient to warrant a decided statement, yet we may infer that *athletic exercise* which strengthens the voluntary muscular system *tends to strengthen the heart-muscle, tends*

* "Landois and Stirling's Physiology," 2d edition, p. 191.

* "Alexandrian Prize Essay," Churchill, London, 1870, page 43.

*to reduce the nervous excitability* of city life, and thus *to influence the pulse-rate toward the normal standard.*

From the preceding pages, and from sphygmographic observations, it is evident that respiratory capacity and thoracic expansion are important factors in estimating the influence of muscular exertion upon the heart. The following tables (Nos. III and IV) show that careful gymnastic exercise materially increases both these factors:

TABLE No. III.

*Showing respiratory capacity (measured by Barnes's dry spirometer) before and after gymnastic exercise of from three to six months' duration.*

| Age. | BEFORE EXERCISING. | | AFTER EXERCISING. | |
|---|---|---|---|---|
| | No. examined. | Average chest capacity. | No. examined. | Average chest capacity. |
| Years. | | | | |
| 15 | 3 | 210 | 3 | 220 |
| 16 | 19 | 185 | 11 | 201 |
| 17 | 83 | 195 | 32 | 210 |
| 18 | 46 | 200 | 24 | 222 |
| 19 | 35 | 205 | 17 | 228 |
| 20 | 31 | 220 | 9 | 230 |
| 21 | 27 | 222 | 9 | 233 |
| 22 | 25 | 236 | 4 | 274 |
| 23 | 24 | 228 | 7 | 235 |
| 24 | 22 | 235 | 8 | 232 |
| 25 | 12 | 216 | 2 | 233 |
| 26 | 11 | 234 | 4 | 241 |
| 27 | 13 | 244 | 1 | 210 |
| 28 | 7 | 246 | 3 | 266 |
| 29 | 2 | 240 | .. | ... |
| 30 | 6 | 216 | 2 | 195 |
| 31 | 3 | 225 | 1 | 340 |
| 32 | 5 | 243 | .. | ... |
| 33 | 2 | 227 | .. | ... |
| 34 | 1 | 195 | 1 | 190 |
| 35 | 1 | 325 | .. | ... |
| 42 | 1 | 110 | 1 | 180 |
| 25 17/19 average. | 379 | 220 ave. cap. | 139 | 230 ave. cap. |

TABLE No. IV.

*Showing the range of thoracic expansion and collapse of both sides of the chest, and of each side separately, taken at the same time. The measurements were made before and after from three to six months' of athletic exercise, and were taken at the lower border of the pectoralis major.*

| Age. | No. examined. | BEFORE EXERCISE. | | | | No. examined. | AFTER EXERCISE. | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Repose. | | Full. | | | Repose. | | Full. | |
| | | Right | Left. | Right | Left. | | Right | Left. | Right | Left. |
| 15 | 3 | 15 3/8 | 15 3/8 | 16 3/8 | 16 1/4 | 3 | 15 1/4 | 15 1/4 | 16 3/8 | 16 1/2 |
| 16 | 14 | 14 5/8 | 14 | 16 | 15 1/2 | 8 | 15 3/8 | 14 7/8 | 16 3/4 | 16 |
| 17 | 36 | 15 1/4 | 14 3/4 | 16 1/2 | 15 5/8 | 26 | 15 1/2 | 15 1/8 | 16 3/8 | 16 3/8 |
| 18 | 30 | 15 3/8 | 15 1/8 | 16 3/4 | 16 3/8 | 19 | 16 1/8 | 15 3/4 | 17 3/8 | 16 1/4 |
| 19 | 22 | 15 1/4 | 14 5/8 | 16 1/4 | 16 1/8 | 12 | 15 3/4 | 15 1/2 | 17 | 16 3/4 |
| 20 | 14 | 16 | 15 5/8 | 17 1/8 | 16 3/4 | 9 | 16 3/8 | 15 3/4 | 17 1/2 | 17 |
| 21 | 14 | 16 | 15 1/2 | 17 | 16 1/2 | 6 | 16 3/8 | 16 | 17 3/8 | 17 |
| 22 | 9 | 16 | 16 | 17 3/8 | 18 1/2 | 4 | 16 5/8 | 16 7/8 | 18 | 17 3/4 |
| 23 | 15 | 16 1/2 | 15 3/4 | 17 3/8 | 16 7/8 | 5 | 17 1/4 | 16 7/8 | 18 1/4 | 17 7/8 |
| 24 | 15 | 16 | 15 3/4 | 17 1/4 | 16 3/4 | 7 | 15 7/8 | 15 3/4 | 17 1/8 | 16 7/8 |
| 25 | 8 | 15 7/8 | 15 1/2 | 16 3/4 | 16 1/2 | 2 | 15 3/4 | 16 | 16 3/4 | 16 3/8 |
| 26 | 4 | 16 7/8 | 16 3/8 | 17 5/8 | 17 3/8 | 3 | 16 5/8 | 16 3/8 | 18 1/8 | 17 3/4 |
| 27 | 3 | 17 1/4 | 16 1/4 | 18 3/8 | 17 1/2 | 1 | 15 1/4 | 15 1/4 | 16 5/8 | 16 1/2 |
| 28 | 3 | 16 1/8 | 16 3/8 | 17 5/8 | 17 1/8 | 3 | 16 7/8 | 16 1/4 | 17 3/8 | 17 1/4 |
| 30 | 3 | 15 3/4 | 15 1/4 | 16 7/8 | 16 1/2 | 3 | 15 5/8 | 15 1/8 | 16 3/8 | 16 3/8 |
| 31 | 1 | 17 3/8 | 17 3/8 | 18 1/2 | 18 1/2 | | | | | |
| 32 | 3 | 17 1/8 | 15 5/8 | 18 1/2 | 17 1/4 | 1 | 17 | 16 | 19 | 18 1/4 |
| 34 | 1 | 13 3/4 | 13 1/2 | 15 | 14 3/8 | 1 | 14 | 13 3/4 | 15 | 14 1/2 |
| 42 | 1 | 23 | 23 | 24 | 24 1/2 | 1 | 23 1/4 | 23 1/4 | 24 1/4 | 24 1/4 |
| 24 14/19, aver. | 199 | 16 1/8 | 16 | 17 1/2 | 17 1/8 | 114 | 16 3/8 | 16 1/4 | 17 5/8 | 17 1/8 |
| | | 32 4/12 | | 34 7/12 | | | 32 5/8 | | 35 1/8 | |

The increase in lung capacity is (Table No. III) about the same in men over twenty-three years of age as in those who are younger. The increase in chest expansion is much less after that age. The greatest increase is seen between the ages of seventeen and twenty years.

It seems fair to infer that this increased lung capacity brings into action a greater number of air-cells, thus increasing the *oxygenating* surface of the lungs. The increased appetite which accompanies gymnastic exercise calls for an increased amount of nourishing food. *The blood, thus enriched with more food and more oxygen, not only increases the size and strength of the voluntary muscles, but also nourishes and builds up the heart-muscle.*

The increased chest capacity and expansion also affords the heart more room, or at least renders its action more regular, as was shown by the sphygmograph, when exercise was taken without any constriction of the thorax, and again when the chest was bound by a tightly buttoned coat or constricted by belts, or after a hearty meal.

*New Method of recording Sphygmographic Tracings.*—This article has been of necessity very hastily prepared, and does not permit the introduction of sphygmographic tracings illustrating the effect of gymnastic exercises. One great hindrance in scientific work is the difficulty of classifying results of various observations so that they may be studied in different ways and permit correct deductions.

More than one sphygmographic tracing can seldom be taken illustrating the point under consideration. Many times one wishes to group these tracings in different ways for study.

To accomplish this purpose I have tried various methods, using mica, oiled paper, etc., but with little satisfaction. Finally, however, I tried gelatin plate, with good results. This can be purchased in large, thin sheets, and cut into plates (for Dudgeon's sphygmograph, 2/10 inch wide and six or more inches long). These plates are smoked in the usual way, care being exercised not to burn the gelatin. After the tracing has been taken, numbered, and properly labeled, it is treated to a bath in compound tincture of benzoin. When it is thoroughly dry we have a negative which can be used repeatedly *à la* photographer. If one wishes to photograph a person before and after certain periods of gymnastic training, corresponding tracings taken in this way can also be photographed without destroying the original. A simple method of grouping tracings is available by using ordinary blue print paper, such as is used by architects and designers. Five minutes' exposure to bright sunlight is sufficient to develop a distinct blue line on a white ground, which is made permanent by immediately immersing the paper in water for the same length of time. The same paper, differently prepared, will develop a white tracing on a blue ground. The blue ground or margin can be utilized for notes or labeling by simply writing the same with a saturated solution of sodium bicarbonate. In these ways sphygmographic tracings can be grouped and preserved indefinitely for reference, writing, or study.

These gelatine negatives may be utilized in photo-mechanical printing processes, in the Woodbury type process, and in photo-lithography.

This method of recording tracings renders the sphygmograph more practical and useful, especially in a careful study of physical diagnosis. To be sure, the story written by this little instrument is not absolute, but if properly used it speaks of truths which lie unwritten within the thoracic cavity. Scores and hundreds of tracings which have been thus taken and recorded serve to prove that considerable careful training is necessary to enable the heart to act normally when more or less severe exercise is undertaken. They show also that the "trainer" (physical director) should carefully observe his men and adapt the exercise to the individual, instead of putting every man through the same routine.

So far as I have been able to ascertain, *the men who have suffered from the effects of athletic exercise have been more frequently men of a certain delicacy of fiber than those who were brawny and muscular;* or in either case men whose *previous "training" was insufficient* or *too hasty;* who *have resorted too frequently to cardiac excito-motors and not enough to sleep;* or, in a few cases, men who have *allowed their enthusiasm to exceed the bounds of reason.*

The heart itself is a muscle, and the vessels which issue from its cavity are surrounded by muscular bands.

Three things are necessary to promote the advantages and inhibit any evil influence of athletic exercise upon the vital organs—viz.: 1. That "training" be commenced early, be more gradual, and extend over a longer period (at least seven to nine months before any contest). 2. That the "training" be directed by a practical physiologist, who knows the condition of each man in charge. 3. That the supporters of our college and association gymnasia make the salary of the physical director such as to enable him to give up his whole time and energy to the study of his profession. If, then, training (preceded by a thorough physical examination) be commenced gradually and carried out systematically, it will be the means of strengthening the muscles both of the heart and vascular system in a degree proportionate to that in which it develops the voluntary muscles. Such a proportionate and healthy development is normal, and is to be desired for hearty vigorous living. Athleticism of the past is becoming modern physical education. It is impossible to doubt that many circumstances of the present day, especially in our larger towns and cities, tend to weaken both men and women.

These depressing influences, as population increases, must tell with augmenting effect. To counteract this tendency, every game, every pastime, and every variety of exercise tending to make men more muscular, stronger, and healthier, is deserving of encouragement. The time and medical skill bestowed in patching up the most confirmed invalids doubtless prolongs their lives and is in harmony with the humane sentiment of the nineteenth century; but, in the interest of the state, such must be regarded as a national calamity.

Transmitted and inherited disease degrades civilization and makes families miserable. The principles of physical education are intended to combat these baneful inheritances; improve and strengthen the human stock. Gymnastics form the practical part of "physical science." The gymnasia of our universities and associations are being placed in the hands of the medical profession. The field for careful investigation is a broad one, and it is to be hoped that men will be ready with sound physiological and hygienic ideas to give their time and energy and careful study to this work of *promoting health and aiding their profession.*

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## TWO CASES OF PRIMARY CARCINOMA OF THE VAGINA.

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The following two histories of cases of vaginal carcinoma, admitted to the New York Cancer Hospital, are interesting on account of the rarity of the disease, and especially is this the case with the first of these, from the fact of its position upon the anterior wall and not in the usual posterior location. They are as follows:

Case I.—Mrs. R. was admitted to the hospital March 27, 1888, to the service of Dr. James B. Hunter. She was fifty-four years of age and a widow. She had had six children, the last in 1868, and two miscarriages, the last of which occurred in 1870.

Her general health had always been good, with the exception of a slight diarrhœa lasting for twenty-five years. She gave no history of any uterine trouble, and her menstruation had always been normal up to the menopause. Her family history gives the fact that her mother died of cancer of the breast.

During the summer of 1886, and up to August, 1887, she had a history of frequent attacks of pruritus vulvæ. In August she was told of a growth existing on the anterior wall of the vagina. From this date up to the time of admission to the hospital she had frequent attacks of pruritus, an almost constant thin, watery discharge, at times bloody, of an offensive odor, and some pain.

When admitted to the hospital the uterus was freely movable, the cervix was normal, as were the upper two inches and a half of the posterior vaginal wall and about an inch of the upper part of the anterior wall. The anterior wall from this point above to within about half an inch of the urethral meatus was infiltrated and thickened, and presented to the touch numerous elevations, all of which bled easily under the examination.

The posterior vaginal wall presented only a small area of infiltration without any ulceration. At this point the vagina was slightly contracted, though not extensively enough to interfere with a thorough examination of both uterus and vagina.

This patient was treated in the hospital for about a month and a half, during which time she was repeatedly seen by the attending surgeon of the division in which she was placed.

Case II was that of Miss L. She was admitted to the hospital on May 3, 1888, in the service of Dr. Clement Cleveland. She was thirty-nine years of age, and single.

Her occupation was that of a cook, and she was of good habits. She gave no history of syphilis. Her general health had been fair up to almost a year previous. Her family history was negative.

For the previous two months she had been gradually losing flesh, and did not know the cause.

Some three weeks before entering the hospital she applied to one of the general hospitals of the city for relief, and from

this place she was sent to this institution. She said that she knew nothing of any trouble with her vagina or uterus until told of it in St. Luke's Hospital, as she had experienced no pelvic pain whatever, and only now and then some loss of blood.

Upon her admission, the general condition of the patient was poor, she being emaciated, cachectic, and very feeble. The vagina was filled up with a cauliflower growth almost protruding from the vagina, and bleeding freely under the examination. Upward it extended beyond the reach of the finger.

By rectal touch, it was found that the intestinal mucous membrane was not involved. The mass plainly pressed the anterior wall of the rectum backward. Farther up could be felt a space, of about half an inch in extent, between the growth and the cervix. Through this portion of the recto-vaginal septum the cervix could be felt apparently normal, and could be easily made out; also the uterus could be freely moved.

The miserable condition of the patient prevented anything being done as to attempts at removal of the mass, and there was no absolute proof as to its exact location.

She died some two weeks after entering the hospital, and no autopsy was allowed.

These two cases are of especial interest from the rare location of the neoplasm. Its unusual occurrence in this situation is very striking. Hart and Barbour state that Biegal collected 8,287 cases of cancer of the vagina, with only 14 out of the number as primarily occurring in this locality. Dr. Parvin, of Philadelphia, cites Grammatikati as stating that only *thirty-eight* cases have as yet been published.

Of the two cases mentioned in this article, the latter can not be stated positively as commencing *de novo* in the vagina, yet all the indications presented on examination pointed to this condition.

The cervix, with its central indentation, could be easily made out through the rectal wall, and the feel was that of one perfectly normal in all respects.

## TOBACCO: ITS USE AND ABUSE.

By C. W. LYMAN.

There are 5,250,000 acres of land in the world given up to the cultivation of tobacco. As this plant will not grow in a poor, or even in a medium, grade of soil to any advantage, it follows that these acres represent the richest agricultural lands. Tobacco being a very exhausting crop to the soil, these acres must be extensively and frequently fertilized, or the plant must be cultivated in new soil. In France and Austria tobacco is classed as a luxury, and both its manufacture and sale are monopolized by the government. The income so derived is said to be great and without much variation. In the United States the internal revenue on tobacco is more than forty millions of dollars.

Tobacco contains an acrid, dark-brown oil, an alkaloid, nicotine, and another substance called nicotianine, in which exist its odorous and volatile principles. This description of the active principles of tobacco is of importance to smokers, for, when tobacco is burned, a new set of substances is produced, some of which are less harmful than the nicotine and are more agreeable in effect, and much of the acrid oil, a substance quite as irritating and poisonous as nicotine, is carried off. These fire-produced substances are called, from their origin, the pyridine series. By great heat the more aromatic and less harmful members of the series are produced, but the more poisonous compounds are generated by the slow combustion of damp tobacco.

Now, this oil which is liberated by combustion is bad both in flavor and in effect, and it is better even for the immediate pleasure of the smoker that it should be excluded altogether from his mouth and air-passages. Smoking at its best is well described by Mrs. Harriet Martineau, who acquired the habit in Egypt during her voyage up the Nile. The small bowl of the chibouk used by the Arabs is attached to a stem several feet in length, in the interior of which all the poisonous oil is condensed and deposited. By inserting a small piece of cotton into the stem each time the pipe is used, or by drawing the smoke through water, the smoker may evade the bad effects produced by the oil. This chibouk was smoked only in the evening after dinner. Mrs. Martineau thought that her health improved while using it, and she continued in the habit after her return from the East. But ordinary pipes, especially old pipes, are without excuse. The tobacco smolders in the large bowl, the more harmful vapors of the pyridine series enter the mouth and throat, the oil saturates the bowl and stem, and after that enters the mouth with the smoke.

Smoking in a stub of a pipe is particularly injurious, for the reason that in it the oil is stored in a condensed form, and the smoke is therefore highly charged with the oil. Sucking or chewing the stub of a cigar that one is smoking is a serious mistake, because the nicotine in the unburned tobacco dissolves freely in the saliva and is absorbed. "Chewing" is on this account the most injurious form of the tobacco habit, and the use of a cigar-holder is an improvement on the custom of holding the cigar between the teeth. Cigarettes are responsible for a great amount of mischief, not because the smoke from the paper has any particularly evil effect, but because smokers—and they are often boys or very young men—are apt to use them continuously or at frequent intervals, believing that their power for evil is insignificant. Thus the nerves are under the constant influence of the drug and much injury to the system results. Moreover, the cigarette smoker uses a very considerable amount of tobacco during the course of a day. "Dipping" and "snuffing" are semi-barbarities which need not be discussed. Not much effect is obtained from the use of the drug in these varieties of the habit.

With thousands of men about us all the time who are taking daily full doses of this drug tobacco, many of whom are willing to testify as to their experience, it apparently should not be difficult to arrive at exact conclusions as to its effect on the human organism. Yet it is a fact that very different opinions in regard to tobacco are current. It is the object of this paper to connect a series of facts which are well established, and to give to the different facts in regard to tobacco their relative importance.

Now, the effects of bringing tobacco by any method into contact with the tissues of the body are more or less modifications of what pure nicotine itself does when the body

falls under its influence. So that, after admitting that one method of using tobacco may be worse or better than another, it is perfectly fair to examine all of them at the same time by an inquiry into the actual effects of nicotine.

Nicotine is one of the most powerful of the "nerve poisons" known. Its virulence is compared to that of prussic acid. If birds be made to inhale its vapor in amounts too small to be measured, they are almost instantly killed. It seems to destroy life not by attacking a few but all of the functions essential to it, beginning at the center, the heart. A significant indication of this is that there is no substance known which can counteract its effects; the system either succumbs or survives. Its depressing action on the heart is by far the most noticeable and noteworthy symptom of nicotine-poisoning. The frequent existence of what is known as "smoker's heart" in men whose health is in no other respect disturbed is due to this fact.

Extreme faintness and giddiness, followed by an indescribable feeling of sinking and misery, and then horrible nausea, vomiting, and great muscular weakness, are caused by even moderate doses of the drug. Tobacco, after the habit of using it is formed, is a cerebral stimulant. The exhilarating effects produced by the drug are evidently due to the excitement attending the resistance offered by the life-force to the attack of a foreign or noxious element present in an amount not too great to be overcome. Were there present a little too much of this poison, life is either destroyed or a long time is required in which to repair damages. Can any one believe that the smaller dose can give any real increase of power, and that the larger one can take it away in so alarming a manner? Now, some idea of what effect the smoke of burning tobacco can produce in a human body may be conceived by a glance at the results of its long-continued use in the cases of "those who are hurt by it," as the expression is — that is, in that large majority of smokers who use it in excess, as an habitual indulgence with a direct view to pleasure; not as the Arab uses his after-dinner chibouk, nor yet as a means of modifying discomfort on particular occasions. In the strongest men, those with much of what we call "surplus" vitality, tests must be delicate. The apparent absence of effect in these unusually powerful men is constantly instanced by deluded friends of tobacco, implying by this that they believe that if it does not injure one man it can not badly injure another. But in those who have not enough vitality to resist the effect of the amount of tobacco they use, whose general good health can not, at least, be supported at the same time, results are evident and very noticeable, and yet they need not necessarily be of an apparent variety at first. A healthy body is elastic, and resists injurious influences up to a certain point. It may be that the more marked results will only appear after a number of years' use of the pipe or of chewing tobacco. Dr. Franzel, of Berlin, observes that in his country immoderate smoking agrees, as a rule, with persons for many years, although by degrees cigars of a finer flavor are chosen. But at last, suddenly, and without any other assignable cause, trouble with the heart begins, and a physician is consulted. These troubles seldom begin until the smoker has passed his thirtieth year, and usually appear at an age between fifty and sixty years. The Germans are less nervous and heartier than are their descendants, after a few generations of residence on this side the Atlantic have made them Americans. Another result may be seen in the case of a certain well-known chemist, a man of great energy and large attainments in science, who chewed tobacco, and had been addicted to the habit for a long time. In chewing, depression of spirits and dullness of mind were the final results. This eminent chemist says that of late years, though obliged to take his tobacco regularly, he ordinarily gets no pleasure from its use; rather the reverse. However, once in a week or two, for a single morning, he will experience the old pleasure. It soon passes away, and to it succeeds another period of slavery and great discomfort.

Another class of people can not resist the effects of tobacco at all, can not form the habit, or even stay in a room in which there is tobacco-smoke. It is a well-established rule that no tobacco may be used by a man who is training for an athletic contest. Such a man is usually one of the toughest and strongest, a pugilist or a professional oarsman, and possessing great physical endurance. Those who can use tobacco without immediate injury will have all the pleasant effects reversed, and will suffer from the symptoms of poisoning if they exceed the limits of tolerance. These symptoms are: 1. The heart's action becomes more rapid when tobacco is used. 2. Palpitation, pain, or unusual sensations in the heart. 3. There is no appetite in the morning, the tongue is coated, delicate flavors are not appreciated, and acid dyspepsia occurs after eating. 4. Soreness of the mouth and throat or nasal catarrh appear and become very troublesome. 5. The eyesight becomes poor, but improves when the habit is abandoned. 6. A desire, often a craving, for liquor or some other stimulant is experienced.

A lesser degree of injury may be shown by general restlessness, insomnia, depression of mind, or the development of a dull or irritable temper. Any man who enjoys his tobacco more with a glass of beer or spirits has a heart the action of which has been weakened by the use of tobacco.

A finer and very certain test is that the desire for the society of women is no longer felt as it may once have been. The dreamy and solitary enjoyment of a good cigar takes the place of social pleasures. It is reasonable to assume that the "Reveries of a Bachelor" were tobacco visions. The immediate result of addiction to the use of this drug is felt by women, who very commonly recognize in tobacco a direct enemy to their influence with men. A most ennobling element in social life is thus impaired. Another and most deplorable result of the tobacco habit is that the children of an apparently vigorous man who is addicted to the use of tobacco in some form will often show the symptoms of tobacco poisoning from which the father had never suffered. The general health of these children will be poor as compared with that of the father, the circulation will perhaps be poor, and the face will be pale; there will be a tendency to catarrh, a somewhat nervous, unhappy, cold, or

joyless disposition, weak digestion, or a taste for dainty and stimulating food. The father, perhaps, will nevertheless tell you sincerely that he had still to find that the use of tobacco was injurious to him; that, on the contrary, he obtained much comfort from it.

The finest test of all is of a somewhat ethical nature, it is true, for it has to do with that element which is last developed in the nature of man—religious emotion, taken in the broad significance of the term. The strictly scientific investigators of this subject have stopped at this point with the remark that they were not dealing with ethical questions or results involved, but only with those of a physical nature. But, believing that these can not be separated, and not being limited to the use of medical terms in a discussion so general as this, a few facts come into place here. It was a matter of fixed belief with a celebrated clergyman that the amount of Christianity a man could receive into his soul had a very close dependence upon the state of his liver. On the other hand, a professor connected with a prominent medical college, while lecturing on disorders of the liver, stated that the use of tobacco in even the smallest amount impairs the functional action of the liver on the blood passing through it, and that the abnormal state of the blood thus caused will manifest itself by disturbance in the brain. When a patient is found to have this form of cerebral disturbance, to stop his use of tobacco at the outset of treatment is a *sine qua non*. These two statements of leading authorities seem to connect themselves.

On growing boys and on young men under twenty-five years of age the use of tobacco is known to cause notably bad effects in almost every instance. Especially is this so if the food be scant. The injury which is ultimately done is probably not greater than in the case of the adult who has come into his full powers of resistance to the effects of the drug; there is simply more to be used up in the latter instance, especially the force which nature intended to give to the succeeding generation. It is from this fact that an idea is current that smoking indicates manliness of character, and to the force of social opinion on this point among young men must be credited no small portion of the number of recruits which are annually added to those who use tobacco.

In an experimental observation of 38 boys of all classes of society and of average health who had been using tobacco for periods ranging from two months to two years, 27 showed severe injury to the constitution and insufficient growth; 32 showed the existence of irregularity of the heart's action, disordered stomachs, cough, and a craving for alcohol; 13 had intermittency of the pulse; and 1 had consumption. After they had abandoned the use of tobacco, within six months' time one half were free from all their former symptoms, and the remainder had recovered by the end of the year.

It is not difficult to break the habit if the mind be diverted and the food be good. There is no constitutional reaction, as is the case when the use of opium or alcohol is abandoned; but the strength begins to improve, and the ability to sleep, digest, and see improves at once. While this is so commonly true as to have justified the statement that "the habit is, physiologically, not hard to break," it is to be noted that in men whose constitutions are thoroughly shaken and undermined by the effects of tobacco, an attempt to abandon its use is sometimes accompanied by tremor and a feeling of general misery which are practically intolerable. Such persons are indeed slaves to the habit. However, it is worth repeating that complete diversion of the mind (not always an easy thing to bring about) and good feeding are enough in most instances to make the abandonment of the habit easy.

The pleasant effects of tobacco are realized only after the habit is formed. Tobacco is not alone in the possession of this quality; it is much better known in the case of tobacco than in the case of some other drugs producing similar pleasurable effects. But it is believed that if any of the nerve-paralyzers were taken for a long time in minute doses until an habitual resistance was established, that drug would finally act as a stimulant, and a certain pleasurable excitement would accompany the effort which the body had learned to make in throwing off its influence. In Africa, the *Physostigma venenosum*, or "judgment bean," used in the trial of witches, has also been put to this use of a stimulant by a few.

The only question about tobacco which is really in need of a settlement is the following, and it is important that it should be dealt with justly—namely: Is there, after all, such a thing as a genuinely temperate use of tobacco? Perhaps; perhaps not. The answer depends largely on the degree of health which one judges to be the normal standard for the individual, especially in those cases in which, on account of other reasons, a state of either absolutely perfect or even of good health is out of the question. Few people know what are the sensations and general state of consciousness proper to a completely temperate way of living after the period of childhood has been passed. Their habits of life, and especially their habits of thought, once having become unnatural as a result of the artificial conditions of civilization, competition and particular callings, debility and the wear of rapid living, and their feelings and senses having been altered, a new estimate of what it is to feel well is made. Different tastes and new needs, never before known to a body that is, as trainers express it, "pure," arise. Particularly does a craving come for some means of abolishing sensation at times when sensation is not exactly agreeable, and of blunting the edge of a too insistent voice of mental consciousness busy over the cares of the past and of the coming day. Or it is a hungering for something to relieve the *ennui* of solitude or of uncongenial society, or the worse *ennui* of having no aspirations or necessities that force the employment of the energies. Now, for many, tobacco satisfies this want for the time—that is, it seems to do so by its immediate effect. If the great mass of men, as men now are, could obtain no tobacco, some other narcotic more or less its equivalent would certainly be found and used. A fact sad enough, but a fact it is, that they "must have something." There is no physician who has not heard these words more times than he can remember.

Now, scientific men have decided that there is a class

which, in this attempt to overcome sensibility to unpleasant conditions, do get apparently beneficial effects from tobacco, inspection not being too close. In many, they report, no immediately evident injuries appear from the use of tobacco by adults past the most vigorous period of life if taken in small amounts at intervals, and rather long intervals. It is said that under these conditions it may be used to take away, by its stimulus to the heart and nervous system, the unpleasant sensations arising from fatigue, poor food or lack of food, exposure, strain, or worry. So employed, it then gives aptitude for work; quiet, and good digestion after severe labor; bodily energy when food or sleep can not be had.

As illustrating this favorable action, both English and American authorities instance the case of a sportsman whom the afternoon of a day in the field finds miles from home, beginning to feel faint for want of food, and somewhat fatigued. A few minutes' smoking removes all sense of hunger and "goneness," and restores elasticity to his limbs. It is thus like opium and coca in seeming to arouse active vital processes, and to restore a normal rhythm. A close question arises in many minds in such a case whether the body and brain will suffer more by allowing hunger, discomfort, or mental depression to continue than from the drug which intervenes with its action, and prevents their being felt.

Tobacco will often thus have the immediate advantage of giving comfort, and, with this in view, it now forms part of the regular ration in the German army. They find that soldiers will go through the hardships and anxieties of a campaign better with it than without.

Used occasionally under such unusual circumstances as have just been indicated, and by a man of mature years, good constitution, and out-door occupation, it would necessarily be hard to measure what amount of detriment his total of health sustained. His abundant vitality would easily cover up small losses from any ordinary or immediate tests, and they are the only sort which most people have any disposition to make in a matter involving their daily comforts, whatever they may suppose *them* to consist in. It would show, however, if he engaged in a boat-race, or underwent a severe surgical operation. But the number of those who confine themselves to such a comparatively temperate use of tobacco is not large. A great majority go far beyond any such limitations, and evidences of injury are easily found. It is only necessary to have some record of what the general health was previous to the taking up of the habit, and to have observation cover a long enough time. The history of tobacco in the island of New Zealand furnishes a quite suggestive illustration for our purpose, and one on a large scale. When Europeans first visited New Zealand they found in the native Maoris the most finely developed and powerful men of any of the tribes inhabiting the islands of the Pacific. Since the introduction of tobacco, for which the Maoris developed a passionate liking, they have from this cause alone, it is said, become decimated in numbers, and at the same time reduced in stature and in physical well-being so as to be an altogether inferior type of men.

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## ENTEROSTOMY *VERSUS* LAPAROTOMY IN ACUTE INTESTINAL OBSTRUCTION.

DR. B. F. CURTIS, in the "Medical Record," in urging the employment of enterostomy—which he defines as "the operation of forming an artificial anus in any portion of the intestinal canal, including both colotomy and 'enterotomy'"—in the treatment of acute intestinal obstruction, gives the statistics of a series of sixty-two such operations. In forty-six, or seventy-two per cent., of the cases relief was given by the operation; six of the patients were not relieved (in three of these the fistula was established below the point of obstruction), and in the remaining ten the result was either fatal or no definate statement as to the relief afforded by the operation was recorded. Thirty of the patients died, making the mortality 48·3 per cent.

As to the efficiency of the operation in relieving the symptoms and in ultimately overcoming the obstruction, it was found that in nineteen cases, or sixty per cent. of those in which recovery took place, normal passages *per anum* were resumed after an interval of time which varied from twenty-four hours to ten weeks' duration. The last fifteen cases of the series give the following remarkable statistics: Relieved, 14; unrelieved, 1; died, 4; recovered, 11. Of these eleven successful cases, defecation *per anum* was resumed in seven. In one of the fatal cases death was due to an attack of erysipelas occurring two months after the operation, but in which the bowels moved naturally after fourteen days' time. In seven cases the fistula closed spontaneously.

In many of the fatal cases the exceedingly poor condition of the patient was assigned as the reason for the choice of enterostomy instead of laparotomy as the method of treatment, involving, as it does, the lesser amount of shock and danger of causing inflammatory action. The causes of death in fatal cases are thus classified: Those directly due to the operation or its failure, sixteen, consisting of sepsis, failure to reach the distended gut, subsequent gangrene of the gut, and shock; those due to causes independent of the operation, and those unknown, fourteen, comprising bad condition of the patient, heart failure, perforation of the gut on the thirteenth day, gangrene of the gut existing at the time of operation, and extensive adhesions in the case of an infant suffering from malnutrition. The histories of these cases show that intussusception, volvulus, constriction by bands or adhesions, impaction of foreign bodies, and even internal incarceration, can be rendered harmless by relieving the pressure from behind by opening the distended intestine at a point above the seat of obstruction. At all events, the operation gives

a "fighting chance," and there is considerable ground for the belief that the removal of the pressure behind the obstruction may, in many cases, permit the intestine to expel the matter causing this by its own action, or to escape from the grasp of a constricting band or adhesion. Gangrene of the gut does not necessarily occur from volvulus or internal incarceration, as is shown by the facts presented by the histories of some of these cases, while those of others show that the cause of obstruction may be absolutely removed, or rendered so harmless that the normal function of the gut is performed, by the removal of pressure from behind.

Contrasting these statistics with those obtained from the study of three hundred and twenty-eight cases of laparotomy for acute intestinal obstruction, the author forms the following conclusions: The mortality of laparotomy for this condition is 68·9 per cent. against the 48·7 per cent. of enterostomy; of three hundred and twenty-eight cases treated by laparotomy, 5·8 per cent. were fatal because of failure to remove the cause of obstruction, while 4·8 per cent. of sixty-two cases of enterostomy were fatal for the same reason; enterostomy restored the power of normal defecation in 60 per cent. of the cases, while even laparotomy achieved this result in but 79 per cent. of the cases in which recovery resulted; laparotomy is the preferable operation only in cases in which the patient is in sufficiently good condition to bear the shock of the operation, and those in which the intestine is not too greatly distended to allow of a thorough examination of the abdominal contents; enterostomy should be performed in all other cases, and may be followed by laparotomy should it prove to be inefficient, for the purpose of removing the cause of obstruction and of closing the artificial anus; and, finally, whichever of the two operations be chosen, it should be performed at as early a period in the course of the affection as possible.

The facts and figures presented by Dr. Curtis are extremely interesting and, we believe, surprising to the greater number of surgeons. The condition to be relieved is of such varied and obscure a nature, at least so far as diagnosis of the actual state of affairs is concerned, that the formulation of any rule to be regularly followed in its treatment is well-nigh rendered impossible. The employment of simple measures, such as the forcible injection of large quantities of water or the inflation of the gut with gas *per rectum*, has often been successful in apparently hopeless cases, and we fancy that the general practice of establishing an artificial anus, with all the disgusting and discomforting conditions which are attendant on its presence, will not meet with the approval of the profession at large or the submission of that portion of the laity which is wont to look upon cleanliness as second only to godliness. The statistics given are unanswerable as far as results are concerned, and, from a purely scientific point of view, sustain the author in his position; but the free-born citizen does not, unfortunately, possess that deep and enthusiastic desire to conform to the line of conduct prescribed by science when his life or physiological functions are endangered or deranged.

If it were possible to make an exact diagnosis as to the cause and location of the obstruction in these cases, the choice between the operative or conservative methods of treatment could be made without difficulty; but, as this is impossible, we believe that operative measures which give a more definite opportunity than does enterostomy of detecting and removing the trouble should be adopted as a rule, except in those cases mentioned by Dr. Curtis in which there is present such a poor condition of the patient as to render recovery from the shock of operation an improbable result. The overdistension of the intestine can be relieved as well during the performance of laparotomy as by enterostomy, and but few who understand what the latter involves would prefer it to the former, even though the risk be somewhat less, if the promise of a speedy closure of the fistula could not be given them.

As by far the greater number of fatal cases were those in which the cause of death is ascribed to "poor condition of the patient," the recommendation to lose no time in deciding upon the course of treatment to be followed is an especially sound piece of advice, and we trust that in the records of the next series of cases this cause of death will occupy a much less prominent position in the mortality section. Delay is the curse of surgery; and until the surgeon and patient—especially the latter, as ignorance, lack of confidence, or the advice of well-meaning but misguided friends is the usual cause of the delay which gives to many capital operations a percentage of mortality which is far from just—understand that the old proverb, "a stitch in time saves nine," applies equally as well to the repair of a bodily injury or disease as to a rip in the seam of a pair of trousers, every capital operation will be handicapped by an unnecessary and unjustly imposed death-rate in its race for place among the recognized resources of surgical science.

## *MINOR PARAGRAPHS.*

### POISONING BY ATROPINE.

Dr. Llewellyn Elliot, in the "Journal of the American Medical Association," gives the history of a case of atropine poisoning in which four grains of the drug were taken into the stomach by mistake. Within half an hour all the symptoms ordinarily produced by the drug were present, and no medical aid was had until the lapse of an hour after the poison was swallowed. Active delirium and violent jactitations were prominent symptoms at the time Dr. Elliot reached his patient. One grain and a third of sulphate of morphine was given hypodermatically in divided doses during eighty minutes' time, causing contraction of the pupils, a reduction in frequency of the respirations, and profound sleep. A strong decoction of coffee was then given *per rectum*, as well as citrate of caffeine hypodermatically, at intervals of an hour, until the patient had ceased to show evidences of profound narcosis. Complete recovery ensued. Dr. Elliot has collected thirty-two cases of atropine poisoning, in only two of which a fatal result occurred, one being that of a child who took more than half a grain, and the other that of a woman who swallowed about three grains of the alkaloid. He advocates the heroic use of hypodermatic injections of morphine, at intervals of twenty minutes or half an hour, until the effects of the drug are manifested in the treatment of atropine poisoning, believing that it is the best practice to substitute morphine narcosis for that caused by

atropine, as it can be antagonized by the administration of physiological antidotes during its development.

### SLAG AS AN ABSORBENT AND DEODORIZER OF EXCRETA.

An account of the employment of crushed slag as the absorbing and deodorizing material for earth-closets has been published in the "Lancet." It is said to be greatly superior to dry earth for this purpose, both on account of its extreme porosity, which makes the use of a smaller quantity of material possible, and from its value as a fertilizer, which is vastly increased after it has been used in the manner suggested. It is cheap, the supply is plentiful, and the material can subsequently be utilized as manure. Its use, as well as that of dry earth, as opposed to the system of water-carriage, in dealing with the sewage of large towns, would apparently solve a most difficult problem; but the question of how this use can be made practicable and convenient constitutes a most formidable lion in the path leading to sanitary perfection.

### HYDROGEN PEROXIDE AS A GERMICIDE.

Dr. Gifford, in the "Medical Record," relates his observations in regard to the germicidal action of this agent. He believes that although the fresh "fifteen-volume" solution (containing about three per cent. of the peroxide) is a most efficient and rapidly acting germicide, it is far from acting as such in some of the weaker solutions which have been recommended. He also believes that the ebullition noticed when the drug is used and which is due to the liberation of oxygen is no criterion as to the extent of the germicidal action. He considers this to be due, not to the liberated ozone, but to the action of the undecomposed hydrogen peroxide, which acts in an analogous manner to phenol and mercuric chloride, by direct poisonous effect on the germs. The ebullition increases the cleansing power of the solution by mechanical action, but the escaping oxygen or ozone has no germicidal influence except by favoring the access of the undecomposed peroxide to germs protected by secretions.

### "THE FLY AS A CARRIER OF DISEASE."

Under this heading the "Medical Record" alludes editorially to the observations of Dr. Giuseppe Alessi in his investigations as to the ability of the common house-fly to act as a means for the conveyance of disease germs. If the worthy doctor is not mistaken in his conclusions, there has at last been found for this abominable and ubiquitous pest some other *raison d'être* than that of acting as a destroyer of human comfort and morals. A well-known physician, a professor in one of our medical schools, was asked by one of his pupils to explain the physiological function of Peyer's patches, and replied: "How could one have typhoid fever without them?" The domestic fly, then, may be associated with Peyer's patches in the practical demonstration of the theory of Malthus — at least to as great an extent as this can be demonstrated without the active collaboration of the rising generation.

### ANTIPYRINE AND ITS USES.

Dr. H. B. Bashore, in the "Medical and Surgical Reporter," regards the analgesic, hæmostatic, and antipyretic effects of antipyrine as the chief benefits to be derived from its use. As an analgesic, it often serves as a substitute for morphine, especially in the cases of individuals who are intolerant of that drug; when administered during the first stage of labor, it often calms the excitement, and at the same time lessens the pain without interfering with the progress of the labor. In this case it is most effective when given hypodermatically in doses of four grains, to be repeated after an interval of two hours when necessary. As a hæmostatic, it is employed in powder or solution as a local application, and its action is most efficient. Its antipyretic effect is not produced when antipyrine is administered in cases of malarial fever, but its use in other forms of pyrexia, in doses of from thirty to fifty grains, is followed by a reduction of the febrile temperature of from 0 9° F. to 5° F. The drug is of no value in the treatment of chronic rheumatism, but often exercises a beneficial effect when used in cases of the acute and subacute forms of that disease. Nausea, vomiting, drowsiness, erythematous patches on the skin, swelling of the tissues of the throat, profuse sweating, and collapse are mentioned as occasional effects produced by the administration of the drug, which should always be used with care.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 4, 1888:

| DISEASES. | Week ending Aug. 28. | | Week ending Sept. 4. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 37 | 6 | 35 | 11 |
| Scarlet fever | 78 | 22 | 62 | 9 |
| Cerebro-spinal meningitis | 2 | 1 | 1 | 1 |
| Measles | 97 | 10 | 75 | 9 |
| Diphtheria | 59 | 24 | 75 | 23 |
| Small-pox | 0 | 0 | 0 | 1 |

**The Mississippi Valley Medical Association.**—The meeting which was to have taken place on the 11th, 12th, and 13th inst. has been postponed to the 25th, 26th, and 27th. This, it is stated, is in keeping with the desires of many members of the association, and in order to arrange the most liberal railroad rates.

**Society Meetings for the Coming Week:**

Monday, *September 10th:* New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Medicine (Section in Surgery); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore, Md., Medical Association.

Tuesday, *September 11th:* New York Medical Union (private); Medical Societies of the Counties of Chemung (quarterly—Elmira) and Rensselaer, N. Y.; Mississippi Valley Medical Association (first day—St. Louis); Newark, N. J., and Trenton, N. J. (private), Medical Associations; Baltimore, Md., Gynæcological and Obstetrical Society.

Wednesday, *September 12th:* New York Pathological Society; Medico-legal Society; Medical Societies of the Counties of Albany and Montgomery (quarterly), N. Y.; Mississippi Valley Medical Association (second day); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

Thursday, *September 13th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; Mississippi Valley Medical Association (third day); South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

Friday, *September 14th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *September 15th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

# Proceedings of Societies.

## OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Meeting of June 8, 1888.*

Dr. Da Costa in the Chair.

**Extra-uterine Pregnancy; Laparotomy and Recovery.**—Dr. C. B. Penrose reported the histories of two cases. M. C., aged thirty-two, had had four children, the last seven years before, and two miscarriages, the last eleven years previous. She was treated for syphilis and retroversion of the uterus in 1883. She applied for treatment again on February 6, 1888. She had been bleeding profusely from the vagina for thirteen days, and had suffered with continuous sharp pain in the left side for the same length of time. The pain and bleeding had appeared suddenly after lifting a heavy weight. There were no symptoms of pregnancy. Vaginal examination revealed a small retroverted uterus, and a tender cystic mass of about the size of a duck's egg situated to the left of the fundus. Three days later this mass was again examined and found to have increased in size to that of a large orange. Laparotomy was performed February 10, 1888.

The left tube was found distended at the outer half by a cyst of the size of an orange. About three ounces of recent blood-clot was found in Douglas's pouch. The cyst was very friable and easily ruptured. During the removal a considerable quantity of old blood-clot escaped into the peritoneal cavity.

The left ovary was independent of the cyst in the left tube. The right ovary was cystic, and was removed along with the right tube.

The convalescence of this woman was uneventful. She had menstruated naturally since the operation. Three months after the operation her breasts became enlarged and painful, and she was able to squeeze milk from them. This secretion of milk lasted for two weeks, until it was stopped by the use of belladonna ointment. These mammary symptoms were the only signs of pregnancy exhibited before or after the operation, and the speaker wished to ask the members of the society whether it was not an unusual occurrence for this secretion of milk to appear at so long a time after the removal of the product of conception.

Case II.—E. B., aged twenty-eight, had had four children, the last one a year previous. She had not menstruated since her last labor until two months before she presented herself for treatment. She then began to bleed profusely, and to suffer from great pain in the left side. For the last few weeks the bleeding had been accompanied by the discharge of shreds of membrane from the vagina.

Vaginal examination revealed the presence of a large cystic mass situated to the right of the uterus.

Laparotomy was performed May 22, 1888. To the right of and posterior to the uterus was a blood-cyst of about the size of an orange. The cyst was firmly adherent to the posterior surface of the uterus and to the right ovary and tube. The right tube opened into the cyst.

As might be seen from the specimen, this could not be called a tubal pregnancy, as could the first case, in which the tube was distended by a cyst containing the product of conception. In the second case the tube opened into this cyst. In each case there was disease of the opposite tube and ovary, the ovary being in each instance as large as a good-sized egg.

The second patient was now out of bed.

Dr. M. O'Hara said that Dr. Penrose asked with reference to the secretion of milk in the first case. He had seen one case in which milk had never appeared. The mother was believed to have arrived at the full term of pregnancy, and the child died. Dr. O'Hara did not think belladonna had any effect in arresting the secretion of milk.

Dr. William Goodell said that anything producing irritation of the genito-urinary organs might cause the appearance of milk in the breasts. The presence of a fibroid tumor might even do so.

**Vaginal Hysterectomy for Procidentia, with Epithelioma of the Cervix Uteri and Vagina.**—Dr. William L. Taylor showed a specimen. The patient had had procidentia for several years prior to the appearance of the epithelioma, with a gradual thickening of the vagina. The principal symptoms complained of were due to the occlusion of the urethra and rectum. The operation was performed to relieve these symptoms. The patient died three days after the operation.

The specimen was interesting from the fact that it showed occlusion of the cervical canal by the epitheliomatous matter. To the right side there was an opening which he thought to be the external os, through which the sound entered three inches and a half. At the operation it was found that the sound had entered the diseased mass, the uterus being in the median line. The patient's death was due largely to shock.

**Perityphlitic Abscess.**—Dr. Joseph Hoffman reported a case *originating in appendicitis*, showing the specimens. The patient, Mrs. B., was married, and had had three children. When first seen she had a pulse-rate of 128 and a correspondingly high range of temperature, and was unable to stir in bed without suffering from extreme pain. Careful questioning elicited the information merely that eight days previously she had slipped from a chair, causing thereby severe pain in the right iliac region. This continued up to the time at which Dr. Hoffman was summoned, when she was compelled to take to her bed.

The duration of her trouble, according to her own statement, was limited to a little more than a week's time, though in this connection she mentioned the occurrence, previous to menstruation, of an ill-smelling vaginal discharge. Examination *per vaginam* revealed the presence of a tumor situated to the right of and close to the uterus, and which, when touched, gave her much pain. The rectum was empty, as she had had a dysenteric attack on the previous day. External examination was so painful that it was not made. The pain in her back and right leg was intense. It was decided that operation was necessary, and Dr. Joseph Price was called in consultation; but, after examining her while under the influence of ether, both were somewhat uncertain as to the existing condition.

Operation being decided upon, an opening four inches in length was made in the median line of the abdomen, and an exploration made. The cæcal portion of the intestine was found to be bound down by adhesions, and was freed with much difficulty. The appendix vermiformis was almost completely buried in pelvic tissue, and the temptation was strong to remove it piece by piece, though it was afterward enucleated by persistent efforts. The cæcal portion of the bowel was almost gangrenous in spots, and was almost perforated by ulceration. Surrounding this portion of the intestine was a quantity of fœtid pus—about two ounces. The pelvis was carefully washed out, no antiseptics being used; a drainage-tube was introduced into the *cul-de-sac*, and a rubber tube was made to pass from the iliac fossa through the abdominal incision, which was closed by seven deep and superficial sutures. Nothing was done with the bowel except cleansing it. The bowels were at first moved by enemata, and, after a quantity of scybalæ was discharged, calomel, in one-sixth of-a-grain doses, was given to clean the tongue and relieve bilious vomiting.

The patient made an uninterrupted recovery, all the stitches as well as the tubes being removed by the tenth day. The patient was then, on the twenty-fourth day after the operation, sitting up, entirely free from pain.

A curious feature of the case was that, after removal of the offending appendix, the patient, after three days' time, remarked that she had not been so free from pain at any time during the past two years, and then gave an exact history of her symptoms, all of which pointed to the existence of perityphlitis. Her pain had become so much a part of her that she did not seem to recognize it as a foreign element.

The principal points to which attention might be called were the closing of the incision and its location. Although this was central, drainage was perfect, and, though sutured, it promptly healed, showing, in the opinion of the speaker, that the dogma as to both the location and the non-closure of the incision was not sound. As in this case the central incision made it possible to remove at the same time an ovarian hæmatoma which would otherwise have been out of reach, and as perfect drainage was obtained, these points in the technique of such operations were worthy of special consideration.

As to some points bearing on the diagnosis the speaker would make no reference, leaving them to Dr. Price, who so kindly worked with him. He would only venture the opinion that in this, as in all other surgical diseases of the pelvis, absolute diagnosis was very often impossible, depending, as it did, so much upon anemnesis, which, as in this case, was little to be relied upon.

Dr. Penrose asked whether or not the pus was encysted around the cæcum or free in the peritoneal cavity.

Dr. Hoffman said that the presence of pus became evident only on reaching the cæcum.

Dr. Penrose said that the cases in which it was proper to make the incision over the cæcum were those in which there was an encysted abscess around the cæcum or the appendix. If there was free pus in the peritoneal cavity, a median incision would probably be better.

Dr. Goodell said that he on several occasions had been obliged to sever the appendix from its attachment in operations for the removal of ovarian tumors, and that this detachment had seemed to produce no bad effect. It seemed to be a useless appendage. He did not know that modern research had thrown any light upon its use. In removing the appendix, he simply ligated it with silk and cut it off, carefully squeezing the cut end so that no fæcal matter should remain.

Dr. Joseph Price said that a few years ago ovariotomists regarded the appendix as sacred—as something that should never be touched.

The case reported was one of great interest. The woman had complained for the space of two years, her trouble evidently originating in an appendicitis. The cæcum was so much thickened and so low down in the pelvis as to suggest the existence of tubal disease. She had, however, a good history and several healthy children, the youngest being two years of age. The presence of the tortuous body on the right side determined the choice of the median incision. After opening the abdomen, the small hæmatoma was first removed. Afterward, the cæcum was dealt with. The course of the case was all that could be desired.

Dr. I. G. Morton advised the use of a lateral incision and non-closure of the wound. As to the first of these recommendations, circumstances should influence the choice. As to the second, he did not believe in it at all. We were too far advanced in surgery to employ such a procedure.

Dr. J. V. Kelley said that the general practitioner met with more cases of perityphlitis than did the specialist, and that he was disappointed in not hearing more about the history of the case just reported. He was also surprised that this case was that of a woman, the disease being much more common in men. The existence of pain for a year or two would be evidence against the existence of perityphlitic abscess during that time. Perityphlitic abscess was an acute disorder and ran an acute course.

Dr. J. Price did not concur in the view that the course of perityphlitis was necessarily acute. He knew of a case in the practice of Dr. I. G. Morton in which the operation for the trouble was repeated at the end of a year's time, and the appendix removed. In this case the trouble was recurrent, gradually growing worse, and required a second operation.

Dr. M. O'Hara cited in substantiation of Dr. Price's view the case of his own child, in which there were two or three attacks within eleven months' time. For four or five months the child was in perfect health, although the condition (appendicitis) existed. Another attack followed, and death from septic peritonitis resulted.

Dr. M. Price believed that the peritonæum could tolerate the presence of large quantities of pus for a time, just as abscesses in other parts of the body were tolerated.

Dr. William Goodell thought that perityphlitis, like any other form of inflammation, might exist for years. He thought that Dr. Kelley had narrowed the question down too far.

Dr. Hoffman held that it was a mistake to believe that inflammation could not be present in these cases without the presence of a well-defined tumor. It was easy to make a diagnosis after operation, as was too often done. Many pages could have been written after this operation on the diagnosis of perityphlitis; but before operation it was impossible, because there was no definite history. There was nothing but the inflammation of the appendix which could have caused the symptoms of which she complained.

Dr. J. V. Kelley thought that no one would diagnosticate perityphlitic abscess before the presence of a tumor was recognized. The pericæcal tumors underwent resolution spontaneously and abscesses did not form.

Dr. J. B. Deaver made a distinction between appendicitis and perityphlitis, and believed that very few cases of inflammation about the appendix underwent resolution.

Dr. G. M. Shoemaker cited a case the history of which he thought proved that a termination by resolution occurred in one such case.

Dr. William Goodell presented a **Specimen of Oviducts and Ovaries, the Diseased Condition being caused by Gonorrhœal Infection.**

The ovaries were enlarged by cystic and interstitial degeneration. The mesosalpinx was entirely absorbed, the fimbriated extremities of the oviducts were enlarged by a cluster of cysts, and the adhesions to the broad ligaments were firm.

The history as to the infection was a clear one. The husband had a gleet, and, directly after marriage, the wife's health began to fail, her symptoms consisting of pain in the groin and reflex neuroses of a high grade. By vaginal examination the concurrent implication of the oviducts and ovaries was very manifest, as both organs were readily distinguished from each other. The patient recovered without mishap.

Dr. Goodell also exhibited a solid ovarian tumor of suspected malignant character. The girl from whom he had removed it was only sixteen years of age. It had grown very rapidly since its presence was first discovered a year and a half before. Its weight was six pounds, and for its removal required an incision nearly twelve inches in length. The pedicle was very broad, and some ascitic fluid was present. This patient was also doing well.

Dr. Goodell also showed a fibroid tumor of the uterus weighing eighteen pounds. A rapid accumulation of ascitic fluid rendered the performance of the operation imperative. On account of the pressure upon the diaphragm the patient was anæsthetized in the sitting position, and it was only after removal of the fluid that she could be safely placed in the recumbent position. The incision needed for the removal of the tumor was very long. The pedicle was treated extra-peritoneally by the use of Kœberlé's wire clamp. Thus far all the symptoms had been favorable, but, as only forty-eight hours had elapsed since the operation, the patient was not yet out of danger.

Dr. J. Price was glad to hear Dr. Goodell say that operation was the only treatment for such cases. He never operated simply for relief of nervous symptoms, but only when actual disease existed.

Dr. Penrose showed specimens of diseased ovaries and tubes removed from a patient who had been treated for several months in 1884 for chronic cellulitis by the usual applications. She was married and had two children—the last born five years before. In 1886 she returned for treatment. Diagnosis: cyst of left ovary and tube. She was again treated by the common applications. In 1888, one week before, she returned for treatment, and pyosalpinx was diagnosticated. The tubes and ovaries were found in the hollow of the sacrum. The left ovary contained one drachm of purulent matter.

## Book Notices

*The Rules of Aseptic and Antiseptic Surgery.* A Practical Treatise for the Use of Students and the General Practitioner. By Arpad G. Gerster, M. D., Professor of Surgery in the New York Polyclinic; Visiting Surgeon to Mount Sinai Hospital and the German Hospital, New York. Illustrated with Two Hundred and Forty-eight Engravings and Three Chromo-lithographic Plates. New York: D. Appleton & Company, 1888. Pp. 11–332. [Price, $5.]

The author in his preface announces that "the object of this volume is a systematic yet practical presentation of the Listerian principle." He does not aim at "the inclusion of all the disciplines of surgery," his leading idea being "to illustrate the incisive practical changes that the adoption of aseptic and antiseptic methods has wrought in surgical therapy." The introduction of "pathological and technical diversions" is only "for the sake of laying a rational foundation to the principles composing the essence of antiparasitic surgery," whose principles and practice he hopes "to somewhat propagate and popularize." The work is divided into five parts: 1. Asepsis. 2. Antisepsis. 3. Tuberculosis. 4. Gonorrhœa. 5. Syphilis. Under asepsis, after a definition of the term, the author shows how it is to be preserved, and gives the rules of surgical cleanliness, the various dressings employed, and the method of their application under all circumstances for either temporary or definitive relief. Then follows a long but exceedingly valuable chapter on the special applications of the method—a chapter full of interest and instruction for all practical surgeons, giving not only the general principles of surgical technique, including sutures, drainage, etc., but also their application to diverse organs and regions. One only regrets that still further space was not devoted to this chapter and the subject more exhaustively treated.

Part II, treating of antisepsis, is to be particularly commended for its full and clear account of the natural history of idiopathic suppuration, that great stumbling-block in antiseptic pathology to so many of our surgical teachers. The difference between the micro-organisms of suppuration and putrefaction is made evident, and a concise account of the life history of the former given, showing how infection occurs, develops, and spreads in the organism. The chapter closes with the diagnosis and treatment of the resulting phlegmon, its occurrence in the various regions being well illustrated by the narration of cases and by photographs, and a few words on erysipelas and pseudo-erysipelas. The three following chapters—on tuberculosis, gonorrhœa, and syphilis—while excellent in every particular, are too concise, particularly the one on tuberculosis. It is to be hoped that in the next edition, which must soon follow, the author will elaborate these subjects more.

The work, as a whole, is a particularly valuable one to all interested in surgical procedures. The author's careful training and extended experience, which have been most skillfully utilized, render him a most valuable teacher. The illustrations are very numerous and well executed, a few only lacking in definition.

*The Modern Treatment of Stone in the Bladder by Litholapaxy.* A Description of the Operation and Instruments, with Cases illustrative of the Difficulties and Complications met with. By P. J. Freyer, M. D., M. Ch., Bengal Medical Service. London: J. & A. Churchill, 1886. Pp. 116.

The aim of this work is to place before the profession "a guide to the modern treatment of stone by litholapaxy of a thoroughly practical nature." In so doing the author carefully describes and gives the history of the operation and instruments employed, and ably illustrates, by cases selected from a large experience, the difficulties and complications met with and how they should be overcome. He also proposes a new method of diagnosis by means of an "aspirator-cannula," which has proved valuable to him in the detection of small calculi in misshapen bladders and available not infrequently for their removal. Although meeting with a large number of stone cases, he was for a long time deterred from attempting the new operation by the depreciative criticisms of Sir Henry Thompson upon its introduction by Bigelow, and only finally decided upon giving it a trial when he learned of the former's brilliant successes with it. A valuable summary of the one hundred and twenty-eight cases of operation by the author is given, and a few illustrative cases are described in detail. The practical conclusions drawn from this well-digested experience may be summarized as follows: Litholapaxy is the operation in adults of both sexes, except in a few cases where either the unusual size or hardness of the stone or excessive pathological deformities of the bladder or urethra complicate the case. For children, the cutting operation is to be preferred. This monograph deserves the most hearty commendation.

*The Ethics of Marriage.* By H. S. Pomeroy, M. D., Boston. With a Prefatory Note by Thomas Addis Emmet, M. D., LL. D., New York, and an Introduction by Rev. J. T. Duryea, D. D., of Boston. Also with an Appendix showing the Laws of most of the States and Territories regarding Certain Forms of Crime. New York: Funk & Wagnalls, 1888. Pp. xxxi–33 to 197.

In frank but judicious phrase, addressed rather to the public than to the profession, the author raises his voice against the too prevalent crime of abortion. Few physicians need to be told how common this malpractice is, even among those who are supposed to constitute the most refined class in the community; none but the blind can overlook the scarcely covert ad-

vertisements of abortionists which disgrace the columns of professedly reputable newspapers. But utterances like this and the more vigorous protest of Storer are not likely to reach—and if so would hardly influence—the willful sinners for whom they are intended. When woman in wedlock stifles the maternal instinct and seeks the death of her offspring, her ears are closed to arguments against her self-indulgence. Persuasion is wasted, and the secrecy of her evil doing usually enables her to laugh at the penalties prescribed by laws which it is seldom attempted to enforce, even upon her most notorious accomplices.

### BOOKS AND PAMPHLETS RECEIVED.

Chronic Pyelitis successfully treated by Kolpo-uretero-cystotomy, Irrigation of the Pelvis of the Kidney, and Intra-vaginal Drainage. By Nathan Bozeman, M. D., Surgeon to the Woman's Hospital in the State of New York. [Reprinted from the "American Journal of the Medical Sciences."]

The Gradual Preparatory Treatment of the Complications of Urinary and Fæcal Fistulæ in Women, including a Special Consideration of the Treatmnet of Pyelitis by a New Method, and the Prevention of the Evils of the Incontinency of the Urine by a New System of Drainage. By Nathan Bozeman, M. D., etc. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

Conditions rendering Diagnosis Difficult in Pelvic and Abdominal Diseases. With Illustrative Cases. Including an Oral Report on an Ovarian Tumor, with Discussions. By T. B. Harvey, M. D., LL. D., etc., Indianapolis.

Announcement for 1888–1889 of the Medical and Dental Departments of the National University, Washington, D. C.

The Treatment of Acne. By B. Merrill Ricketts, M. D., Cincinnati, Ohio. [Reprinted from the "Medical Register."]

Heredity. By James Searcy, of Tuscaloosa. Junior Counselor of the Medical Association of the State of Alabama. [Reprinted from the "Transactions."]

The Electro-magnet in the Removal of Steel from the Interior of the Eye. By Alvin A. Hubbell, M. D., etc., Buffalo, N. Y. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Probemittagbrod oder Probefrühstück. Aus der städtischen Frauensiechenanstalt zu Berlin. Von Dr. Max Einhorn, aus New York. [Separat-Abdr. aus "Berliner klin. Wochenschrift," 1888, No. 32.]

## Reports on the Progress of Medicine.

### PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

**Experimental Researches showing the Influence of Gravitation on the Motor Centers.**—M. Brown-Séquard ("Comp. rend. de l'acad. des sci.," No. 23, 1888), in nine experiments out of thirty, found that a stimulus applied to a given part in the motor region of one half of the encephalon provoked movements either in the opposite or the same side of the body, according to the position of the animal on the flank corresponding to the region stimulated, or on the one opposite to this. If the animal lay directly on its back, the movements occurred sometimes on the opposite side, sometimes on the same side as that which was stimulated, but the anterior limb was usually moved by a stimulus applied on the opposite side of the head, and the posterior limb by one applied on the same side, though sometimes the reverse was the case. However irregular the movements provoked may be, the author states that there can be no doubt that—1. The difference of manifestation depends entirely upon gravitation; that is, the position of the head. 2. The motor zone of each hemisphere is capable of producing movements in the four limbs of the animal, and not in the limbs opposite only, as has been generally supposed. Having established artificially the conditions produced by gravitation by cutting the cervical sympathetic, and thus causing hyperæmia of one hemisphere, it was found in two out of a number of cases that a stimulus applied to the hyperæmic hemisphere caused movements in the limbs opposite to those produced by an irritation applied to the same point previous to the section of the sympathetic.

The basal ganglia, the internal capsule, etc., were found to be influenced by gravitation in the same manner as the cortex. The author also alleges that a large number of experiments led him to believe that the anterior pyramids are in no way necessary for the transmission of motor impulses proceeding from any part of the brain. Complete sections through both anterior pyramids were made, but irritation of the parts in front of and above the section gave the same results as when the medulla was intact.

**Experiments on the Motor Functions of the Brain** (Presented by Brown-Séquard).—Eugène Dupney (*ibid.*) has noticed since 1873 that an electrical stimulus applied to a portion of the dura in the parietal region of the brain in animals could bring about distinct muscular movements. The results were constant if the animal was not exsanguinated or anæsthetized, the latter state being incompatible with the manifestations of animal life. His recent experiments gave the following results: A crucial section of the dura of the parietal region particularly, and the eversion of its edges, caused distinct paresis of the limbs, either opposite to or on the same side as the lesion. The motor functions of the facial muscles were markedly disturbed, and always on the same side as the lesion. The inferior eyelid was so dependent as to expose the conjunctiva, the nasal ala approached the superior lip, which was also dependent, and the median line between the lips was deviated to the opposite side. Sensibility was increased in the affected side of the face, and also in the paralyzed parts of the body. The paralysis could be removed by the application of a feeble faradaic current or by producing a similar lesion in the dura of the other hemisphere. Analogous results were obtained after producing lesions of the cerebral convolutions. The application of a feeble faradaic current to the parietal dura, which was naturally somewhat diffused over the brain by the cephalo-rhachidian fluid, gave rise to muscular movements resembling closely those following the faradaic stimulation of the psycho-motor centers described by Fritsch, Hitzig, and Ferrier, or of the surface of section of the internal capsule described by others. That the affection should cease when the site of the lesion is stimulated, or as soon as a similar lesion is made on the opposite side, the author says, is difficult to understand. He thinks that the knowledge of the present time can hardly be said to explain the mode of production of movements in the brain, or the origin of cerebral paralysis.

**Compensatory Hypertrophy of the Suprarenal Capsules.**—M. H. Stilling ("Revue de méd.," No. 6, 1888) performed fourteen experiments on rabbits by extirpating one of these glands or by cutting off its blood-supply. After a lapse of several weeks the remaining capsule was found to have lost its normal aspect, and to have undergone considerable hypertrophy. One of the rabbits, which was deprived of its left gland, presented at the post-mortem examination the following conditions: In front of the vena cava was found a yellowish body with an irregular surface, corresponding to the inferior extremity of the right suprarenal capsule. It was an accessory gland and weighed 0·03 gramme. The right suprarenal capsule itself was decidedly hypertrophied, as compared with one taken from a healthy rabbit of equal size and weight. It weighed 0·41 gramme, whereas that taken from the healthy animal weighed only 0·25 gramme. As the organs vary in weight under physiological conditions, the author took care to compare the hypertrophied capsules with those taken from healthy rabbits of the same weight, and which had been kept under the same conditions as those operated upon. The author believes that these microscopical and physical changes in one capsule after the removal of its fellow indicate that these glands have an important function in the organism.

**The Length of Time needed for Substances to appear in the Blood after their Administration by the Stomach or Subcutaneously.**—MM. Grehant and Quinquaud ("Comp. rend. hebdom. des séances de la soc. de biol.," No. 28, 1888), in determining this question, used solutions of the iodide and salicylate of soda. The conclusions are, from their experiments on dogs, that the presence of salicylate of soda in the blood can be shown within thirty-one minutes after an injection of a six-gramme dose subcutaneously, or directly into the stomach. In the case

of iodide of sodium a seven-gramme dose was needed to cause its appearance in the blood within the same length of time if it was given by the stomach, but when given subcutaneously and in about half the foregoing dose, it appeared in the blood after a lapse of eight minutes only. The authors also remark that after the injection of two grammes of iodide of sodium into the stomach no trace of this salt could be detected in the blood.

**On the Secretory Fibers of the Sympathetic supplying the Parotid.**—J. N. Langley ("Jour. of Phys.," March, 1888) remarks that it is usually said that the parotid receives trophic but no secretory nerve fibers from the cervical sympathetic, because its stimulation rarely excites any secretion. The author found, however, that stimulation of the sympathetic was always followed by secretion by the parotid, if the gland was previously prepared to secrete. Or, in other words, the sympathetic secretory fibers are non-effective unless the gland has been supplied with a considerable amount of oxygen. The gland never failed in the author's hands to respond to sympathetic stimulation if it was previously prepared to do so by irritation of the chorda tympani, especially if a small dose of atropine sulphate had been injected into a vein. The relations of the submaxillary and sublingual glands to their cerebral and sympathetic nerves were found to be of a nature similar to the foregoing.

**The Influence of Organic Temperature on the Convulsions caused by Cocaine** (Presented by A. Richet).—MM. P. Langlois and Ch. Riche ("Comp. rend. de l'acad. des sci.," No. 23, 1888) experimented on dogs exclusively, performing intravenous injections of a solution of cocaine hydrochloride. The effects produced were first a general rise of the body temperature; then convulsions supervened, resembling closely epileptiform attacks. The dose needed to produce convulsions varied greatly. The authors maintain that they were the first to determine that this dose is an amount in inverse ratio to the temperature of the animal. A dog which had had an injection and did not show any tendency to convulsions, as soon as the body temperature was elevated by the administration of a warm bath had a second injection without having manifested a distinct epileptiform attack. It is evident, the authors say, that the elevation of the organic temperature renders an animal more and more apt to have convulsions by increasing the toxic action of the poison on the nervous system; and the convulsions in their turn raise the temperature, and thus hasten a fatal issue by stopping the heart's action and the respiration. The only way to interrupt this vicious circle is to employ refrigerants. The same conditions, they further suppose, are probably present in many diseases in which the auto-intoxications play such an important rôle. The febrile temperature increases the organic sensibility to the poison, the poisoning of the organism is itself the cause of the elevation of the temperature, and refrigeration seems to be the only general method which is likely to diminish the effects of toxic agents which cause convulsions.

**On the Influence of Antipyretics, and particularly of Antipyrine, on the Amount of Glycogen in the Liver** (Presented by Brown-Séquard).—MM. Lépine and Porteret (*ibid.*) experimented on rabbits exclusively, and found that the administration of antipyretics (and they used antipyrine principally) decidedly increases the amount of the hepatic glycogen and diminishes that of the hepatic sugar. The antipyretics, they state, are obstacles to the transformation of glycogen into sugar, and the fact seems to be in perfect harmony with the recent work of Chauveau on the consumption of glycogen and the production of heat. The checking of the transformation of glycogen into sugar they ascribe to a nervous influence, although they witnessed in their experiments some influence on the hepatic parenchyma.

**The Influence of Temperature on the Dissociation of Oxyhæmoglobin.**—Dr. Léon Brasse (*ibid.*) experimented during two years in this direction, and gives the following results: 1. The value of the tension under which the oxygen is held in union is infinitely small at a temperature of 0° C. (32° F.). At this temperature the oxyhæmoglobin is in a condition of considerable stability, does not allow of any dissociation of oxygen in an airless space, and scarcely gives up any oxygen to the living tissues which it bathes. As is well known, in warm-blooded animals, with an artificially reduced temperature, the blood is red in the veins as well as in the arteries. 2. The tension of dissociation grows higher as the temperature is raised, while the stability of the oxyhæmoglobin decreases, the latter being formed in proportion to the superiority of the tension of the atmospheric oxygen to that of dissociation. The foregoing statements are sustained by the fact that in a cold-blooded animal placed in a bath of warm water the venous blood is black, as it is in warm-blooded animals, and *vice versa*. The same truth is evident from Paul Bert's experiment of maintaining an animal's life, the temperature of which was reduced 20° C. (36° F.) below the normal standard during the experiment, the animal being placed in a confined air chamber at a very low temperature, and hence breathing an atmosphere which would be entirely irrespirable by an animal with a normal temperature. 3. Since the tension of dissociation of the oxyhæmoglobin increases with the temperature, there must be a moment when it will equal the tension of the atmospheric oxygen, and at that time the formation of oxyhæmoglobin must be interfered with. This is the case in hyperpyrexia. Animals die when the temperature of their blood reaches 45° C. (113° F.), and analysis is unable to detect any oxygen in this blood. In hyperpyrexia the tension of the oxyhæmoglobin increases, but a smaller quantity of the inspired oxygen is utilized, which explains the frequent and shallow respirations which provide less than the normal quantity of oxygen, and corresponds with the fact that the total oxidation of the body in hyperpyrexia is lowered, as has been observed by various authors. The tension of dissociation of the oxyhæmoglobin is the same for a given temperature in any animal. The author further explains the fact of a bird's life being possible at its normal temperature of 45° C. (113° F.).

**On the Recent Perfection of the Method of Counting the Red and White Blood Corpuscles.**—Professor Mayet ("Arch. de phys. norm. et pathol.," No. 5, 1888) has invented a new solution for the use of Hayem and Malassez's apparatus for counting the blood-cells. The objections which he makes to the solutions now used are that they do not distribute the elements uniformly, that some of the red cells become altered so as to greatly resemble granular leucocytes, and that the solutions themselves become quickly altered. The author makes his solution for Hayem's hæmocytometer as follows: Five hundred cubic millimetres of a one-in-one-hundred solution of osmic acid, the density of which is 1·006, are mixed with four cubic millimetres of the blood to be examined, and the mixture is set aside for two minutes to allow the solution to react upon the elements, which are thus rendered apt to fix coloring substances. Then he adds 500 cubic millimetres of a solution with a density of 1·162, composed of 55 cubic centimetres of distilled water, 45 cubic centimetres of pure glycerin, and 17 cubic centimetres of a one-to-one-hundred solution of eosine. The mixture is to be well stirred.

The result of this process is that the serum acquires a density of 1·084, which favors a perfectly uniform distribution of the elements, and that the eosine stains the red cells very quickly, the leucocytes undergoing only an exceedingly slight change in color. This facilitates the counting of the cells, since they are differently colored and their natural shape is preserved. The author takes four instead of two cubic millimetres of blood, which accounts for doubling of the quantity of serum indicated by Hayem.

**On the Development of the Red Corpuscles of the Blood** (Presented by M. de Lacaze-Duthiers).—L. Cuénot ("Comp. rend. de l'acad. des sci.," No. 10, 1888) observed in the spleen of the inferior vertebrates two kinds of nuclei surrounded by a thin protoplasmic layer. Those which measure from ten to sixteen millimetres are developed into leucocytes; they leave the spleen and enter the general circulation as soon as they have acquired an amœboid movement. The nuclei, measuring from eight to ten millimetres in diameter, and which are more refrangent than the former, enter the general circulation as such, and are ultimately transformed into red blood-cells. Never does a leucocyte nucleus, asserts the author, develop into a red blood-cell. From the red-cell nucleus which has left the spleen, secondary nuclei, about ten in number, spring. These are ultimately detached from the main nucleus, and fall into the general cellular cavity, where they are in a state of constant irregular movement. They are seen to disappear with the beginning of the hæmoglobin secretion in the formerly colorless cell. They disappear completely when the cell and its main nucleus reach the mature state. The main nucleus, the author says, thus

shares to a large extent in the formation of hæmoglobin; and in the mammalia, though the red cells are developed entirely in the spleen on account of the difference in the anatomical disposition, and the main nucleus, instead of persisting, is entirely dissolved during the generation of hæmoglobin (which makes the only difference), in the main the process of evolution is morphologically the same.

**Variations of the Activity of the Reduction of Oxyhæmoglobin in Men in Health and Disease** (Presented by Brown-Séquard).—M. A. Hénacque (*ibid.*) made observations of 370 individuals, and found that physical agents decidedly modify the activity of the reduction of oxyhæmoglobin. It is reduced to one third of the normal amount in a part acted on by an application of ice, but afterward reacts to three times the physiological activity. Normally it is feebler in the morning, attains its maximum at the time of meals and in the two hours subsequent, and during muscular exercise; it is diminished toward the evening and after muscular fatigue. The diminution of the activity of reduction in disease usually goes hand in hand with the diminution in the quantity of oxyhæmoglobin, as in the cachexias, phthisis, etc., and generally in other diseases in which the nutrition is poor. In chlorosis and anæmia, with an equal quantity of oxyhæmoglobin present, the activity of reduction is less in the former. Diabetic patients regularly present a noticeable diminution of that activity, and in epilepsy it is lowered without relation to the quantity of oxyhæmoglobin.

In typhoid fever both the activity of reduction and the quantity of oxyhæmoglobin are diminished at the outset, but they return toward the normal amount when convalescence is established.

**Comparative Experiments on the Elementary Respiration of the Blood and the Tissues** (Presented by A. Milne-Edwards).—MM. Grehant and Quinquaud (*ibid.*) agree with Spallanzoni and Paul Bert, as regards their general statements, that a given weight of blood absorbs less oxygen than an equal weight of muscle. But the authors made a further minute investigation on this subject, and the following are their results: Into a retort holding 100 cubic centimetres of air 25 cubic centimetres of blood were introduced, and the gases furnished by the air and blood were quickly pumped out. The same experiment was repeated, but the retort, with the blood as before, was agitated in a bath at 40° C. (104° F.) for from one to three hours. The gases liberated were extracted again, and the analysis showed a difference between the oxygen absorbed and the carbon dioxide set free in the two experiments which was expressed in tenths of a cubic centimetre. When 20 grammes of fresh muscle were added to the blood, and the whole was treated as in the second experiment, the analysis of the extracted gases showed the presence of 7 cubic centimetres of carbon dioxide after the first hour, and nearly double that quantity after the second hour. The blood became black, but it did not change color under the same conditions when no muscle was present. It follows, the authors say, that the blood is but a carrier of oxygen, and the blood-cells scarcely respire at all.

**On the Relation between the Atomicity of Inorganic Elements and their Biological Action** (Presented by Brown-Séquard).—M. J. Blake (*ibid.*) states that the higher the atomicity of a given salt, the more extensive is its biological action, and also the higher are the centers affected by it. The monoatomic elements injected intravenously in physiological doses affect usually the pulmonary arteries, without causing any marked reaction on the higher nervous centers. Even when injected into the carotid and thus enabling these elements to reach the nervous centers in a considerably concentrated state, their presence does not interfere at all either with the action of the brain, the medulla, or the spinal cord. The author's *résumé* is as follows: The monatomic elements act on the pulmonary arteries; the biatomic, on the vomiting centers and on the voluntary and cardiac muscles; the triatomic, on the respiratory, vasomotor, and inhibitory centers, the cardiac ganglia, and the pulmonary arteries; the tetratomic elements act on the respiratory, vaso-motor, and inhibitory centers, on the brain, the spinal cord, the cardiac ganglia, and the pulmonary arteries.

**The Role of the Bile in the Digestion of Fats, observed through a Cholecysto-Intestinal Fistula** (Presented by Brown-Séquard).—M. A. Dastre (*ibid.*) demonstrated some years ago the error of the assertion by some physicians and physiologists that the penetration of the bile into the stomach may be a cause of grave gastric disturbance. The digestion of fats is attributed, after Claude Bernard, to the pancreatic secretion, to the exclusion of the bile. *In vitro*, the author states, the former is apt to emulsify and digest that class of foods, and *in vivo* the digestive organs of the rabbit furnish identical arguments. In this animal the pancreatic duct opens 35 centimetres below the choleductus; in the interval between the two openings the bile only acts on the food; and if fat be ingested it is not emulsified at that point and the lacteals of that region remain nearly clear, whereas they at once become opaque below the pancreatic duct. The author made in dogs cholecysto-intestinal fistulæ which opened into the small intestine at from 50 and 60 centimetres to one metre below the pancreatic opening. Two of the animals were kept alive for about four months, thus proving that they possessed normal digestive functions. A copious meal including fats was given to them before they were killed. At the post-mortem examination the lacteals above the opening of the fistula were almost clear, but were cloudy below it. This pointed to the fact, in the author's opinion, that scarcely any fat was absorbed by that portion of the digestive tract in which the pancreatic juice alone acted on the food. The author concludes that, although two extremes are seen in these cases of the rabbit and the dogs, we must admit that the pancreatic secretion as well as the bile are, if alone, equally powerless to effect the digestion and absorption of fats; that they must both act on the food in order that the perfect digestion of fats may occur, the pancreatic juice seeming to split up the fatty matters, and the bile seeming to contribute more to the process of their absorption. The absence of either fluid interferes considerably with the normal absorption of fats.

**On the Excitability of the Gray Substance of the Cerebral Cortex when subjected to Experimental Irritation.**—Dr. João Paulo de Carbalho (*ibid.*) states that he, observing that the question as to the experimental excitability or non-excitability of the cerebral gray substance had not been as yet decided, attempted to solve the problem in the following manner: In several dogs the excito-motor zones of both hemispheres were exposed, with the exercise of all known precautions; a feeble faradaic current, scarcely perceptible on the point of the tongue, was then applied to the brain-surface, which was still covered by the pia. Crossed movement of the four limbs resulted. Then a given area on the brain-surface was chosen, and the movements which followed the application of a current of a given intensity were carefully noted. A piece of cotton soaked in a five-per-cent. solution of cocaine hydrochloride was then applied to this area for from five to ten minutes, care being taken to avoid the diffusion of the solution. The same current as before was re-applied to this area, and no movements could be provoked.

The deeper layers of the same area as far down as the white substance were next tested for excitability, and reacted perfectly. Excitation of the other hemisphere gave the same results. After these experiments Dr. Carbalho thinks that there can be no doubt that the cortical gray substance of the brain is decidedly irritable.

**The Structure of the Spleen, and the Destruction of the Red Blood Corpuscles in its Interior.**—Dr. J. Denys ("Bull. de l'acad. roy. de méd. de Belgique," No. 3, 1888) alleges that he has made a discovery in regard to the structure of the spleen. He says that the pulp of that gland consists entirely of a cavernous capillary system, and that the circulation is not interrupted in passing from the capillaries to the veins. The author's work is criticised in the same number of the journal, page 221, where it is said that it does not seem to be really a discovery, since Billroth, Schweigger-Seidel, Gray, Kylber, Wedl, etc., established the same fact.

In accordance with the views of Neumann, but against those of Fincke, who supposes that the red cells enter the leucocytes in the spleen and there suffer disintegration, the author states that it is not possible to see any red cells englobed in the leucocytes in the cavernous capillary system of the pulp; that the red globules are there in great number and in different stages of disintegration; that their number varies according to the activity of the digestive organs.

He used two methods to prove the presence of the red cells in the gland: 1. The method of dissociation by indifferent liquids. 2. The method of coloring by fuchsin. The former was especially useful if the cells were nucleated. The formation of pigment in the spleen, the author states, is accomplished in two stages. The first one is when the

hæmoglobin and allied matters leave the red cells to be dissolved in the blood serum. In the second, the hæmoglobin is absorbed and decomposed in the endothelial cells of the cavernous system, and also in some globular cells which are not leucocytes but hypertrophied endothelial cells. The pigmentation of the endothelial cells the author believes to be analogous to what he has observed in the living connective tissue when injected with hæmoglobin, and that it is also suggested by the facts related by Neumann in his work on the formation of the pigment in a hæmorrhagic focus. In both cases the connective tissue cells give the characteristic reaction of iron by hydrochloride of ammonia.

The peculiar disposition of the vessels of the spleen is thought by the author to favor the destruction of the red cells. He supposes, finally, that the hæmoglobin, after being dissolved in the serum, goes in part to the liver as a source of the bile pigment.

**On the Action of the Nerves which Dilate the Pupil.**—Dr. W. H. Gaskell ("Jour. of Phys.," March, 1888) remarks that there are three views on this subject: 1. The usual explanation of the dilatation of the pupil is that there are motor fibers in the cervical splanchnic nerve supplying a special dilating muscle. 2. Gruenhagen seeks the cause in the constriction of the blood-vessels of the iris. The author's suggestion is that the cervical splanchnic is the inhibitory nerve of the sphincter, the latter being normally in a condition of tonic contraction. The author, together with Mr. Langley, was enabled to prove the truth of the last-named view by studying the reactionary effect following stimulation of the splanchnic nerve. The right cervical splanchnic nerve of a cat was severed, and with each stimulation of the peripheral end a decided dilatation of the corresponding pupil followed. The animal's head was then cut off, when the right pupil contracted moderately, while the left was in a state of extreme dilatation. To avoid the influence of post-mortem changes, should any occur, along the track of the ocular nerve, the author removed the brain and its nerves. The pupils were kept under observation for three days. The long and short diameters of the right pupil were 7 and 4·5 millimetres respectively for the first day, while those of the left were 11 and 13 millimetres. By the third day both pupils were the same. The marked after-contraction of the sphincter muscle consequent on a series of stimulations of the cervical splanchnic, the author states, can only be explained by admitting the inhibitory action of this nerve on the splanchnic muscle.

## OPHTHALMOLOGY.

By CHARLES STEDMAN BULL, M. D.

**The Development of the Nasal Duct in Man.**—Ewetsky (*ibid.*) draws the following conclusions from his investigations on the subject: 1. The development of the nasal duct begins at about the end of the fifth or the beginning of the sixth week of fœtal life. 2. The development of the duct follows about the same course as it does in the other vertebrates. 3. A marked difference exists in the form which the canal assumes during the first period of development in man and that which it assumes in the other mammalia.

**The Retinal Circulation, especially the Pulsation of the Retinal Arteries, in Diseases of the General System.**—Schmall (*ibid.*) agrees with Donders in regard to the venous pulsation, that the increased pressure with which the blood circulates in the arteries of the body during the contraction of the heart depends partly upon the vitreous, before it has been propagated through the veins into the capillaries and the veins have become compressed.

The places in which the lateral blood-pressure is weakest are first compressed. In diseases of the heart we meet in the eye with embolism of the central artery of the retina or of its branches; with septic retinitis dependent upon a supposed more or less infectious capillary embolism; with changes in the caliber of the veins and arteries, and in their color; and, finally, with abnormal phenomena of pulsation in the retinal arteries. In cases marked by great cyanosis of the skin, particularly in congenital diseases of the right side of the heart, in congenital abnormal communication between the right and left sides of the heart, and in marked valvular defects, a pronounced venous hyperæmia has sometimes been observed in the right fundus of the eye, though this is by no means usually the case. Schmall has never seen an increase in the difference in caliber of retinal veins and arteries in cases of non-compensatory cardiac failure, and finds the explanation of this in the venous turgidity of the abdominal organs, notably the liver, which is found in these cases. In this same class of cases, however, he has often met with marked anæmia of the retinal arteries. In regard to the changes said to have been observed in the retinal vessels during the course of long-continued fevers, Schmall thinks that the views of Jaeger in regard to the dilatation of the retinal veins and arteries, and the relation existing between the degree of dilatation and the intensity of the fever, are faulty, and that the cases in which this dilatation exists are exceptions to the rule. The condition of the central vascular system in progressive phthisis, and the general cachexia induced by it, naturally leads to a consideration of the question of how far the retinal circulation is influenced by chronic conditions of anæmia. Schmall draws his conclusions on this point from an examination of ninety-four cases of chronic anæmia, due to chlorosis, extensive losses of blood, marked febrile disturbances, malignant growths, chronic cardiac disease, and progressive pernicious anæmia. 1. The retinal vessels often appear abnormally full in these cases. 2. When changes exist in the central vascular system, they affect in the majority of cases both arteries and veins alike; in a small minority of cases the arteries and veins are affected in a different manner the one from the other. 3. An analogous change of the central vascular system appears either in a diminution in the color of both arterial and venous blood, with or without a slight lessening of the caliber of the vessels, or in a diminution in the caliber of the vessels alone, or in both together. 4. A difference in relation between arteries and veins appears very rarely in abnormal differences in color between arterial and venous blood, but more often in a difference in caliber between arteries and veins, that of the latter being increased. 5. The veins show a relative increase in caliber both with normal and contracted arteries, but are only slightly increased in tortuosity. 6. A marked tortuosity of the retinal arteries occurs more frequently in anæmic individuals than in healthy persons. No demonstrable relations exist between the increased caliber and the degree of tortuosity. 7. The changes in caliber and color of the retinal arteries do not at all affect the anæmic appearance of the patient. 8. Unilateral changes in the caliber of the retinal veins sometimes occur in patients whose anæmic condition in no wise differs from that of other anæmic patients, and is in all probability due to some local cause which influences the retinal circulation. 9. It is no more possible to develop a theoretic system for classifying these cases than it is to determine the intensity of the process and its prognosis. 10. The arterial pulsation is very frequently observed in the retinæ of anæmic persons. It is by no means constant in the same individual, but is sometimes wanting. 11. Increase or diminution of the arterial pulsation in the supine or sitting posture of the body has been but rarely noticed. 12. Compression of the carotid often weakens the pulsation, but never completely suppresses it. Compression of the external jugular vein produces no effect upon the pulsation. 13. A more or less marked diminution of the median arterial pressure, and consequently of the intra-ocular tension, is always present with pulsation of the retinal artery. 14. A certain increase in the rapidity of the radial pulse is not so constant. 15. The arterial pulsation has no definite connection with the tortuosity of the arteries in the retina, except that it is more apt to occur in vessels which are tortuous. 16. The arterial pulsation has no direct connection with the diminution in the formed elements of the blood. 17. The arterial pulsation does not always disappear when the anæmic condition has ceased to exist.

**A New Method of Corneal Transplantation.**—Von Hippel (*ibid.*) thus describes his present method of operating for the improvement of vision in leucomatous corneæ: 1. The lids are opened by an elevator. In placing the trephine in position, care must be taken that the cutting edge be perfectly perpendicular to the surface of the leucoma. To attain this end it is better to fix the globe with two forceps, one externally and the other internally, so as to prevent all motion. This may be done painlessly under the influence of cocaine. Any pressure with the trephine must be avoided, both on account of the danger of bruising the tissues and that of causing a perforation. The crown of the trephine should measure four millimetres or four millimetres and a half in diameter, never more; for the larger the flap, the less are the chances

that a smooth healing process and a maintenance of transparency will result. The leucoma is to be divided as far as the membrane of Descemet, this ending the first part of the operation. 2. More or less hæmorrhage follows the withdrawal of the trephine, and is best arrested by the application of bits of absorbent cotton soaked in sublimate solution and cooled on ice. The second step consists in the careful dissection of the trephined bit of leucomatous cornea by the aid of strong, straight iris forceps with sharp teeth, and a Graefe's cataract knife. One blade of the forceps is introduced to the bottom of the wound made by the trephine, so that when the other blade is closed upon it the piece of cornea is pulled somewhat forward, which admits of the proper introduction of the knife. Keeping the flap on the stretch in this way, the piece is readily dissected free by means of the knife. This dissection is more or less interfered with by the hæmorrhage, and an assistant should carefully and continuously mop up the blood in the manner already mentioned. With the removal of the excised part of the cornea, the second part of the operation is then completed. The eye is then to be irrigated with a warm sublimate solution (1 to 5,000), the lids closed and softly pressed until the third step in the operation is begun. A piece is then cut from the cornea of a rabbit with the same trephine, the section being made through the entire thickness of the cornea, any little segment or bridge that remains being divided with fine scissors. 4. The fourth step in the operation consists in inserting the trephined bit of rabbit's cornea in the defect or hole in the leucomatous cornea. The eyelids of the patient are opened and the bit of rabbit's cornea is placed gently upon the surface of the leucoma, and slowly pushed over the edge of the hole so that no air-bubbles become confined beneath it. The piece is then softly pressed into the hole by means of the spatula. It is then dusted with iodoform, the lids are carefully closed, and a pressure bandage of antiseptic gauze is applied over both eyes. This should not be changed for three days. It is then changed every twenty-four hours, and on the sixth day the other eye is left open and the patient is allowed to get out of bed. The bandage may be removed from the affected eye on the eighth or tenth day. Slight conjunctival and ciliary injection usually appear at the end of twenty-four hours, and, when the bandage is removed, the transplanted flap appears either entirely transparent or only very slightly clouded, while the epithelium is smooth and glistening. In the course of the first week the injection of the eyeball entirely disappears, and the swelling along the margin of the wound of the leucoma subsides. At the end of the third week the healing of the flap seems to be complete. From the results of this operation von Hippel draws the following conclusions: 1. The possibility of transplanting a piece of clear cornea from the eye of a rabbit to that of a man, and of maintaining permanently the transparency of the flap, thus securing a certain amount of useful vision, has been irrefutably demonstrated. 2. The transplantation may be successfully done even in leucomata which occupy the entire thickness of the cornea. 3. Totally adherent leucomata and staphylomatous leucomata are entirely unfit for the operation, and in such cases it should not be attempted. 4. The operation is entirely safe, and occasions the patient but little pain and annoyance.

**Chronic Œdema of the Eyelids in Erysipelatous Inflammation with the Development of Tumors on the Edges of the Lids.**—Pedraglia and Deutschmann (*ibid.*) report a curious case of this nature in a boy aged fourteen. They think, in regard to the pathogenesis of the morbid structures, that they arose from the secretion of the Meibomian glands and from the sebaceous glands of the hair-follicles. The chronic erysipelatous affection of the lids led to a decided chronic hyperæmia of the vascular network surrounding the sebaceous glands of the lids, cilia, and skin, and consecutive hyperproduction of cellular structure and secretion, and to an exuberant development of epithelium along the edges of the lids, followed by recurrent inflammatory attacks, and the exudation of lymph-cells and fibrin in the excretory ducts of the glands. The proliferation of epithelium at the mouths of the excretory ducts of the glands caused a closure of these openings, and thus prevented the escape of their contents. As a result, the ducts became swollen, inflammatory action, with an effusion of fibrin and lymph-corpuscles, and even of blood-corpuscles, resulted, and thus the tumors were developed.

**A Contribution to the Doctrine of Glaucoma.**—Jacobson (*ibid.*) here discusses some of the points involved in the true pathology and pathogenesis of glaucoma. Clinical observations and the results of iridectomy have shown that there is scarcely another disease of the eyes which shows so many varying changes as the various forms of glaucoma. Jacobson notes a distinct difference in the impression produced by palpation before and after iridectomy. The firm, spheroidal vitreous seems smaller after the operation than before it, and, he thinks, becomes smaller, firmer, and contains less water than before. The vitreous of malignant glaucoma is poor in water, and is a viscid substance of a dark-yellow color. There is in every case of acute glaucoma a diffuse opacity of the vitreous, which lasts for several weeks after iridectomy has been done. If glaucoma simplex occurs in connection with rapidly progressive myopia in a young person, the place of the normal vitreous is taken by a fluid resembling the aqueous in color and consistence, and in such abundance that the lamina cribrosa is deeply excavated and the sclerotic is greatly stretched in every direction. Comparing the loss of water from the vitreous in glaucoma simplex occurring with the disappearance of the venous stasis and its condensation in inflammatory glaucoma on the one hand, with the pathological emigration from the ciliary body and papilla, and the anatomical relations of the canal of Cloquet on the other, Jacobson draws the following conclusions:

The blood-pressure in the ciliary processes and veins as far as the ora serrata, varying continually with the movements of the pupils and with the accommodation, produces just as varying a filtration into the vitreous. The canal of Cloquet, with its opening into the central canal of the papilla, is the safety-valve for the preservation of the optic nerve against a vitreous overladen with chorioidal infiltration. Inasmuch as every glaucomatous excavation begins at the central canal, the marginal excavation, in comparison with less peripheral excavations, should not be regarded as characteristic of glaucoma; but every excavation extending centrifugally from the central canal should be so regarded. Within certain limits, conditions of stasis in the anterior section of the chorioid may be equalized or balanced by an exit of the filtrated fluid toward the central canal of the optic papilla, by dilatation of collateral vessels, or by absorption of œdematous or even inflammatory fluids. Beyond these limits we reach permanent tissue changes, which, with increased intra-ocular tension, present an entirely different picture. Increase of tension with consecutive disturbance of function of the optic nerve and retina is no longer the cause of glaucoma, if we admit other causes of amblyopia. Glaucomatous increase of tension is the sometimes stationary, sometimes transient result of a dropsical, œdematous, or inflammatory swelling of the vitreous upon the basis of venous stasis in the chorioid. Subsequent changes of shape of the papilla occurring during the transformation from an acute into a chronic inflammatory glaucoma with diminishing, though always abnormally increased, tension, are, without exception, excavations.

As they usually begin to follow long after the intense inflammation has subsided, it is probable that they are the result of pressure and not of inflammation. There are, however, exceptional changes of form of the papilla, occurring within the first few days of the attack, which have been described as inflammatory atrophy, and which do not end in excavations. Glaucoma simplex, or watery infiltration, does not occur as glaucoma fulminans, nor is there inflammatory infiltration of the papilla after iridectomy. This fact, as well as the blindness of glaucoma fulminans with moderate excavation, is readily explained by the assumption of a communication between the anterior portion of the chorioid and the papillæ through the canal of Cloquet. Clinical experience has taught us that there are cases of glaucoma with increased tension and without marginal excavation, and cases of marginal excavation without increased tension. The signs of acute glaucoma seen in the optic papilla can not be explained by the pressure hypothesis alone. Jacobson offers the following theory: The glaucomatous process, consisting in increased filtration from the anterior portion of the uvea, may, after a certain lapse of time, be recognized by the presence of an excavation of the optic disc, but not always by a perceptible increase of tension. The latter is still the most important symptom of the disease, for it is present, in the prodromal stage, in subacute and acute glaucoma, and in the majority of the cases of glaucoma simplex, and distinguishes this form of chorioiditis from all other inflammatory affections of the same membrane. The increased tension corresponds to an increased filtration, the lowest grades of which are not perceived by the sense of

touch, while they are plainly visible in the changes in the optic papilla. One hypothesis must be confirmed by the pathologist—viz., in every case of glaucoma simplex the anatomical conditions for increased filtration from the choroidal veins must be demonstrable. The changes in shape of the optic papilla depend upon the entrance of the pathological fluid into the central canal and upon the increased intra-ocular tension. Jacobson decides that the old hypothesis, which defines glaucoma as resulting from all those conditions of stasis in the anterior portion of the choroid which tend to produce an excavation of the papilla extending in a centrifugal direction, is still perfectly logical.

**Experimental Investigations in Keratoplasty.**—Wagenmann (*ibid.*) begins by citing the present status of the operation known as keratoplasty. The transplantation of flaps involving the entire thickness of the cornea has hitherto proved unsuccessful, not only in experiments on animals, but also in experiments on man. The flap becomes adherent and heals, it is true, but it does not remain transparent. The partial transplantation, as described and performed by Von Hippel, on the other hand, promises to give good results in suitable cases. Wagenmann's experiments were all performed on rabbits, under the influence of a 5-per-cent. solution of cocaine, with a previous disinfection of the skin and lids by a sublimate solution (1 to 1,000), and of the conjunctiva by a sublimate solution (1 to 5,000). If the animals be isolated, all means of protection or covering may be abandoned, though it may sometimes be wise to cover the parts with the nictitating membrane, drawn over and stitched to the outer canthus, or by means of a large conjunctival flap. An objection to this latter method is that the conjunctival flap is very apt to slough and form a nidus for micro-organisms. Wagenmann's experiments proved that flaps transplanted without pedicles do heal by first intention and with normal transparency. In cases where the flaps become permanently cloudy, this may be due to some infection coming from without and interfering with the physiological process of healing. In man the possibility of this infection may be prevented by strict antisepsis. The preservation of the endothelium is of great importance in maintaining the transparency of the transplanted flap, for, if the endothelium be injured, the aqueous humor causes a loss of transparency of the transplanted flap by imbibition. Through this imbibition the nutrition of the corneal cells and the parenchyma is interfered with, the cells are either partially destroyed or proliferate, and the parenchyma becomes markedly fibrous. The swelling of the tissue caused by this imbibition only disappears after several days, and the pressure thereby induced sets up changes which outlast the regeneration of the endothelium.

**A Case of Homonymous Right Hemianopsia with Alexia and Paralysis of the Trochlearis.**—Brandenburg (*ibid.*) reports an interesting case of this kind occurring in a man aged sixty-five. The patient, a healthy man, with only one useful eye, was suddenly attacked with vertigo, which ended in coma of thirty-six hours' duration. When he regained consciousness, there was dullness of intellect and of memory, slight aphasia, right hemianopsia, paresis of the right trochlearis nerve, secondary contraction of the antagonist, and alexia without agraphia. Owing to the left eye being blind, it could not be determined by the perimeter whether a median hemianopsia due to a lesion of the chiasma was present, or whether there was an homonymous hemianopsia, caused by some rupture of continuity of the fibers of the left optic tract somewhere between the chiasm and the peripheral ends of the fibers. The presence of homonymous hemianopsia was determined by the fact that in illumination of the nasal half of the retina by the lens or mirror, the pupil contracted and the patient saw light. Hence the left optic tract must have been intact as far as the point at which its fibers form the reflex arc for contraction of the pupil with fibers of the right oculo-motor nerve—that is, as far as the corpora quadrigemina. The cause of the hemianopsia must, therefore, lie on the side of the cortex from the plane of this reflex arc. The alexia or word-blindness was not marked. The lesion was somewhere in the left hemisphere. The absence of anæmia and of heart disease, and the gradual diminution of the severity of the symptoms, point to hæmorrhage as the cause, and this view is strengthened by the fact of the rigidity and sclerosis of the peripheral arteries.

**The Ligamentum Pectinatum and the Termination of the Membrane of Descemet.**—Straub's (*ibid.*) observations have led him to the following conclusions: In man the first changes in the membrane of Descemet appear about half a millimetre in front of the attachment of the iris. The endothelial cells become smaller with nuclei closely crowded together. The zone of small endothelial cells measures 0·2 millimetre. In its second half the membrane of Descemet consists of two lamellæ, both covered with endothelium. The upper lamella soon ends in a wide-meshed network of fibers, which are covered with elongated epithelial cells.

The deeper lamellæ of the membrane of Descemet, which are dark in polarized light, form plates of fine fibers, perforated by holes and closely connected together, the direction of the fibers being first longitudinal and afterward transverse. Near the angle of the anterior chamber they spread out like a fan, the character of the plates is lost, and a cavernous elastic tissue is formed, which is partly lost in the iris and partly serves as points of insertion for the ciliary muscle. Straub regards the marginal ring of connective tissue of the membrane of Descemet as a rudimentary ligamentum pectinatum which has been separated from the iris either by the development of the individual or the development of the species.

**The Origin of Ruptures of the Sclerotic and Chorioid.**—Hughes (*ibid.*) holds the following views in regard to rupture of the sclerotic: The blunt force must strike the eyeball with a superficies of twenty millimetres in diameter, and about in the direction of its center of gravity. The greater superficies prevents any lateral yielding of the eye, and it is therefore driven into the orbit. The globe is pressed strongly against Tenon's capsule, so that any rotation in consequence of greatly increased friction is rendered difficult and even impossible. As the intra-ocular tension increases, the part of the eyeball farthest away from the point of contact with the foreign body assumes the shape of a cup or bowl. The restraining ring becomes more and more curved, until finally the eyeball bursts. The point of rupture is always at the line of union between the cornea and sclerotic. The margin of the sclerotic is under strong tension, while the eyeball assumes a globular shape, because it is the only zone of the eye which under normal relations appears concave outward. If now this point of tension coincides with the curvature of the restraining ring, the rupture must of necessity occur at this point. As the intra-ocular pressure bears perpendicularly on the walls of the eye, the rupture also occurs in the same direction. In the great majority of cases the rupture occurs in the supero-nasal quadrant, because the force of the blow comes from downward and outward, though the rupture may occur at any point. In the case of the chorioid, the force coming from the same direction, the rupture cuts the line between the optic papilla and the macula, and is concentric with the optic disc. If the blow comes from the nasal side, the chorioidal rupture occurs on the nasal side of the disc. If the blow comes from above or below, the rupture occurs in the vertical direction. Hughes formulates his conclusions as follows: 1. In rupture of the chorioid, the *contrecoup* plays a part merely in those cases in which a small part of the cornea is struck. 2. Ruptures result as a consequence of tension, induced on the one hand by a flattening and yielding of the cornea, and on the other by an increase of those diameters of the cornea which are perpendicular to the axis of vision, as a result of incompressibility of the media. 3. The ruptures in the optic nerve are to be attributed to the unyielding character of this region; the chorioid is here firmly fixed, the increasing tension acts upon it from all sides, especially upon the small part of the papilla, and there the rupture must occur.

**The Operative Treatment of Trachoma.**—Schueller (*ibid.*) gives the following directions for operating on cases of trachoma: After careful antiseptic irrigation of the eye and *cul-de-sac*, the operator strongly everts the eyelid and pushes the retrotarsal fold as far out as possible by pressing the edge of the lid against the eyeball and into the orbit with the end of the index finger. This manœuvre is aided by an assistant pressing the other lid back against the eyeball without everting it. The operator then takes Snellen's broad squeezing forceps in the right hand, and grasps the retrotarsal fold of conjunctiva in a grip from two to four millimetres wide, and if possible throughout its entire length, and firmly locks the forceps. The assistant then firmly holds the lid which is to be operated upon, the operator takes the forceps in the right hand, draws the conjunctiva as far as possible outward and

forward, and with a pair of Cooper's scissors cuts off all the swollen portion as far down as the subconjunctival tissue. The hæmorrhage is checked with iced compresses, the *cul-de-sac* is thoroughly cleaned by irrigation with an antiseptic solution, and the eye closed with a bandage, which is changed daily for three days. If both eyes are operated upon simultaneously, they are kept bandaged for eight days, the bandage being kept wet for twenty-four hours with the antiseptic solution; and the eyes are irrigated every day with the same. After eight days the wound usually presents a linear cicatrix. The treatment of these cases is thus materially shortened, and any accompanying processes being removed, the wound also heals rapidly. Recurrence of the trachoma is very rare.

**A Method of Operating for Entropium and Trichiasis.**—Pfalz (*ibid.*) suggests that the entropium and trichiasis may be cured by one operation, which consists in a stretching of the tarsus by the excision of a wedge-shaped piece, as Streetfield and Snellen have suggested, and the simultaneous lifting forward and upward of the edge of the lid by cutting out a piece of skin and closing the defect by sutures, as Arlt, Jaesche, and Burow have done. The operation which Pfalz suggests differs from the other in the broader base given to the wedge, the position of the skin and muscle excision, and the nature of the suture. The operation is indicated for all cases of entropium due to pathological changes in the lid, especially in the tarsus and conjunctiva.

**The Indications for the Operative Treatment of Paralytic Deviations of one Eye.**—Graefe (*ibid.*) calls attention to the vague ideas which still exist in regard to the principles involved in the operative treatment of the functional annoyances and disturbances caused by paralysis of an ocular muscle, especially of one of the muscles which pull the eye upward or downward. The two operations to be considered are the operation of advancement and that of tenotomy. If in the case of a paralyzed muscle no increase in motility is gained by the operation of advancement, still the so-called dislocation or displacement of the arc of rotation toward the side of defective motility will help to make this defect less noticeable. With reference to this effect of the operation, it might better be known as the method by substitution. While the operation of advancement is always done on the paralyzed muscle, the operation of simple tenotomy may be done either on the antagonist of the paralyzed muscle or on its associated muscle in the other eye. In the first case the operation is mainly done for the purpose of endeavoring to re-establish the loss of equilibrium between the paralyzed muscle and its normally enervated antagonist. In the second case the main object is a restoration of a symmetrical action of the muscles co-operating in the associated movements of the eyeball, and hence this operation is a compensatory one. In the case of an isolated paralysis of the rectus superior or the rectus inferior, the operation of compensatory tenotomy must be avoided, inasmuch as it is practically impossible. Hence in such a case the paralyzed muscle must be advanced, and its antagonist must be divided, for the purpose of restoring equilibrium.

**The Escape of Fluid from the Aqueous and Vitreous Chambers under Different Pressures.**—Priestley Smith ("Ophth. Rev.," July, 1888) believes that the vitreous humor probably receives its nutrient supply exclusively from the ciliary portion of the uveal tract. Positive evidence in favor of its nutrition, at least in part, has been obtained by various experiments. With regard to the escape of fluid from the vitreous, there is a remarkable conflict of evidence. On the whole, it seems indubitable that there is an escape along the lymph spaces surrounding the central vessels of the papilla, but it seems probable that the amount of fluid escaping here is extremely small. His experiments with single injections show that the escape of fluid from the eye is about three times more rapid during injection into the vitreous chamber. The escape of fluid at the back of the eye is extremely small as compared with the escape in the ciliary region. The escape from both chambers during such injections is influenced by the more or less advanced position of the base of the iris. With regard to double injections, a comparison of his results will show that much less fluid escapes from the eye during simultaneous injection of both chambers than during injection of the aqueous chamber alone. Since the pressure in the aqueous chamber is the same in the two cases, the diminished escape must be due to a narrower outlet. When the aqueous chamber only is injected, the angle opens more widely than when both chambers are injected, and the wider angle permits a more rapid escape. When a higher pressure is established in the vitreous than in the aqueous chamber, the rapidity of the escape is influenced in a more decided manner. His experiments do not suffice to show whether there is, under normal conditions, a persistent stream from the vitreous to the aqueous chamber, but they do show that fluid passes easily from one chamber to another under a very slight excess of pressure on one side of the diaphragm. So long as the diaphragm remains permeable and the intraocular fluid diffusible, any tendency to excess in either chamber would be quickly neutralized by osmosis into the other. If the normal stream of fluid which enters the vitreous from the ciliary body is of larger amount than the minute stream which escapes around the central vessels of the optic nerve, then the surplus must escape through the anterior chamber.

**Corneal Fibroma.**—Scott and Story (*ibid.*) report a case of this kind occurring in a young man aged twenty. In March, 1886, there was a small yellowish-white growth in the left cornea, which has existed ever since. The tumor occupied the supero-temporal quadrant of the cornea, was oval, the long arc axis being six millimetres, the short four millimetres in length, and it lay with its long axis perpendicular to the corneal diameter, which bisected it. Small blood-vessels could be seen ramifying over the growth, which was sharply defined from the surrounding corneal tissue. Its surface was not elevated, and the epithelium passed over it without a break. A piece of the growth four millimetres long by three wide was excised, which procedure was followed by considerable hæmorrhage. The little ulcer which was left healed over in a few days, blood-vessels developing in it with great rapidity. Sections made of the hardened piece showed that the conjunctiva corneæ was unaltered, but immediately beneath this the abnormal tissue was seen to supplant the corneal tissue proper. The new growth was mainly formed of connective tissue, with a large number of blood-vessels, and numerous groups of nuclei, in some places so numerous as to suggest sarcoma. The microscopic structure was very similar to a cicatrix. The corneal opacity may have been congenital, antedating the ophthalmia which the patient had had in early youth.

**Scheme for the Topical Diagnosis of Disturbances in the Reflex Movements of the Pupils.**—Magnus ("Kl. Mntsbl. f. Augenheilk.") has developed rather an ingenious scheme for locating the position of the lesions in disturbances of the reflex movements of the pupil, and by this he also claims to be able to gain a clear insight into the conditions of pupillary reactions in the normal state. He maintains: 1. That the direct and consensual reactions of the pupil show no marked difference, inasmuch as both follow the direct transmission of the light-stimulus to the nucleus of the oculomotorius (due to an incomplete decussation in the chiasm). 2. That the direct and consensual pupillary reactions are equal in extent to each other, inasmuch as both are really direct. 3. That the direct pupillary reaction is composed of that part of the light-stimulus which passes along the uncrossed fibers of the optic nerve of the excited side to the corpora quadrigemina and thence to the oculomotorius nucleus of the excited side, and of that part of the light-stimulus which passes through the crossed fibers of the optic nerve to the corpora quadrigemina and oculomotorius nucleus of the opposite side, and returns through the central union of both reflex circles to the nucleus of the same side. 4. The consensual reaction is composed of that part of the light-stimulus which goes through the crossed fibers of the optic nerve to the corpora quadrigemina, and thence to the oculomotorius nucleus on the side opposite to the irritated eye, and of that part of the light-stimulus which passes through the uncrossed optic nerve fibers to the corpora quadrigemina and oculomotorius nucleus of the irritated side, and thence passes through the central union of both reflex circles to the oculomotorius nucleus of the opposite side. 5. The conditions of decussation of the optic nerves in the chiasm and the central union of the reflex circles are the cause of the size of the two pupils being the same. Differences in the diameters of the pupils can therefore never be caused by disease or lesion of the nerve tracts which conduct the light-stimulus to the center, but only by disease or lesion of the centrifugal part of the reflex circle. In studying the pathological reactions of the pupil, Magnus has found it convenient to divide the reflex circle into three parts: 1. The cen-

tripetal part, consisting of optic nerve, chiasm, optic tract, and line of union with the cortex. 2. Meynert's fibers, which carry the light stimulus from the corpora quadrigemina to the oculomotorius nucleus. 3. The centrifugal portion of the reflex circle, including the nucleus for the sphincter iridis, the trunk of the oculomotorius, and the terminations of the oculomotorius in the iris.

# Miscellany.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending August 31st:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending August 11th corresponded to an annual rate of 17·6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 9·2, and the highest in Plymouth, viz., 23·5 in a thousand. Small-pox caused 1 death in Preston, 1 in Nottingham, and 3 in Manchester. Diphtheria caused 3 deaths in Nottingham.

*London.*—One thousand four hundred and seventy-six deaths were registered during the week, including measles, 51; scarlet fever, 17; diphtheria, 25; whooping-cough, 27; enteric fever, 6; diarrhœa and dysentery, 138; simple cholera and choleraic diarrhœa, 5. Diseases of the respiratory organs caused 183 deaths; different forms of violence, 56; and 5 suicides were registered. The deaths from all causes corresponded to an annual rate of 18 in a thousand. In greater London 1,791 deaths were registered, corresponding to an annual rate of 16·9 in a thousand of the population. In the "outer ring" 21 deaths from diarrhœa, 4 from diphtheria, and 4 from measles were registered.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending August 11th in the sixteen principal town districts of Ireland was 16·9 in a thousand of the population. The lowest rate was recorded in Galway, viz., 3·4, and the highest in Armagh, viz., 25·8 in a thousand. In Dublin 131 deaths were registered, including whooping-cough, 3; enteric fever, 1; scarlet fever, 3; and diarrhœa, 4.

Twenty-two thousand nine hundred and eighty-three deaths were registered in Ireland during the quarter ending June 30, 1888, corresponding to an annual rate of 19·2 in a thousand of the estimated population. The deaths included measles, 606; scarlet fever, 229; typhus-135; whooping-cough, 281; diphtheria, 110; enteric fever, 140; diarrhœa, 228; and simple cholera, 4.

*Scotland.*—The deaths registered in eight principal towns during the week ending August 11th corresponded to an annual rate of 15·6 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 11·2, and the highest in Greenock, viz., 18·9 in a thousand. The aggregate number of deaths registered from all causes was 395, including measles, 6; scarlet fever, 2; diphtheria, 7; whooping-cough, 5; fever, 6; and diarrhœa, 87.

*Denmark.*—The Danish Government issued a quarantine order under date of July 27, 1888, as follows:

[Translation.]

The proclamation of the Ministry of Justice dated February 24, 1888, and ordering quarantine against ships coming from or having touched Italian ports on the Adriatic Sea between Ortona and Bari, both inclusive, and the provisions against importation of the things mentioned in the law of July 2, 1880, § 32, sec. 1, from the above-named harbors, is hereby discontinued.

Quarantine will henceforth be discontinued.

The provisions of sec. 2, § 1, of the law of July 2, 1880, referring to precautionary measures against the introduction of contagious diseases into the kingdom, are hereafter to be enforced with reference to the following places:

Ports on the French coast between Nantes and St. Malo, both inclusive; Egernsund; Grimsby; all ports in Chili; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe; St. Iago di Cuba; ports in the East Indies, Tonkin, and Cochin China; Trieste; all ports in Egypt; all ports on the Red Sea; Rio de Janeiro and Havana.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bedclothes, providing the articles named do not constitute the personal effects of travelers, waste cotton or wool, refuse paper, hair and hides, remains in force in reference to the following places:

Ports on the French coast between Nantes and St. Malo, both inclusive; Egernsund; Grimsby; all ports in Chili; all ports in Florida; all ports in Jamaica; all ports in Martinique; all ports in Guadeloupe; St. Iago de Cuba; and ports in East India, Tonkin, and Cochin China.

The prohibition against the importation into the kingdom of used linen, used articles of clothing, and used bedclothes, providing the articles named do not constitute the personal effects of travelers, remains in force in reference to Rio de Janeiro and Havana. In addition thereto, special attention is to be paid to the cleansing under official inspection of linen, clothing, and bedclothes brought from either of the last-named places as the personal effects of travelers.

This order to go into effect at once.

*Martinique.*—The United States consul, in his dispatch dated August 7, 1888, states that "by the last official report of the governor St. Pierre and Fort de France have enjoyed absolute immunity from small-pox for more than six weeks past, and that in the whole island there have been during the last fortnight of July only 160 cases and 30 deaths from this disease, all in the interior of the island."

*Bordeaux, France.*—Four hundred and seventeen deaths were registered during the month of July, 1888, including enteric fever, 13, and diphtheria and croup, 25.

*Nassau, N. P.*—The United States consul, in his report for the week ending August 18th, stated: "Weather hot and wet. City healthy."

*Bermuda.*—The United States consul, in his report for the week ending August 21st, stated: "Islands very healthy."

*Havana.*—Twenty-nine deaths from yellow fever were registered during the week ending August 18, 1888.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paris | August 11. | 2,260,945 | 869 | .. | .... | 1 | .... | 9 | 4 | 24 | 29 | 2 |
| Glasgow | August 11. | 545,678 | 166 | .. | .... | .. | .... | 1 | .. | .. | .. | .... |
| Warsaw | August 4. | 444,814 | 194 | .. | .... | 5 | .... | .... | 2 | 2 | .. | .... |
| Calcutta | July 14. | 433,219 | 143 | 11 | .... | .. | .... | .... | .. | 1 | .. | .... |
| Rome | July 7. | 391,188 | 211 | .. | .... | .. | .... | 6 | .. | .. | .. | .... |
| Rome | July 14. | 391,188 | 209 | .. | .... | .. | .... | 1 | 1 | 4 | .. | .... |
| Amsterdam | August 11. | 389,916 | 149 | .. | .... | .. | .... | 1 | .. | .. | .. | .... |
| Copenhagen | August 7. | 300,000 | 111 | .. | .... | .. | .... | 1 | .. | 6 | .. | .... |
| Munich | August 4. | 275,000 | 167 | .. | .... | .. | .... | .... | .. | 5 | .. | .... |
| Edinburgh | July 28. | 262,733 | 69 | .. | .... | .. | .... | .... | 1 | 1 | .. | .... |
| Edinburgh | July 4. | 262,733 | 79 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Palermo | August 11. | 250,000 | 79 | .. | .... | .. | .... | .... | .. | 1 | .. | .... |
| Belfast | August 11. | 227,022 | 74 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Bristol | August 7. | 125,510 | 58 | .. | .... | .. | .... | 1 | .. | 1 | .. | .... |
| Havana | August 18. | 208,000 | 166 | .. | 29 | 2 | .... | 5 | .. | .. | .. | .... |
| Genoa | August 11. | 179,664 | 71 | .. | .... | 1 | 1 | .... | .. | .. | .. | .... |
| Trieste | July 28. | 154,500 | 93 | .. | .... | 4 | .... | .... | .. | 1 | .. | .... |
| Stuttgart | August 11. | 125,510 | 38 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Bremen | August 4. | 122,000 | 36 | .. | .... | .. | .... | .... | .. | 2 | .. | .... |
| Havre | August 11. | 112,074 | 88 | .. | .. | .. | .... | 17 | 1 | .. | .. | .... |
| Leghorn | August 12. | 101,854 | 31 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Leith | July 28. | 74,320 | 21 | .. | .... | .. | .... | 1 | .. | .. | .. | .... |
| Leith | August 4. | 74,320 | 15 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Cadiz | August 11. | 65,028 | 45 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Matanzas | August 22. | 40,000 | 26 | .. | .. | 3 | .... | .... | .. | .. | .. | .... |
| Guayaquil | July 22. | 30,000 | 54 | .. | 1 | .. | .... | .... | .. | .. | .. | .... |
| Guayaquil | July 29. | 30,000 | 34 | .. | 1 | .. | .... | .... | .. | .. | .. | .... |
| Vera Cruz | August 16. | 23,800 | 22 | .. | .... | .. | .... | .. | .. | .. | .. | .... |
| Gibraltar | August 5. | 23,631 | 6 | .. | .... | .. | .... | 1 | .. | .. | .. | .... |
| Cape Haytien | August 12. | 15,000 | 9 | .. | .... | .. | .... | .... | .. | .. | .. | .... |

UNITED STATES.

*Buffalo, N. Y.*—The medical officer in charge of the Marine-Hospital Service reported, under date of August 23d, as follows: "Since my

last report (July 30th) there have occurred in this city 10 new cases of small-pox, making a total of 21 up to the present time. Of these, 4 have proved fatal."

*Springtown, Ohio.*—The president of the State Board of Health reported August 23, 1888: "Another case of small-pox has developed at Springtown, Monroe County, Ohio."

*St. Mark's, Fla.*—At the request of citizens, the governor has appointed a board of health for the county, and, in accordance with instructions from this bureau, persons will not be allowed to land from infected ports unless provided with a certificate that their baggage, etc., is thoroughly fumigated.

*Blackshear, Ga.*—The postal clerk, Mr. Ballentine, sick with yellow fever at Blackshear, was thoroughly isolated and guarded, and no communication allowed outside the line.

Surgeon W. H. H. Hutton telegraphed August 29th: "Ordered Ballentine's bedding burned last Monday; clothing and linen washed, boiled, and rinsed in bichloride solution; house fumigated. Will repeat the process Friday, personally, and remove quarantine Monday if nothing further occurs."

*Fernandina, Fla.*—In regard to the rumor of the existence of a case of yellow fever at Fernandina, Acting Assistant Surgeon Starbuck telegraphed August 28th: "Rumor false. City never healthier or in better sanitary condition."

*Tampa, Fla.*—Dr. J. P. Wall reported August 26th: "No fatal cases of yellow fever since the 14th inst. . . . The fever on the Manatee River has thus far proved to be of a mild type; very few deaths."

*Jacksonville, Fla.*—Dr. Neal Mitchell, president of the Board of Health, telegraphed as follows:

August 25th: "For twenty-four hours ending 6 P. M.: New cases, 7; deaths, none; recoveries, 2; under treatment, 59. Total number of cases to date, 91; total number of deaths to date, 12."

August 26th: "For twenty-four hours ending 6 P. M.: New cases, 9; deaths, 2; recoveries, 2; under treatment, 64. Total number of cases to date, 100, of which 9 are colored; total number of deaths to date, 14. One case received from Camp Perry to-night."

August 27th: "For twenty-four hours ending 6 P. M.: New cases, 10; deaths, 3; recoveries, 9; under treatment, 62. Total number of cases to date, 110; total number of deaths to date, 17."

August 28th: "For twenty-four hours ending 6 P. M.: New cases, 21; deaths, 2; recoveries, 9; under treatment, 72. Total cases, 131; total deaths, 19."

August 29th: "For twenty-four hours ending 6 P. M.: New cases, 34; deaths, 4. Total number of cases, 165; total number of deaths, 23."

SUMMARY.—August 30th, 6 P. M.: Total number of cases to date, 188; total number of recoveries, 40; total number of deaths, 26; total number of cases now under treatment, 122.

*Camp Perry, Fla.*—Passed Assistant Surgeon Guitéras telegraphed:

August 29th: "Eighty refugees at muster this morning, and 17 employees."

August 30th: "Arrivals, 5; at muster, 85; employees, 18; discharged to-day, 1."

*Bainbridge, Ga.*—Upon rumor of yellow fever at this place, Assistant Surgeon H. D. Geddings was directed to proceed to that village, and in his report, through Surgeon Hutton, dated August 27, 1888, he states that—

"Bainbridge is situated in Baker County, on the Flint River, and is eight miles from the line of the Savannah, Florida, and Western Railroad, and is connected with it by a branch road. The population is about 1,600, and is equally divided as to whites and blacks. The soil is a fine white sand, underlying which is a red decomposed sandstone, which makes a very porous soil, through which water percolates rapidly, and even after the heaviest rains no water collects or stands stagnant. The elevation of the town was given to me as 119·6 feet above tide-water. In the past six months there have been only 3 deaths in the town—one white female from pyosalpinx; one colored male adult, from typhoid fever; and one colored child, from eclampsia. At present there are but 2 cases of illness in the town, one of which was reported to me as 'nephritis' of long standing, and the other (which I visited) a case of remittent malarial fever. Apart from this no malarial diseases exist.

"The town is in the hands of a thoroughly live, intelligent, and vigilant board of health, and all persons coming in, either by rail or boat, are required to present satisfactory certificates of health and non-exposure to contagion of any kind. The town is thoroughly policed daily, and weekly inspections are made by the board and a committee of citizens. The streets are clean, well kept, and a large force is at work on them daily. The privies are open (without vaults), and once in each week are raked out, the excrement buried, and the spots disinfected with a solution of sulphate of iron and quicklime. The water-supply is admirable. There are no surface wells in the town, and the cisterns which existed prior to the introduction of the present system have fallen into disuse, except for washing purposes. The supply is derived from two artesian wells—No. 1, 965 feet, and No. 2, 1,135 feet in depth. . . . These waters are pumped into a stand-pipe and distributed through about six miles of mains, and from them to almost every residence in the town. [Analysis was inclosed.]

"In conclusion, I would state that the town of Bainbridge is in a highly satisfactory sanitary condition; that the health condition at present is as good as could be reasonably desired; that the importation of contagion is almost an impossibility under existing regulations, and, most important of all, that the utmost vigilance prevails and will be maintained."

Live Oak, Lake City Junction, and Lake City have also been inspected by Dr. Posey, and reported healthy.

The following circular has been issued:

*Circular.—Regulations for the prevention of the spread of yellow fever from certain infected places in the State of Florida.*

TREASURY DEPARTMENT,
*Office Supervising Surgeon-General, U. S. Marine-Hospital Service,*
WASHINGTON, D. C., *August 28, 1888.*

In accordance with the act of April 29, 1878, and appropriation acts authorizing the maintenance of quarantine at points of danger, the following regulations are framed to assist in the work of preventing the spread of yellow fever, now prevailing as an epidemic in certain towns in the State of Florida:

1. A camp of refuge for persons from infected places in Florida is hereby established, to be under command of Passed Assistant Surgeon Guitéras, on the south bank of the St. Mary's River, near the crossing of the Savannah, Florida, and Western Railroad, to be known as Camp Perry. Temporary quarantine stations are hereby established, under direction of Surgeon Hutton, Marine-Hospital Service, near Way Cross, Ga., and Live Oak, Fla. Those at Du Pont, Ga., and Chattahoochee River Junction are hereby discontinued.

2. At the stations aforesaid an inspection will be made of all persons, baggage, mail, and express arriving by rail from points south; and in case of arrival of any person, mail, baggage, or express matter capable of conveying infection, coming from an infected place or a place not known to be healthy, as shown by recent inspection reports, then such person shall either be returned to the original place of embarkation or to Camp Perry, at his or her option, and the baggage of such person shall be held for fumigation, and fumigated under the direction of the officer in charge. Mail matter from infected places will be fumigated under the direction of the Railway Mail Service, under orders already issued by that service.

3. All persons arriving in Camp Perry will be under the orders of the commanding officer, and will not depart the camp without permission until ten days shall have elapsed from the date of their departure from an infected place. A special daily train will run between Jacksonville and Camp Perry, for the purpose of conveying persons from Jacksonville and such other business as may be incident thereto, and at the expiration of the detention period such persons will be taken to Way Cross, and then allowed to proceed to their destination without further detention.

4. Railway agents, conductors, or other persons in charge of railway trains south of and including those of the Savannah, Florida, and Western Railroad will not receive persons from infected places on board trains, except to the refuge camp as provided in paragraph 1 of

this circular, and sleeping cars will not be allowed to proceed south of Way Cross, Ga., until the cessation of the epidemic.

5. An additional refuge camp, under the same regulations as those governing Camp Perry, will be established in the mountains of North Carolina (the site hereafter to be determined) as soon as practicable.

JOHN B. HAMILTON,
*Supervising Surgeon General.*

Approved:

C. S. FAIRCHILD,
*Secretary of the Treasury.*

Since the issue of the foregoing circular the erection of two hundred cheap barrack huts has been authorized to be built near Jacksonville for the negroes liable to propagate the fever, who will immediately be removed thereto, and their present quarters thoroughly disinfected; and special excursion trains will run at intervals, under guard, to some point in the North Carolina mountains, to be hereafter designated, as soon as a sufficient number indicate their desire to go. Such persons, on arrival at their destination, will be released on parole, not to go to the sea-board or quarantined towns within ten days from date of departure from Jacksonville.

MORTALITY TABLE, CITIES OF THE UNITED STATES.

| CITIES. | Week ending | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Varicella. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York, N. Y.... | August 25. | 1,532,932 | 754 | .. | .. | .. | .. | .. | .. | 10 | 19 | 16 | 9 | 17 |
| Philadelphia, Pa... | August 18. | 1,016,758 | 439 | .. | .. | 2 | .. | .. | .. | 32 | 3 | 2 | 1 | 5 |
| Chicago, Ill..... | August 25. | 800,000 | 322 | .. | .. | .. | .. | .. | .. | 13 | 1 | 19 | 1 | 5 |
| Baltimore, Md..... | August 25. | 431,879 | 164 | .. | .. | .. | .. | .. | .. | 13 | .. | 2 | .. | .. |
| San Francisco, Cal. | August 17. | 330,000 | 108 | .. | .. | .. | .. | .. | .. | 3 | .. | 5 | .. | 1 |
| Cincinnati, O ..... | August 18. | 255,139 | 153 | .. | .. | .. | .. | .. | .. | 2 | 1 | 3 | .. | 5 |
| Cincinnati, O..... | August 25. | 255,139 | 119 | .. | .. | .. | .. | .. | .. | 5 | 2 | 1 | .. | 1 |
| New Orleans, La... | August 18. | 248,000 | 100 | .. | .. | .. | .. | .. | .. | .. | .. | 7 | .. | 2 |
| New Orleans, La... | August 25. | 248,000 | 103 | .. | .. | .. | .. | .. | .. | .. | .. | 13 | .. | 1 |
| Pittsburgh, Pa..... | August 25. | 230,000 | 95 | .. | .. | .. | .. | .. | .. | 7 | .. | 3 | 1 | 6 |
| Louisville, Ky..... | August 27. | 200,000 | 60 | .. | .. | .. | .. | .. | .. | 4 | .. | 2 | .. | .. |
| Milwaukee, Wis ... | August 25. | 195,000 | 101 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Kansas City, Mo.... | August 25. | 180,000 | 56 | .. | .. | .. | .. | .. | .. | 5 | .. | .. | .. | .. |
| Minneapolis, Minn. | August 24. | 180,000 | 56 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. |
| St. Paul, Minn..... | August 25. | 175,000 | 45 | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .. |
| Rochester, N. Y.... | August 25. | 120,000 | 61 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. |
| Detroit, Mich..... | August 25. | 116,340 | ..... | .. | .. | .. | .. | .. | 3 | .. | .. | 2 | .. | .. |
| Richmond, Va..... | August 25. | 100,000 | 39 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Denver, Col..... | August 24. | 96,000 | 37 | .. | .. | .. | .. | .. | .. | 6 | 1 | .. | .. | 1 |
| Columbus, Ohio ... | August 25. | 93,000 | 30 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 |
| Toledo, Ohio ..... | August 25. | 80,000 | 19 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Lowell, Mass..... | August 27. | 72,000 | 44 | .. | .. | .. | .. | .. | .. | .. | 2 | 5 | .. | .. |
| Nashville, Tenn.... | August 25. | 65,153 | 20 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. |
| Fall River, Mass... | August 25. | 65,000 | 36 | .. | .. | .. | .. | .. | .. | 1 | 2 | 1 | .. | .. |
| Charleston, S. C.... | August 25. | 60,145 | 44 | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. |
| Cambridge, Mass... | August 25. | 59,660 | 35 | .. | .. | .. | .. | .. | .. | 1 | .. | 3 | .. | .. |
| Evansville, Ind .... | August 23. | 53,000 | 19 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Savannah, Ga..... | August 17. | 52,827 | 20 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Oakland, Cal ..... | August 18. | 50,000 | 14 | .. | .. | .. | .. | .. | .. | 3 | .. | 3 | .. | .. |
| Lynn, Mass..... | August 25. | 50,000 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Manchester, N. H.. | August 25. | 41,000 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Mobile, Ala..... | August 25. | 40,000 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Galveston, Tex.... | August 17. | 40,000 | 15 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Portland, Me..... | August 18. | 40,000 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Portland, Me ..... | August 25. | 40,000 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Wheeling, W. Va.. | August 18. | 35,000 | 11 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. |
| Wheeling, W. Va.. | August 25. | 35,000 | 9 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| E. Saginaw, Mich.. | August 27. | 33,000 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Burlington, Ia..... | August 23. | 30,166 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Davenport, Ia..... | August 25. | 30,084 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Salem, Mass..... | August 27. | 29,000 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Yonkers, N. Y..... | August 24. | 27,500 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| New Bedford, Mass | August 25. | 26,845 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Auburn, N. Y..... | August 25. | 26,000 | 9 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Haverhill, Mass.... | August 25. | 25,000 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Jackson, Mich..... | August 25. | 22,500 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Newton, Mass..... | August 26. | 21,105 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Newport, R. I..... | August 23. | 20,466 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |

**The Health of the State of New York.**—According to the State Board of Health's "Monthly Bulletin" for July, the whole number of deaths reported was 10,300, including 35 from cerebro-spinal fever, 73 from typhoid fever, 51 from malarial diseases, 2 from small-pox, 141 from scarlet fever, 111 from measles, 23 from erysipelas, 108 from whooping-cough, 411 from croup and diphtheria, 2,957 from diarrhœal diseases, and 73 from puerperal diseases.

**The Southern Surgical and Gynæcological Association.**—The meeting which was announced for the 11th, 12th, and 13th inst. has been postponed in consequence of the quarantine laws.

**Infantile Atrophy.**—According to the "Lancet," "Bohn, following Henoch, defines infantile atrophy as an independent condition of the system, the result of a continuous deficiency in nutrition, the means of reparation of material being defective. Metabolism may be regarded as excessive or normal, and anabolism insufficient. Intestinal catarrh, though not a constant symptom, as maintained by Parrot, is a complication due to external causes. In these infants œdema of the skin or dropsy does not occur. The poverty of the solid tissues and organs of the body is shared by the blood, and no hydræmic state is developed. The cranial bones of atrophied infants during the first year of life are always hard, in marked contrast to the cranio-tabes of rhachitic children of the same age. Bohn does not consider that the atrophy results from wasting of the intestinal mucous membrane, and the conclusion is that no organic disease at present known can produce that condition."

## ANSWERS TO CORRESPONDENTS.

*No. 224.*—The institution was incorporated in 1857, having been organized in 1852. It became extinct in 1862 by the repeal of its charter.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

### FLATULENT DISTENSION OF THE STOMACH,

WITH SPASMODIC CONTRACTION AND HYPERÆSTHESIA OF THE ABDOMINAL WALLS;

THE DIAGNOSIS BETWEEN PHANTOM TUMORS AND MORBID GROWTHS WITHIN THE ABDOMEN.

*A Clinical Lecture delivered at the Hospital of the University of Pennsylvania, Philadelphia.*

BY WILLIAM PEPPER, M. D., LL. D.,

PROVOST OF THE UNIVERSITY AND PROFESSOR OF CLINICAL MEDICINE.

GENTLEMEN: This strong, hearty-looking girl, thirteen years of age, comes to us for an opinion in regard to the nature of a tumor which she thinks she has discovered in the left hypochondriac region. This tumor was first noticed about a year and a half ago. She lives in a somewhat malarious district, but, so far as can be ascertained, has never had chills and fever. She has always been healthy. The appetite is good. She can eat whatever she desires, but belches a great deal of wind after eating; the bowels are costive; she has never had diarrhœa nor vomiting. She is very nervous, and I can not induce her to lie on the bed. I shall therefore be compelled to make the necessary examinations with her in the sitting posture.

The heart is perfectly normal. The area of hepatic dullness is not too great. She complains of pain in the epigastrium and in the splenic region. The epigastrium is decidedly prominent. This fullness is soft. Pressure over it gives pain, which is worse on the left side than elsewhere. On removing the pressure, the prominence speedily returns. There is no pulsation, or hardness, or distinct tumor to be felt anywhere.

The epigastrium is not so resonant as we should expect to find it if this fullness were due to distension of the stomach with gas; but you observe that the note is more distinctly tympanitic when I press somewhat firmly as I percuss than it is when I allow my finger to rest lightly on the abdominal wall. Under the latter circumstances, the note is almost flat. It is almost flat even when I percuss with a considerable degree of force. The explanation of this is that the abdominal muscles are in such a condition of tension that when percussion is performed without firm pressure being made they give a flat sound—the note is not transmitted from the stomach; but when the abdominal walls are pressed in and brought in contact with the stomach, a tympanitic sound is produced.

This condition will often be found where there is distension of the stomach together with a spasmodic condition of the abdominal muscles. These muscles are strongly knotted, and their bulk is sufficient to cause dullness when percussion is made on the finger lightly applied. This state is found in many cases where we are trying to determine, in the first place, whether the liver is enlarged, and, in the second place, whether there is any tumor in the walls of the stomach. Simple percussion is often misleading, and, if we are not careful, may cause us to imagine that there is enlargement of the left lobe of the liver or that there is a tumor of the stomach when no such condition exists. The fact that the condition is due to distension of the stomach and spasm of the muscles will be recognized by examining the patient in the recumbent posture. It will then be seen that the heads and different divisions of the recti muscles are more plainly marked than natural, and that there is spasm of the abdominal walls. If the patient's attention is drawn from the examination and gentle pressure is made, the muscles will become relaxed, but the instant palpation or percussion is employed they will again spring into a state of spasm. Not infrequently there is, in addition, some cutaneous or muscular hyperæsthesia. This spasm can sometimes be overcome by varying the attitude of the patient's body; by elevating the shoulders and directing him to draw up the knees and to breathe in and out deeply. Then, under the exercise of gentle and continuous pressure, the contracted muscles slowly relax, and we are able to depress the abdominal walls and readily and thoroughly palpate the epigastric region. At other times it is necessary to examine the patient under anæsthesia in order to be sure that the muscles are relaxed.

It is clear that in the present case there is no tumor of the stomach, nor is there any thickening or hardening of the walls of that organ; but there is a state of flatulent distension of the stomach with hyperæsthesia and spasm of the recti muscles. I am not sure that this is the only thing present, but of this there is no doubt.

Let us study the case further. Relaxing the abdominal walls as much as possible, I pass my finger beneath the ribs into the left hypochondriac region, but I can detect no marked enlargement of the spleen. I think that I feel the point of the spleen projecting a slight distance below the edge of the ribs. On percussion there does not seem to be much enlargement of the spleen, but I am prepared to admit that, if this patient were in a posture more favorable for relaxing the walls of the abdomen, we might find some enlargement of this organ. I can find no mass of any kind in the abdomen.

The proper explanation of this case is, I think, that the girl has had some malarial trouble, causing slight enlargement of the spleen, and that with this there are hyperæsthesia of the abdominal walls and distension of the stomach.

You are aware that considerable confusion occasionally arises from what are called phantom tumors. These may present themselves in any part of the abdominal cavity. They vary in size and shape, but they rarely exceed a man's fist in size, and are usually of an oval or rounded shape. They may be as large as a child's head. The epigastric region is their favorite situation. Their peculiarities are that they are very variable in their appearance; a tumor may be found at the first examination, but on the succeeding day it may have entirely disappeared, and perhaps during the examination it will again become evident. These tumors come and go without apparent reason. When present, they often closely simulate actual growths, being quite resistant to pressure and usually somewhat sensitive. On percussion they are sometimes resonant; at other times they yield but little resonance, the note indicating that

there is a considerable amount of solid matter between the finger and any gas in the intestine. These tumors are for the most part somewhat movable. They appear in persons of a neurotic temperament and are associated with other phenomena of disturbed innervation.

Phantom tumors are dependent upon one of two things: either upon irregular muscular contractions in the walls of the abdomen, with spasm of certain groups of fibers and the formation of knots in the muscles, or else upon spasmodic contraction of some part of the gastro-intestinal canal, with the imprisonment of gas and the formation of a rounded tumor, with the walls of the intestine in a state of spasm and with the abdominal muscles grasping it more or less spasmodically. This accumulation of gas may take place in the colon, in the small intestine, or even in a portion of the stomach. These bodies will often simulate intra-abdominal growths of various kinds. Their proper nature is to be recognized by a consideration of the general health, the peculiar neurotic state of the system, the variability as regards the presence of the tumor and its position, the absence of symptoms of obstruction of the stomach or intestines, the results of careful palpation, the fact that the tumor will sometimes disappear under the use of gentle manipulations and suddenly reappear when the surface is irritated, and the fact that the tumor entirely disappears when the patient is etherized.

Phantom tumors are not to be confounded with the movable abdominal tumors which come and go, and which are actual tumors, such, for instance, as a floating spleen, a floating kidney, or a fibroid tumor of the uterus with a long pedicle allowing it to appear in different parts of the abdomen. All these floating tumors disappear at times to reappear when the patient assumes a different posture or when the relations of the gastro-intestinal canal are altered. These are to be distinguished by the slight character of the general symptoms, by the absence, in the case of the kidney and spleen, of the organ from its normal position as revealed by percussion, and by the fact that they admit of careful palpation and can be grasped by the hand and, if the patient is etherized, can be examined minutely so as to remove every possibility of doubt. Moreover, in the case of a uterine fibroid, it can often be pressed down so as to admit of bimanual examination with one hand in the vagina and the other on the abdomen. A consideration of these facts, with the long duration of the tumor and the previous history which points to conditions that would favor the displacement of an organ, will enable you to decide that there is a true abdominal tumor.

This girl does not present a sufficiently defined body to be said to have what is properly called a phantom tumor, yet this distension, with pain in the epigastric region, approaches the border line. It is dependent upon a neurosis of the stomach, possibly associated with some malarial trouble, and certainly with dyspepsia, with flatulence, and with a spasmodic state of the stomach and the abdominal muscles. There is, however, so far as I can make out, no actual growth. There is also hyperæsthesia, which makes her complain of pain on light pressure, and on deep pressure she still complains of severe pain, but at the same time is able to smile pleasantly. This is not the pain caused by pressing an inflamed or really tender morbid growth.

I should have mentioned before that, in the distinction between phantom tumors and movable tumors of the abdomen, nothing requires more careful consideration than the possibility of fæcal accumulation. This must never be absent from our minds whenever we approach a case of abdominal disease, for fæcal accumulation is a factor in a vast number of instances of abdominal trouble. When a mass is found in the abdominal cavity, no matter what its position, size, shape, or consistence, the possibility of its being a fæcal accumulation is never to be forgotten. This is especially true if the mass is oval in shape, somewhat movable, not very painful, and not associated with evidences of marked derangement of the general health.

It will perhaps be instructive if I briefly relate a case that recently came under my notice. I was asked to see, in consultation, a man, aged about seventy-two, who had been suffering for a number of months, and was losing flesh and gradually sinking into a cachectic condition. I found him in bed, propped up with pillows, with a look of great distress upon his face, and complaining intensely of pain around the abdomen and in the back. When I came to examine him, I found it impossible to get him to lie down. He stated that lying down gave him agonizing pain in the back. When I tried to flex, extend, or rotate the spine, he complained of very severe pain in the dorsal region. On percussion, I found that there was a distinct increase of dullness posteriorly on the right side, at about the level of the kidney. The pain complained of extended down the right side more than down the left. The urine was thick, turbid, scanty, and offensive, was loaded with urates, and contained a certain amount of pus and epithelium from the upper urinary passages. There was a febrile movement in the evening, and there was copious sweating at night.

There was in addition, over the right flank and extending into the right iliac region, a sense of resistance, with some impairment of resonance upon percussion. The man could not be induced to lie down, and the abdominal muscles were so rigid that it was impossible to determine whether or not there was a solid mass in this region, but I thought that there was.

My diagnosis was, that there was an abscess connected with the anterior portion of the spinal column, in the lower dorsal region, involving the circumrenal tissue, and that this abscess was probably burrowing along the spine toward the right iliac fossa. The reasons that decided me in favor of a purulent collection, rather than cancer of the glands along the vertebral column, were the presence of hectic fever and night-sweats, the intense pain, the absence of enlargement of the glands, the absence of any external cancer, and the duration of the disease. I suggested aspiration, but this the man positively refused to allow. I never saw him again, but the case progressed and he died. I learn that large hypodermic injections of morphine became necessary to control the pain. Toward the close of the case the dullness which had existed in the right iliac fossa became so marked, and the resistance to pressure so great, that it was evident that a solid tumor was forming in this situation.

The bowels had been sluggish, but at the same time were moved by enemata, the stools being rather small and soft.

At the post-mortem examination there was found an abscess at the twelfth dorsal vertebra, with slight caries of the anterior surface of the lower part of the vertebral column and inflammation of the cellular tissue around the right kidney, not going to the extent of a perinephritic abcess, however. There was found about two fluidounces of pus, sufficient to produce all the symptoms which had been noted as referring to the back. The tumor in the right iliac fossa was due to enormous fæcal distension. The cæcum was as large as an adult head, and through the center of the mass there was a sinuous channel through which a little liquid fæcal matter trickled, furnishing the stools which were obtained.

The presence of this large mass must have been one factor that led to the use of large doses of morphine, which certainly had much to do in depressing the nutrition and hastening the fatal termination. No one is to be censured for not recognizing this fæcal accumulation, because it was impossible to get the man into a posture which would enable careful palpation of the mass to be made, and because there was a primary disease of a suppurative or cancerous character on the anterior face of the vertebral column, which was not unreasonably thought to be associated with the formation of a similar collection at the lower part of the spine and along the iliac bone; and yet the fact that the man had not good fæcal evacuations, and the possibility of this mass being a fæcal accumulation, ought to have attracted serious attention to its nature.

This was, of course, a rare case, combined as it was with other obscure troubles rendering the diagnosis difficult. I want to impress upon you the importance of being alive to the possibility of an abdominal tumor being a fæcal accumulation, and the importance of not making a diagnosis until by free evacuations of the bowels you are convinced that any tumor which remains must be something other than fæcal accumulation. You should also remember the existence of these spasmodic phantom tumors and insist upon the elimination of the possibility of such a body before admitting the presence of a morbid growth.

The treatment of this girl should consist in the regulation of the diet, attention to the bowels, and the use of remedies to allay the nervous condition of the stomach and the hyperæsthesia of the abdomen. For this purpose I shall order four or five grains of bromide of sodium and a drop of dilute hydrocyanic acid to be taken after meals. She will also take with the meals a little pepsin. I shall assure her that there is no serious trouble, and tell her not to think about herself. In order to draw the attention from the stomach, it would, I think, be well to apply to the epigastric region some strong counter-irritant. I shall have tincture of iodine repeatedly applied over this part of the abdomen. Under this treatment there should be decided improvement.

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**Exposure of Wounds to Air.**—If the view of Professor Leon Le Fort should prove well founded—namely, that exposure to the air does not interfere with the primary healing of wounds—it will tend to simplify surgical dressings, and make less interference with them possible.

# THE INDUCTION OF PREMATURE LABOR.

*A Lecture delivered in the Course on Obstetrics at the Medical Department of the University of New York.*

By WILLIAM M. POLK, M. D.,
PROFESSOR OF OBSTETRICS AND DISEASES OF WOMEN AND CHILDREN.

Gentlemen: We have now come to the subject of the induction of premature labor. The importance which is at present attached to this operation is due to the fact that within the last few years its performance has become a much more common matter than formerly, when it was only thought justifiable in such cases as extreme narrowness or deformity of the pelvis, and was not resorted to, as it is now, for the relief of the mother when exposed to the dangers of eclampsia, albuminuria, and the like. Let me say at the outset that by "premature labor" I mean any labor occurring before the completion of the full term of gestation and after the child has reached the period of viability—that is to say, after the seventh month of utero-gestation. Up to that time we speak of a labor as a "miscarriage" or an "abortion." But the term "abortion" is generally limited to a labor occurring before the fourth month, while "miscarriage" includes all labors previous to the period of viability as well as abortion.

Now, let me give you the indications for the induction of premature labor. They are, in general, any conditions likely to threaten or terminate the life of either the child or the mother. Now, the conditions which endanger the life of the mother, and call for operative interference, are, in general, these: Any condition that threatens her life through exhaustion. Under this head come obstinate nausea and vomiting; but we generally have to resort to abortion here rather than to the induction of premature labor, because this is a trouble which is likely to be most severe, and to call for relief, during the earlier months of pregnancy. Then comes that exhaustion which is incident to secondary diseases occurring in the progress of gestation, and the chief of these are puerperal mania and chorea. Then physical exhaustion incident to the mental state of the patient is not an uncommon indication for the induction of premature labor. Then we have a variety of diseased conditions belonging essentially either to the respiratory or to the circulatory system of the mother, which are accompanied by more or less exhaustion of her powers. Thus a chronic emphysema or a bronchitis in a woman who is pregnant, or a liability to repeated attacks of asthma, in itself predisposes the mother to abortion, because in these affections the blood becomes overcharged with excrementitious matters, the chief of which is carbon dioxide, and one of the principal predisposing causes of abortion is put down as "carbonic acid" in the blood. So, though this is a condition which sometimes relieves itself, yet there is occasionally a case where you will have to step in and interfere for the sake of the mother. It was in former times thought that the mother's life was of no account so long as she could be delivered of a living child, and that it was never justifiable to induce labor prematurely at the expense of the child for the sake of the mother; and in France and some other countries this is still the rule. The religious beliefs

of some people have also prevented them from ever sacrificing the child in favor of the mother. But now in this and in most civilized countries the mother's life is considered to be of more value, and so, if either life has to be sacrificed, it should be the child's. Hence we seem to be justified in inducing premature labor if such causes of exhaustion to the mother exist as I have spoken to you about. Again, if the mother is suffering from a cardiac disease, such as extreme stenosis of the mitral value, so that the blood overdistends the right side of the heart and causes extensive venous congestion in the lungs and abdominal viscera, premature labor should be induced early, for the chances are that you will have to come to it at last when respiration and the other vital processes begin to be interfered with. Still, other conditions than those I have mentioned are apt to call for this operation, such as pneumonia or a catarrhal bronchitis or a pericarditis with a very large effusion, all of which cause more or less interference with the respiratory function. Yet usually the patient speedily becomes so reduced by this condition of the chest that she is no longer able to endure the shock of the operation for inducing labor, and hence you are relieved from the responsibility of attempting it. But, if you see that her suffering is greatly added to by the distension of the abdomen with the enlarged uterus, which interferes with the movements of the diaphragm and so with the respiration, and if you think that labor can be induced without causing a great amount of shock, you will be justified in inducing it. But, in general, in case of disease in the mother, the advisability of resorting to this measure becomes a question of judgment, and it is one not to be determined until you have called a consultation and obtained the best light on the matter that the professional resources of the neighborhood will afford.

Among the indications for the induction of premature labor, deformities of the pelvis stand out prominently. Now it may be laid down as a rule that there is no chance whatever of extracting a living child through a two-and-a-half inch pelvis, and if such a pregnancy goes on to full term the only chance of saving the mother will be by removing the child by the operation of craniotomy or the Cæsarean section. Hence, to avoid the risks of embryotomy at the superior strait, which indeed are not much less than those of the Cæsarean section, and at the same time to save the life of the child, it is advisable to induce labor in such a case before the cranial bones of the fœtus have reached such a state of ossification as to render it impossible to extract it alive. Though a few cases are on record where a living child of seven months has been extracted through a two-and-a-half inch pelvis, yet, as a rule, it is practically impossible to extract a child alive through a pelvis with a conjugate diameter of less than two inches and a half or two inches and three quarters. I have never seen a case of a living child extracted through a pelvis of less than two inches and three quarters, and the reason is that the head of the fœtus is very compressible, and as you drag it down through a two-and-a-half inch pelvis after having performed version, the head becomes caught in the space between the symphysis pubis and the promontory of the sacrum, and the face now becomes so compressed and the head so distorted that the chances are that the child will be killed.

These rules may be laid down for your guidance as regards the length of time you can wait: If you have a woman with a pelvis only two inches and three quarters in diameter antero-posteriorly, you should induce premature labor at the seventh month. If you have a conjugate diameter of three inches, you can put off the induction of premature labor to the thirty-third week; if the diameter is three inches and a quarter, you may wait till the thirty-fourth or even the thirty-sixth week; and if the diameter is three inches and a half or over, I think you can safely let the pregnancy go on to term, and the chances are that by performing version you will then be able to extract the child alive. These are the general rules for determining the best time to induce premature labor in cases of deformity of the pelvis; but when the deformity is not in the bony structures but in the soft parts, remember that the impeding mass will now bear a certain amount of compression, and so in estimating the diameter of the outlet you should introduce your hand into the vagina and compress the swelling as much as you can, and then measure the distance between it and the opposite wall of the pelvis while you keep up the pressure on the tumor.

In considering the disorders incident to the state of pregnancy, and calling sometimes for relief by the induction of premature labor, the first one I will speak of is the condition known as puerperal albuminuria. When this condition exists there is always a liability to convulsions, and, worse still, œdema of the lungs or chronic Bright's disease perhaps. These are all matters that are more or less understood, and they will be inquired into by the members of the patient's family, and especially as regards the dangers of chronic Bright's disease supervening. So you should carefully watch for symptoms of any of these difficulties arising, and, while you can say to the friends of the patient that the chances are against the development of chronic Bright's disease, yet there is no doubt that a sufficient number of cases do develop to render this a matter for your careful consideration. Then the development of œdema of the lungs in connection with the convulsions of albuminuria is a complication from which few escape with their lives.

If, therefore, during the latter months of pregnancy you see any evidences of uræmia, such as any disturbance of vision or derangement of digestion, you should make an examination of the urine, and not wait for the development of œdema of the limbs or general anasarca to tell you that the kidneys are beginning to fail to perform their functions. And do not be satisfied with a single examination of the urine if you find no traces of albumin, but repeat the test once or twice every day for one, two, or three weeks if necessary. But, if by that time you find nothing suspicious in the water, you can safely conclude that the disorders of vision and the gastric irritability are due to some derangement of the digestive tract. But in the majority of cases where these symptoms come on after the sixth or seventh month of pregnancy you will find some further evidence of trouble with the kidneys. And now that you have found these evidences, you are brought face to face with one of

the greatest responsibilities that a physician is ever called upon to bear, and it will require your best judgment to determine the extent of danger your patient is in, and just when your interference with the course of nature is called for. The rule is, however, that, as long as your patient is passing plenty of water and the specific gravity remains high, even though it contains a very large amount of albumin, and if she does not complain of persistent headache, she is doing well enough, and by the aid of well-directed therapeutic measures you will be able to carry her on to full term. To accomplish this end you must see that all her excretory organs are kept working freely, and especially the skin and the bowels, and that she is kept mostly on a milk and fluid diet, and then see that she takes plenty of exercise in the open air, and that all other symptoms are controlled as they arise. Yet if, in spite of these precautions, you find that the urine is becoming more scanty and its specific gravity is very low, and with this is associated a violent, persistent headache, with photophobia or other disturbances of vision, you may be sure that you are approaching dangerous ground. In such a case, therefore, you had better tell the friends, but never the patient herself, that she is in great danger, and that you fear convulsions may supervene. Now, in ninety-nine cases out of a hundred, if any harm befalls the patient after this, they will throw the whole responsibility upon you; hence you should first call a consultation and strengthen your position thus, and then go to work and do what you think the occasion calls for. But make it a rule never to induce premature labor without calling a preliminary consultation. If you induce one labor on your own responsibility, and either the patient or the baby dies, you will never hear the end of it, and this is simply because you are by this measure supposed to be going contrary to the laws of nature, which require that the child should be expelled only by the natural forces. But when you have called a consultation and decided that the patient's condition calls for interference with the course of nature, do not fear to go ahead and induce labor as rapidly as possible, and trust to nature for the consequences. The chances for the mother after this operation are always good, and for the survival of the child, if it has passed the seventh month, they are fair, and the better the longer the pregnancy has continued.

Next we come to placenta prævia as an indication for the induction of premature labor. This is one of the conditions in which you will be much more likely to get the consent of the patient and her friends to the induction of labor than where the danger is less apparent; for here the hæmorrhage is apparent to them all, and in the human mind there appears to be a natural fear of blood, so that men are willing to submit to almost anything in order to get rid of the sight of it. But here the responsibility resting upon you is in no respect less than in case of eclampsia; and practically the question of the advisability of interference here is not only one for the friends, but for you to decide; for no one can say positively that a patient with albuminuria will certainly have convulsions and will surely die, but almost anybody can say that, if the bleeding in a case of placenta prævia is profuse and unchecked, the chances are that the mother will die, and the child will certainly. The question of interference is therefore less difficult for both you and the friends to determine, and you can more readily proceed without fear of being held responsible in case of accident. But even here it is best to first call a consultation, and when you have all become satisfied that the condition is really one of placenta prævia your duty is clear. It is to have the patient kept perfectly quiet in bed, and to carry her along, if you can, up to the completion of the eighth month, and then undertake to induce premature labor. By pursuing this plan you may be able to save both the child and the mother, and it is better to interfere at this time than to let the pregnancy go on till ended by natural labor, for you can not tell what will happen meanwhile. A profuse hæmorrhage may come on unexpectedly while you are away, and within ten or fifteen minutes before you can be summoned the woman may lose enough blood to destroy her own life, and certainly that of the child. You should therefore not attempt to procrastinate beyond the eighth month of pregnancy.

Now, a word in regard to the prognosis after the induction of premature labor. For the mother it is good, but not quite, though nearly, as good as in natural labor, and in natural labor you know about one in one hundred and twenty dies on the average. So the risk of inducing premature labor is not great enough, as a rule, to lead you to decline the operation when the safety of the mother or child calls for it. The prognosis for the child is, of course, not so good as for the mother, and it depends much upon the period at which the labor is induced. But I have already said sufficient on this point.

Now, as regards the dangers of the operation, first, to the mother, they are: Hæmorrhage from the accidental separation of a portion of the placenta from the uterine walls; the introduction of septic material into the uterus by means of the instruments employed; and, most striking of all, the danger from subinvolution of the uterus after delivery. For before the uterus has reached its fullest development at term, if delivery is induced, the muscular fibers in its walls do not seem to undergo the same fatty degeneration as in ordinary cases, but they remain firm and unyielding, and hence the uterus does not undergo a proper involution, but remains larger than it should. These are the chief dangers to which the mother is exposed. Shock is sometimes spoken of as one of the dangers, but it is not one that need influence you enough to hinder you from operating if you think necessary.

The principal dangers to the child depend upon the fact that a premature child needs to have more care taken in reference to its clothing, so that it will not take cold, and, if it is only a seven-months' child, it is best not to have it washed at all for the first thirty-six or forty-eight hours, until it has become somewhat accustomed to the change in its surroundings, and meanwhile it should be kept well wrapped up in cotton so as to keep it warm. Then, again, such a baby needs more care in nursing, for it may be so weak that it can not take the nipple, and you may have to feed it artificially, or you may have to get a wet-nurse for it because the mother's milk does not yet flow in sufficient quantities to nourish it.

Now, having discussed the indications for the induction of premature labor, we come to the description of the operation itself. A variety of measures have been suggested for attaining this end, but all of them have about the same object in view, and that is to open up the cervix and induce uterine contractions. The problem before us, then, is how to open the cervix, and after that bring on a sufficient amount of uterine contraction to cause the expulsion of the fœtus. And, first, the simplest means for overcoming the rigidity of the cervix and forcing it to open, and at the same time for stimulating the uterus to contract, is by the introduction of a Barnes's dilator, or Barnes's bag, which is a small fiddle-shaped rubber bag that, when empty, can be folded up into a very small compass, but, when filled with water or air, is expanded so as to occupy a greatly increased space. Now, after pregnancy has gone on for seven months or more, you will find the cervix sufficiently dilated for you to easily introduce one of the small-sized bags, and the manner of doing this is the following: Bring the patient down to the edge of the bed, or if possible put her on a table, which is harder, or, if this can not be done, put a board or a table-leaf under the mattress at the foot of the bed, so that her hips may not sink so deep into the bedding as to impede you, and, when you have put her in this position, with her knees elevated and thighs separated, you will have the uterus where you can easily get at it. Now fasten a catheter into the bottle-shaped mouth of the bag and secure it well by a string wound around it, and fold the bag up lengthwise and keep it so by pressing with the fingers of the right hand; then introduce into the vagina one or two fingers of the left hand until the cervix is felt, and then push the Barnes's bag up through the os uteri, guiding it by the fingers until it comes in contact with the membranes inside the uterus; it usually displaces these a little, and lodges to one side between them and the uterine wall. Having got it in position, next fill it by pumping water into it through the catheter by a Davidson's syringe, and then tie a string around the catheter so as to prevent the bag from emptying itself. By this means a sort of hydrostatic pressure is exercised upon the cervix, resembling closely that of the bag of waters in natural delivery at term. The peculiar shape of the bag enables it to keep its place in the cervix so that it will not easily come out, and, as it continues to exert pressure, its dilating power after a while is sufficient to cause some of the cervical muscular fibers to separate. This dilatation is kept up until labor-pains set in. After the first bag, which is of small size, has done its work, the cervical canal has become so large that the dilator falls out into the vagina, and then it should be removed and one of a larger size introduced, and this should in turn be replaced by the next larger size, and so, by the time you have reached the largest instrument, the dilatation or distension of the cervix will be sufficient, and labor-pains will usually be fairly at work; then you can safely leave the case to the processes of nature, and the labor will be completed in the natural way. If you rupture the bag of waters, however, you will render the process more rapid than it is in natural labor.

After dilating the cervix you will sometimes find that the uterus is still sluggish and will not contract. To overcome this you can resort to the device of passing a catheter that has been well carbolized and not used for any other purpose up into the cavity of the uterus between the bag of waters and the uterine walls and leave it there in position; after a period varying from twenty-five or thirty minutes to an hour the chances are that labor will come on and be completed in the usual manner.

I have said nothing of hot-water injections or the rupturing of the bag of waters as methods of inducing labor, because I imagine that you will, as a rule, find the means of which I have told you the best ones and all that will be necessary. Yet, in cases where the cervix is hard and very unyielding, you may use hot-water injections to lessen this rigidity and soften the cervix so that you can introduce a rubber dilator.

But, after you have faithfully tried the Barnes's bags and the introduction of a catheter, and have failed to produce uterine contractions, you have one other resource to fall back upon, and that is the rupture of the bag of waters. But you had better not resort to this until you have tried the other means, and you can dilate the cervix no further with the bags, and the uterus will not respond to the catheter. But, after these have failed, the most powerful means at our disposal is to suddenly puncture the bag of waters so as to let the uterine muscles come down directly on the child's body. But this greatly increases the dangers of the child, for the pressure upon the placenta and cord as they lie between the uterus and the body of the fœtus is liable to so interfere with the circulation of the child as to asphyxiate it. So, if labor is not rapidly completed after this measure has been tried, there is only one other thing to do in order to save the child, and that is to perform version, bring down one foot, and deliver as rapidly as possible. It is rarely necessary, however, to resort to these extreme measures; but, if you ever find that it is, the only thing for you to do is to accept the responsibility and carry out the indications as well as you can.

## Original Communications.

### SULPHURIC ACID IN MEDICINE.

By CHARLES P. BECKER, M. D.,
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With new remedies continually presenting themselves and claiming our attention, we are in danger sometimes of neglecting our old and well-tried friends, and of forgetting that the possibilities of many of these have not been exhausted. This is the case with sulphuric acid, which I find is seldom prescribed for any purpose by some physicians, except, perhaps, as a solvent for quinine. This is somewhat surprising to me, as in my hands it has proved one of the most reliable substances in those cases to which it is adapted.

This acid, under the name of oil of vitriol, has long

been known in medicine and the arts. It obtained this name, as is well known, from its thick, oily appearance, and from being derived by distillation from green vitriol, or sulphate of iron. The distilled form, under the name of Nordhausen oil of vitriol, was used until quite recently whenever a very concentrated acid was desired, but the extreme cheapness of the modern lead-chamber or synthetic acid has practically driven the other out of the market. Few commercial articles, in fact, are cheaper than the ordinary sulphuric acid, its price, I think, being less than three cents a pound by the carboy. Druggists, in selling it at retail, frequently state that they charge for the trouble and danger in handling it, rather than for the article itself.

When the commercial acid is diluted with water, if this is not in large excess, much heat is developed, and this is frequently so intense as to crack the vessel, if of glass, in which the mixture is made. This is caused by the great affinity which the acid has for water, and the heat produced proves that a chemical union is taking place, and not a mere dilution. The process is analogous to the slaking of quicklime, in which a chemical combination also occurs with the development of heat.

Another thing that will frequently be noticed on diluting the commercial acid is that a slight precipitate falls, which may be separated by filtration. This is mainly sulphate of lead, which is soluble to some extent in the concentrated acid, but not in pure water or very dilute acid. The presence of this lead salt has caused many to object to the use of the ordinary acid for internal administration, under the idea that it might produce toxic effects; for, though the acid is always given very much diluted, still the precipitate is not always noticed or removed by filtration. This fear, I believe, is groundless, for the sulphate is one of the most inert of the lead salts, and the quantity that would be administered with medicinal doses of the acid would be practically infinitesimal. I have never heard of injury caused by it, and when I wish to take a dose myself I generally take it from the same bottle from which I supply my galvanic battery. However, in drug-stores the chemically pure article is always kept on hand, and this is very properly used in compounding prescriptions.

For internal use we have two principal forms—the official dilute acid (one part acid, thirteen parts water) and the aromatic, or elixir of vitriol. Though the latter is the stronger preparation, little regard is usually paid to difference of dose, which is from ten to thirty drops, very much diluted with water, and kept from the teeth by means of a glass tube through which it is sucked.

The destructive action of the acid on the teeth, and on textile fabrics on which it may be spilled, cause some to be prejudiced against it. A little care will guard against these accidents. Few men who handle the acid and wear black cloth clothes have failed to notice the manner in which the dye is changed to a bright-red color whenever a drop comes in contact with the garment; but every student of chemistry knows that the original color is restored by the application of a solution of ammonia, and, if the acid was not too strong, or allowed to remain too long unneutralized, little or no injury is perceptible in the fabric.

Sulphuric acid is in some respects the most powerful of all acids; that is, it can be made to drive out nearly all other acids from their chemical combinations and appropriate the bases to itself, forming sulphates. For this reason it is incompatible in prescriptions with nearly all salts except soluble sulphates. If this fact is not remembered, an effect may be produced on the system diametrically opposite to the one intended. For, if it were intended to administer sulphuric acid as a tonic, combined with the salt of a vegetable acid as an adjuvant, the stronger acid would appropriate the base, set free the weak vegetable acid, and this would have a relaxing instead of tonic effect, if any. Again, it must be remembered in adding a soluble salt to a solution of sulphuric acid, or of a sulphate, that if by a possible chemical interchange an insoluble substance may be produced, this will infallibly occur, and a precipitate will form.

The use of sulphuric acid as a solvent for the sulphate of quinine is known to every one, and it seems a very simple matter. Most druggists are competent pharmacists, and prepare such a solution properly if the ingredients are given. But once in a while something goes wrong. A common form of prescription is the following:

℞ Quininæ sulph..... gr. xxx;
Aquæ..... ℥ ij;
Acid. sulph..... q. s. ad sol. fac.

Now, if the official acid be poured on the quinine before mixing it with water, a very small quantity suffices to dissolve it, and the water, on being subsequently added, will not precipitate it, but if the quinine be first suspended in water and the acid added afterward, it takes a much larger quantity of the latter to form a solution, and it will be too sour.

As a tonic I have found this acid very serviceable. It is especially suitable to the condition of debility existing during slow convalescence from pneumonia, pleuritis, and erysipelas, and also after all the exanthematous fevers. Where night-sweats occur, this acid frequently acts like a charm, and patients who were becoming exhausted and dispirited after weeks of suffering from this annoyance have often been cured permanently after taking the acid only two or three days. Even during phthisis pulmonalis its beneficial effects are noticeable, and many are enabled to obtain sound and refreshing sleep under its influence who otherwise are afraid to close their eyes under the fear that they will immediately break out in a flood of perspiration. Given in this disease, it undoubtedly prolongs life, and gives a better opportunity for iron, cod-liver oil, or hypophosphites to exert their favorable effects. Sometimes it seems to slightly interfere with digestion; in this event its use should be intermitted or the dose reduced. No routine dosage should be relied upon, but its action upon patients should be carefully watched, and the smallest amount given that will produce a favorable result.

In the treatment of furuncles, sulphuric acid has in my hands acted as a specific. I have not once failed to cut short a course of boils where I have administered it. I have repeatedly had patients on whom these pests were breaking out numerously and persistently, and on whom

not another one developed after beginning with the remedy. I prefer it to the phosphate of soda. I have no doubt it has cut short many a threatened carbuncle. In boils and carbuncles a very weak solution applied externally by means of lint saturated with it seems to increase the rapidity of their healing.

This remedy is, in my opinion, very serviceable in the treatment of all suppurative diseases—for instance, salpingitis—and will do much to prevent the appearance of pyæmia and septicæmia; while I know of no other remedy on which I should so confidently rely after blood-poisoning has manifested itself.

Sulphuric acid was formerly used a great deal in the treatment of typhus and typhoid fevers. Of late it has to a great extent been superseded by other remedies in these diseases, as, for instance, antipyrine and acetanilide. While its good effects are not so marked in these fevers, of course, as in the minor complaints that I have mentioned, I still think them decided, and believe the acid specially adapted to the treatment of all fevers with gastric or abdominal complications, for reasons which I shall now state.

Sulphuric acid is a powerful germicide. Bacteriologists state that the comma bacillus of cholera can not live in liquids acidulated with it. It would thus seem well adapted as a remedy for that disease. During the cholera epidemic of 1866 we knew nothing of schizomycetes, and I treated my patients with morphine and mercury. Since that year I have not had a patient with Asiatic cholera; but should I have one to-day, I would give him sulphuric acid and sulphate of morphine. If the acid will kill the microbes, it may be used as a prophylactic. It is well understood to-day that cholera is propagated by the germs being swallowed with solids or liquids taken as food. Should, therefore, a case of cholera occur on shipboard or in a village, if every inhabitant were compelled to take daily a few drops of the acid, it seems to me that an epidemic might be averted. Typhoid fever is propagated in much the same way as cholera. In regard to yellow fever, this is also accompanied with gastric disturbances, in the worst cases amounting to black vomit. From what I know of the ætiology of this disease, I should much like to see the prophylactic effects of sulphuric acid tried during an epidemic of it, such as at present rages at Jacksonville and a few other places in Florida.

Undiluted sulphuric acid has been used for its caustic and escharotic effects, and has given good results when applied to gangrenous tissues. But the solid caustics are more manageable for ordinary purposes.

Finally, I wish to call attention to the possible usefulness of this acid in aseptic and antiseptic surgery. It is far cheaper than either carbolic acid or bichloride of mercury. It has not the vile odor of the first nor the poisonous properties of either of them. It can never do harm except when of corrosive strength. If it were absorbed, it would act as a tonic and not as a poison. I should not advise its use for the submersion of surgical instruments, as they would in time be attacked; but for direct application to wounded surfaces, or as a dressing, I believe it would be found to possess advantages.

Not knowing to what extent views expressed in this article may have been anticipated by others, no claim is made to originality.

Hale Avenue near Atlantic.

## THE TREATMENT OF LATERAL CURVATURE BY POSTURE AND EXERCISE.*

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In a clinical lecture published in December, 1886, I made some remarks on the treatment of lateral curvature, to which my friend, Mr. Roth, has recently called my attention. The remarks were as follows: "Mr. Bernard Roth, of London, has a system of twelve or fifteen movements . . . it is quite an amusing spectacle. It is rather embarrassing for a young lady to go into the doctor's office, bare herself down to the hips, lie prone upon the floor, twist herself around like a serpent, and bring herself up on all fours, with the doctor's foot on her pelvis. There is still a certain amount of modesty left in all classes of society, and the method seems objectionable for this reason." My presence this evening in the capacity of one who gives a demonstration of this same method demands an explanation, and it is this: At the time I delivered the lecture from which the quotation has been taken I had not seen the method as practiced by Mr. Roth. My attention had only been called to a modification of this treatment. It was this modification which led me to make the criticism I did, and to unjustly attribute this to Mr. Roth. Since I have had the opportunity of becoming better acquainted with the method, of witnessing the gymnastic treatment in the hands of the gentleman himself, I hasten to correct any erroneous impressions my paper may have made.

In the first place, there is nothing immodest in his method. The physician himself makes an examination when the patient comes under treatment. This is more or less complete, according to the routine of the individual practitioner. Mr. Roth directs the following: "The patient stands without shoes, with the feet close together and knees well extended, the pelvis being symmetrically placed in front of the surgeon. She is requested to hold the trunk in her habitual comfortable position, while the spinous processes of each vertebra, from the seventh cervical to the first sacral, is marked with a soft copying pencil. The patient is then inspected laterally and in front while in the same position. She is then told to flex the trunk thoroughly, still keeping the knees extended and the feet together, the arms hanging freely, with the scapular muscles relaxed, so as to uncover the ribs posteriorly as much as possible, when any inequality of the loins and ribs posteriorly is looked for. If there be any undue prominence of one loin, or of the ribs posteriorly on one side, I take a tracing, with a malleable strip of metal, of the loins opposite the third lumbar vertebra, and another of the ribs on a level with the lower angles of the scapulæ, while the patient's trunk is still kept flexed." In the second place, the exercises are taken, not in a semi-nude condition,

* A revision of a paper read before the New York Clinical Society.

but with a loose dressing sack or garment of similar nature. I shall trespass on your time a little to tell the society what advantages this treatment possesses, what it really does, and how much time is required. Assuming, for the sake of argument, that an osseous deformity in a lateral curvature is not amenable to cure by any method with which we are familiar, there is alleged for the treatment now under discussion a correction of vicious habits in standing and sitting, a correction of the apparent deformity to a great measure, and a substitution of muscles for mechanical appliances. Its most enthusiastic advocates do not maintain, so far as I can learn, any ability to cure a rotated spine. From an extended experience I am in a position to state what mechanical appliances will do for this deformity. Leaving out all question of a simple curvature dissociated from osseous changes, we can expect no more from a brace than a certain amount of support to the chest-walls and the spinal column. I have assumed the foregoing, as already stated, for the sake of argument. I think I am prepared not only to assume this, but to make this as a statement which can be proved. Still time will not permit it this evening, and I hasten to the second part of my paper, namely: The merits of the gymnastic method. This treatment permits us to entertain any theories we choose as to the ætiology of the curvature, hence it can be made applicable to almost all varieties. If a person can, by personal effort, partially correct a spinal deformity, however great, or however long the time when this corrected position can be maintained, then it is assumed that by a systematic course of exercise this effort can be prolonged and the time increased. To make it clearer, take a patient before a camera and induce such patient to maintain for a few moments the best possible position while a photograph is being taken. If now a good position can be maintained sufficiently long for this purpose, then by a system of drilling it may be maintained for a longer time. We need only bear in mind the extraordinary muscular developments that may be obtained by an athlete to understand how a group of muscles can under contraction correct this deformity. It will be found, on examining a number of cases, that the muscles on the concave side seem to be either weakened or to act at a disadvantage. It is maintained by many that the muscles over the convex side are the ones that should be developed, and hence when electricity is employed the electrodes are usually brushed over this region.

Whatever theories one may entertain as to the side on which the muscles should be developed, it can be clearly demonstrated, I think, that the muscles on the concave side are capable under contraction of bringing about an improvement in the curve. Take, for instance, the key-note position.* Here the improvement in some cases is quite as marked as can be shown under what is known as self-suspension. Indeed, in self-suspension we aim to get the left hand above the right where the curve is in the right dorsal, and changes in the curvature are quite pronounced. Pathological specimens that different authors have presented are so conflicting in the settlement of this question that we are naturally led to depend for our own pathology upon the appearance of certain muscles in contraction. The movements that Mr. Roth advocates are as follows:

Lying on the back, arms by the side, hands supinated, very slow, deep inspiration by the nose, expiration by the mouth (four times).

2. The same with arms extended above the head (four times).

3. Same position as No. 1, head rotation, afterward flexion of the head (four times).

4. Lying on the back, slow simultaneous circumduction of both shoulder joints from before backward, elbows and wrists extended (twelve times).

5. Same position, one hip circumduction, both ways knees extended (ten times).

6. Lying on the back, simultaneous extension of both arms, backward, outward, upward, and downward from a position with elbows flexed and close to the trunk (ten times).

8. Sitting on a couch with back at an angle of 45 degrees, ankle circumduction, downward, inward, upward, and outward, the toes being inverted the whole time (twenty times). Also foot abduction (patient resisting), adduction (surgeon resisting [eight times]). Omit if there is no tendency to pes-planus.

9. Lying on the back, arms extended upward by the sides of the head, flexion of both arms (surgeon resisting). (The patient's knees flexed over the end of the table, fix the trunk.) Six or eight times.

10. Patient astride a narrow table, the arms down and hands supinated, trunk flexion at lumbar vertebræ (patient resisting), followed by trunk extension (the surgeon resisting by his hands against the patient's head [ten times]).

11. Patient, with arms extended upward, leans against a vertical post with pegs on each side; these he grasps. The surgeon gently pulls the patient's pelvis forward by his hands on the sacrum (patient resisting), also pelvis rotated on its axis to right and left alternately (surgeon resisting), with the hands on each side of the pelvis (eight times).

12. Lying on the back with the head and neck projecting beyond the end of the table, the head is gently flexed by the surgeon's hand on occiput (patient resisting [eight times]).

My own experience is limited in this treatment to about three months. During the winter I had twelve or fifteen patients in private practice under daily treatment, and while I am unable to make a full report, I feel that there is nothing lost, at all events, in omitting mechanical appliances. The employment of such appliances and gymnastic treatment at the same time are at great variance, for, if muscles are to be developed by systematic and daily exercises, then the pressure from the plaster corset or a brace on muscles we are attempting to develop must needs be harmful.

Mr. W. J. Walsham, orthopædic surgeon to St. Bartholomew's Hospital, has made a report of the results obtained in 72 cases treated by "exercise and posture." Mr. Walsham's reputation for accuracy and observation is such

* When the patient stands quite erect and extends the arm corresponding to the concave side above the head to the extreme limit, while the arm of the convex side is extended to a right angle with the body, this position is called by Mr. Roth the "key-note."

that his report is especially valuable. Mr. Roth, however, quite naturally objects to the report, because of the lack of a correct record of the rotation. Mr. Walsham, for instance, speaks of "slight rotation, very slight, etc." In 33 cases the deformity was slight, in 29 pronounced, and in 10 advanced. In the 33 slight cases 14 were cured. In 29 pronounced cases 2 were cured. I do not give a copy of the report; it simply shows, however, that the treatment is certainly worthy of commendation. Mr. Walsham's remarks on the difficulty of carrying out the details is in accord with my own experience, and is as follows:

"Treatment by posture and exercise has many difficulties in out-patient practice. In the first place, it is necessary to instill into the patient or her friends a firm faith in the efficacy of the method itself, or no attempt will be made to carry it out. So imbued are the class of patients generally who apply for relief with the idea that some form of support is necessary for the cure of lateral curvature that evident dissatisfaction is often manifested when they find that a steel instrument, or at least a plaster case, is not prescribed. But, in the second place, even after the necessary enthusiasm for treatment has been awakened, the patients, although willing, are too frequently unable, from want of time or the exigencies of their occupations, to properly pursue it. Much disappointment, principally from the above-mentioned causes, was experienced; and in many cases, as shown above, the treatment appeared to be of little or no service. Where, however, it was faithfully followed, the curves in slight cases rapidly disappeared, and in pronounced cases were greatly improved. In advanced cases little improvement was met with; but, on the other hand, the curves did not get worse, and the health and strength, where there was muscular debility, were benefited."

The important point is to secure correct measurements for record, and there is at present a great need of a good skoliosometer. The method advocated by our author is as follows: The patient is stripped to the hips, and, with shoes removed, bends forward at the hips, the knees being kept together and in line with the vertical axis of the limbs. The spinous processes are marked by a dermatograph pencil, and the most prominent point of curvature is taken for a tracing; then, with a strip of lead passing vertically across the body, while the patient bends forward as far as possible, hands toward the head, a strip of lead is folded from the axillary line on one side across the body to the axillary line on the opposite side. The lead terminates at any two given anatomical points. It is perhaps better to measure a certain distance from the spinous processes, and thus have a standard. The point on the lead where the spinal column is crossed is marked, and, on removing the lead, a tracing is taken on the margin of a piece of paper, the number of the vertebra is noted, patient's name, the date, and the two sides. With a pair of scissors this pattern is cut out, folded at the point where the spinous processes are marked, and the difference between the projection of the two sides is thus easily noted. A similar tracing is taken now in the lumbar region, third lumbar vertebra being used, in order to get the compensating curve. These tracings are pasted with the history, and can be taken again in different stages of treatment. The length of the limbs, the height of the shoulders, and the relative position of the angle of the scapulæ will complete the examination.

As before remarked, I do not propose to give a tabular report of the cases under my care, inasmuch as I have not secured sufficient accurate records. I will take the liberty, however, of presenting a case in the usual style:

A young lady, seventeen years of age, who has been under my care for three years in private practice and about six years in hospital practice, presented at the beginning of the present mode of treatment an unusual amount of rotation in the dorso-lumbar region, with deviation to the right of at least one inch. The chest-walls on the right side projected about one inch further backward than those on the left. The previous treatment in hospital practice was with the Knight brace, which consists of a steel framework with canvas lacing in front, and a leather pad to press against the projecting ribs. In conjunction with this brace treatment she had instructions to exercise on parallel bars once a day, but whether she carried out the instruction or not I am at a loss to say. In June, 1888, she came under my care as a private patient, and I began the use of plaster-of-Paris corsets and self-suspension by means of the Sayre apparatus. This treatment was followed very faithfully. The mother was induced to superintend the exercises daily, and I am confident that none of the instructions were neglected. In 1886, finding no improvement, and at the same time not detecting any increase in the deformity, I combined with the treatment just mentioned the faradaic current to the convex side, and the employment of manual force in the effort to untwist the spine; this was employed three times a week, and the mother was provided with a faradaic machine, with instructions to employ the current every day. In June, 1887, I was unable to note any improvement, although I had been careful to renew her jackets from time to time, and had followed the plan of saving the old ones in order that I might compare results; the effect of this was to find some of the early jackets straighter than some of the later, and, upon the whole, I was not satisfied with my result. I had her photographed at the time in order to keep a more accurate record. In October, however, I discarded the plaster corsets, and began the method now advocated. She has improved in general health; her muscles are in much better condition at present. One would be surprised how much resistance is required to prevent certain of the movements. While the rotation is unaffected, the muscles on the concave side are so much better developed than formerly that the apparent deformity is certainly less. For two or three months now she has felt no need whatever of a jacket; she can take much more exercise than she could formerly, and her back is quite strong.

After having practiced this system for nearly twelve months, I feel prepared to give an opinion as to its merits; at the same time I confess that I have not carried out in all its details the treatment practiced by Mr. Roth, because I have not been able to find the time, and, furthermore, because I lack the enthusiasm that Mr. Roth puts into this work. He devotes nearly all his time to the treatment of lateral curvature, and is not engaged in any hospital work. His ideas of dress-reform differ somewhat from my own in that he lays much stress on loose clothing about the waist and neck, while the patients with us yield very slowly to any suggestions about the garments they wear.

It is my conviction that the improvement one obtains in a given case must depend upon the entire confidence of the patient and friends in the medical adviser, and upon his personal interest in the case.

The real improvement, after all, is in posture. In only two instances have I observed entire correction of the lateral curvature, and in these the deformity was very slight, the lead-tracings being scarcely worthy of record.

The difficulties of carrying out such a course of treatment in hospitals and dispensaries have already been alluded to, and the question whether it is better to apply a plaster corset in such cases is indeed a puzzling one.

It is my intention, however, to give this plan a fair trial in hospital, and I confidently expect to obtain results from this method which, although imperfect, will certainly bear comparison with results obtained by any form of apparatus.

## ABSCESS OF THE VESICO-VAGINAL SEPTUM (PYOKOLPOS).

By EGBERT H. GRANDIN, M. D.

The condition present in the case I propose to report is one not frequently met with. Pus from within the pelvis (pelvic abscess) may burrow its way downward between the rectum and the vagina, or, more rarely still, an abscess in the vesico-uterine space may lead to a collection of pus between the vagina and the bladder. The usual course of events, however, is for the pus to seek an outlet into one of the neighboring organs, if the patient is fortunate enough to escape rupture into the peritoneal cavity.

With instances like the above-mentioned I am not at present concerned, seeing that the abscess, instead of having its source in the pelvis, began primarily in the vesico-vaginal, or rather the urethro-vaginal, septum, and thence worked its way upward toward the vesico-uterine space. As will be noted by those who read the history of my case, the only difficulty presented was one of diagnosis, the condition simulating quite closely cyst of the anterior vaginal wall; and indeed I did not feel justified in excluding this until, at the operation, I was unable to distinguish a cyst-wall from that of the vagina. The course of the case, it must be admitted, speaks for abscess, even though, through an unfortunate oversight, the evidence of a microscopical examination is lacking.

About five years ago Mrs. X. consulted me on account of a protrusion from the vagina which interfered with coitus. She had been married a number of years, but had never conceived. On examination, I found a protrusion of the anterior vaginal wall, just under the course of the urethra, of about the size of a walnut. It fluctuated distinctly and was painful on pressure. She had first noticed it three weeks previously, and considered it due to an accidental blow on the pubes. The sound in the urethra did not enter the protrusion. I diagnosticated a cyst of the vagina, and advised excision. This advice the patient refused to take, and a few days thereafter she told me that it had burst and healed of its own accord.

I lost sight of this patient for two years, when I was informed by her sister that every now and then the "swelling" would recur and rupture. Six months ago the patient consulted me again, and, on examination, I found a tumor of the anterior vaginal wall extending from the urethro-vaginal junction midway up the vagina. It was tense, fluctuating, and not connected with the bladder. The patient had been told by another practitioner that she had a prolapse of the anterior vaginal wall, and she had returned to me for the purpose of having a pessary inserted. This I declined to do, but again offered to excise the tumor. The patient was averse, however, to any interference whatsoever.

Six weeks ago she returned to me and expressed herself as perfectly willing to be guided by my judgment. Coitus had become practically impossible, and, in addition, a constant dysuria annoyed her exceedingly. On examination, the lumen of the vagina was blocked by a tumor extending from the urethro-vaginal to the cervico-vaginal junction; it was uniformly tense and fluctuating, and again was proved to have no connection with the bladder. I determined to excise the cyst after the late Carl Schröder's method—that is, to remove by the scissors all the projecting part of the cyst, and then unite the mucous membrane of the vagina to that of the cyst, thus turning the latter into the vagina. When I operated I was foiled in my purpose. There existed no cyst-wall that could be distinguished, but the incision led into a cavity between the vagina, the bladder, and the urethra; in other words, instead of the cyst I had expected to find, I was dealing with an abscess of the anterior vaginal wall, which, beginning at the urethral junction, had dissected its way up to the cervico-vaginal junction. I curetted the cavity, using the sharp curette, to remove the pyogenic membrane, and then, as the hæmorrhage was inconsiderable, I loosely tamponed with iodoform gauze. Granulation has been perfect.

This case is recorded not alone because instances of the kind are rather rare, but also because of the difficulty of distinguishing it from one of cyst of the vagina—the only condition with which it was at all allowable to confound it. I am not sure that it may not be deemed by some to have been a cyst which had undergone purulent degeneration. Even so, the case is worthy of record on account of the size which the mass had attained, the impossibility by careful search of eliminating it from the vagina, and, lastly, its probable cause—traumatism.

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## THE PLASTER-OF-PARIS SPLINT; IMPROVEMENTS BASED UPON PRACTICE.

By MAUS R. VEDDER, M. D.

Although the plaster-of-Paris splint has been used for many years in the treatment of fractures, yet its popularity has varied greatly. In private practice, on account of many difficulties in the way of its successful employment, it has never been extensively adopted. In public practice, because of all the facilities, the requisite number of attendants, and the abundance of time, it has made greater headway toward adoption.

In the teaching of the systematic courses upon minor surgery, this splint has met with qualified approval; but, at the same time, it is usually demonstrated as one of the permissible splints.

In the use of this splint certain modifications and precautions, born of experience in employment, have gradually

suggested themselves, with the result that it is now considered the best splint at the disposal of the surgeon.

In illustrating my views I take for an example a Pott's fracture seen shortly after injury.

After the fracture has been examined and put in position, under ether if necessary, the limb is placed in some wooden extension-splint until the swelling has reached its maximum. The form of the splint is not essential so long as it secures immobilization of the fracture and of the adjacent joints.

The swelling having reached its maximum in twenty-four to forty-eight hours, the plaster-of-Paris splint is now to be applied.

The bandages are best made of crinoline, five yards long by two inches and a half wide, filled with fresh dentist's plaster, as this not only makes a firmer bandage with less plaster, but also sets immediately. The bandage is drawn through the plaster, some being rubbed into the meshes with a spatula, and then rolled somewhat firmly. These bandages can be procured ready prepared at the stores, but better ones can be made at home.

The limb being cleansed, a bicycle stocking is drawn over it as far as the splint is to extend. The advantages of using this stocking, which takes the place of the cotton batting formerly in use, are that it covers the limb smoothly and yet permits a certain amount of swelling without causing discomfort.

The stocking now being wetted, the limb is held in position by an assistant and the wet plaster rolls are put on over the stocking, in the same way as any other roller bandage is put on, no reverses being necessary, as the wet bandage will yield sufficiently. If the bandage is put on evenly, a much thinner one is required than is usually supposed, four or five bandages being sufficient for a splint extending from the metatarso-phalangeal joint of the foot to the middle of the thigh of even a very stout person. Since the bandage is so thin, the limb must be supported until the plaster becomes perfectly dry, or else the under surface will become flattened by pressure, and this, in turn, will produce pressure upon the projecting portion of the limb. The bearing points also must be frequently changed. If no more water than is necessary is used in wetting the bandages, the process of drying lasts but a short time.

In a week or ten days the patient, who, in the mean while, has been permitted to have the freedom of the room, will state that the bandage has become quite loose. The splint is now removed by cutting down the anterior edge with any bandage-shears, a proceeding of no difficulty when a bandage of the proper thinness has been applied, and the splint spread apart and taken away from the limb. The limb will be found to be in good position, and the swelling to be much diminished.

A new splint is applied in the same way as the first, and the patient is given the freedom of the house. When, in the course of the next ten days, the next splint becomes necessary, the old one is removed as before, and the new one is put on.

The splint just taken off is to be further utilized as a removable splint. Without removing any of the cut edge of the splint, the ends are bound with lamb-skin, and along the cut edge is fastened a series of hooks upon a leather binding, that is kept in place by stitching through the thickness of the splint. This splint is to be laced with a strong lacing, and used when the last permanent splint is taken off. The patient uses it during the day, and takes it off at night, for as long a time as may be necessary.

The great advantage of the plaster-of-Paris splint over the other splints is, that when it is applied in the manner above indicated the deformity is gradually reduced by the continuous, accurately placed, and well-graduated pressure that it furnishes. In fractures near the joints, not only is this method the only one by which perfect apposition is secured, but also a too exuberent formation of the callus, that often interferes with the subsequent motion of the joint throughout the whole of the patient's life, is prevented.

690 Madison Avenue, *September 1, 1888.*

## PREDISPOSITION IN TUBERCULOSIS.

By T. L. DIX, M. D.,
Shelbyville, Ky.

Dr. Councilman, in his address on "Predisposition in Tubercle," as published in the April 21st number of this Journal for 1888, although able and suggestive, fails to demonstrate that condition of the system which invites and favors the deposition of tubercle.

The object of this paper is to discover a condition of the system and its antecedents that will account for all the phenomena presented in Dr. Councilman's address. And if we succeed in this, the cause and effect in tubercle will be demonstrated beyond question.

We will first consider the philosophy of the relation of cause to effect.

Cause is made up of a train of antecedents which consist of circumstances and conditions, and the character of these must be such as to render them efficient to produce the expected effect. In illustration, a man falls from a scaffold and is killed. The factors that make up this cause consist in concussion (circumstance), the hardness of the surface upon which he fell, and the friability of his body (conditions); the breaking of a timber in the scaffold (circumstance), weakness of the timber (condition). Here we have circumstances and conditions which pertain to the concussion and those which pertain to the scaffold. Let it be observed that those which pertain to the scaffold may be materially altered without producing any effect upon those which pertain to the concussion. Instead of the breaking of the scaffold, let a banana-peel be dropped upon which the man treads, slips, and falls. Here we have the presence of the peel, the step, and slip (circumstances); the sleekness of the peel (condition). It will be readily seen that if one of the circumstances should fail to occur, or a change of condition take place, as if the place upon which the man falls should be soft instead of hard, the cause would be inadequate to the killing, and, consequently, the latter would not obtain.

We propose to account for all the phenomena connected with tubercle and its treatment upon the hypothesis that it is the result of fibrin changed by oxidation into casein, and the fibrinous dyscrasia to be the result of inherited large lung capacity and a predominance of the arterial over the venous system—progressive metamorphosis; or the breaking down of fibrous tissue—retrogressive metamorphosis. The former is inherited, the latter acquired, tuberculosis.

Since we find the growth and decay of the forest tree, the plowing of the mighty deep by the steamer, the upheaval of mountains, the belching forth from the crater of fire, smoke, and sulphurous fumes, the hurling of huge balls against the rock-bound fort and the noble man-of-war, the destruction of Sodom, man's existence and decay, and the growth of animalcula in a mixture of straw and water —all to be phenomena called forth by the simple process of oxidation; and oxygen to be profusely distributed and ready to combine with every substance, it is not at all surprising to find tubercle to be a result of oxidation. For proof of this and many other particulars which bear directly upon this subject, and to save the reproduction of that which has already been written, the reader is referred to an article by the writer "On the Correlation of Alcohol, Rheumatism, and Phthisis," August 15th number of this Journal of 1885, also April 28th number of 1888. Presuming the reader has these two articles fresh in mind and a comprehension of their teachings, we will consider Dr. Councilman's address and quote from him as follows:

1. "We may now define tuberculosis as an infectious disease produced by the tubercle bacillus."

2. "That tuberculosis is an infectious disease, and that the tubercle bacilli are the infecting agents, are facts too well established to need further discussion."

3. "The fact that there is often a greater mortality in cases at the beginning of an epidemic than at its termination may be explained by the fact that the most susceptible were first attacked, and, finally, only those are left who naturally have a greater resisting power."

4. "There is no condition in which the effect of different degrees of resisting power is better seen than in the various forms of pulmonary phthisis, and this is in great part shown by the varying extent of connective-tissue formation. In one case we see a great deal of connective tissue formed around cavities, around areas of tubercular pneumonia, and around miliary tubercles, by which certain limits are set to the advance of the disease, or at least its advance is retarded. In other cases scarcely anything of this is seen, and the disease takes the form of a rapidly advancing inflammation with caseation."

5. "There are few ideas in medicine more firmly rooted than that there exists in all cases of tuberculosis a special predisposition of the tissue for the disease; this predisposition we can only regard as some condition of the cells or fluids of the body which favors the growth of the bacillus."

6. "That the soil in which the bacteria grow does exert some influence on their growth there can be no doubt." "The cases which we have been speaking of—those cases which have been designated *latent tuberculosis*—are examples of the disease on, for it, unfavorable soil." "They are hardly to be explained under any other theory than that there is in these cases some condition of the tissue by which a greater resistance to the growth of the bacilli is offered."

7. "And few facts are better established than that in the vast majority of tuberculous individuals a family history of the disease may be obtained."

8. "We are convinced, however, that the importance of this family history as showing that some special condition of the tissues, something analogous to a peculiarity of feature or expression, is transmitted, has been very greatly overestimated."

9. "It is a matter of common experience that all conditions of life which produce a low state of vitality in the system predispose to tuberculosis."

10. "The oft-cited Brompton Hospital, in which, notwithstanding the number of tuberculous patients, there were no cases of infection among the house-staff and attendants, only shows that the general health of the attendants must have been excellent, or that the hygienic regulations were good."

11. "Infection seems to take place more readily after certain diseases, especially after measles."

12. "We can not suppose that mountain air can exert any lethal influence on the organisms themselves, but, in placing the individual under better hygienic relations, we raise the resisting power of his tissues."

13. "In cases of primary tuberculous lesions of the bones in children, we can scarcely understand, from our present knowledge of the disease, how the infection could take place."

14. "Various attempts have been made to find some condition of the body which could be pointed out as the mark of the tuberculous diathesis."

As regards the first quotation, tubercle must in the nature of things bear the same relation to the bacillus as the corpse does to the larvæ of the *Sarcophaga mortuorum*, and therefore can not be regarded as a product of the bacilli.

The second states a circumstance that is analogous to other phenomena, as a decayed apple infects sound ones, or as tainted meat infects the fresh. It is, therefore, beyond question that the halitus of a consumptive patient will infect a healthy person, provided that one is in a condition to become infected, having caseous matter within the system. But the circumstance can in no wise occur unless the corresponding condition exists.

3. "The most susceptible" are those who are in the highest state of fibrinosis, and therefore present the most favorable condition for infection, whereas those who are in a lower state are the most slow to partake of the infection; and those so fortunate as to have the process of oxidation and the supply of albuminous or nitrogenous food in such proportions as will meet the demand of the economy for fibrin, and not producing an excess, will in no degree be possessed of the condition for infection, and will, therefore, escape.

4. This quotation clearly sets forth the consequence of medication or change of those conditions which lessen fibrinous oxidation, which results in tissue formation, and healing of the tubercular lesion.

5. In this quotation it is difficult to understand what is meant by the "predisposition of the tissue for the disease; . . . this predisposition we can only regard as some condition of the cells or fluids of the body which favors the growth of the bacillus." Let it be remembered, as shown in former articles, that fibrin is the product of both progressive and retrogressive metamorphosis; and the writer has previously shown many examples of tuberculosis as the result of retrogressive metamorphosis, the breaking down of fibrous tissue, and the consequent presence in the blood of a superabundance of fibrin, which, by further oxidation, results in casein or tubercle. This "special predisposition of the tissue for the disease" prevails to a greater degree in those cases of retrogressive than in those of progressive metamorphosis.

6. Soil is a condition that exerts a marked influence upon growth. The more slowly fibrin is supplied for the formation of the casein, the more slowly will the tubercular deposits take place; and that "condition of the tissue" consists in the retrogressive metamorphosis by which an excess of fibrin is thrown into the blood.

7. The heredity of phthisis consists in the transmission to the offspring of a predominance of the arterial over the venous circulation, which consists in large lung capacity and distribution of arterioles. In this connection let it be observed that the father exerts his influence upon the animal construction, whereas the mother's influence predominates in the organic construction, in the offspring. This is illustrated in the mule and hinny. Dr. Carpenter refers to the mule as a "*modified ass*," and the hinny as a "modified horse," the former having the physical construction of the ass, with a large body and head for the accommodation of the large vital organs of the mare, whereas the hinny is physically constructed more after the horse, but has a small body and head to meet the diminutive vital organs of the she ass. It is for this reason that diseases of the vital organs are more frequently transmitted by the mother to the offspring than by the father. The transmission of tuberculosis does not consist in the transmission of the disease *per se*, but of that physical construction which favors fibrinosis. This construction of the vital organs is hereditary, and of such parents we find consumptive children; consequently we have a family history. However, a child may be born of such parents and escape such a vital construction, while, upon the other hand, a child may be born of parents without such a family history, and yet be possessed of an organism highly fibrinous and perish of tuberculosis. This fibrinous construction may run out during a generation or more, and again, upon the principle of atavism, reappear. This accounts for the jumping over and the reappearing of the disease in the line of progenitors.

8. This overestimation is due to the fact that tuberculosis does not depend upon the condition of the tissue nor upon peculiarity of feature or expression, but upon fibrinosis.

9. This is so largely dwelt upon in the article to which reference has been made that we will not consider it in this connection.

10. This simply shows that the attendants did not possess the conditions adequate to contract the disease.

11. Certain diseases, especially measles, supply to the blood fibrin as the product of retrogressive metamorphosis as one of the conditions for tuberculosis.

12. For the manner in which mountain air effects the cure of tuberculosis the reader is referred to the April 21st number of this Journal for 1888.

13. Infection is not a *sine qua non* to the production of the disease. This finds illustration in persons who die in midwinter and during intense cold, and are buried. After a few months the body is disinterred and found to contain the larvæ of the *Sarcophaga mortuorum*. The fly did not exist during the cold weather, and when it did exist during the warm weather, how did it find a way to the corpse? But this rule does not hold good with tubercular bacilli and with the larvæ, for it appears that, however deep-seated the lesion may be, there the bacilli will be found; and however cold the weather may be at the time of death, and however deep and securely we may bury the dead, the larvæ will there be found. From these circumstances it may be reasoned that the tubercle produces the bacilli and the corpse the larvæ.

14. This is clearly pointed out by Rokitansky.

In conclusion, we will sum up the circumstances and conditions under which tuberculosis makes its appearance.

1. Tubercle is casein mingled with adventitious cells. (Condition.)

2. Casein is the product of fibrin and oxygen. (A circumstance.)

3. Fibrin is held in solution by the blood in excess—fibrinous blood. (A condition.)

4. Fibrin is the product of albuminous or nitrogenous food and oxygen. (Circumstance.)

5. Fibrin becomes excessive in the blood through two methods, viz.:

1. Arteriosis, or progressive metamorphosis—tissue formation.

2. The rapid breaking down of fibrous tissue—retrogressive metamorphosis. (Circumstance.)

The first of these constitutes the inherited type of the disease, and the second the acquired form, although they may appear in the reverse order.

These circumstances and conditions are the ones, and the only ones, essential to the production and continuance of tubercle, and form the hypothesis upon which every particular concerning the rational treatment of the disease is founded.

Now, when we turn to the treatment of the disease we find that the foregoing hypothesis forms the basis for all useful agents, and these consist in the production of cyanosis. For instance, the carbohydrates consume the oxygen; abstaining from nitrogenous food lessens the fibrin; breathing the attenuated mountain air lessens the amount of oxygen taken into the lungs; rest lessens the disintegration of fibrous tissue as well as the amount of air taken into the lungs.

Whatever there is to be accomplished for the good of humanity in the way of preventing and curing the disease is to be attained by a continuance of this line of thought and based upon the hypothesis as above set forth.

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## THE MEDICAL EDUCATION OF THE LAITY.

WE would not be understood as about to introduce a plea for the popularizing of medical instruction. On the contrary, we believe that nothing is more mischievous than the attempts of non-professional writers to impart a smattering of medicine to the general public. The daily journals minister to the curiosity of their readers by entering into the minutest details regarding the illnesses of public men, the reports of the attending physicians being frequently expanded and embellished in the most fanciful and inaccurate manner. It thus happens that every lay reader naturally constitutes himself a medical critic, and comes to believe that he is as well informed regarding the case as the attendants—and even better. Thus the illness of Garfield afforded an opportunity for exhaustive journalistic instruction on the subject of pyæmia, while the subsequent death of two prominent personages from malignant disease gave the public a chance to learn much that was curious and hitherto (and is still) unknown about cancer. Indeed, there were not wanting numerous non-medical readers who, following the example set by their favorite newspaper, felt fully competent to criticise unfavorably the gentlemen who ministered so wisely at the bedside of the hero of Winchester. So the work of instructing the masses in the mysteries of medicine goes joyously on, until we may hope that all will "be as gods, knowing good from evil."

But, one of the most active educators in this department of science is the modern novel. It is a singular fact that the ablest novelists, whose character-studies are otherwise recognized as perfectly true to nature, whenever they approach the subject of medicine or medical men, invariably draw on the imagination. There is a dreary monotony about the doctor of fiction. He is a fiction indeed, always appearing and disappearing in a blaze of blue fire, like the stage villain. He is never passive, always endowed with supernatural powers and a supreme confidence in them—a veritable Monte Cristo. The patient, on the other hand, is always in desperate straits, and, after hovering between life and death, is miraculously snatched from the grasp of the fell destroyer through either a wonderful surgical operation or a single dose of some powerful drug, interposed just at the critical moment. When we reflect that from these two sources, the novel and the newspaper, the public, the wise as well as the unlearned, derive most of their knowledge of the healing art, we must admit that such distorted teaching "tends to invest the practice of medicine with an unworthy mystery."

What the laity need is not to be more thoroughly instructed in medical science, but to be taught to distinguish between the true and the false, between the charlatan and the honest, conscientious physician. This task will take more than one generation, and will only be accomplished through the influence of the profession, who, it must be confessed, too often encourage the ignorance which they ought to enlighten. It seems as if men loved to be humbugged now almost as well as in the dark ages, to judge by the success which still attends any medical adventurer whose pretensions are sufficiently extravagant to attract general attention. The promise of a "cure," and not an honest opinion, is what the patient seeks when he consults a specialist, and such is the "competition," we are ashamed to admit, that if he consults one gentleman unsuccessfully, it is more than likely that the next one will gratify him. As we have before stated, men who possess more than the usual amount of intelligence and common sense are often singularly warped in their judgment when they consider medical matters. Whatever opinions they may hold on other subjects, they are ready to defer to the superior knowledge of those who have made a special study of such subjects, but in their peculiar theories on medicine they will yield to no one, not even to the physician. The *vis medicatrix naturæ* is an absurdity to the laity; they expect the doctor to triumph over nature, or at least to pretend to do so. The same is true with regard to medication. "In the popular mind," says an eminent writer, "the practice of medicine is too closely connected with the use of drugs. . . . It is desirable for the public to understand that the proper office of the physician is to observe cases of disease, and to either prescribe or withhold remedies according to the indications." The medical education of the laity will be complete when this truth has once been grasped. It will cause an entire change in the present attitude of the physician toward his patient. The former, instead of assuming a knowledge which he does not possess, will venture to express his honest doubt occasionally, and, while he promises less, will feel that he still retains the confidence of his patient, who will understand that greater learning leads to greater humility. The conscientious beginner may then feel that success in medicine is to be attained by a frank and open expression of opinion with regard to his patient's case, instead of by adopting the method of promising everything and performing little. Let the word "cure" be less frequently on the lips of the educated physician, and it will be less often demanded by the public as the sole testimony of professional success. We shall succeed in educating our patients to take a common-sense view of medicine only when we are ourselves honest and free from pedantry. We do not try to impose superficial knowledge upon our *confrères*—why do we endeavor to deceive the laity?

## *MINOR PARAGRAPHS.*

### THE OTHER SIDE OF THE QUESTION.

THE demands of the public for information as to the condition of or changes for better or worse in a "distinguished patient" are so strong that the temptation to advertise by means of the "medical bulletin" is beyond the power of resistance of, we are sorry to say, the majority of practitioners. Nor is

the sacredness of the death-bed proof against the inquisitive obtrusiveness of the insatiable reporter, whose fertile imagination converts fancy into fact, in the absence of definite information, and supplies the missing links in a chain of symptoms which establish in his mind, at least, both diagnosis and prognosis, and forthwith appears in the newspaper a full and correct (?) account of Mr. So-and-so's condition. There is happily, however, another side to the question—a side in which the secrets of the sick-room are zealously guarded. It is extremely gratifying to find a physician who has the moral courage and the firmness to resist the demands of the public and to repel the intrusiveness of reporters, and who is also proof against the "bulletin" temptation. Such a man Dr. William Ingalls, of Boston, has shown himself to be in his management of the case of a distinguished actor now, probably, on his death-bed. Not only has Dr. Ingalls refused to give public announcement of his diagnosis, but he has also declined to state, for the benefit of the public, the patient's condition. We commend Dr. Ingalls's course as one worthy of imitation by the profession at large.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 11, 1888:

| DISEASES. | Week ending Sept. 4. | | Week ending Sept. 11. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 35 | 11 | 73 | 15 |
| Scarlet fever | 62 | 9 | 60 | 23 |
| Cerebro-spinal meningitis | 1 | 1 | 2 | 2 |
| Measles | 75 | 9 | 68 | 6 |
| Diphtheria | 75 | 23 | 52 | 13 |
| Small-pox | 0 | 1 | 0 | 0 |

**The Health of New York City.**—During the four weeks ending Tuesday, September 11th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 171 cases and 41 deaths; scarlet fever, 291 cases and 64 deaths; cerebro-spinal meningitis, 7 cases and 5 deaths; measles, 361 cases and 37 deaths; diphtheria, 268 cases and 91 deaths; small-pox, 2 cases and 1 death.

**The Franklin, Vt., County Medical Society** will hold its annual meeting at Sheldon Junction on Tuesday, the 25th inst.

**The New York Polyclinic.**—The Seventh Annual Announcement shows an attendance of 337 practitioners for the session of 1887–'88. The only changes in the faculty are the appointments of Dr. Charles Stedman Bull as professor of ophthalmology and of Dr. Henry N. Heineman as professor of general medicine. The session of 1888–'89 will open on the 24th inst.

**The Congress of American Physicians and Surgeons.**—In previous issues we have published the substance of the preliminary programmes of the first triennial meeting, to be held in Washington, on Tuesday, Wednesday, and Thursday of next week. The completed programme has now been issued by the secretary. The officers of the congress are as follows: President, John S. Billings, M. D., LL. D., U. S. Army; Vice-presidents, ex-officio, the president of the American Surgical Association, D. Hayes Agnew, M. D., of Philadelphia, the president of the American Association of Genito-urinary Surgeons, Edward L. Keyes, M. D., of New York, the president of the American Laryngological Association, Rufus P. Lincoln, M. D., of New York, the president of the American Climatological Association, Alfred L. Loomis, M. D., LL. D., of New York, the president of the Association of American Physicians, William H. Draper, M. D., of New York, the president of the American Otological Society, Jonathan S. Prout, M. D., of Brooklyn, the president of the American Ophthalmological Society, William F. Norris, M. D., of Philadelphia, the president of the American Neurological Association, James J. Putnam, M. D, of Boston, the president of the American Dermatological Association, I. E. Atkinson, M. D., of Baltimore, the president of the American Physiological Society, Henry P. Bowditch, M. D., of Boston, and the president of the American Orthopædic Association, Newton M. Shaffer, M. D., of New York; Chairman of the Executive Committee, William Pepper, M. D., LL. D., of Philadelphia; Secretary and Acting Treasurer, William H. Carmalt, M. D., of New Haven.

The associations and societies are represented as follows on the Executive Committee and on the Committee of Arrangements, respectively: American Surgical Association, Dr. Claudius H. Mastin, of Mobile, Dr. J. Ford Thompson, of Washington; American Association of Genito-urinary Surgeons, Dr. John P. Bryson, secretary, of St. Louis, Dr. A. T. Cabot, of Boston; American Laryngological Association, Dr. J. Solis-Cohen, of Philadelphia, Dr. E. C. Morgan, of Washington; American Climatological Association, Dr. Alfred L. Loomis, of New York, Dr. W. W. Johnston, of Washington; Association of American Physicians, Dr. William Pepper, chairman, of Philadelphia, Dr. Samuel C. Busey, chairman, of Washington; American Otological Society, Dr. William H. Carmalt, of New Haven, Dr. S. O. Richey, of Washington; American Ophthalmological Society, Dr. William F. Norris, of Philadelphia, Dr. Samuel Theobald, of Baltimore; American Neurological Association, Dr. Landon Carter Gray, of New York, Dr. Robert T. Edes, of Washington; American Dermatological Association, Dr. I. E. Atkinson, of Baltimore; American Physiological Society, Dr. Henry P. Bowditch, of Boston, Dr. H. Newell Martin, of Baltimore; American Orthopædic Association, Dr. Newton M. Shaffer, of New York, Dr. A. Sidney Roberts, of Philadelphia.

The sessions of the congress, except the preliminary one for organization, will be held during the evenings, beginning at 8 o'clock P. M. On the evenings of the 18th and 19th the meetings will be held in the main hall of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and on the last, Thursday evening, in the hall of the National Museum. During this evening the Army Medical Museum and Library building, alongside of the museum building, will be lighted and opened for the inspection of the members and invited guests. The sessions of the congress will be open to the profession. The meetings of the societies will be held during the day, according to the programme each may respectively provide. Members and guests are requested to register at the office of registration, Willard's Hotel. Ladies of the families of members and guests are cordially invited to listen to the address of the president, and to be present at the reception following. The preliminary meeting to receive the report of the Executive Committee, and for organization, will be held on Tuesday, September 18th, at 1 P. M., in the main hall of the Grand Army Building.

On Tuesday evening, in the main hall of Grand Army Building, papers on "Intestinal Obstruction in its Medical and Surgical Relations" will be read by Dr. Reginald H. Fitz, of Boston, and Dr. Nicholas Senn, of Milwaukee, followed by a discussion in which Dr. William Pepper, Dr. J. Collins Warren, Dr. Thomas G. Morton, and others will take part. On Wednesday evening, at the same place, papers on "Cerebral Localization in its Practical Relations" will be read by Dr. Charles K. Mills, of Philadelphia, and Dr. Roswell Park, of Buffalo, followed by

a discussion in which Dr. David Ferrier, Mr. Victor Horsley, Dr. W. W. Keen, Dr. E. C. Seguin, Dr. Robert F. Weir, and others will take part. On Thursday evening, in the hall in the National Museum, Smithsonian Grounds, the address by the president, "On Medical Museums," will be delivered, to be followed by a general reception in the United States Army Museum Building.

The programme of the AMERICAN SURGICAL ASSOCIATION (meeting in the main hall of the Grand Army Building) is as follows: Tuesday—Session at 10 A. M. Roll call; the address by the president, Dr. D. Hayes Agnew, of Philadelphia; executive session; "Excision in Articular Disease," by Dr. John Ashhurst, Jr., of Philadelphia (synopsis: Table of 120 cases of excision of the larger joints, from Dr. Ashhurst's practice, with remarks on the operative method, the after-treatment, and the limitations of applicability of the operation in reference to the several joints—the discussion to be opened by Dr. Lewis A. Sayre, of New York, Dr. R. A. Kinloch, of Charleston, Dr. T. F. Prewitt, of St. Louis, and Dr. F. S. Dennis, of New York); "The Relation of Micro-organisms to Injuries and Surgical Diseases," by Dr. Nicholas Senn, of Milwaukee (synopsis: 1. Hereditary transmission of microbic diseases. 2. Do pathogenic micro-organisms exist in the healthy body? Yes, under certain circumstances. 3. Sources of infection. 4. Localization of micro-organisms. Localization of microbes in antecedent pathological products. 5. Elimination of pathogenic micro-organisms. *a.* Phagocytosis. *b.* Elimination of microbes through the kidneys and other excretory organs. 6. Antagonism among micro-organisms. 7. Inflammation. *a.* Simple or plastic. *b.* Infective or destructive. 8. Suppuration. Description of the different kinds of pus microbes. Experimental and clinical evidences that pus microbes are the cause of suppuration. The relation of ptomaines to suppuration. Can suppuration be produced by chemical irritants? Pus microbes in different suppurative affections. 9. Gangrene. *a.* Microbic embolism or thrombosis. *b.* Copious inflammatory exudation. *c.* Destruction of tissues by ptomaines. 10. Septicæmia. History. Artificial septicæmia in animals. Septic intoxication in animals by the introduction of putrid substances and toxic alkaloids. Kryptogenic septico-pyæmia. 11. Pyæmia. The artificial production of pyæmia in animals. The relation of pus microbes to pyæmia in man. 12. Erysipelas. The relation of erysipelas to puerperal fever and other septic processes. The relation of erysipelas to phlegmonous inflammation and suppuration. 13. Erysipeloid. 14. Noma. 15. Tetanus. The ptomaines of the *Bacillus tetani* cause tetanic convulsions. 16. Tuberculosis. Tubercular infection of wounds. Inoculation following circumcision. Clinical forms of surgical tuberculosis. 17. Anthrax. Attenuation of virus. Intensification of virus. Anthrax infection in man and clinical varieties. 18. Glanders. 19. Actinomycosis hominis. 20. Gonorrhœa. Action of the gonococcus on the tissues. The gonococcus and purulent ophthalmia. The gonococcus in abscesses. Diagnostic value of the gonococcus. 21. Syphilis. Bacteriological and experimental study of syphilis. The bacillus of smegma. Secondary infection of syphilitic lesions with pus microbes. 22. On the alleged microbic origin of tumors—the discussion to be opened by Dr. Roswell Park, of Buffalo, Dr. W. H. Carmalt, of New Haven, and Dr. J. Collins Warren, of Boston); "Cerebral Localization: its Relation to Operative Surgery," by Dr. Stephen Smith, of New York; "Three Cases of Brain Surgery," by Dr. W. W. Keen, of Philadelphia; "Certain Indications for Trephining, and their Comparative Value," by Dr. J. W. White, of Philadelphia (the discussion of the papers by Dr. Smith, Dr. Keen, and Dr. White to be opened by Dr. C. B. Nancrede, of Philadelphia, Dr. M. H. Richardson, of Boston, Dr. John B. Roberts, of Philadelphia, Dr. Joseph Ransohoff, of Cincinnati, Dr. W. G. Porter, of Philadelphia, Dr. Christopher Johnston, of Baltimore, Dr. P. S. Connor, of Cincinnati, and Dr. D. W. Cheever, of Boston).

Wednesday—"The Choice of Operation for Vesical Calculus," by Dr. Hunter McGuire, of Richmond; "Suprapubic Cystotomy," by Dr. John H. Packard, of Philadelphia (the discussion on the papers by Dr. McGuire and Dr. Packard to be opened by Dr. S. W. Gross, of Philadelphia, Dr. D. W. Yandell, of Louisville, Dr. William T. Briggs, of Nashville, and Dr. A. Vanderveer, of Albany); "Forty Years of Chloroform and Ether in Louisville, Ky.," by Dr. D. W. Yandell, of Louisville (synopsis: When first used; by whom; in what cases; results; struggles; opposition to both; death from; circumstances of. The agent now used; general opinion of the relative safety of the two; the conditions in which one or the other is preferred—the discussion to be opened by Dr. Hunter McGuire, of Richmond, Dr. E. M. Moore, of Rochester, Dr. Charles T. Parkes, of Chicago, Dr. W. W. Dawson, of Cincinnati, and Dr. C. H. Mastin, of Mobile); "The Surgical Management of Typhlitis and Perityphlitis," by Dr. W. T. Bull, of New York; "The Propriety of Surgical Interference in Perforating Typhoid Ulcer," by Dr. J. Ewing Mears, of Philadelphia (the discussion of the papers by Dr. Bull and Dr. Mears to be opened by Dr. T. G. Morton, of Philadelphia, Dr. J. Ford Thompson, of Washington, Dr. F. S. Dennis, of New York, and Dr. B. A. Watson, of Jersey City); "Report of a Case of Simultaneous Ligation of the Right Carotid and Subclavian Arteries for Aneurysm of the Innominate," by Dr. John H. Packard, of Philadelphia.

Thursday—"Hernia: its Treatment," by Dr. C. H. Mastin, of Mobile (the discussion to be opened by Dr. L. McLane Tiffany, of Baltimore, Dr. H. H. Mudd, of St. Louis, and Dr. J. E. Michael, of Baltimore); "The Comparative Merits of Tracheotomy and Intubation in the Treatment of Croup," by Dr. George W. Gay, of Boston; "Pregnancy and Operative Surgery: their Mutual Relations," by Dr. L. McLane Tiffany, of Baltimore (conclusions: 1. Pregnancy is a physiological condition, and does not contra-indicate a surgical operation. 2. During pregnancy, temporary strain may be exerted on some organ—*e. g.*, the kidney, inducing impairment of function. 3. A surgical operation upon a pregnant woman is to be conducted so as to avoid inducing abortion, in itself a serious accident. 4. The main cause of abortion after operation is sepsis. 5. The probability of sepsis after operation is increased if the patient is suffering from disease, either temporary or chronic. 6. Abortion may result from operation—shock, perhaps. 7. Hæmorrhage does not seem to induce abortion. 8. Union of fracture may be retarded by pregnancy. 9. Recorded cases show that the unborn child receives no evil impress when the mother is subjected to operation. 10. When a surgical operation upon a pregnant woman is under consideration, the function of all the patient's organs must be carefully investigated and regulated; an operation then, conducted antiseptically, may be expected to result as though pregnancy were not present—the discussion to be opened by Dr. Donald Maclean, of Detroit, Dr. J. Ewing Mears, of Philadelphia, Dr. E. M. Moore, of Rochester, and Dr. D. W. Yandell, of Louisville); "Nerve Stretching," by Dr. N. P. Dandridge, of Cincinnati (the discussion to be opened by Dr. W. W. Keen, of Philadelphia, Dr. T. G. Richardson, of New Orleans, Dr. John Ashhurst, Jr., of Philadelphia, and Dr. T. A. McGraw, of Detroit); "Nephrectomy for Gunshot Wound," by Dr. DeForest Willard, of Philadelphia (synopsis: Abdominal and dorsal incisions; treatment of hæmorrhage and hæmatocele; drainage; urinary functions, etc.—the discussion to be opened by Dr. W. W. Keen, of Philadelphia); "Shock," by Dr. David W. Cheever, of Boston.

The programme of the American Association of Genito-urinary Surgeons (meeting at Willard's Hotel) is as follows: Tuesday—Address of Welcome, by the President, Dr. Edward L. Keyes, of New York; "Pyæmia as a Direct Sequel of Gonorrhœa," by Dr. Roswell Park, of Buffalo; "Clinical Observations on Gonorrhœa, with Special Reference to Ætiology, Duration, and Treatment," by Dr. John P. Bryson and Dr. Edwin C. Burnett, of St. Louis; "Retrojections in Gonorrhœa," by Dr. Edward R. Palmer, of Louisville; "The Local Treatment of Chronic Urethral Discharges," by Dr. Frederick R. Sturgis, of New York; "On the Relation of the Prostate to Chronic Urethral Discharges," by Dr. J. William White, of Philadelphia; "The Diagnosis and Treatment of Chronic Urethritis, with Demonstrations and Instruments," by Dr. Oberländer, of Dresden, Germany (to be read by Dr. John B. Fordyce); "The Connection between Masturbation and Stricture of the Urethra," by Dr. Samuel W. Gross, of Philadelphia; "The Curability of Urethral Stricture by Electricity: an Investigation," by Dr. Edward L. Keyes, of New York; "On the Radical Cure of Stricture of the Urethra by Dilating Urethrotomy," by Dr. Fessenden N. Otis, of New York; "The Prognosis of Stricture, based on Thirty Years' Death Record at the London Hospital and the Practice at St. Peter's Hospital," by E. Hurry Fenwick, F. R. C. S., of London, England; "Some Points on the Ætiology of Stricture of the Urethra," by Dr. Robert W. Taylor, of New York.

Wednesday—"The Operative Treatment of Hypertrophy of the Prostate, with Stereopticon Demonstrations of Specimens," etc., by Dr. Francis S. Watson, of Boston; "Prostatotomy for Enlarged Prostate at the Age of Forty-two Years," by Dr. Abner Post, of Boston; "The History of the Filaria Sanguinis Hominis: its Discovery in the United States, and especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis," by Dr. William M. Mastin, of Mobile; "Clinical Observations on Diseases of the Testicle," by Dr. L. Bolton Bangs, of New York; "Case of Removal of Both Testicles for Recurrent Carcinoma," by Dr. Frank W. Rockwell, of Brooklyn; "Some Points in the Differential Diagnosis of Bladder and Kidney Affections, with Demonstrations of the Cystoscope and Other Instruments," by Dr. Alexander W. Stein, of New York; "Demonstration of a Perfected Evacuator and an Improvement in the Method of Removal of Débris from the Bladder," by Dr. Fessenden N. Otis, of New York; "Stone in the Bladder in Connection with Splenic Leukæmia," by Charles Williams, F. R. C. S., of Norwich, England; "Litholapaxy in Male Children," by Surgeon-Major Keegan, of Indore, Central India; "Case of Perineal Section for Traumatic Retention—Unusual Condition of the Bladder," by Dr. J. E. Michael, of Baltimore.

Thursday—"Operations on the Kidney," by Dr. William H. Hingston, of Montreal, Canada; "On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis," by Dr. George Chismore, of San Francisco; "Case of Nephro-lithiasis complicated with Hydronephrosis, in which Lumbar Nephrotomy was performed," by Dr. Frank W. Rockwell, of Brooklyn; "Malignant Tumors of the Seminal Vesicles: Two Cases, with Specimens," by Dr. John P. Bryson, of St. Louis; "Case of Bowel Ending in the Urethra of a Child Four Weeks Old—Relief by Operation," by Dr. Arthur T. Cabot, of Boston; "Unusual Case of Urethral Calculus," by Dr. Harvey G. Mudd, of St. Louis; "The Congenital Anomalies of the External Urethral Orifice," by Dr. C. Kaufmann, of Zürich, Switzerland; "The Prophylaxis of Syphilis," by Dr. Prince A. Morrow, of New York; "Syphiloma of the Vulva," by Dr. J. Nevins Hyde, of Chicago; "The Value of the Tolerance of the Iodides in the Diagnosis of Syphilis," by Dr. J. William White, of Philadelphia.

The programme of the American Laryngological Association (meeting in hall No. 8, Grand Army Building) is as follows: Tuesday—Address of Welcome, by Dr. E. Carroll Morgan, of Washington; the President's Address, "A Decade of Laryngology," by Dr. Rufus P. Lincoln, of New York; "Imaginary Lingual Ulceration," by Dr. George M. Lefferts, of New York; "A Case of Subglottic Chronic Stenosis of the Larynx treated by Dilatation," by Dr. Frank Donaldson, of Baltimore; "Case of Stenosis of the Larynx and Trachea," by Dr. Carl Seiler, of Philadelphia; "A Specimen of Stricture of the Larynx with Extensive Cicatrization, from Ulcerative Tuberculosis," by Dr. J. Solis-Cohen, of Philadelphia; "A possible Substitute for Tracheotomy and Intubation in Certain Cases," by Dr. Edgar Holden, of Newark; "Residence at certain Great Altitudes as a Means of Cure for Laryngeal Phthisis," by Dr. Clinton Wagner, of New York; "Internal Œsophagotomy; with Report of Successful Cases," by Dr. John O. Roe, of Rochester; "On a hitherto undescribed Neurosis of the Aural Apparatus, closely allied to Coryza Sympathetica," by Dr. John N. Mackenzie, of Baltimore; "Further Investigations as to the Existence of a Cortical Motor Center for the Human Larynx," by Dr. D. Bryson Delavan, of New York.

Wednesday—Discussion: "Dyspepsia as Reflected in the Mucous Membrane of the Upper Air-passages"; "The Anatomy of the Nasal Chambers," by Dr. Harrison Allen, of Philadelphia; "The Treatment of Atrophic Rhinitis by the Galvanic Current," by Dr. J. H. Hartman, of Baltimore; "Notes on a Case of Nasal Caries, complicated with Meningitis, successfully treated by means of the Surgical Drill," by Dr. W. C. Jarvis, of New York; "A Photographic Study of the Laryngeal Image during the Formation of the Registers and the Production of Vibrations in the Pitch of the Singing Voice," by Dr. Thomas R. French, of Brooklyn; "Congenital Bony Occlusion of the Posterior Nares," by Dr. C. H. Knight, of New York; "Antiseptic Nasal Surgery," by Dr. Clarence C. Rice, of New York.

Thursday—"The Treatment of some forms of Hoarseness," by Dr. C. E. Sajous, of Philadelphia; "The Cure of the Falsetto Voice," by Dr. J. C. Mulhall, of St. Louis; "Subglottic Laryngeal Enchondroma," by Dr. E. Fletcher Ingals, of Chicago; "A Case of Sarcoma of the Tonsil," by Dr. Alexander W. MacCoy, of Philadelphia; "A Specimen of Laryngeal Papilloma from a Child," by Dr. S. W. Langmaid, of Boston; "Lupus of the Nose, Pharynx, and Larynx," by Dr. Samuel Johnston, of Baltimore; "The Effects of varying rates of Stimulation on the Action of the Recurrent Laryngeal Nerve," by Dr. Franklin H. Hooper, of Boston; "A Contribution to the Physiology and Pathology of the Recurrent Laryngeal Nerve," by Dr. F. Donaldson, Jr., of Baltimore; "Report of Cases of Pharyngeal and Laryngeal Paralysis due to Bulbar Lesion," by Dr. F. H. Bosworth, of New York.

The programme of the American Climatological Association (meeting in hall No. 2, Grand Army Building) is as follows: Tuesday—The President's Address, by Dr. A. L. Loomis, of New York; "A Study of the Climate of Colorado as applied to the Arrest and Cure of Pulmonary Disease," by Dr. S. A. Fisk, of Denver; "Invalids suited for Treatment at Colorado Springs," by Dr. S. E. Solly, of Colorado Springs; "Is Climate an Ætiological Factor in Graves's Disease?" by Dr. R. G. Curtin, of Philadelphia; "Health Resorts *vs.* Institutions for the Treatment of Pulmonary Consumption," by Dr. P. H. Kretzschmar, of Brooklyn.

Wednesday—"The Influence of Semi-tropical Latitudes on Types of Diseases," by Dr. John Guitéras, of Charleston; Discussion: "The Relative Importance of Different Climatic Elements in the Treatment of Phthisis" (to be opened by Dr. E. T. Bruen, of Philadelphia, and Dr. V. Y. Bowditch, of Boston);

"Indications and Contra-indications for Altitude in the Treatment of Phthisis," by Dr. F. I. Knight, of Boston; "An Environment Experiment Repeated," by Dr. E. L. Trudeau, of Saranac Lake, N. Y.; "An Epidemic of Cerebro-spinal Meningitis in Central New York," by Dr. W. T. Ford, of Utica; "The Physiology of Respiration at Great Altitudes," by Dr. F. Donaldson, Jr., of Baltimore; "Report of the Committee on Mineral Springs," Dr. C. C. Rice, of New York, chairman (the Therapeutic Value of Mineral Waters in Gastro-hepatic Diseases, by Dr. William Pepper, of Philadelphia; in Urinary and Arthritic Diseases, by Dr. A. H. Smith, of New York; in Malarial Diseases, by Dr. W. C. Van Bibber, of Baltimore); "The Therapy of Ocean Climate," by Dr. A. L. Gihon, U. S. Navy.

Thursday—"Conditions which tend to render the Atmosphere of a Locality Aseptic," by Dr. J. T. Whittaker, of Cincinnati; Discussion: "The Relation of the Nasal and Neurotic Factors in the Ætiology of Asthma" (to be opened by Dr. F. H. Bosworth, of New York, and Dr. E. L. Shurly, of Detroit); "Climate and Bright's Disease," by Dr. J. C. Wilson, of Philadelphia; "The Therapeutic Differences of Mountain and Sea Air," by Dr. W. H. Geddings, of Aikin, S. C.; "Climatic Characteristics of Texas," by Dr. Morse K. Taylor, U. S. Army; "Climatic Characteristics of Roan Mountain, East Tennessee," by Dr. C. Y. Kenworthy, of Jacksonville, Fla.; "Weak Hearts as affected by Climate and Temperature," by Dr. J. J. Levick, of Philadelphia; "Temperature and Relative Humidity, and their Relation to Health and Disease," by Dr. J. M. Anders, of Philadelphia; "Interpleural Pathological Products: their Cause, Significance, and Specific Relationship to Pulmonary Phthisis," by Dr. J. R. Leaming, of New York; "The Management of Phthisical Patients undergoing Climatic Treatment," by Dr. I. H. Platt, of Lakewood, N. J.; "A further contribution to the Study of Consumption among the Indians," by Dr. W. Matthews, U. S. Army; "Observations on the Use of Terebene," by Dr. D. M. Cammann, of New York; "Notes of a Summer in Switzerland," by Dr. D. B. St. John Roosa, of New York; "The Climate of Colorado," by Dr. W. A. Jayne, of Georgetown, Col.

The programme of the Association of American Physicians (meeting in hall No. 1, Grand Army Building) is as follows: Tuesday—Inaugural Address by the President, Dr. William H. Draper, of New York; "The Geographical Distribution of Typhoid Fever in the United States," by Dr. W. W. Johnston, of Washington; "The Management of the Stage of Convalescence in Typhoid Fever," by Dr. James H. Hutchinson, of Philadelphia: "On some Forms of Paralysis after Typhoid Fever," by Dr. George Ross, of Montreal; "Causal Therapeutics in the Infectious Diseases," by Dr. James C. Wilson, of Philadelphia; "Gastric Neurasthenia," by Dr. George M. Garland, of Boston; "Fatty Heart," by Dr. Frederick Forcheimer, of Cincinnati; "The Diagnostic Significance of the Presystolic Murmur," by Dr. Frank Donaldson, of Baltimore; discussion on "The Absolute and Relative Value of Albumin and Casts, and of Renal Inadequacy, in the Diagnosis and Prognosis of Diseases of the Kidney" (reporters, Dr. Robert T. Edes, of Washington, and Dr. Edward G. Janeway, of New York); "The Relation of Albuminuria to Life Assurance," by Dr. James Tyson, of Philadelphia; "The Cardiac Changes in Chronic Bright's Disease," by Dr. Alfred L. Loomis, of New York; "The Relation between Chronic Interstitial Nephritis and Angina Pectoris," by Dr. Samuel C. Chew, of Baltimore; "Disturbances of the Heart-Rhythm, with reference to their Causation and their Value in Diagnosis," by Dr. G. Baumgarten, of St. Louis; "Pulse-wave Velocity and Ventricular Close-time in Health," by Dr. James K. Thacher, of New Haven; "The Treatment of Valvular Affections of the Heart," by Dr. Jacob M. DaCosta, of Philadelphia.

Thursday—Discussion, conjointly with the American Physiological Society, on "The Relation between Trophic Lesions and Diseases of the Nervous System (reporters, Dr. E. C. Seguin, representing the Association of American Physicians, and Dr. H. C. Wood, representing the American Physiological Society); "The Pathology of the Thymus Gland," by Dr. A. Jacobi, of New York; "Is Hystero-epilepsy better treated by Medical or Surgical Means?" by Dr. William M. Polk, of New York; Demonstrations in Pathological Anatomy, by Dr. T. Mitchell Prudden, of New York, Dr. William H. Welch, of Baltimore, Dr. E. O. Shakespeare, of Philadelphia, and Dr. W. T. Councilman of Baltimore; "Recent Researches relating to the Ætiology of Yellow Fever," by Dr. George M. Sternberg, U. S. Army; "The Effect of Concussion of the Spine on the Reflexes," by Dr. Francis T. Miles, of Baltimore.

The programme of the American Otological Society (meeting at the Arlington Hotel) is as follows: Tuesday—"The Primary Physiological Purpose of the Membrana Tympani," by Dr. S. O. Richey, of Washington; "Chronic Purulent Inflammation of the Tympanic Attic," by Dr. C. H. Burnett, of Philadelphia; "Nasal Difficulties in Ear Disease," by Dr. J. Oscroft Tansley, of New York; "The Employment of Solutions of Boric Acid in the Treatment of Otitis Media Suppurativa," by Dr. Samuel Theobald, of Baltimore; "A Case of Cerebral Abscess, following Extensive Necrosis of the Temporal Bone—Operation—Death from Secondary Hæmorrhage—Autopsy," by Dr. Gorham Bacon, of New York; "Excision of the Drumhead and Ossicles for the Cure of Chronic Purulent Inflammation of the Attic of the Tympanum," by Dr. Samuel Sexton, of New York; "Exhibition of Improved Cannular Aural Forceps and Scissors," by Dr. W. H. Carmalt of New Haven.

The programme of the American Ophthalmological Society (meeting at the Arlington Hotel) is as follows: Wednesday—"Some Tenotomies for the Correction of Heterophoria, with Results," by Dr. David Webster, of New York; "The Advantages and Disadvantages of Iridectomy in Simple Chronic Glaucoma compared," by Dr. Charles Stedman Bull, of New York; "Is Astigmation a Factor in the Causation of Glaucoma?" by Dr. Samuel Theobald, of Baltimore; "The Treatment of Ulcers of the Cornea," by Dr. Peter A. Callan, of New York; "Meridional Astigmation," by Dr. Edward Jackson, of Philadelphia; Report of a Committee "On the Numbering of Prisms according to their Refractive Power"; "Nasal Difficulties in Eye Diseases" and "A New Instrument for Demonstrating Refractions," by Dr. J. Oscroft Tansley, of New York; "Acute Cocaine Conjunctivitis," by Dr. W. F. Mittendorf, of New York; "The Treatment and Prognosis of Incipient Cataract," by Dr. Samuel D. Risley, of Philadelphia; Exhibition of Apparatus for the Diagnosis of Refraction, by Dr. Swan M. Burnett, of Washington.

The programme of the American Neurological Association (meeting at Willard's Hotel) is as follows: Tuesday—"The Relation of Renal Diseases to Diseases of the Nervous System," by Dr. Robert T. Edes, of Washington (to be discussed by Dr. F. X. Dercum, Dr. Leonard Weber, Dr. E. C. Seguin, and Dr. L. C. Gray); "Muscular Dystrophies," by Dr. B. Sachs, of New York (to be discussed by Dr. P. C. Knapp, Dr. G. W. Jacoby, Dr. W. R. Birdsall, and Dr. C. K. Mills); "Post-hemiplegic Disturbances of Motion in Children," by Dr. Philip C. Knapp, of Boston; "Heat Centers in Man," by Dr. Isaac Ott, of Easton, Pa.; "The Relation of the Thalamus to the Paracœle (Lateral Ventricle), with Comments on Other Matters sometimes misunderstood," by Dr. Burt G. Wilder, of Ithaca, N. Y.; "Clinical Report of Cases of Epilepsy following Cerebral Hemiplegia," by Dr. E. D. Fisher, of New York;

"The Relation of Urinary Changes to Functional Nervous Diseases," by Dr. C. L. Dana, of New York; "The Differential Diagnosis between General Paresis, Certain Forms of Intracranial Syphilis, and the Cerebral Type of Disseminated Sclerosis," by Dr. Landon Carter Gray, of New York; "Report of a Case of Primary Lateral Sclerosis with Late Cerebral Symptoms due to a Cyst of the Floor of the Lateral Ventricle, with Microscopic Report," by Dr. Wharton Sinkler, of Philadelphia; "A Case of an Unusual Form of Myxœdema, illustrated by Photographs and Sections of Excised Tissues," by Dr. F. X. Dercum, of Philadelphia; "A Case of Alcoholic Multiple Neuritis, with Sections," by Dr. James Hendrie Lloyd, of Philadelphia; "Acute Fatal Neuritis, with a Histological Examination," by Dr. James J. Putnam, of Boston (Dr. C. K. Mills and others will demonstrate specimens); "Myositis Subacuta Progressiva," by Dr. G. W. Jacoby, of New York; "The Differential Diagnosis between Peripheral Neuritis and those Cerebral Affections with which it is most likely to be confounded," by Dr. E. C. Spitzka, of New York; "Dislocation of Cervical Vertebræ —Two Cases—Spontaneous Recovery," by Dr. G. L. Walton, of Boston; "Nervous Affections following Injury," by Dr. Philip C. Knapp, of Boston; "Hereditary Chorea," by Dr. Wharton Sinkler, of Philadelphia; "Aneurysm of an Anomalous Artery causing Antero-posterior Division of the Optic Chiasm and Bitemporal Hemianopsia," by Dr. S. Weir Mitchell, of Philadelphia (to be read by Dr. F. X. Dercum, of Philadelphia); "A Case of Focal Epilepsy, with Observations on Trephining," by Dr. James Hendrie Lloyd, of Philadelphia; the Preliminary Report of the Committee on Encephalic Nomenclature (to be read by Dr. Burt G. Wilder, Chairman, Ithaca).

The programme of the American Dermatological Association (meeting at Willard's Hotel) is as follows: Address, by the President, Dr. I. E. Atkinson, of Baltimore; "The Electrolytic Decomposition of Organic Tissues," by Dr. G. H. Rohé, of Baltimore; "The Value of Salicylic Acid in Dermatology," by Dr. Heitzmann, of New York; "Hereditary Dermatoses," by Dr. J. C. White, of Boston; "A Report of Four Cases of Dermatitis Herpetiformis," by Dr. J. E. Graham, of Toronto, Canada; "Dermatitis Herpetiformis, with Notes of Three Cases," by Dr. H. W. Stelwagon, of Philadelphia; "Personal Observations on Skin Diseases in the Negro," by Dr. R. B. Morison, of Baltimore; "Note of a Case of Filaria Medinensis," by Dr. A. Van Harlingen, of Baltimore.

Wednesday—Report of the Committee on Statistics; Report of the Committee on Nomenclature; "So-called Acne Anthracoïde Iodo-potassique," by Dr. R. W. Taylor, of New York; "Note Relative to the Vegetative Lesions induced by the Ingestion of Some of the Iodine Compounds," by Dr. J. N. Hyde, of Chicago; "Notes on Some Unusual Cases of Skin Disease," by Dr. W. A. Hardaway, of St. Louis; "A Contribution to the Clinical History of Alopecia Areata," by Dr. A. Van Harlingen, of Philadelphia; "The Non-identity of Lichen Planus and Lichen Ruber," by Dr. G. H. Fox, of New York; "The Question of the Relationship between Lichen Ruber (Hebra) and Lichen Planus (Wilson)," by Dr. A. R. Robinson, of New York; "Multiple Pigmentary Sarcoma," by Dr. E. B. Bronson, of New York; "Dermatitis Plantaris et Palmaris," by Dr. L. Duncan Bulkley, of New York.

Thursday—"Raynaud's Disease and Symmetrical Gangrene in late Syphilis," by Dr. R. W. Taylor, of New York; "The Relations of Frambœsia to Syphilis and Tuberculosis of the Skin, with Report of a Case," by Dr. P. A. Morrow, of New York; "Kraurosis of the Vulva (Breisky)," by Dr. C. Heitzmann, of New York; "Molluscum Contagiosum, a Clinical Report," by Dr. H. W. Stelwagon, of Philadelphia.

The programme of the American Physiological Society (meeting in the Army Medical Museum) is as follows: "On the Therapeutic and Forensic Aspects of Hypnotism," by Dr. G. Stanley Hall, of Worcester, Mass.; "On Enzymes Comparable with Papain, found in certain Fruits of Temperate Climates," by Dr. G. L. Goodale, of Cambridge, Mass.; "On the Knee-jerk Phenomenon," by Dr. G. W. Warren, of Boston; "On the Nature of the Knee-jerk," by Dr. W. P. Lombard, of New York; "Growth and Death," "The Cells of the Cortex Cerebri," and "The Uterus during Gestation," by Dr. C. S. Minot, of Boston; "On the Temperature of the Vitality of the Mammalian Heart," by Dr. H. N. Martin, of Baltimore; "Histological Changes produced in Ganglion Cells by Stimulation," by Dr. H. H. Donaldson, of Baltimore; "On Fever," by Dr. Isaac Ott, of Easton; "On the Distribution of Bacteria in Drinking-waters and Public Buildings," by Dr. W. T. Sedgwick, of Boston; "The Origin and Regeneration of Red Blood-corpuscles," by Dr. W. H. Howell, of Baltimore; "On the Physiological Action of Uranium Salts," "On Elastin and certain of its Decomposition Products," and "The Influence of Acetanilide, or Antifebrine, on Proteid Metabolism," by Dr. R. H. Chittenden, of New Haven; "The Relations of Costal and Diaphragmatic Breathing, with particular reference to Phonation," and "A Plethysmographic Study of the Changes of Volume Produced in the Human Finger and Arm by Various Methods of Electrical Stimulation," by Dr. H. Sewall, of Ann Arbor, Mich.

The programme of the American Orthopædic Association (meeting at Welcker's Hotel) is as follows: "The Modern Treatment of Chronic Joint and Spinal Disease," by Dr. Newton M. Shaffer, of New York; "Immobilization in Articular Disease" and "A Report on the Treatment of Club-foot by means of the Thomas Wrench, or 'T. T.,'" by Dr. V. P. Gibney, of New York; "The Mechanical Treatment of Senile Coxitis," by Dr. Henry L. Taylor, of New York; "A Practical Point in the Treatment of Pott's Disease of the Spine," by Dr. A. B. Judson, of New York; "An Efficient and Inexpensive Method for the Mechanical Treatment of Pott's Disease," by Dr. C. F. Stillman, of New York; "Rest in the Treatment of Chronic Joint Diseases," by Dr. John Ridlon, of New York; "Acute Epiphysitis in Infants," by Dr. Dillon Brown, of New York; "Remarks on Lateral Curvature and its Early Treatment," by Dr. Samuel Ketch, of New York; "Osteotomy for Anterior Tibial Curves," by Dr. DeForrest Willard, of Philadelphia; "Description of an Apparatus for Measuring any Inequality in the Lengths of the Lower Extremities," by Dr. T. G. Morton, of Philadelphia; "Hæmatoma Oris as a Sign of Injury to the Spine in the Superior Cervical Region," by Dr. Benjamin Lee, of Philadelphia; "Two Knee-joint Excisions," by Dr. A. J. Steele, of St. Louis; "Report on Morton's Operation for the Immediate Reduction of Club-foot," by Dr. H. Hodgen, of St. Louis; "Femoral Osteotomy," by Dr. Ap Morgan Vance, of Louisville; "A Case of Reflex (?) Valgus," by Dr. G. W. Ryan, of Cincinnati; "Remarks on the Operative and Mechanical Treatment of some Joint Diseases and Injuries; with special reference to the Hip, Knee, and Elbow Joints, with Illustrative Cases," by Dr. W. R. Whitehead, of Denver; "An Analysis of the Treatment of Seventy Cases of Club-foot," by Dr. E. H. Bradford, of Boston; "The Treatment of Hip-joint Disease by Fixation and Extension, with the Exhibition of a New Splint," by Dr. R. W. Lovett, of Boston; "The Surgical and Mechanical Treatment of the Deformities of Infantile Spinal and Cerebral Paralyses," by Dr. A. Sidney Roberts, of Philadelphia.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States*

*Marine-Hospital Service for the two weeks ending September 10, 1888:*

PURVIANCE, GEORGE, Surgeon. To proceed to Fairport, Ohio, as inspector. August 27, 1888.

MURRAY, R. D., Surgeon. To proceed to Key West, Fla. September 5, 1888.

HUTTON, W. H. H., Surgeon. To take temporary command of Camp Perry, Florida. September 8, 1888.

GUITÉRAS, JOHN, Passed Assistant Surgeon. To proceed to Jacksonville, Fla., after his return from duty on special train from Jacksonville to Hendersonville, N. C. September 8, 1888.

BRATTON, W. D., Passed Assistant Surgeon. To proceed to San Francisco, Cal., and report to Surgeon H. W. Sawtelle for duty. September 8, 1888.

WASDIN, EUGENE, Passed Assistant Surgeon. To rejoin his station at Mobile, Ala. September 5, 1888.

MAGRUDER, G. M., Assistant Surgeon. To proceed to Mobile, Ala., and assume temporary charge of the Service. August 31, 1888.

FATTIC, J. B., Assistant Surgeon. To proceed to Memphis, Tenn., and relieve Passed Assistant Surgeon C. T., Peckham. August 31, 1888.

MAGRUDER, G. M., Assistant Surgeon. To proceed to Way Cross, Ga. September 6, 1888.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 26 to September 8, 1888:*

ALDEN, CHARLES H., Major and Surgeon. Detailed as a member of the Board of Medical Officers convened at U. S. Military Academy, West Point, N. Y., vice Major Charles R. Greenleaf, Surgeon, relieved. Par. 2, S. O. 199, A. G. O., August 28, 1888.

CALDWELL, DANIEL G., Major and Surgeon. To report to the Recorder of the Retiring Board in session at Fort Leavenworth, Kan., as a witness in the case of Captain Thomas Sharp, Seventeenth Infantry. Par. 2, S. O. 74, Department of the Platte, August 18, 1888.

CALDWELL, DANIEL G., Major and Surgeon. Having completed his duty as witness before Retiring Board, Fort Leavenworth, Kan., to return to his station, Fort D. A. Russell, Wyoming Territory. Par. 4, S. O. 106, Department of the Missouri, August 24, 1888.

LORING, LEONARD Y., Assistant Surgeon. Granted leave of absence for one month. Par. 1, S. O. 97, Department of Arizona, August 23, 1888.

TAYLOR, MARCUS E., Captain and Assistant Surgeon. Granted leave of absence for four months, to take effect about October 15, 1888. Par. 8, S. O. 196, A. G. O., August 24, 1888.

BIRMINGHAM, HENRY P., Captain and Assistant Surgeon. Relieved from duty at Fort Myer, Va., and ordered to Fort Klamath, Oregon, for duty. Par. 18, S. O. 196, A. G. O., August 24, 1888.

BALL, R. R., Assistant Surgeon, Fort Riley, Kan., ordered to Fort Lewis, Colorado, for temporary duty. Par. 5, S. O. 108, Department of the Missouri, August 27, 1888.

SWIFT, EUGENE L., Assistant Surgeon. Upon being relieved from temporary duty at Fort Klamath, Oregon, to return to his proper station, Fort Spokane, W. T. Par. 18, S. O. 196, A. G. O., August 24, 1888.

RAFFERTY, OGDEN, Assistant Surgeon. To proceed from Fort Clark to the camp at the Department Rifle Range near San Antonio, Tex., and report for temporary duty. Par. 3, S. O. 85, Department of Texas, August 15, 1888.

RAFFERTY, OGDEN, Assistant Surgeon. Upon conclusion of department rifle competition to report to the Inspector of Rifle Practice, Division of the Missouri, for assignment to duty in connection with the division rifle competition as Camp Surgeon. Par. 4, S. O. 86, Department of Texas, August 17, 1888.

WORTHINGTON, J. C., Captain and Assistant Surgeon. Ordered from Fort Crawford, Col., to Fort Townsend, Washington Territory. S. O. 206, A. G. O., September 5, 1888.

HALL, J. D., Captain and Assistant Surgeon. Ordered from Fort Townsend, Washington Territory, to Fort Niagara, N. Y. S. O. 206, A. G. O., September 5, 1888.

**Society Meetings for the Coming Week:**

MONDAY, *September 17th:* New York Academy of Medicine (Section in Ophthalmology and Otology); Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *September 18th:* Congress of American Physicians and Surgeons (first day—Washington); New York Academy of Medicine (Section in Theory and Practice of Medicine); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburg, N. Y., Medical Association; Baltimore, Md., Academy of Medicine; Connecticut River Valley Medical Association (Bellows Falls, Vt.).

WEDNESDAY, *September 19th:* Congress of American Physicians and Surgeons (second day); Northwestern Medical and Surgical Society of New York (private); Harlem Medical Association of the City of New York; Medical Society of the County of Alleghany (quarterly), N. Y.; New Jersey Academy of Medicine (Newark).

THURSDAY, *September 20th:* Congress of American Physicians and Surgeons (third day); New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *September 21st:* Chicago Gynæcological Society; Baltimore, Md., Clinical Society.

# Reports on the Progress of Medicine.

## DISEASES OF CHILDREN.

BY ANDREW F. CURRIER, M. D.

**Diphtheria.**—Cousot ("El Progreso Gin. y Ped.," June 25, 1888) discusses anew the question whether diphtheria is primarily a general disease with local manifestations, or whether the diphtheritic membrane is the first factor in a general intoxication. The author believes that the great point is to combat the local manifestations from the beginning, and that they constitute the origin of all subsequent accidents. He believes that the following principles should dominate all rational treatment of this disease:

1. The medical treatment of diphtheria should be principally local at the beginning of the disease. 2. The organized germs of the products of diphtheria should be destroyed or sterilized wherever they occur. 3. Putrefaction of the elements of the diphtheritic membrane should be prevented at all hazards. 4. If the disease has reached an advanced period and general poisoning has supervened, local treatment should still be rigorously continued, in addition to the adoption of suitable means for controlling the general symptoms. The best means for the treatment of diphtheritic products with which the author is acquainted is a preparation of tannin, alcohol, and mucilage applied with a syringe. Tannin is a safe antiseptic which may be extensively used without fear of injury to delicate tissues. The mixture which the author uses contains:

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| Mucilage | 100 parts; |
| Tannin | 10 " |
| Alcohol | 2 to 20 " |

If the false membrane is discovered when there is only a single patch upon the skin or the mucous membrane external to the air-passages, applications of the tannin may prevent its spread. If the pharynx, tonsils, or nasal fossæ are involved, the mixture should be injected by the mouth or nose every two hours. Evidences of putrefaction will disappear after the first few injections, the membranes will shrivel, and the underlying mucous surface will assume a healthy red appearance.

**Menthol in Diphtheria of the Nose.**—Cholewa ("Rev. mens. des mal. de l'enfance," August, 1888) opens with the following case:

In a child eight years of age, suffering with diphtheria, the pillars of the velum of the palate, the tonsils, and the uvula were covered with thick false membrane. From the orifices of the nose there flowed a transparent fluid along the naso-labial furrow which irritated the nasal mucous membrane and the upper lip. Examination of the nasal mucous membrane showed that the pituitary membrane was swollen and extensively covered with a grayish deposit. The patient complained of lancinating pains in the ears, and the tympanum was red, inflammatory swelling of the mucous membrane of the middle ear evidently existing. The nose was irrigated with lime-water, and frequent gargling with the same solution was advised. The result was not satisfactory, and in twenty-four hours the mucous membrane was so swollen that respiration by the nose was impossible. Thick false membranes now covered the pituitary mucous membrane, and in a short time the entire naso-pharyngeal space was covered by them. At this time it occurred to the author to make applications with a twenty-per-cent. solution of menthol in the nasal cavities. Within a few hours after these applications were begun, the swelling of the nasal mucous membrane lost its gravity and the child could breathe freely by the nose. Identical results were also obtained by similar treatment in the case of the four-year-old sister of the preceding patient, who also suffered with diphtheria. The false membranes in this case rapidly disappeared not only from the nasal cavities but also from the pharynx.

**Mercurial Fumigations in Laryngeal Diphtheria, or Diphtheritic Croup.**—Corbin (*ibid.*) remarks that the extension of diphtheritic membranes from the pharynx to the larynx is one of the most serious complications of diphtheria, and usually leads to a fatal result from asphyxia. Tracheotomy, except in rare instances, must be considered a method by which a relatively easy death is obtained. The results obtained from intubation, as regards the number of recoveries, have been little, if any, better than those obtained by tracheotomy. The author began the treatment of diphtheria by mercurial fumigation in 1874 in a distressing case in which a fatal issue seemed probable. A tent was arranged in the bed-chamber in which the child was placed and in which a drachm of the black oxide of mercury was volatilized by the heat from an alcohol-lamp every two hours, the child being kept in the tent twenty minutes. The child recovered, and on the third day expectorated a portion of false membrane four inches long. Other cases were seen by the author in which mercurial fumigation was equally successful. In no case did salivation or diarrhœa follow this treatment.

**The Treatment of Whooping-cough.**—Widowitz (*ibid.*) says that, according to the investigations of Letzerich, Thchamer, and Afanassjen, whooping-cough is produced by a fungus which has its seat upon the mucous membrane of the respiratory passages. This fungus proliferates without entering the current of the circulation. In this respect whooping-cough shows decided analogies with muguet. In the second and third stages of the disease, when the cough is very violent and the mucus from the tracheo-bronchial mucous membrane upon which the proliferation of the fungi has taken place is violently expelled, the conditions are favorable for its self-limitation or spontaneous cure. The aim of treatment should be, therefore, to encourage the active secretion of mucus in the bronchial tubes, that it may be expelled in the course of the paroxysms of coughing. With this theory in view, the author has been in the habit of administering oxymel of squills according to the formula of Netter. Between 5 and 6 o'clock each afternoon a coffeespoonful of this medicament was prescribed, to be repeated every ten minutes, the quantity being somewhat smaller for very young patients. In most cases this medication caused violent attacks of cough followed by vomiting, the latter ceasing within two days, after which the expectoration of thick mucus was abundant. Under this treatment the paroxysms of coughing diminished within twenty-four hours in one case from twenty-four to six in number; in another from ten to two; in a third from twenty-three to three; and in a fourth from twenty-four to nothing. Thus it appears that this preparation of squills exercises an influence upon the frequency and intensity of the paroxysms of coughing, but not upon the duration of the disease.

**Fumigations, Vaporizations, Inhalations, etc., in the Treatment of Pulmonary Diseases in Children.**—Pierron ("Jour. de méd.," June 3, 1888) says that the external therapeutic agents which by means of their volatile properties are absorbable, whether by fumigation, inhalation, pulverization, or irrigation, should be generally understood, for they are useful in both acute and chronic diseases of the lungs. If a medicament which should be taken by a child in a given disease is very repugnant to him when taken by the mouth, it should be given in some way which will render it less repugnant, and there seems to be no better way than to mix it with air and inhale it. The value of eucalyptus in bronchitis is increased because of the fact that it may be so readily taken by inhalation. The following is recommended as an excellent mixture for fumigation, being placed over an alcohol-lamp or a slow fire:

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| ℞ Tr. of oil of eucalyptus, Fir-tree buds, | āā 1½ oz.; |
| Ess. of terebinth. rectif. | 10 dr.; |
| Aquæ | 31 oz. |

Water should be added as evaporation progresses, and every two hours a teaspoonful of essence of turpentine, until the atmosphere is saturated. The quantity of the ingredients may be varied according to circumstances, and the entire mixture should be renewed every two or three days. Another formula for fumigation is:

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| ℞ Resin of fir-wood | 6½ oz.; |
| Potass. carb. | 2½ dr.; |
| Water | 31 oz. |

This should be allowed to evaporate over a slow fire, the resin and the water being frequently renewed.

Another excellent means of treatment is to take one hundred grammes of juniper berries, pour over them a thousand grammes of boiling water, and place the vessel near or on the bed of the child so that the vapor may be freely inhaled. In the same way evaporating mixtures may be made from poppies, chamomile flowers, and aromatic essences. Other vapors may be obtained by the combustion of sulphur, potash salts, benzoin, myrrh, amber, etc. Sulphur is rarely used in acute diseases, but in chronic ones it is often efficient in the form of inhalations or pulverizations. Sublimed sulphur is the best for such purposes, one gramme being burned for each twenty-five cubic meters of air. The combustion of chlorate of potash on a hot pan will liberate a quantity of oxygen which will be very efficient when the supply of oxygen is too limited. Dry fumigation with balsams and aromatics may be obtained by the combustion of suitably prepared troches. The following formula is suggested for such purpose:

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| ℞ Benzoate of myrrh | 45 gr.; |
| Pulverized poplar | 2 oz.; |
| Nitrate of potash | 5 dr.; |
| Gum tragacanth | 45 gr.; |
| Water | 48 gr. |

The foregoing is to be made into sixteen troches.

Useful results may also be obtained by fumigation with leaves of belladonna, stramonium, etc., after having moistened hem with a ten-per-cent. solution of nitrate of potash, and then allowing them to dry. The vapor from camphor is no longer esteemed as it used to be. Iodine evaporates at ordinary temperatures, and one may inhale a sufficient quantity by pouring a few drops of the tincture upon a cloth and holding it before the mouth for a few minutes. Such gases as sulphureted hydrogen, chlorine, and nitrogen should not be used in the lung diseases of children.

Atomization or pulverization with suitable spraying apparatus is also a serviceable means of treatment. The following formulæ are suggested for that purpose:

| | | |
|---|---|---|
| ℞ Acidi carbol | 36 | gr.; |
| Alcohol | 4 | dr.; |
| Aquæ calidæ | 8 | oz. |
| ℞ Camph. pulv. | 36 | gr.; |
| Alcohol | 10 | dr.; |
| Creasoti | 1½ | dr.; |
| Aquæ | 9 | oz. |
| ℞ Acidi salicyl. | 36 | gr.; |
| Thymol | 36 | gr.; |
| Alcohol | 2½ | dr.; |
| Aquæ calidæ | 16 | oz. |
| ℞ Eucalyptol | 1 | dr.; |
| Alcohol | 2½ | dr.; |
| Aquæ calidæ | 13 | oz. |

Instead of the foregoing, other volatile essences or oleo-resins may be used with the atomizer. The atomization should not be made directly into the child's throat, but the air in the immediate vicinity of the couch should frequently be charged with the medicated vapors.

**Pleurisy in Very Young Children.**—Sevestre ("Rev. mens. des mal. de l'enfance," July, 1888) concludes from his investigations and reflections as follows:

1. Pleurisy in children is very easily recognized if one is sufficiently cautious in examinations; on the other hand, it is very difficult to estimate with precision the quantity of fluid which has been effused. For this particular portion of the diagnosis, indeed for establishing the very existence of pleurisy, percussion is more useful than auscultation.

2. The determination that the fluid effused in pleurisy is purulent is difficult; the gradual emaciation of the child and the cachectic condition give rise to a suspicion that such is the case. Exploratory puncture, which is not a dangerous procedure, will remove all doubt in the matter.

3. Should the child diminish in weight while the effusion still appears to be serous, one should not hesitate to evacuate the effusion by puncture. If the pleurisy be purulent, still more is puncture indicated, and if the general condition continues bad, one should not delay in considering it an empyema, and treat it by antiseptic irrigation.

**The Causes which may Retard or Prevent Walking in Children.**—Grancher (*ibid.*) remarks that the questions, At what age should a child walk? and What are the causes which may retard or prevent walking in a child? are interesting and delicate. There is an anatomical explanation for the fact that a child acquires the power of walking only by degrees, and at a period sufficiently remote from birth—namely, that the portion of the nerve axis which presides over locomotion is only imperfectly developed at birth. This portion is called the *pyramidal fasciculus*, and forms a long commissure between the cortical motor cells and the cells of the anterior horns of the spinal cord. Its development is not completed until a considerable period from birth has elapsed, as has been shown by the investigations of Flechsig and Parrot. The former considers that it is derived from a kind of bud of gray matter, which is gradually developed from above downward, while the latter thinks that there are two centers of formation, the first and earlier constituted by the central nuclei, the second or later by the cortical motor zone. The important point in this matter is that the pyramidal fasciculus starts from the cerebrum, and that at the moment of birth there is only a rudimentary condition in the bulb and in the cord. In order that locomotion may be exercised, the pyramidal fasciculus must be completely developed, and there must also be integrity of the motor cortical zone, the cerebral ganglions, the cord, the nerves, muscles, bony levers, and articulations. An analysis of 168 hospital cases, of which 100 were girls and 68 boys, shows that the greatest number of the former began to walk between the tenth and the sixteenth months, the most precocious beginning at the eighth month and the most backward at the end of the second year. The greatest number of boys walked between the twelfth and the sixteenth months, the extreme limits being nine months and two years. Any child who is unable to walk by the end of the second year will usually be found to be the subject of a pathological condition.

A series of physiological tracings were made of the impressions made by the feet of young children in walking; from these the rule was deduced that in children the width of the step remains about the same whatever the age of the subject; the length increases in direct ratio with the age. The impression obtained from the right and left feet of an infant in walking resembles, more or less, a parallelogram, the width of the step—that is, the distance of the two impressions from the center of gravity—being especially noticeable, while in a child ten or twelve years of age it is the length of the step which is noticeable. The diseases which render a child unable to walk, or retard or otherwise interfere with that function, are cerebral atrophy, cerebral sclerosis, hydrocephalus, meningitis, spasmodic hemiplegia, cerebral or cerebellar tumors, amyotrophic lateral sclerosis, hereditary ataxia, infantile paralysis, chorea, and sometimes hysteria. All the foregoing diseases are associated with the nervous system. In the diseases of the muscles there are also two which have a decided influence in interfering with the function of walking—pseudo-hypertrophic paralysis, and a form of myopathy which begins in the lower limbs. Lesions of the bones and joints have also an important bearing in this direction—namely, fractures, congenital or traumatic luxations, arthropathies, club-feet, Pott's disease, and rhachitis.

**Treatment of Imperforate Anus; Retro-pharyngeal Abscess in an Infant Two Months Old; Opening made on the Right Side of the Neck; Recovery.**—St. Germain (*ibid.*) offers a few practical reflections concerning imperforate anus, also the description of a simple method of treatment which has been found very effective. Patients who are presented for hospital treatment with imperforate anus usually show two distinct varieties of condition. In one variety there is only a point, a brown or white spot, which represents the location which should be occupied by the anus, but there is no trace of even the rudiment of a canal. In the other variety, which includes the greater number of cases, the anus is present, but ends at a certain depth. The outward conformation appears normal enough, but when a sound is introduced it is quickly arrested. Often there are ulcerations or scars which indicate that unsuccessful attempts have been made to relieve the obstruction.

In the first variety of the deformity the surgical procedure is a simple one, and, with few exceptions, it will result in a cure. A stroke or two of a bistoury or trocar will be all that is necessary to open the rectal ampulla and evacuate the contained meconium, and then a few points of suture can be taken at the edges of the wound to prevent its closure. There are cases, however, in which the external *point* appears, but in which there is a communication of the rectum with the bladder, the meconium passing away through the urethra. In such cases the author will not operate, believing that such a course is preferable to making an artificial anus, according to the method of Littre or Amussat. He believes that death is preferable to the misery which is a necessary consequence of an artificial anus.

In that variety of deformity in which the anus is imperforate, and in which there is a rudiment of a rectum at a greater or less depth, the following course is adopted: The patient being in the lithotomy position, an incision is made through the posterior anal commissure toward the coccyx, and the tissues are dissected layer by layer, care being taken to find the rectal ampulla, if one exists. This being found, it is opened, and its edges are secured to the external wound. It may even be necessary to remove a portion of the coccyx in doing this operation. The hæmorrhage may be severe, especially from large veins, and it should be carefully guarded against. A modification of this operation consists in entering a curved needle two centimetres to the left of the rudimentary rectum, passing it to a depth of four centimetres, then carrying it horizontally and outward again. It is armed with a silver wire, and the latter is drawn through the opening made by the needle. With this wire for a guide, the tissues which it includes can be carefully divided, and the rectal ampulla be more readily found than without it. It also diminishes the dangers from hæmorrhage.

In the author's case of retro-pharyngeal abscess the child had been perfectly well until it was five weeks old, when it began to have difficulty in nursing and in swallowing, its cry became deeper and less clear, its skin became hot, and it would have paroxysms of fever. Only a slight redness and swelling were discovered at the level of the right tonsil, and pharyngeal touch did not at first suggest a retro-pharyngeal abscess. At the same time a diffuse tumor began to develop at the level of the anterior border of the right sterno-mas-

toid muscle. Fluctuation in this tumor was absent; resolvent ointments and cataplasms were used with little benefit; the voice became more and more hoarse, the fever more intense, and dysphagia more annoying. In this condition the patient was seen by the author, and the diagnosis of retro-pharyngeal abscess was made. As the abscess was large and had developed outwardly, an external incision was made, and the pus was thoroughly evacuated. A drainage-tube was introduced, carbolic acid dressings were applied, and the child soon recovered.

**Herpes Zoster during Childhood.**—Mettenheimer (*ibid*) reports four cases—three in boys and one in a girl—the ages being five, eight, ten, and sixteen years. In two the herpes was on the right and in two on the left half of the body. The most characteristic vesicles were surrounded with a red areola; they were pearl-colored and had clear contents. They were somewhat elongated instead of rounded, their long axis corresponding with the long axis of the contiguous extremity, the inguinal fold, or with the course of the nerve bundles of the affected region. In a little girl eight years of age who was attacked simultaneously with a phlyctenoid inflammation of the eyes, with otorrhœa, and with swelling of the cervical glands, the vesicles were disseminated in small groups, one inch wide and two inches long, over a uniformly red base. The vesicles were so small that they were barely distinguishable with the naked eye. The exanthem caused a very lively smarting, but after it disappeared there was no neuralgic pain. In a boy five years of age the exanthem began on the right side on a level with the top of the vertebral column, and extended as far as the umbilicus. On the back the vesicles had the characteristic appearance of herpes, but in front, along the abdominal walls, they were transformed into pustules filled with thick pus, and were arranged in groups. There were no fever and no gastric symptoms, and the herpetic eruption was not accompanied by any pain.

Sometimes the herpetic vesicles resembled pemphigus in their volume and form. Such was the case with a boy ten years of age who showed groups of vesicles on the left side, surrounding the seventh and eighth intercostal spaces. There were also gastric troubles in this case. In the fourth case, a cachectic boy sixteen years of age with weak constitution, the vesicles were upon the face. The eruption started from the left ear and extended in small groups along the course of the facial nerve, and the left cheek, as far as the angle of the mouth.

The diagnosis of abortive forms of herpes zoster presents considerable difficulty in children. When there is only a single group of herpetic vesicles it can be regarded as truly herpetic only when it is accompanied by pains and its direction corresponds to that of the neighboring nerve trunks. While many authors affirm that herpes zoster is very rare in children, it is possible that this rarity is more apparent than real, for it is believed that many cases are overlooked in children because the eruption is not usually accompanied by pain, contrary to the experience which attends the same condition in adults.

**Treatment of Infantile Paralysis.**—Murrel (" El Progreso Ginecol. y. Pediat.," March 10, 1888) remarks that during the febrile period of infantile paralysis the temperature is elevated three or four degrees, and at this time the child should be kept in a darkened room and as quiet as possible in his bed. The bowels should be kept freely open by means of suitable purgative waters. The food should be as light as possible, and should consist principally of milk and peptones. Tincture of aconite is to be preferred as an antipyretic, the dose varying with the age of the child. Convulsions are not infrequent during this period, and should be treated with large doses of bromides, either by the mouth or the rectum. After the acute period has passed the child may be taken out of bed and should receive an abundance of nourishment. Revulsives should be applied to the nape of the neck, either in the form of blisters or tincture of iodine. A pill containing one sixteenth of a grain of the extract of calabar bean should now be given three times daily, and the number should gradually be increased to eight pills daily. The effect of this medicament is to increase the muscular excitability to such an extent that even slight stimulus will cause muscular contraction. The use of the calabar bean should be continued for several months, but after the sixth week it should be combined with one sixty-fourth of a grain of phosphorus at a dose. After the acute period has terminated, treatment by massage is also indicated. This should be kept up from six weeks to six months, with, perhaps, short periods of interruption. The séances should be of brief duration. Applications of the continuous galvanic current should be made from time to time until the tone of the muscles has improved, and then the induced current should be used. If cerebral symptoms predominate, a weak current should be passed through the head, a large moist sponge being used as an electrode. In addition to the foregoing, cod-liver oil, malt, the hypophosphites, and beef extracts should be given. The child should always be kept warm. It would be well to envelop him in flannel from head to foot, and at night bottles of hot water should be placed by the side of the paralyzed limbs. Frequent baths should also be given, and they may be salt water, resinous, or electrical, or all three varieties may be used.

**Coryza in Very Young Children.**—Le Gendre (" Le concours méd.," July 14, 1888) remarks that the dyspnœa and its accompanying symptoms which often attend severe attacks of coryza in young children, especially in nursing infants, is not infrequently regarded by the laity as due to croup. It may even be mistaken for croup by the physician; and Henoch reports cases in which the differential diagnosis was very difficult. Purulent or blennorrhagic coryza may appear a few hours after birth, being a condition kindred with blennorrhagic ophthalmia, and, like the latter, due to infection from the mother during parturition. In some cases of infection, the nasal discharge may be watery or mucous for some time instead of purulent. Non-infectious nasal catarrh may also occur in infants as the result of a too free use of iodine, which may have been administered in the form of the iodide of potassium. The possibility that a coryza may be of syphilitic origin must ever be borne in mind, for the destructive effect of the disease upon the nasal bones and the contour of the organ will soon be manifested, if suitable treatment be not promptly instituted. In the treatment of simple coryza, one at once recalls the effectiveness of local applications of cocaine in the adult for a similar condition. Inasmuch as a strong solution is requisite to be of any benefit, it should either not be used at all, or with great caution, for the absorption of even a small quantity might be followed by dangerous results. The author has had good success in treatment by irrigation, a small sound being passed into one nostril, and a stream of water siphoned into it and out by the other nostril; thus the mucus is thoroughly cleared out, and the child is enabled either to breathe or to nurse with the customary facility. It is admitted, however, that this method would involve considerable risk in new-born infants. The simple use of pieces of small rubber tubes or sounds is recommended by Bouchut, Philipoteaux, Barthez, and Sanné. Henoch recommends the internal use of a seventh to a fourth of a grain of calomel every two hours, even if the coryza be not of syphilitic origin. The author has had good results by insufflating into the nasal fossæ a powder containing pulverized boric acid, resorcin, and powdered sugar, each one part. The general health of infants with coryza must also be carefully guarded. They must not be taken out of doors too soon, and when the weather is damp they must always be kept in the house.

**Litholapaxy in Children.**—Suender (" Anales de Obstet., Ginecop. y Pediat.," June, 1888) has collected the following data from the statistics of Keegan, Caldecott, and Gunputsingh, all of them military surgeons in the India service: These gentlemen have collectively operated upon fifty-eight children, between the ages of one year and eight months and fourteen years, for stone, by Bigelow's method, and all but one of the cases was successful. The time occupied by the operations varied between four minutes and three hours, the greater number of them requiring forty minutes to one hour. The caliber of the lithotrites used was 7 or 8 of the English scale, the larger size being used in a small number of cases. The sounds used were of the same size, or, in some cases, a little larger than the lithotrites. In three of the operations the lithotrite was introduced only once, in the greater number of cases it was introduced four to six times, and in one case twenty introductions were necessary. All of the cases, excepting the unsuccessful one, were operated upon at one sitting. The greater number of the calculi were of the uric-acid variety; the detritus weighed from three grains to an ounce and a quarter. It is believed that the only contra-indications to litholapaxy in children consist in great size or hardness of the stone; or very small dimensions of the urethra—that is, too small to admit the sounds and lithotrites. It is recommended that

no dentated lithotrites be used, that operations be completed at one sitting, and that this operation be preferred to the cutting operations for stone.

**Late Congenital Syphilis.**—Rabl ("Arch. f. Kinderh.," ix, 4 and 5) believes that late congenital syphilis is of much more frequent occurrence than has usually been supposed. The disease is to be diagnosticated not only by the presence of parenchymatous keratitis, but also by various glandular swellings, especially those of the neck, by periostitis, by abscesses of the upper external region of the orbital margin, by ozæna even if it occurs only in the form of chronic catarrh, by symmetrical inflammations of the tibia, ulna, and other bones, and by all cases of scrofula in children of vigorous parents in whom there is neither the taint of hereditary tuberculosis nor any of the other usual causes of scrofula. In any of these cases there must be at least a suspicion that the lesion is that of late congenital syphilis, especially when the phenomena appear after the end of the second year—that is, after dentition is completed.

From a study of 112 cases, 50 of which were in boys and 68 in girls, it is clear that there is in general a mistaken idea as to the time when the first symptoms of this disease appear—that is, that in the majority of cases they do not appear at the time of puberty, but before that time. There is a decided difference as to the time of appearing in the two sexes, in boys the symptoms appearing in 68 per cent. of cases before the thirteenth year and about the tenth; in girls they appear in 50 per cent. of the cases about the twelfth year, and during the fourth year they are also of frequent occurrence. At the twenty-first year—that is, about the time of the first pregnancy—they are also of frequent occurrence. There is considerable variety with respect to the lesions manifested, the phenomena varying with the age and also with the sex of the patients. The least significant are those of the eyes, which are sometimes the seat of parenchymatous keratitis; the most significant are those of the nose and pharynx, which in boys appear most frequently at the ages of ten, sixteen, and seventeen years. In girls the lesions of the nose and pharynx occur nearly twice as frequently as in boys and are usually observed at the ages of fourteen and fifteen.

The various lesions as they were observed in the investigations are tabulated by the author as follows:

| | Males. | Females. |
|---|---|---|
| Lesions of bone | 32 | 33 |
| Lesions of eyes | 21 | 18 |
| Lesions of nose and pharynx | 19 | 23 |
| Gummata and tumors | 4 | 10 |
| Glandular lesions | 3 | 5 |
| Visceral syphilis | 3 | 5 |
| Deafness | 2 | 3 |
| Lesions of skin | .. | 2 |

In 50 per cent. of the cases there was only one form of lesion, while in the others two or three forms either appeared simultaneously or one after the other.

**The Influence of Nutriment upon the Supply and the Nutritive Character of Woman's Milk.**—Zaleski ("Ctrlbl. f. Gyn.," May 26, 1888) found, by analysis of a portion of milk taken from a wet-nurse, that it contained six per cent. of fat, or double the usual quantity. Further investigations showed that the child who was suckled by this nurse was very poorly nourished; diarrhœa and loss of weight supervened; and it was found that the milk which was given was scarcely digestible. It was believed that all these disturbances were due to too great concentration of the milk, the nurse being fattened by a too free use of beer and too little exercise. A change of diet, moderate use of meat, dilution of the beer with water, and abundant exercise in the open air, led to a diminution in the quantity of fat in the milk and an increase in milk-sugar. From that time on the child also began to improve, and throve well subsequently. The conclusions which were drawn from this case and from experiments upon cows and other animals were: 1. A woman's milk which is very rich in fat may have a very harmful effect upon the nutrition of the child. 2. A diet which is composed almost exclusively of albuminous elements will increase to a perceptible degree the fat in woman's milk, diminish the quantity of milk-sugar, and has a bad effect in other ways; a similar result may follow the use of alcoholic liquors. 3. By proper diet and nutriment, a desired condition of the milk which is indispensable for the proper nutrition of a child can be obtained, within certain limits. 4. The influence of the general condition upon the milk supply is the same in human beings as in animals. 5. The fat in milk is probably obtained, to a considerable extent, either directly or indirectly, from albuminous foods.

**Ectocardia and its Cure by Autoplasty.**—Lannelongue ("Rev. mens. des mal. de l'enfance," July, 1888) says that the idea that children born at term with ectocardia, though normally constituted in other respects, may receive such treatment as will result in their cure has recently been strengthened by the experience of the author. The patient when six days old was brought to the Hospital Trousseau. It was rather delicate in appearance, but nursed and performed other functions normally. In the thoracic region near the middle of the sternum there was a round ulceration about as large as a twenty-five-cent piece. This ulceration was incompletely closed on the side of the thoracic cavity by a soft, yellowish membrane, which was partly detached and subsequently came away altogether. Beneath this membrane lay the heart, the apex of the ventricles beating toward the aperture in the chest-wall. There was also an incomplete median fissure of the sternum, the xiphoid appendix being normal. After the membrane referred to came away, a granulation process began in the circle of tissue bounding the thoracic opening and along the lateral borders of the ventricles. As the work of reparation would eventually interfere with the action of the ventricles, a surgical operation was determined upon, the following physiological observations being first made: 1. The heart being bare, it was possible to demonstrate that when the finger was directly applied to the ventricle it was thrust back at the moment that the organ diminished in size and became hardened. 2. The impulse was perceived over the entire extent of the ventricles and not at the apex alone.

The pathogenetic condition of ectocardia is due to intrinsic or extrinsic adhesions. Intrinsic adhesions, or abnormal connections between the heart and the neighboring organs or tissues of the embryo, usually result in ectopia with preservation of the integument; extrinsic adhesions or connections between the heart and the appendages (annexes) of the embryo usually result in ectocardia. The patient was fifteen days old when the operation was performed. It seemed probable that, if the cutaneous orifice were closed with freshened strips of tissue, the movements of the heart would prevent too close attachment to it, and that a serous cavity would form which would respond to the needs of the cardiac function. Two vertical incisions were made on each side of the opening, about 15 millimetres from the ulcerated edge. The two flaps thus formed were then sufficiently moved so that their internal borders could be united and sutured over the seat of the heart. Only a few drops of blood were lost during the operation, and there was no perceptible after-effect upon the infant's general condition. In less than twenty days cicatrization had been accomplished. Two months later the child was in good health, and over the region of the heart there was a linear scar which was barely perceptible. The chest was normally closed by the external integument. Two vertical scars marked the site of the tissue which had been transplanted. The beatings of the heart, and even the form of the organ at each systole, were plainly visible, but the tegumentary covering of the organ furnished a good protection, and was not adherent to it. The effect of the operation was to convert a case of ectocardia into one of subcutaneous ectopia. As the heart develops in this case, it is possible that it may eventually take an intrathoracic position, the sternal fissure may be more or less obliterated, and the contractions of the organ may no longer be visible externally.

**Syphilis and its Treatment.**—Widerhofer (*ibid.*) remarks that of children who are born with congenital syphilis, especially if they are born prematurely, 99 per cent. die if they are not nourished at the breast. The danger of infection from those who are born with syphilis is far less than from those who have acquired it, and for this reason the author does not hesitate to place such children with a wet-nurse, if the nurse is informed beforehand of the degree of danger to which she is exposed. In the way of medication, he prefers the use of three fourths of a grain of calomel and one sixth to one third of a grain of the sac-

chlorated carbonate of iron two or three times daily. Treatment by inunction should never be practiced with children under one year of age, and very infrequently and circumspectly with those who are more than one year old. Good results have been obtained by the author with subcutaneous injections, Ranberger's sublimate peptone being used, in doses of one sixth of a grain. This should not be continued if it produces nodules in the skin, and one must be very particular that the preparation is a fresh one. Sublimate baths are also recommended, and have been found very efficient, fifteen grains of sublimate being used to three hundred litres of water. External lesions may be treated by applications of sublimate, or the condylomata may be sprinkled with calomel, and then washed off with chlorine water. In affections of the nose, which should be watched with great care on account of possible complications in suckling, local applications may be made with a one-per-cent. ointment of yellow precipitate. A child with hereditary syphilis should be kept under observation for at least a year, and should be seen every fourteen days. Afterward the treatment should be resumed should there be the slightest evidence of its reappearance.

**The So-called Essential Œdema.**—Wagner (*ibid.*) designates by the term *essential œdema* those rare cases in which it is impossible, by either clinical or pathologico-anatomical investigations, to find out the cause. This œdema, whether primary or idiopathic, is more frequently observed in children than in adults. Most frequently, also, it occupies the entire surface of the body. The study of the cases which the author has reported has given him little light in regard to the ætiology of the disease. In most of the cases it is apparent that there are many causes for the morbid phenomena, among the most frequent of which are changes in the blood, cardiac asthenia, vascular modifications, and probably cutaneous changes. In several cases which occurred among children, heredity seemed to play an important part in the genesis of the disease, in some cases a father having been rhachitic, in others one of the parents, or a brother or sister being the subject of general œdema. Neither autopsies nor experiments upon animals have served to explain to the author the genesis of the disease. It is doubtful whether the vaso-motor or trophic nerves have any part whatever in the process. We are equally in the dark in regard to the generalized œdema which sometimes accompanies the febrile affections, though it is possible that the elastic tissue, the pathologico-anatomical modifications of which are very little known, may have something to do with the production of the phenomenon.

# Miscellany.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending September 7th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending August 18th corresponded to an annual rate of 16·4 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bolton and Nottingham, viz., 12·9, and the highest in Manchester, viz., 22·8 in a thousand. Small-pox caused 1 death in Oldham. Diphtheria caused 3 deaths in Manchester and 2 in Salford.

*London.*—One thousand three hundred and thirty deaths were registered during the week, including measles, 33; scarlet fever, 17; diphtheria, 13; whooping-cough, 20; typhus, 2; enteric fever, 2; diarrhœa and dysentery, 162; simple cholera and choleraic diarrhœa, 4. Diseases of the respiratory organs caused 167 deaths; different forms of violence, 47; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 16·2 in a thousand. In greater London 1,649 deaths were registered, corresponding to an annual rate of 15·6 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 31; diphtheria, 5; whooping-cough, 8; and measles, 7.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending August 18th in the sixteen principal town districts of Ireland was 17 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4·8, and the highest in Waterford, viz., 25·5 in a thousand. In Dublin 123 deaths were registered, including whooping-cough, 3; enteric fever, 2; scarlet fever, 1; diarrhœa, 5; typhus, 1; and diphtheria, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending August 18th corresponded to an annual rate of 17·3 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 10·1, and the highest in Paisley, viz., 24·5 in a thousand. The aggregate number of deaths registered from all causes was 438, including measles, 6; scarlet fever, 6; diphtheria, 3; whooping-cough, 5; fever, 3; and diarrhœa, 20.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having a population of 1,149,778, during the month of June, 1888, corresponded to an annual rate of 22·4 in a thousand of the population. The lowest rate was recorded in Haarlem, viz., 16·5, and the highest in Dordrecht, 32·9. The total number of deaths from all causes was 2,081, including typhus and enteric fever, 6; scarlet fever, 1; measles, 11; whooping-cough, 40; diarrhœa and dysentery, 35; and simple cholera, 7.

*Calcutta.*—Two thousand seven hundred and thirty-eight deaths were registered during the quarter ended June 30, 1888, including cholera, 514; fevers, 697; and dysentery and diarrhœa, 200.

*Ruatan, Honduras.*—The following reports have been received from the United States consul:

July 7th: "The malarial fever of a pernicious type which prevailed here from December to June seems to have disappeared."

July 14th: "Good health is enjoyed in this port and island."

July 21st: "Sanitary condition of this port and island remarkably good."

July 28th: "On the 19th instant the Board of Health of New Orleans declared this an infected port. 'No cause exists for such action.'"

*Cardenas, Cuba.*—The United States commercial agent reports, under date of August 24, 1888: "Good health prevails in town and harbor. No American vessels in port."

*Havana, Cuba.*—Thirty-five deaths from yellow fever were registered during the week ending August 24, 1888. Week ending August 31st, 15.

Mortality Table, Foreign Cities.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Glasgow | August 11. | 545,678 | 203 | .. | .. | .. | .. | 1 | 2 | 2 | .. | .. |
| Warsaw | August 11. | 444,814 | 220 | .. | .. | .. | .. | .. | 6 | 4 | .. | .. |
| Calcutta | July 21. | 433,219 | 159 | 12 | .. | .. | .. | .. | .. | 2 | .. | .. |
| Amsterdam | August 18. | 389,915 | 120 | .. | .. | .. | 1 | 2 | 2 | 1 | .. | .. |
| Copenhagen | August 14. | 300,000 | 108 | .. | .. | .. | .. | .. | 3 | 5 | .. | .. |
| Edinburgh | August 11. | 262,733 | 75 | .. | .. | .. | .. | 1 | .. | 2 | .. | .. |
| Belfast | August 18. | 227,022 | 70 | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Leipsic | August 11. | 180,000 | 74 | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Leipsic | August 18. | 180,000 | 57 | .. | .. | .. | .. | .. | 1 | 2 | 1 | .. |
| Trieste | August 4. | 154,500 | 87 | .. | .. | 4 | .. | .. | .. | 2 | .. | .. |
| Trieste | August 11. | 154,500 | 86 | .. | .. | 2 | .. | .. | .. | 1 | .. | .. |
| Stuttgart | August 18. | 125,510 | 42 | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Bremen | August 11. | 118,000 | 50 | .. | .. | .. | .. | .. | 1 | .. | 2 | 1 |
| Barmen | August 11. | 109,000 | 38 | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Barmen | August 18. | 109,000 | 39 | .. | .. | .. | 1 | .. | 1 | 1 | 1 | .. |
| Leith | August 11. | 74,320 | 16 | .. | .. | .. | 3 | .. | .. | .. | .. | .. |
| Mayence | July 21. | 65,802 | 23 | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Mayence | July 28. | 65,802 | 28 | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Cadiz | August 18. | 65,028 | 50 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Merida | August 14. | 48,818 | 39 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Merida | August 21. | 48,818 | 27 | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Vera Cruz | August 23. | 23,800 | 21 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Gibraltar | August 12. | 23,631 | 6 | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Kingston, Can | August 24. | 16,216 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Sagua la Grande | August 18. | 15,603 | 19 | .. | 2 | .. | .. | .. | .. | .. | .. | .. |
| Laguayra | August 11. | 7,428 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Laguayra | August 18. | 7,428 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. |

UNITED STATES.

*San Francisco, Cal.*—The secretary of the State and county health department, in his report dated August 28th, stated that "after the

absence of small-pox from this city since July 1st, the following cases have occurred: August 22d, 1 case; August 26th, 1 case; August 27th, 3 cases; August 28th, 3 cases. The source of infection can not be traced so far. All men from eighteen to thirty, some of them from the country."

*Buffalo, N. Y.*—Passed Assistant Surgeon Wheeler, Marine-Hospital Service, reported, under date of September 4th: "Since my last report (August 23d) there have been 14 new cases of small-pox in this city, and 2 deaths, making the whole number of cases up to date 35, and the number of deaths 6."

*Coshocton, Ohio.*—The president of the State Board of Health reported, under date of August 31st: "A case of small-pox is reported at Coshocton. The patient has been removed to quarters outside the village, and his dwelling disinfected. The origin of the disease is yet unknown."

*Delaware Breakwater Quarantine Station.*—The steamer Progreso, four days from Havana, arrived at this quarantine station September 3d, having left one of her crew in Havana sick with yellow fever. The schooner Adele Thackeray, also from Havana, arrived in the evening of the same day. The captain reports the loss on the voyage of two seamen from yellow fever. Two other members of the crew had the fever, but recovered during the voyage. All well on arrival. These vessels are now in quarantine.

*Brownsville, Tex.*—The collector of customs telegraphed September 3d as follows: "Quarantine against Matamoras terminated Friday. To-day Matamoras declared the retaliatory quarantine against Brownsville off. Business resumed at noon. No contagious or infectious sickness."

*Manatee, Fla.*—Surgeon R. D. Murray telegraphed:

September 4th: "One isolated case; Palmetto, 1 case on 31st; 14 in all to date. River villages healthy. Total cases recorded, 31. Last one on the 24th."

*Tampa, Fla.*—Dr. J. P. Wall telegraphed:

September 4: "Seven cases reported in last two days. Four positive; mostly mild type. No deaths."

*Jacksonville, Fla.*—Dr. Neal Mitchell, president of the Board of Health, telegraphed as follows:

August 31st: "For twenty-four hours ending 6 P. M.: New cases, 23; deaths, 4. Total cases, 211; total deaths, 30."

September 1st: "For twenty-four hours ending 6 P. M.: New cases, 23; deaths, 2. Total cases to date, 234; total deaths to date, 32."

September 2d: "For twenty-four hours ending 6 P. M.: New cases, 24; deaths, 2. Total number of cases to date, 258; total number of deaths to date, 34."

September 3d: "For twenty-four hours ending 6 P. M.: New cases, 37; deaths, 2. Total number of cases to date, 295; total number of deaths to date, 36."

September 4th: "For twenty-four hours ending 6 P. M.: New cases, 43; deaths, 1. Total number of cases to date, 338; total number of deaths to date, 37."

September 5th: "For twenty-four hours ending 6 P. M.: New cases, 50; deaths, 5. Total number of cases to date, 388; total number of deaths to date, 42."

September 6th: "For twenty-four hours ending 6 P. M.; New cases, 46; deaths, 10. Total number of cases to date, 434; total number of deaths to date, 52."

September 7th: "For twenty-four hours ending 6 P. M.: New cases, 77; deaths, 8. Total cases to date, 511; total deaths, 60." The number of cases under treatment is no longer furnished in the dispatches.

*Camp Perry, Fla.*—Passed Assistant Surgeon John Guitéras telegraphed as follows:

September 1st: "At muster, 152; discharged to-day, 13; arrivals yesterday, 30."

September 2d: "At muster, 158; received yesterday, 19; discharged to-day, 12."

September 3d: "Discharged well, 2; sent to Jacksonville with yellow fever, 1; expelled for misconduct and sent to Jacksonville, 9; eloped, 1; at muster, 147."

September 5th: "At muster, 145; admissions yesterday, 17; discharged to-day, 1; sent to Jacksonville, 5; at fever hospital, 2."

September 6th: "Discharged, none; sent to Jacksonville, 11; admitted yesterday, 12; in camp to-day, 146."

Four "railroad" houses were sent from Way Cross to Camp Perry on the 7th, and 25 more have been contracted for, to be set up as soon as possible. These houses will be set up as soon as possible to take the place of the tents, and a large barrack is being constructed. The Supervising Surgeon-General will take temporary command of the camp until it shall be thoroughly equipped for the regular passage of refugees. One special train conveying refugees to Atlanta was sent before the passage of the prohibitory resolutions. Another special will go to Hendersonville, N. C., this week. This point has an elevation of 2,100 feet.

*Fernandina, Fla.*—Dr. Julius Wise, who was sent to Fernandina as inspector, reported, under date of September 1st, as follows:

"Arrived at this place to-day and found sanitary condition as good as possible. There is no doubt that the case of Merriwether was not yellow fever."

*Way Cross, Fla.*—September 6th Dr. Posey reported, through Surgeon Hutton, that Gainesville, Palatka, and Orlando were healthy.

## CONFERENCE AT AUGUSTA, GA.

[Telegram.]

AUGUSTA, GA., *September 3, 1888.*

At the suggestion of Governor Gordon, Surgeon-General Hamilton had a conference here to-day with the health authorities of several cities in the State and with the State health officers of Tennessee and Alabama, Governor Gordon being present, as also Mayor Lester, Dr. Brunner, and General Manager Haines, from Savannah, Ga., and Mayor Dunn, of Brunswick. At the conference the following telegram was read, which was received by the Surgeon-General:

"ATLANTA, GA., *September 3, 1888.*

"Surgeon-General J. B. HAMILTON (care Mayor, Augusta, Ga.):

"I am instructed to wire following resolutions adopted at noon to-day:

"*Resolved*, That the Board of Health of the City of Atlanta, his honor the mayor co-operating, cordially approves the plan of the Surgeon-General of the United States, requiring ten days' quarantine of all persons from infected or suspected districts in Florida conveniently near to infected points.

"*Resolved*, That the wholesale removal of persons from infected districts to populous cities and the aggregation of infected individuals in any part of this country is regarded as hazardous in a sanitary point of view, and is unjust to any community upon whom such persons are forced, because of the probable necessity of maintaining many of them at the corporate expense. JAMES M. BAIRD, *Secretary.*"

After discussion of these resolutions, the following resolutions were adopted by the conference:

*Resolved*, That this convention cordially approves the plan of the Surgeon-General of the United States Marine-Hospital Service requiring ten days' quarantine of all persons from infected or suspected places, together with fumigation and other disinfection of baggage, etc., from infected points.

*Resolved*, That the wholesale removal of persons from infected districts to populous cities and the aggregation of individuals from infected places in any city of this country is regarded as extremely hazardous to any such community; also, that the citizens of Jacksonville have no just cause for complaint against the quarantine regulations as at present operated, inasmuch as abundant provision has been and will be made by establishing healthful and cleanly camps for the inhabitants of Jacksonville, and provision made for maintenance of such citizens during detention in camp.

*Resolved*, That, in the judgment of this convention, after the suspects shall have been detained in quarantine camp for ten days and their baggage shall have been fumigated under direction of United States Government, such persons should be permitted to go to any community willing to receive them.

An inspection of Camp Perry was made by the Surgeon-General on Tuesday.

*Nashville, Tenn.*—The president of the Board of Health telegraphed September 6th: "Unless refugees have been in camp ten days, baggage

disinfected, and each hold your certificate of health, they will not be admitted to State. The Augusta agreement is approved."

*Atlanta, Ga.*—September 7th the secretary of the Board of Health telegraphs: "Atlanta relies upon the Camp Perry quarantine and the decision at Atlanta conference."

*Macclenny, Baker County, Fla.*—Mayor Reese, of Montgomery, Ala., telegraphed September 7th as follows: "Our special agent reports 10 cases of yellow fever at Macclenny; 1 death from black vomit. Pensacola and Marianna have quarantined against whole of Baker County. We will proceed to follow their example, and this only exemplifies the fact that the measures that you have already taken are right." This town is on the F., R. and N. R. R., west of Jacksonville, between Baldwin and Lake City.

Mortality Table, Cities of the United States.

| Cities | Week ending | Estimated population. | Total deaths from all causes. | Deaths from: Cholera. | Yellow fever. | Small-pox. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York, N. Y.. | Sept. 1. | 1,533,804 | 831 | .. | .. | 1 | .. | .. | 15 | 25 | 23 | 16 | 17 |
| Philadelphia, Pa... | August 25. | 1,016,758 | 454 | .. | .. | 1 | .. | .. | 41 | 2 | 7 | .. | 4 |
| Philadelphia, Pa... | Sept. 1. | 1,016,758 | 352 | .. | .. | .. | .. | .. | 24 | 3 | 5 | .. | 3 |
| Brooklyn, N. Y.... | Sept. 1. | 703,300 | 353 | .. | .. | .. | .. | .. | 2 | 4 | 4 | 1 | 6 |
| Baltimore, Md... | Sept. 1. | 431,879 | 172 | .. | .. | .. | .. | .. | 5 | .. | 7 | .. | 3 |
| Boston, Mass.... | August 25. | 415,000 | 202 | .. | .. | .. | .. | .. | 5 | .. | 7 | .. | 1 |
| Boston, Mass.... | Sept. 1. | 415,000 | 217 | .. | .. | .. | .. | .. | 7 | .. | 4 | .. | .... |
| San Francisco, Cal. | August 24. | 330,000 | 120 | .. | .. | .. | .. | .. | 3 | .. | 2 | .. | 2 |
| Cincinnati, O.... | Sept. 1. | 255,139 | 105 | .. | .. | .. | .. | .. | 2 | .. | 5 | .. | 1 |
| Pittsburgh, Pa..... | Sept. 1. | 230,000 | 97 | .. | .. | .. | .. | .. | 8 | 2 | 2 | 1 | 3 |
| Washington, D.C.. | Sept. 1. | 225,000 | 113 | .. | .. | .. | .. | .. | 6 | .. | .. | .. | 5 |
| Louisville, Ky..... | Sept. 15. | 200,000 | 46 | .. | .. | .. | .. | .. | 3 | .. | .. | .. | ... |
| Milwaukee, Wis .... | Sept. 1. | 195,000 | 81 | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .... |
| Kansas City, Mo.... | Sept. 1. | 180,000 | 37 | .. | .. | .. | .. | .. | 3 | 1 | .. | .. | .... |
| Minneapolis, Minn. | August 31. | 180,000 | 65 | .. | .. | .. | .. | .. | 4 | .. | 1 | .. | ... |
| St. Paul, Minn..... | Sept. 1. | 175,000 | 47 | .. | .. | .. | .. | .. | 6 | .. | 1 | .. | 2 |
| Rochester, N. Y.... | Sept. 1. | 120,000 | 46 | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .... |
| Detroit, Mich..... | Sept. 1. | 116,340 | 84 | .. | .. | .. | .. | .. | 1 | 3 | 2 | .. | ... |
| Richmond, Va..... | Sept. 1. | 100,000 | 33 | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .. |
| Denver, Col..... | August 31. | 96,000 | 34 | .. | .. | .. | .. | .. | 5 | .. | 5 | .. | .... |
| Columbus, Ohio ... | Sept. 1. | 93,000 | 27 | .. | .. | .. | .. | .. | 2 | .. | .. | .. | 1 |
| New Haven, Conn. | August 25. | 82,000 | 30 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| New Haven, Conn. | Sept. 1. | 82,000 | 27 | .. | .. | .. | .. | .. | 3 | .. | .. | .. | ... |
| Toledo, Ohio ..... | Sept. 1. | 80,000 | 21 | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| Nashville, Tenn.... | Sept. 1. | 65,153 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Fall River, Mass... | Sept. 1. | 65,000 | 35 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .... |
| Charleston, S. C.... | Sept. 1. | 60,145 | 37 | .. | .. | .. | .. | .. | .. | .. | .. | .. | ... |
| Cambridge, Mass... | Sept. 1. | 59,660 | 34 | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | ... |
| Evansville, Ind .... | August 30. | 53,000 | 23 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Savannah, Ga..... | August 24. | 52,827 | 14 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | ... |
| Lynn, Mass..... | Sept. 1. | 50,000 | 24 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Council Bluffs, Ia.. | Sept. 1. | 45,000 | 19 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 4 |
| Manchester, N. H.. | Sept. 1. | 41,000 | 17 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Mobile, Ala..... | Sept. 1. | 40,000 | 15 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Portland, Me..... | Sept. 1. | 40,000 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Galveston, Tex.... | August 24. | 40,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| E. Saginaw, Mich.. | Sept. 1. | 33,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Burlington, Ia..... | August 29. | 30,166 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Davenport, Ia..... | Sept. 1. | 30,084 | 7 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Altoona, Pa..... | August 25. | 29,546 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Salem, Mass..... | Sept 1. | 29,000 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| New Albany, Ind.. | August 31. | 28,689 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Yonkers, N. Y..... | Sept. 1. | 27,500 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| New Bedford, Mass | Sept. 1. | 26,845 | 22 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Haverhill, Mass.... | Sept. 1. | 25,000 | 8 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | ... |
| Jackson, Mich..... | Sept. 1. | 22,500 | 7 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 1 |
| Newton, Mass..... | Sept. 1. | 21,105 | 13 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Newport, R. I..... | August 30. | 20,466 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |

**Effect of Acids on the Sense of Taste.**—"The intensity of the sour taste of an acid," says the "Lancet," "appears to be related to its chemical composition. Dr. Corin found that the intensity of the sensation of sourness produced by different acids of an equal degree of strength was not the same, neither was it proportional to the amount of replaceable hydrogen. The effect on the sense of taste was found, however, to vary with the atomic weight with solutions containing an equal amount of acid hydrogen replaceable by metal; so that the acid taste was stronger in proportion as the molecular weight was lower."

**The Influence of Typhoid Fever on Some Other Diseases.**—"That diseases characterized by hyperkinesis may disappear at the onset of typhoid fever," says the "Lancet," "is fairly well known as regards chorea. Couturier has observed a case of disseminated sclerosis in which great amelioration of the symptoms was apparently produced by an attack of typhoid fever, the ankle clonus and other exaggerated movements being notably diminished. The difficulty, however, of separating some cases of spinal sclerosis from functional spasmodic paraplegia must be remembered. A sudden event, or one of some intensity, often makes a difference in cases of neurasthenia, but the difference is not always in the direction of improvement; a fright has cured paraplegia and, on the other hand, has made paraplegia worse."

**Galvano puncture in Goitre.**—According to the "Lancet," "Dr. Weinbaum reports, in a recent number of the 'Vrach,' two cases of goitre in girls, occurring shortly after menstruation had been established, which were entirely cured by passing the current from a battery of twenty cells through the tumor by means of two gold needles inserted into opposite sides of the growth for the depth of a few millimetres. In one case 150 sittings were required. These were prolonged during eight months, as small eschars frequently formed round the cathode, and it was thought well to give these time to heal before repeating the treatment. Each sitting lasted from ten to fifteen minutes. It is noteworthy that, after the tumor in this case had to a large extent become absorbed, the girl's general condition began to give rise to some alarm, cough, night-sweats, and amenorrhœa coming on. However, by means of arsenic and iron, the patient ultimately recovered, and has enjoyed excellent health since, the only signs of the goitre being the cicatrices due to the needles."

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**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

# ON MEDICAL MUSEUMS,

### WITH SPECIAL REFERENCE TO THE ARMY MEDICAL MUSEUM AT WASHINGTON.

*THE PRESIDENT'S ADDRESS BEFORE THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS, Washington, September 20, 1888.*

BY JOHN S. BILLINGS, M. D., LL. D.,
SURGEON, U. S. ARMY.

GENTLEMEN OF THE CONGRESS: Our articles of confederation require that the president shall give an address. In endeavoring to comply with this regulation I must ask your indulgence, for, while I think I have something to say, I can not give you such a discourse as would befit the audience, the occasion, and the subject.

The prominent characteristic of the great majority of the societies composing this Congress is that their members have, as a rule, been chosen because they have either made some valuable contribution to medical literature, or have, in some way, rendered aid to the profession; in other words, they are supposed to be men whose labor and thought have not been confined to their own interests, or to those of their own patients. It may, therefore, be assumed that you are all interested in medical science, not merely as a means of giving new modes of diagnosis or of treatment, but also for its own sake, for the sake of knowing, for the pleasure of investigation, and in the hope of helping others, and that, while the majority have devoted themselves more or less to special branches, they have not, in so doing, lost interest in what may be for the general good of the whole profession.

I am here as the representative of the medical departments of the General Government, which has need of the best knowledge of all the specialties, and is beginning, in its turn, to do something for each.

The physicians in the Government service are all general practitioners, and are expected to have such an education and training as will fit them to deal, alone and without consultation, with the diseases and injuries to which men, women, and children are liable. You have been, and still are, their teachers—in the lecture-room and the hospital before they entered the service—in your text-books, monographs, and contributions to journals or transactions which follow them to their widely scattered posts of duty. They are your warm friends; the more you discover, the greater your skill, the more recognition which your work receives, the better they are pleased.

Within the last twenty-five years the General Government has, in its turn, done something for medicine and for you by founding and maintaining a medical library and museum in Washington under the direction of the Medical Department of the Army.

I have had occasion several times to call attention to the library, which no doubt is that part most immediately useful to physicians, and which has attracted most attention. To-night I propose to speak of the other branch, in whose proper development it is desirable that you should take an intelligent interest, and, after giving a brief sketch of the development of modern medical museums, we will consider more especially our own national medical collection as it is, and as it ought to be.*

The origin of collections of objects of natural history was possibly, as suggested by Beekman, the custom of keeping curious objects in temples; but we have no record of the formation of any collections specially connected with anatomy or medicine before the sixteenth century. It is true that human anatomy had been introduced in the schools by Mundinus in 1306, and that, no doubt, in Bologna, in Paris, and a few other places, a skeleton or two was preserved for purposes of instruction; but alcohol was unknown as a preservative before the end of the fifteenth century, anatomical details were of no interest until Vesalius had stirred up controversy with the Galenists, and injected preparations were not thought of until after Harvey's announcement, in 1628, of the discovery of the circulation of the blood.†

The introduction of the use of the microscope at the beginning of the seventeenth century, and the collections of preparations for use with this instrument made by Leeuwenhoek and Ruysch, gave a powerful stimulus to the formation of museums of this kind. The most famous of these collections was that of Ruysch, purchased in 1717 by Peter the Great, and sent to St. Petersburg. Ruysch was practically the first to prepare injected anatomical specimens for permanent preservation, and, if the stories told of his work are true, he made preparations which have never been surpassed. His museum was a very ornamental one, the bones and skeletons being arranged in various devices, the plants in bouquets, while scattered through the whole were beautifully engrossed sentences from the Latin poets.

The most famous medical museum in the latter half of the eighteenth century was that founded by Fontana, at Florence. This still exists, filling a series of rooms, and consists mainly of wax preparations, beautiful to look at, but inaccurate, and of little scientific value.‡

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* As a "museum," in the original sense of the word, is a building or place in which are collected objects of interest to the muses—that is, objects of art, literature, etc.—the phrases "medical museum," "museum of pathology," etc., would have seemed quite improper in the days of Hippocrates, just as the prevailing pronunciation of the word mu'seum grates on the ears of the elders accustomed to the strictly proper way—*i. e.*, muse'um. Custom has, however, so strongly sanctioned the use of the word museum in the sense of a collection of different articles, that it would be folly to attempt to give it a more limited signification, and, though lexicographers still recognize only the word as accented on the penultimate syllable, the tendency to accent the first syllable is so strong and constant that it is safe to predict that mu'seum will, in popular usage in this country, ultimately win the day

† For accounts of the collections formed between the days of King Solomon and the end of the seventeenth century, consult tome ii of the "Musei museorum" of Michael Bernhard Valentin, in folio, published at Frankfort in 1714, wherein are curious engravings of many of the wonders contained in these museums. See, also, Hagen (H. A.), "The History of the Origin and Development of Museums," "American Naturalist," 1876, x, p. 80.

‡ The first use of wax models to represent pathological specimens or dissected preparations of parts of the human body is attributed to a Sicilian priest, Gaetan Jules Zambo, who lived in the latter part of the

| Locality and name of museum | Total number of specimens. | Number of Specimens in each Department. | | | | | Number of specimens added during the last five years. | Amount expended during the last five years. |
|---|---|---|---|---|---|---|---|---|
| | | Comparative anatomy. | Normal human anatomy. | Embryology. | Pathological anatomy. | Materia medica. | | |
| **United States** | | | | | | | | |
| Albany: | | | | | | | | |
| Medical College Museum | 5,500 | 250 | 1,250 | 200 | 3,100 | 700 | 770 | $660 |
| Boston: | | | | | | | | |
| Warren Anatomical Museum, Harvard University | 7,900 | .... | .... | .... | .... | .... | 470 | 8,973 |
| Chicago: | | | | | | | | |
| Chicago Medical College Museum | 1,332 | 122 | 300 | 10 | 200 | 700 | .... | .... |
| Rush Medical College Museum | 850 | 70 | 100 | 50 | 100 | 200 | .... | .... |
| Cincinnati: | | | | | | | | |
| Miami Medical College Museum | 3,078 | 450 | 603 | 75 | 823 | 1,002 | .... | .... |
| Museum of Hospital and Pathological Department of Cincinnati University | 1,250 | .... | .... | .... | 1,250 | .... | .... | 889 |
| Louisville: | | | | | | | | |
| Medical Department of the University of Louisville Museum | 1,992 | 276 | 275 | 127 | 868 | 446 | .... | 2,250 |
| New Orleans: | | | | | | | | |
| Museum of Tulane University | 2,500 | .... | .... | .... | .... | .... | .... | 500 |
| New York: | | | | | | | | |
| Pathological Cabinet of New York Hospital | 2,366 | .... | .... | .... | 2,366 | .... | 542 | 14,028 |
| Museum of Medical Department, University of New York | 8,000 | 1,000 | 4,000 | 500 | 2,500 | .... | 50 | 7,250 |
| Wood Museum, Bellevue Hospital | 2,224 | 256 | 282 | 69 | 1,613 | .... | .... | .... |
| Philadelphia: | | | | | | | | |
| Mutter Museum, College of Physicians | 3,700 | 296 | 242 | 140 | 3,000 | .... | .... | .... |
| Wistar and Horner Museum, University of Pennsylvania | 7,458 | 919 | 1,355 | 292 | 2,717 | 2,175 | .... | 2,950 |
| Jefferson College Museum | 2,500 | .... | .... | .... | .... | .... | 1,000 | .... |
| Washington: | | | | | | | | |
| Army Medical Museum | 14,360 | 1,685 | 2,853 | 108 | 8,354 | 814 | 3,789 | 23,356 |
| **Great Britain and Ireland.** | | | | | | | | |
| Birmingham: | | | | | | | | |
| Museum of Queen's College | 3,270 | 277 | 652 | 107 | 1,400 | 834 | 1,250 | .... |
| Cambridge: | | | | | | | | |
| University Museum | .... | 120,000 | 4,000 | | .... | .... | .... | 50,000 |
| Dublin: | | | | | | | | |
| Trinity College Museum of Normal Human Anatomy | 562 | .... | 442 | 120 | .... | .... | 362 | 2,175 |
| Trinity College Museum of Anatomy and Zoölogy | 14,125 | 13,580 | | .... | .... | .... | 1,000 | 4,000 |
| Trinity College Pathological Museum | 4,815 | .... | .... | .... | 4,815 | .... | 650 | .... |
| Trinity College Museum of Materia Medica | 200 | .... | .... | .... | .... | .... | .... | .... |
| Museum of Royal College of Surgeons | 9,797 | 3,756 | | 71 | 5,001 | 1,139 | .... | *10,280 |
| Edinburgh: | | | | | | | | |
| Anatomical Museum of University of Edinburgh | 10,000 | 6,000 | | | 4,000 | .... | 310 | 5,975 |
| Museum of Royal College of Surgeons of Edinburgh | 6,700 | 1,000 | 1,050 | 350 | 4,000 | .... | .... | .... |
| Liverpool: | | | | | | | | |
| Anatomical and Pathological Museum, University College | 2,347 | 87 | 97 | 93 | 1,500 | 570 | 600 | 3,655 |
| London: | | | | | | | | |
| Museum of Medical School of St. Bartholomew's Hospital | 7,000 | 250 | 1,200 | 150 | 5,500 | 1,400 | 939 | †6,740 |
| Museum of Guy's Hospital | 11,500 | 1,929 | 1,504 | 62 | 7,515 | 500 | 358 | 10,066 |
| Museum of King's College | 6,500 | 3,000 | 323 | 177 | 2,508 | 874 | 299 | .... |
| Museum of Royal College of Surgeons | 28,015 | 4,278 | 3,576 | | 5,011 | .... | 1,068 | 61,210 |
| Museum of St. George's Hospital | 6,010 | 345 | 457 | 134 | 4,644 | 430 | 356 | 3,800 |
| St. Thomas's Hospital Museum | 5,940 | 673 | 656 | .... | 4,017 | 594 | 520 | ‡4,560 |
| Pathological Museum of Charing Cross Hospital | 1,265 | .... | .... | .... | 1,265 | .... | .... | .... |
| Museum of University College | 7,500 | 391 | 765 | 270 | 5,000 | 1,000 | 641 | 8,750 |
| Manchester: | | | | | | | | |
| Medical Museum of Owen's College | 6,694 | 1,763 | 281 | 135 | 2,515 | 2,000 | .... | .... |
| Norfolk: | | | | | | | | |
| Norfolk and Norwich Hospital Museum | 2,537 | 156 | 100 | 30 | 2,251 | .... | 71 | 400 |
| Oxford: | | | | | | | | |
| University Museum | 8,500 | 6,922 | | | .... | .... | 580 | 8,145 |
| **France.** | | | | | | | | |
| Paris: | | | | | | | | |
| Dupuytren Museum | 6,700 | .... | .... | .... | 6,700 | .... | 300 | 5,000 |
| Orfila Museum | 14,027 | .... | .... | .... | .... | .... | 500 | 3,900 |
| **Germany.** | | | | | | | | |
| Berlin: | | | | | | | | |
| Anat. Museum of the Path. Inst. Fried. Wilh. University | 17,600 | .... | .... | .... | 17,600 | .... | 1,526 | .... |
| Anatomische Sammlung | 3,000 | 1,000 | 1,500 | 500 | .... | .... | 374 | 3,750 |
| Pharmakologische Sammlung | 2,000 | .... | .... | .... | .... | 2,000 | 600 | 750 |
| Kiel: | | | | | | | | |
| Anatomisches Institut der Universität | 2,390 | .... | 1,520 | 870 | .... | .... | 350 | 5,775 |
| Zoologisches Institut | 15,000 | 3,000 | .... | .... | .... | ... | .... | 9,158 |
| Leipsic: | | | | | | | | |
| Anatomische Anstalt | 3,200 | 3,200 | | ... | .... | .... | .... | .... |
| Pharmakologische Anstalt der Universität | 2,500 | .... | .... | ... | .... | 2,500 | ... | .... |
| Strassburg: | | | | | | | | |
| Pharmakologische Institut der Universität | 1,720 | .... | .... | .... | .... | .... | 485 | 6,650 |
| Anatomisches Museum der Universität | 2,500 | 800 | 1,580 | 120 | .... | .... | 609 | 1,875 |
| Pathologisches Institut | 8,000 | .... | .... | .... | 8,000 | .... | 625 | 6,250 |

* Four years (1883 to 1886, inclusive). † Four years (1883 to 1886, inclusive). ‡ In 1885 and 1886.

| LOCALITY AND NAME OF MUSEUM. | Total number of specimens. | Number of Specimens in each Department. | | | | | Number of specimens added during the last five years. | Amount expended during the last five years. |
|---|---|---|---|---|---|---|---|---|
| | | Comparative anatomy. | Normal human anatomy. | Embryology. | Pathological anatomy. | Materia medica. | | |
| **Austria-Hungary.** | | | | | | | | |
| Budapest: | | | | | | | | |
| Path. Anat. Institut der Universität | 2,560 | .... | .... | .... | 2,560 | .... | 275 | 1,000 |
| Wien: | | | | | | | | |
| Museum der anatomischen Anstalt | 3,582 | 77 | 3,212 | 293 | .... | .... | 333 | .... |
| **Italy.** | | | | | | | | |
| Bologna: | | | | | | | | |
| Museo di anatomia patologica umana | 2,472 | .... | .... | .... | 2,472 | .... | 154 | $1,250 |
| Museo di anatomia comparata | 6,334 | 6,334 | .... | .... | .... | .... | 175 | 2,500 |
| Museo di anatomia veterinaria | 1,042 | 1,034 | 8 | .... | .... | .... | 551 | 8,450 |
| Museo di patologia comparata | 3,473 | .... | .... | .... | 3,473 | .... | 76 | 800 |
| Museo di anatomia umana normale | 4,414 | .... | 4,414 | .... | .... | .... | 248 | 605 |
| Pavia: | | | | | | | | |
| Gabinetto di anatomia umana dell' Università | 2,678 | .... | 2,493 | 185 | .... | .... | 300 | 2,900 |
| Museo di anatomia e fisiologia comparate | 5,094 | 4,580 | .... | 370 | .... | .... | .... | 4,300 |
| Instituto di fisiologia | 385 | .... | .... | 210 | .... | .... | .... | .... |
| Gabinetto di anatomia patologica | 2,300 | .... | .... | .... | 2,300 | .... | 450 | .... |
| Inst. di patologia generale ed istologia, | 2,500 | .... | .... | 150 | 2,350 | .... | 500 | 2,200 |
| Museo Porta—anatomia e patologia chir. | 1,848 | .... | .... | .... | 1,848 | .... | .... | 1,340 |
| Instituto ostetrico-ginecologico | 372 | .... | .... | .... | 372 | .... | .... | 2,970 |
| Gabinetto dermosifilopatico | 258 | .... | .... | .... | 258 | .... | 200 | 250 |
| Gabinetto di materia medica | 1,000 | .... | .... | .... | .... | 1,000 | 350 | 1,780 |
| Manicomio Provinciale di P. in Voghera | 543 | .... | .... | .... | .... | .... | 250 | .... |
| Torino: | | | | | | | | |
| Inst. di anatomia normale dell' Univ. | 12,000 | .... | 12,000 | .... | .... | .... | 3,000 | 7,000 |
| Museo di zoologia ed anatomia comparata | 2,500 | 2,500 | .... | .... | .... | .... | .... | .... |
| Collezione di antropologia criminale | 2,000 | .... | 2,000 | ... | .... | .... | .... | .... |
| Museo di materia medica | 700 | .... | .... | .... | .... | 700 | 100 | 2,000 |
| Museo di anatomia patologica | 800 | .... | ... | .... | 800 | .... | 480 | 3,000 |
| Riberi Ospedale S. Giovanni | 887 | .... | .... | .... | 887 | .... | 389 | 2,040 |

During the first half of the present century a number of private collections were formed by anatomists, pathologists, and surgeons. Most of these have become public collections, either by gift or purchase, and the rest have been dispersed or destroyed. There is not in existence at the present time any large collection of specimens pertaining to human pathology which is the property of an individual, and is at all comparable to those made by John or William Hunter, Astley Cooper, Howship, Liston, or others. Commenting on this fact, Sir James Paget writes me that he does not know of any large private pathological collection, and that he believes the change to be entirely for the better.

The necessities of modern progress in anatomy, physiology, and pathology have led to the creation of medical museums in all parts of the civilized world. In most of the continental capitals these are connected with universities supported by the state. In Great Britain and in this country they are, as a rule, connected with private or semi-private institutions for medical teaching. This difference is connected with the relative position which medicine holds in the educational machinery of the state in different countries. Where medical education is furnished by institutions directly supported by the government, the museums, which are a part of the apparatus required, are, of course, also supported by the government.

Through the aid of friends, whose kindness in replying, or in obtaining replies, to somewhat troublesome inquiries I can not sufficiently acknowledge, I have obtained certain data with regard to some of the most important medical museums now existing in the world, and a part of these data are summarized in the table before you.

Evidently the city having the most valuable aggregate of anatomical and pathological specimens at the present time is London, which contains the collections of the Royal College of Surgeons, of St. Thomas's, Guy's, St. Bartholomew's, St. George's, and other hospitals, and of University College, the College of Physicians, and others. The oldest public anatomical museum in London is probably that of St. Bartholomew's, which, in 1726, had a room set apart for the purpose under the charge of John Freke, and which received the private collection of Abernethy. The most important medical museum in the world, and the one which has exercised the greatest influence in giving direction to anatomical and pathological studies, and in serving as a model for the formation of other collections, is undoubtedly that of the Royal College of Surgeons of London, the foundation of which was the collection made by John Hunter, purchased by the government in 1799. In one sense it is not a government institution, the funds from which it is now supported not coming directly from government grants; but, in another sense, it is truly such, since the college may be looked upon as an agent of the government having special charge of matters connected with medical education, as it is

seventeenth century, and who had been accustomed to make wax models of diseased or deformed hands, feet, etc., to be used as *ex voto* offerings at the shrines of certain saints. The fame of these induced a Florentine surgeon, Ricci, to visit the priest and to get him to model some pathological specimens which he furnished. A Franciscan named Desrones brought this art to France, and made many such models between the years 1703 and 1706, and Bianchi formed a large collection of the same kind in Italy. It was scattered after his death, and the last vestiges of it were two models representing a healthy and a diseased liver, which were to be seen in Innspruck in 1766.—Percy et Laurent, in "Dict. des sci. méd.," Paris, 1818, vol. xxxv, article "Museum."

the principal examining body for those proposing to practice surgery in Great Britain.

The great value of the Hunterian collection lies in the breadth of its scope, which includes every branch of medical science; but it is pre-eminent in illustrations of human morphology and its abnormities. The museums of the great hospital medical schools are relatively richer in the department of pathological anatomy, specimens of which they have greater facilities for obtaining. Among these there is, of course, a certain amount of duplication of matters of interest; but no two pathological specimens are precisely alike, and the question discussed in the Paris school one hundred and fifty years ago, viz., "An pro distinctis ægris ægritudines diversæ?" is one that often occurs to a curator as he examines new specimens which differ but little from those already in his collection, but which do differ in some respects, and with regard to which he must decide as to whether, upon the whole, they are worth the trouble and cost of preservation.

Edinburgh and Dublin have also each large and valuable collections pertaining to anatomy and medicine.* In Paris the medical museums are those of the Faculty of Medicine, including the Musée Dupuytren, devoted to pathological anatomy, and the Musée Orfila, devoted to human and comparative anatomy, materia medica, natural history, and instruments and apparatus.

Professor Léon Le Fort, to whom I am indebted for data with regard to these collections, remarks that a large proportion of the anatomical specimens of the Orfila museum come from candidates who take part in *concours* opened for positions connected with the anatomical teaching of the faculty—such as prosectors, demonstrators, etc., each candidate being required to furnish from ten to thirty specimens.

The medical museums of other European countries are connected, as a rule, with universities, and it is to be remembered that in these the different branches of medical instruction are each both more specialized and more comprehensive than is the rule with us. The professor of anatomy, of physiology, of pathology, has each his own building or institute, and, therefore, each his own museum; and unless this fact is held in view, comparisons between continental and English, or American, medical collections may give very erroneous results.

With regard to the museums connected with American medical schools I will say little, referring you to the table and appended notes for such data as I have been able to collect. I am aware that in so doing I put aside a splendid opportunity to enlarge upon the general superiority of all these collections and the peculiar excellences of each, but I think that you all know as much about these as I do, and there is time only for details with regard to the one American museum in which I am specially interested. I will say only that the best museum connected with a medical school in this country is the Warren Museum in Boston, and that the history of the collections of wax models upon which several of our museums have expended large sums of money is very instructive as to how not to do it.

So far as mere number of specimens is concerned, our own national medical collection is one of the eight largest in the world, and is increasing more rapidly than any other.

This collection, known as the Army Medical Museum, owes its inception to Dr. William A. Hammond, one of whose first acts after becoming surgeon-general, in 1862, was to issue a circular stating that "as it is proposed to establish in Washington an army medical museum, medical officers are directed diligently to collect and to forward to the office of the Surgeon-General all specimens of morbid anatomy, surgical or medical, which may be regarded as valuable, together with projectiles and foreign bodies removed, and such other matters as may prove of interest in the study of military medicine or surgery."* By the end of the year over a thousand specimens had been collected, and the catalogue printed in 1866 showed that it contained 7,716 specimens. It is not my purpose in this address to trace the history of its development; that must be done elsewhere. It has recently been placed, with the Library, in a conveniently arranged fire-proof building, and on the 1st of July last contained over 15,000 specimens besides those contained in its microscopical department, divided as follows:

| | |
|---|---|
| Comparative anatomy | 1,689 |
| Pathological " | 8,354 |
| Medals | 384 |
| Microscopical specimens | 10,416 |
| Normal human anatomy | 2,961 |
| Instruments and apparatus | 814 |
| Microscopes | 141 |
| Miscellaneous | 835 |

Besides these, there are 375 specimens pertaining to normal human anatomy and 726 to pathological anatomy, which are in what is called the provisional series.

It is not, however, by number of specimens that the importance and value of museums of this kind can be judged, and in this case such a comparison would give an exaggerated and erroneous idea of the value of this collection. My object in this address is not to boast of what we have, but to indicate what we want; to point out what a national medical museum, arranged to meet the wants and interests of this country, should be, should have, and should do, and to suggest some of the ways in which this is to be brought about.

At first the Army Medical Museum was limited to military medical subjects, but of late years its scope has been greatly broadened, and is now nearly the same as that of the Royal College of Surgeons. It includes human anatomy, physiology, pathology, somatological anthropology, in-

* I am indebted to Sir James Paget for the information given with regard to the greater number of the British museums. I had originally intended to attempt to obtain such data only from four or five of the largest; but on my sending my little list of questions to Sir James he took such a kindly interest in the matter as to send a copy of these queries to a number of other museums, with the request that they might be answered.

* Circular No. 2, Surgeon-General's Office, Washington, D. C., May 21, 1862.

struments and apparatus, and illustrations of methods of teaching connected with special departments of practical medicine. It does not at present include hygiene or materia medica, except in their immediate relations to the military medical service, and this for reasons which will be stated presently. That our National Medical Museum should be broad and comprehensive in its scope there can be no doubt, its requirements in this respect being quite different from those of collections formed and used more especially for the purpose of teaching medical students. The most practically valuable of these last are those formed by individual professors to suit their own specialties and methods of teaching. They need not, as a rule, be large. I may even say that they should not be large; for the labor of properly preserving a large collection is great, and the student, with his limited time and want of knowledge of what to look for, can examine but few specimens so as to profit by them. For the same reason specimens of rare abnormities, of double monstrosities, etc., are of little use in ordinary medical teaching as given in this country, and are not specially desirable in the museums of our medical schools.

You may have noticed that, in speaking of the scope of our museum, I said it included "human anatomy." This phrase does not mean that it has no specimens illustrating the structure of other animals—for it has many, and needs many more; but it means that in this department its main purpose is not to make comparative anatomy an end to itself by exhibiting all known variations in structure throughout the animal kingdom as a basis for their study in relation to development and environment, causation and results. In other words, it is not an anatomical museum, but a medical museum. The broad field of general biology, including natural history and comparative anatomy, will ultimately be covered by the National Museum, and in our medical collection it will be quite enough to illustrate human anatomy fully, using so much of the structure of the lower animals as will be useful in explaining why certain parts of the human body are thus and so, and not otherwise. No sharp line of distinction can be drawn between the field of work of the general and that of the medical museum. So far as morphology is concerned, they must necessarily overlap somewhat, since both want a certain number of the same specimens, although using them to illustrate different points of view.

The medical museum should possess a series of specimens showing the normal anatomy of the domestic animals, or of animals used in experimental pathology, pharmacology, or physiology as a basis for comparison with abnormal or pathological specimens derived from the same animals. It is in the section of embryology, illustrating laws of heredity and development, that specimens from the lower animals are most interesting, and this is especially the case in the study of human abnormities and monstrosities. It is quite possible that to some anatomists it may seem that no limitation should be placed to the scope of the museum in this direction, for it is easy to trace some connection between any variation in structure in any animal and some structure, normal or abnormal, in man, but the limitation is placed, with reference to the work of the National Museum, so as to secure the best results.*

The kind of specimens most valued for illustrating anatomy in a museum is now very different from what was sought for in the first half of this century. Dried and varnished dissections showing blood-vessels, etc., are now looked on as nearly useless, and are kept only as historical relics. Elaborate dissections under alcohol, mounted in opaque dishes, with flat glass covers, and sections of frozen bodies, similarly mounted, are what the student and the practitioner most desire to see. In our museum there are some excellent specimens of this kind, prepared under the direction of Professor His, of Leipsic; of Professor Cunningham, of Dublin; and by our own anatomist, Dr. Wortman. These, however, are only samples to show how the work should be done. We require several hundred such specimens to illustrate properly regional anatomy in relation to age and sex, while the possible applications of the same methods to the illustration of visceral displacements, hernias, and deformities of all kinds are boundless. As regards physiology, but little can be done by museum specimens to illustrate function as distinguished from form and structure. The so-called physiological series in the Hunterian collection is a series of organs illustrating variations in different families of the animal kingdom or at different ages—in other words, it illustrates ontogenic and phylogenic development. The things students or teachers of physiology are most anxious to see in a museum are specimens of instruments and apparatus employed in experimental physiology, or in the measurement of the special work of different organs, or in illustrating lectures on physiology. Illustrations of results obtained in experimental pathology often belong quite as much to physiology; as, for example, specimens of results of Gudden's atrophy method.

The Army Medical Museum has only a beginning of such an anatomical collection as I have indicated as desirable. Like all other museums, it is richer in specimens illustrating osteology than in any other branch of anatomy, simply because such specimens are the easiest to obtain and preserve. We are accustomed to think that human anatomy is nearly exhausted as a field for original research, and that, at all events, every important organ or muscle or nerve has been figured, described, and named. Granting this, so far as the adult is concerned, although it is by no means true even for him, we have still to study the development of each of these organs or groups of organs, as seen at different ages, and, for some of them, in different races. As fast as these points are seen to be of practical interest, either in connection with diagnosis or the surgical treatment of disease, they are investigated; but an ideal museum should furnish the investigator the means for his researches; and it must, therefore, collect specimens without special regard to what is at present known to be their practical interest. The

* In the great majority of medical schools in this country anatomical teaching has a much more limited field than in the German universities, and our professors of anatomy, following English traditions, are usually in training for surgery. We have, however, several who are devoting their entire work to anatomy in the broad sense and for its own sake, and it is in this direction that progress will be made.

collection of such series of specimens of each joint, region, and organ as I have in mind, including sections and dissections at different ages, from the earliest appearance in fœtal life to extreme old age in man, and in many cases in the lower animals, is a slow process. Such specimens, and especially such series of specimens, can only be prepared by a skilled anatomist, and there are few such; hence the formation of our ideal anatomical collection, limited though its scope may be, must be a work of time.*

There is ample material and scope for original work for half a dozen skilled anatomists, for many years to come, to supply the demands of this museum for illustrations of human morphology in its various relations, and it is not desirable to scatter effort over too wide a field.

The pathological section of a medical museum is its main feature, being, as Mr. Flower remarks, the section to which, in the eyes of Hunter and his successors, all others form merely the introduction. It is true that to some physicians specimens in this department seem to have little value; but they are balanced by those physicians whose chief interest in a case of disease is to get a post-mortem. No doubt much of the ancient pathology, and some of that which is quite recent, is comparable to the looking in the dark for a black spot which is not there, but those who despise pathology, and devote their entire attention to symptoms and treatment, err as much on one side as those who talk and act as if a knowledge of pathological anatomy could take the place of clinical experience do on the other. I do not know, however, that the doctrine usually preached—viz., that each man should attain the just mean in his views—is a true one. Certainly it is not the principle on which the universe seems to be constructed; the balance is maintained, not by having everything exactly symmetrical, but by excess in one direction balancing excess in another.

To secure pathological specimens in their most instructive forms for museum purposes requires, in many cases, not only considerable variation from the usual routine methods of post-mortem examinations, but very considerable delay in ascertaining the results. If, for example, we wish the best specimens of the results of cerebral disease, the brain must not be removed and sliced up in the usual manner; it should be hardened *in situ* to a certain extent, and its sections should be carefully considered with reference to their preservation in their relations to each other before they are actually made. There is need of a treatise by a skilled pathological anatomist giving such methods in detail from the modern point of view.

Thus far, the great majority of contributions of pathological material to our museum have been made by army medical officers; but some of the most valuable specimens have come from practitioners in civil life, and it is to these last that we must appeal for illustrations of the effects of disease in all parts of the country. There are difficulties in the way, of course. The physician in private practice does not make post-mortem examinations in five per cent. of the cases of death of patients under his charge, and when he does come into possession of an interesting specimen he is very naturally inclined either to keep it himself, especially if it is an osteological one which can be preserved with little expense or trouble, or to put it in the little collection which has been formed at the dispensary, or asylum, or hospital. I hope, however, that when it becomes known that we are trying to form in Washington a complete medical museum for the benefit of the whole medical profession, and that we have the means of permanently and securely preserving, and exhibiting to the best advantage, the specimens sent to us; I say that I hope and believe that when this is understood many physicians will be willing to take a little trouble, and to give up something of their very natural impulse to keep a trophy of their skill, or a curiosity to talk about, in order to promote the general good.

As a rule, single specimens of abnormity or of disease have little scientific value; it is only when they are associated with others that they both furnish and receive light. To this audience it is unnecessary to give other reasons as to why physicians should contribute material to the national collection, nor as to why the curator of this collection is justified in being very bold in requesting such material; but there is one objection to parting with certain specimens which is sometimes made, and to which I will refer, because it brings up one of the ways in which our ideal medical museum can meet a practical need of the family practitioner. The objection I refer to is, that the specimen may be important from the point of view of medical jurisprudence; that it has a special bearing in certain suits for malpractice, etc., and that, therefore, the owner wishes to keep it to be used as testimony to protect himself or his neighbors. There is some truth in this; but it is also true that such specimens brought together in the National Museum would be just as available as ever for the protection of the rights of the individual physician, while they would also be available for the benefit of the whole community.

Whether the specimens preserved are, or are not, desirable for and useful to the museum, it is certain that the securing and forwarding them is a very useful thing to the physician who does it. It tends to keep him in touch with the current living thought and work of the profession, to direct his attention to the connection between symptoms and the mechanism of their production, which is often so important in deciding on the remedy to be used, and, above all, it gives him an interest in other men's work, and thus broadens his views and increases his knowledge and pleasure.

Having obtained the specimens, the next difficulty is so to prepare and preserve them that they shall be available for study. The great majority can not be preserved in such a manner as to retain their natural color, size, and texture. No doubt more might be done in this direction than is usually done. It is possible to stain or paint portions of specimens in such a way as to give some idea of the normal appearances, but thus far, I think, experience shows that the best medium for the permanent preservation of wet pathological specimens is alcohol, and this will contract and harden most tissues, and remove the color from nearly all. It is also an expensive mode of preservation for large col-

* As Sir William Turner remarks: "Where a question in human embryology hinges upon an examination of parts in a very early state of development, we have often to wait for many years before an appropriate specimen falls into the hands of a competent observer."

lections, and requires constant care to prevent the effects of evaporation. It does not follow, however, that such specimens are of little value, and that, as some have urged, it would be better to seek to obtain records of the results of disease by colored drawings or models. The pathological specimen, whether seen at the post-mortem or years afterward in a museum, is, to the scientific pathologist or the practical physician, merely a sign or hieroglyph of the morbid process which has produced it; it is a result, in most cases, of interest not in itself, but because of the preceding phenomena which it connotes. As Sir James Paget has said, the same objection—viz., that museum specimens are unfit for the teaching or the study of pathology—might be made to the study of botanical specimens in an herbarium. "In both cases alike, the changes produced by preparation are so far uniform that any one accustomed to recent specimens (and no others should study either herbaria or pathological collections) can allow for them or 'discount' them. Just as an anatomist can discern, in a recent specimen of disease, the healthy structure, so, but often much more clearly, can the pathologist or any careful student discern in the prepared specimen the chief characteristics of the disease." * Colored drawings, casts, and models are of great value in supplementing original specimens, but they can not wholly replace them.

A good preparation, whether of normal or abnormal structure, but especially the latter, is valuable, not only for what we can see in it, but also for what we overlook or misinterpret, and which our successor may see, and see rightly. In this it is better than a mere description, yet the latter is equally necessary and much more easily preserved and made generally useful. Next to the preparation itself in accuracy and completeness of record is the photograph, and next to this is a good model, or a careful drawing.†

In medical and surgical matters, as in most other things, we habitually think in terms of vision as interpreted by touch. Hence, in part, the importance of the so-called object-teaching, and the fact that what the medical lecturer shows his class will usually be much better remembered and understood than what he says to it. And, while pictures and diagrams are of great assistance, they are by no means so instructive and suggestive as representations in three dimensions—*i. e.*, models, if the thing itself is not available.

One of the most important sections of our museum is that devoted to microscopy, including normal and pathological histology and photomicrographic work. In the cabinets there are nearly 11,000 mounted specimens, illustrating almost every field of microscopical research. Many of these were made twenty years ago and more, and were mounted by processes which have not given good results, so that Dr. Gray, who is in charge of this section, estimates that about 3,000 will be set aside as worthless; but the rest form a very valuable series to which additions are being constantly made, and materials for which we are specially anxious to obtain. In connection with this section a series of cultivations of chromogenic and pathogenic bacteria is kept up for museum exhibits, and also to illustrate methods of work.

While the great majority of the specimens in a medical museum have some relation to diagnosis, prognosis, or therapeutics, the number of those which are of direct interest to the so-called practical physician is not very great. It includes models and casts illustrating dermatology, morbid growths, the results of amputations, excisions, plastic operations, etc., and instruments, apparatus, dressings, etc., of all kinds. Here also may be classed hospital fittings and furniture, means of transportation for the sick and wounded, model cases of instruments, emergency chests, etc. Our medical museum has a fair beginning of a collection of this kind, including over a thousand specimens; but many more are needed to make it reasonably complete. If each medical man who devises a stethoscope, a pessary, a speculum, an ophthalmoscope, or an electro-therapeutic appliance with which he is well pleased would send a specimen to the collection, its increase would certainly be rapid, and it could always show the latest improvement.

An ideal medical museum should be very complete in the department of preventive medicine or hygiene. It is a wide field, covering, as it does, air, water, food, clothing, habitations, geology, meteorology, occupations, etc., in their relations to the production or prevention of disease, and thus far has had little place in medical museums, being taken up as a specialty in the half dozen museums of hygiene which now exist.

Our own National Museum of Hygiene is, as you know, under the direction of the Medical Department of the Navy. It is a very interesting collection of sanitary appliances of various kinds; but it is not well housed, it is much overcrowded, and its location is so inconvenient that it receives but few visitors, and, therefore, it has by no means the educational influence that it ought to have. It should be provided with ample quarters in the immediate vicinity of the National and of the Army Medical Museums, to both of which it would form a very desirable supplement. In our Medical Museum at present military hygiene only is illustrated, and this only in a few branches, such as hospitals, means of transportation of the wounded, etc. As regards materia medica, an exceedingly well arranged collection, including about five thousand specimens, has been formed in the National Museum, under the direction of the Surgeon-General of the Navy. The relations of materia medica to natural history, commerce, and the arts, which are subjects belonging especially to the National Museum, are as close to them as they are to medicine, and I am very glad that our national collection in this branch is where it is and under its present management. In the Medical Museum we have a collection showing what is supplied in the way of drugs, instruments, etc., to the medical department of our army, and, as opportunity offers, we shall

* "British Medical Journal," 1880, ii.

† To realize the value of a good drawing, one should consult the illustrations of the works of Vesalius, Eustachius, and other anatomists of the sixteenth and seventeenth centuries. The dissections and preparations which they made perished long ago. It is true that there is still in existence at Basle a skeleton prepared by Vesalius, and possibly a few other osteological specimens preserved by the older anatomists and pathologists may still be in existence; but, as a rule, to which there is hardly any exception, we must depend on the plates of these old folios to get at the true meaning of the text.

extend this to include the medical supplies of other armies or services.

The extent to and manner in which a medical museum should deal with anthropological and ethnological problems are not questions to be discussed in the abstract with advantage, since the answers must differ greatly according to circumstances. In our national museums the matter has been so arranged that all material relating to anthropometry, or to real or supposed structural differences in man according to race, are cared for in the Medical Museum, while specimens illustrating manners and customs, implements, weapons, clothing, pottery, etc., are taken charge of in the anthropological division of the national collection.

The Army Medical Museum contains what may seem a large amount of material relating to human osteology, and especially craniology, in its relations to North American ethnology, or the history of the development of different varieties of man on this continent; but it is not actually half large enough to permit of drawing definite scientific conclusions from it. The majority of the crania which it contains have been measured to a certain extent, and the results have been published; but many other measurements are desirable to permit of comparison with series taken elsewhere, and even measurements already made must be repeated by later and better methods. We have been trying some experiments with composite photography and superimposed contour tracings as a means of obtaining typical outlines and dimensions for race groups of crania, and these give promise of good results. If the collections of crania of North American Indians in Boston, New York, Philadelphia, and Washington could be brought together, a very much better average representation of the majority of tribes or groups would be obtained than can be furnished by either of these collections taken separately. By composite photography and tracings, combined with uniform methods of measurement, we can practically bring these collections together, and obtain results nearly as satisfactory as if we had them all in one room. We have also fitted up one large room with instruments and apparatus for anthropometry in its widest sense, including psychophysical investigation, and it is intended to make this a complete laboratory for illustration of methods of work.

In London arrangements have been made to have such an anthropometric laboratory in an outbuilding at the South Kensington Museum. The two things have no connection, and it seems to have been placed there because it would obtain more visitors desirous of being measured and tested than if placed anywhere else. In this laboratory, which is, I believe, essentially the same sort of institution as that arranged by Mr. Francis Galton at the Health Exhibition in 1884, and is planned by Mr. Galton, any person can have the regular series of measurements and tests made upon himself for a charge of six cents. There are difficulties in the way of making a charge for such measurements in a government establishment, and there are also difficulties in undertaking to do such work gratis, chiefly on account of the cost. It is, however, so desirable that it should be done, and the data derived from such observations, systematically carried on for a series of years, would be so valuable, not only from a scientific point of view, but for practical purposes in connection with life-insurance interests, and very possibly with practical medicine, that we should endeavor to overcome these difficulties in some way, and I think it can be done sufficiently, at least, to stimulate private enterprise in this direction. It is possible that we may yet see in large cities establishments of this kind, directed by skilled and reputable physicians having the confidence of the profession, where not only normal but abnormal conditions can be determined; places where the secretions can be tested chemically and microscopically, ophthalmoscopic and endoscopic examinations of all kinds made, the mode of functioning of muscles and nerves determined, and an authoritative record of the results made for the use of the individual, as evidence of his condition, or for the information of his physician. It would require an already established reputation and much skill and tact on the part of the director of such a laboratory, with absolute refusal to give prescriptions or advice in any shape, to make it fully successful; but it may be done.

An important feature of our National Medical Museum should be to show methods of research and of instruction for the benefit of the investigators and teachers of the country. This includes instruments and apparatus, and, to a limited extent, illustrations of the modes of using them and of the results; it also includes diagrams, models, etc., used for illustrating lectures. For example, as soon as Koch's researches became known in this country, physicians, and especially medical teachers who visited the museum, asked if we could show them the apparatus used by Koch and Pasteur in bacteriological work, and eagerly examined the few specimens of cultivations on solid media which we were able to exhibit. The anatomist comes to the museum quite as much to see methods of mounting and preservation as to see the specimens themselves; the physiologist does not expect to see function directly exhibited, but he does hope to find information about kymographs and constant temperature apparatus, and he wants to see whether Kühne's artificial eye is so useful for teaching purposes that he ought to get one to illustrate his lectures.

Medical museums are not, as a rule, freely open to the public, nor are they collected or arranged with reference to interesting or instructing non-professional persons. The Medical Museum at Washington is the chief exception to this rule, and it is so because it was placed in Ford's Theatre, the scene of the assassination of President Lincoln. Many visitors to Washington, both men and women, wished to see this memorable spot, and, in doing so, necessarily went through the museum. This gradually led to the adjusting of the specimens exhibited with a view to the fact that they were to be seen by a number of non-professional persons of both sexes. Certain groups of specimens were put aside and not shown except to persons known to be physicians, while other groups were given prominent places because they interested the public, although not of great professional or scientific value.

On the other hand, the public has gradually become accustomed to consider the Army Medical Museum as one of the "sights" of Washington, to be visited by male and

ing the condition of bones, joints, brain, larynx, and other organs in extreme old age.

In the second place, it needs a regular supply of funds from the General Government. To form and keep in proper condition such a medical museum as this should be is a more difficult and expensive matter than those not acquainted with such work would suppose, and the gifts of specimens from the profession must be supplemented by ample means for the preparation, preservation, and proper display of these specimens, and also for the purchase of apparatus and typical specimens of foreign work, in order that the museum may always be able to show the latest state of knowledge and the best ways of doing things.

The annual appropriation for the museum at present is $5,000. This is sufficient, except that the printing of the catalogue, of which I shall speak presently, must be an extra charge; but the medical profession should see to t that the amount is not reduced in the rhythmic spasms of partial economy with which some of our statesmen are afflicted.

The third need of the museum is of a series of the right kind of descriptions of its specimens, given on labels and in a catalogue. Unaided by such descriptions, it has for each man that which he can see in it, and no more. One man will see nothing but an old piece of bone, a shapeless mass of tissue bleached by alcohol, a case of old dingy brass instruments. Another will see in the same things a rare joint atrophy, implying curious abnormal nerve influence; a leprous nodule, whose history, if we knew it, would reach back through the lazar-houses of the middle ages to the far East, and whose bacilli may be the lineal descendants of those that vexed Naaman the Syrian; a case of microscopes illustrating the development of that instrument from the first rough iron tube of the spectacle-maker of Nuremberg to the delicate and complicated instrument through which we now peer curiously into that world which lies within the world of unassisted vision. By our labels and catalogues we must tell men what to see; but to do this we must first see ourselves. The aphorism that a first-class museum would consist of a series of satisfactory labels with specimens attached means a good deal. Something has been done in this direction, as you will see on inspection of the cases; but I often wonder what sort of labels a man who has spent years in investigating the normal and abnormal structure and relations of one organ would write for our specimen of that organ. Such help as this we need; kindly, truthful criticism, the pointing out of errors and of new points of view for this mass of material.

We also need a series of printed catalogues. One of these should be in the form of compact hand-books relating to particular sections of the collection, and intended partly for the use of visitors while in the museum and partly as a ready means of letting distant friends know what material it most needs in different departments. It should also print a complete illustrated catalogue of the whole collection for the use of the investigators and teachers of the profession. Congress has been requested to grant authority for the printing of such a catalogue by the Government Printer. The material for it is nearly ready, and it would make three volumes each of the size of one of the volumes of "The Medical and Surgical History of the War of the Rebellion." *

The subject of museum organization and management is one of those with regard to which it has been said that a man who is interested in it passes through three successive states of mind, viz.: First, he thinks he knows almost all about it, except a few minor points of detail which he is going to look up. Second, he feels that he will never know anything about it. Third, he believes he knows a little, and hopes by experience and study to know more.

The museum needs earnest and well-trained students to work up its collections so as to advance knowledge, and, at the same time, to display the specimens properly so as to make them most instructive. To all such students we shall endeavor to afford opportunities for this work. Precisely how this is to be effected is not yet clear, but there is abundance to be done, and there are quite a number of men coming on the stage who want to do such work for its own sake, because it gives them pleasure. Sooner or later we shall have half a dozen or more of specially trained men busy in the laboratories and work-rooms of the museum, each engaged on his own problems, and the whole for the common good.

The medical museum hints at matters which lie outside the scope of known physical and chemical laws. Physicians have not, as a rule, been very virulent theologians; their studies and their daily work tend to give them compensation of bias in this particular, and therefore, in this age of transition in beliefs, it is not so true of them as of others, that "the old hopes have grown weak, the old fears dim, the old faiths numb." In our medical museum yonder may be found abundant illustrations of the results of physical and chemical actions and reactions upon what was once living matter, and was connected with centers of consciousness, of intellect, of emotions which imply something more than ordinary protoplasm or mere metabolism. It brings together strange company. The men who dwelt on the sides of the Andes in the old Aztec days, the men who built cities in the Gila Valley centuries before the days of Columbus, the Esquimaux, and the Indian of the plains, black and white, red and yellow, all sorts and conditions of men are represented in those bony caskets which once held their centers of life and thought, but now are reckoned only as so many crania in the museum catalogue. The great majority of the pathological specimens imply either suffer-

* Some large and valuable collections have no formal catalogues; but the results have been published in essays, monographs, or text-books by those who have formed them. This is the rule as regards the collections at the various anatomical and pathological institutes and laboratories of continental schools. I have examined most of the published catalogues of medical museums, partly to obtain information as to the best methods of doing such work, and partly to ascertain what might be worth indexing in them. Some of them are mere lists of specimens, of no value except for use in the museum itself. A few give accounts of many specimens, especially in pathology, which make them valuable works of reference apart from the collections themselves. To what extent such detailed descriptions should be made for publication, including brief histories of cases, depends partly on the character of the specimens, partly on the skill of the describer, and partly on whether illustrations are to be used or not.

ing or death, or both, of the individual from whence they came. Some of them are the results of intemperance, of lust, of folly, and crime; but some are the results of unselfish sacrifice for the good of others—true flowers of blood and pain. A large group of them form one of the relics of an acute paroxysm of disease of a great nation. The old pensioner likes to keep the battered ball which crippled him, and so these relics have an interest beyond that which is purely professional. That the nation is not crippled by its loss takes nothing from their interest, and the fact that we are physicians does not imply that we look upon them from a medical or scientific standpoint only. Those of the combatants who survive are now better friends than ever, and the museum specimens, coming as they do from the sick and wounded of both armies, and contributed by both Union and Confederate surgeons, enforce the lesson of the unity of the profession and of its interests, as well as that of our country.

Our museum, like the library with which it is associated, includes all the specialties. No physician is so learned or skillful that he can find no instruction there, and no one is so ignorant that he can not comprehend some of the lessons which it teaches. Taken together, these institutions should contribute in no small degree to our national prestige, for which eminence in scientific work and teaching is an essential element, and if it is remembered that they are only twenty-five years old, and that during that period we have been making medical history at a tremendous rate, surely some incompleteness and crudeness may well be excused or overlooked.

Speaking in behalf of the Army Medical Department, and for the dead as well as for the living who have been charged with this work, I can truly say that we have been very proud of our charge, and that we have done our best, each according to his capacity and opportunities, to make the museum and library such as a great profession and a great nation have a right to demand.

## Original Communications.

### RECENT EXPERIENCE IN LITHOLAPAXY IN MALE CHILDREN.*

By D. F. KEEGAN, M. D.,
SURGEON-MAJOR, INDORE, CENTRAL INDIA.

When your distinguished president did me the honor of inviting me to be present at the meetings of your section as a member of the Congress of American Physicians and Surgeons, he at the same time conferred on me a still greater honor by requesting me, in case I should not be able to take part in your discussions, to send a short note on my latest experience in regard to litholapaxy in male children. Unfortunately, I am unable to be present at your meetings, and so I gladly seize the opportunity so kindly offered, and send a short note on this subject.

Your president, in sending me the invitation, very justly remarked that in the birthplace of litholapaxy it was but fitting that such a paper should appear. As America is the birthplace of litholapaxy, so I may maintain that India is the land of its adoption, for in no quarter of the globe has Bigelow's successful revolution in the treatment of stone been more cordially welcomed or more ungrudgingly recognized than in England's great dependency. Freyer and I, in this country, have pushed litholapaxy to its furthest limits in both young and old, and the more we have practiced this operation, the better we like it. And now briefly to relate my latest experience of it in its application to the treatment of stone in male children.

I will not dwell on the many objections raised against the operation of litholapaxy in male children. Accomplished facts have demonstrated how purely theoretical were these objections. I will therefore merely direct your attention to the accompanying table, which embodies the principal features of interest connected with one unbroken series of one hundred and fourteen litholapaxies performed on male children and boys at the Indore Charitable Hospital, Central India, between December, 1881, when I first started this operation, and June of the present year. A glance at this table shows that litholapaxy was tried very tentatively at first among this class of patients, and, as time went on and we had gained more experience, the range of the operation was much enlarged, for within the last fifteen months, out of thirty-five male children and boys admitted into the Indore Hospital suffering from stone, I have treated thirty-three by litholapaxy. This table proves what I have frequently stated elsewhere—namely, that the caliber of the urethra in male children is, as a rule, much larger than what surgeons in former days believed was the case. It also shows that the average number of days spent in hospital by male children and boys after litholapaxy was 5·7, and that the average weight of stones removed was 95·05 grains. The percentage of mortality which followed litholapaxy among these one hundred and fourteen patients was 3·5. But I may justly state that this rate of mortality should be halved, for serial No. 11 was really not one of litholapaxy, but one of lithotrity at three sittings, and serial No. 69 was hopeless from the beginning, the child being the subject of very advanced disease of the kidneys, and the operation only being undertaken at the urgent request of his parents that something should be done to relieve him from his sufferings.

The accompanying table also proves what some surgeons do not as yet believe—namely, that Bigelow's operation is capable of dealing successfully with very large and hard stones occurring in boys; *vide*, for example, serial Nos. 44, 46, 96, and 108. I would draw especial attention to the consideration of serial No. 108, because through the kindness of Surgeon-Major Warden, professor of chemistry in the Medical College, Calcutta, I am in a position to give the exact chemical composition of the *débris* of this stone, which weighed 606 grains. A glance at the table appended shows that I have within the last year disposed

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting, September 19, 1888.

TABLE SHOWING PARTICULARS OF 114 LITHOLAPAXY OPERATIONS PERFORMED ON BOYS AND MALE CHILDREN AT THE INDORE CHARITABLE HOSPITAL, CENTRAL INDIA, FROM DECEMBER, 1881, TO JUNE, 1888.

| Serial number. | Age. | Caste. | Date of operation. | Time occupied by operation, in minutes. | No. of lithotrite used. | No. of catheter used. | No. of times lithotrite was introduced. | No. of sittings. | Composition of stone. | Duration of disease, in months. | Weight of stone in grains. | No. of days in hospital after operation. | Result. | Name of operator. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 5 | H | Dec. 15, '81. | No record | 10 | 9 | No record. | 1 | No record. | 5 | * | 25 | Success | Dr. Keegan. |
| 2 | 8 | H | Apr. 21, '82. | " | 10 | 9 | " | 1 | No record. | 15 | * | 14 | " | " |
| 3 | 7 | M | Oct. 11, '82. | " | 10 | 9 | " | 1 | No record. | No record | 30 | 9 | " | " |
| 4 | 8 | H | Feb. 7, '83. | 45 | 10 | 9 | " | 1 | Phosphatic. | " | 15 | 2 | " | " |
| 5 | 2½ | H | Mch. 16, '83. | No record | 7 | 9 | 1 | 1 | No record. | " | 10 | 3 | " | " |
| 6 | 5 | M | June 28, '83. | 35 | 10 | 9 | No record | 1 | Uric acid. | " | 17 | 12 | " | " |
| 7 | 4 | H | Sept. 26, '83. | 30 | 10 | 9 | " | 1 | Uric acid. | " | 55 | 3 | " | " |
| 8 | 7 | H | Sept. 27, '83. | No record | 10 | 9 | " | 1 | Uric acid. | " | 5 | 3 | " | " |
| 9 | 8 | H | Oct. 9, '83. | 20 | 10 | 9 | " | 1 | Uric acid. | " | 16 | 10 | " | " |
| 10 | 5 | H | Oct. 9, '83. | 70 | 10 | 9 | " | 1 | Uric acid. | " | 84 | 9 | " | " |
| 11 | 4 | H | Dec. 15, '83. | No record | 7 & 10 | 9 | " | 3 | Phosphates growing round tilli stalk.† | 10 | 35 | 16 | Died. | Mr. Gunput-singh & Dr. Keegan. |
| 12 | 10 | H | Dec. 17, '83. | " | 10 | 9 | " | 1 | Phosphates. | No record | 200 | 9 | Success | Mr. Gunput-singh. |
| 13 | 5 | H | Dec. 29, '83. | 60 | 10 | 9 | " | 1 | Uric acid. | 6 | 158 | 11 | " | " |
| 14 | 3 | H | Jan. 26, '84. | 38 | 10 | 9 | " | 1 | Uric acid. | 12 | 104 | 7 | " | Dr. Keegan. |
| 15 | 5 | H | Feb. 16, '84. | 30 | 10 | 9 | " | 1 | Urate of ammonia and uric acid. | 6 | 51 | 12 | " | " |
| 16 | 12 | H | Mch. 3, '84. | 55 | 10 | 9 | " | 1 | Earthy and triple phosphates. | 24 | 240 | 11 | " | " |
| 17 | 2 | H | Mch. 10, '84. | 4 | 7 | 9 | " | 1 | Uric acid. | 4 days | 7 | 2 | " | " |
| 18 | 1½ | H | Mch. 27, '84. | 32 | 7 | 7 | " | 1 | Uric acid. | 4 | 18 | 4 | " | " |
| 19 | 7 | M | May 12, '84. | 60 | 10 | 9 & 12 | 5 | 1 | Phosphates. | 24 | 160 | 15 | " | " |
| 20 | 3½ | H | May 26, '84. | 67 | 7 & 10 | 9 | 5 | 1 | Phosphatic. | 12 | 75 | 8 | " | " |
| 21 | 2½ | H | May 29, '84. | 70 | 7 | 7 | 5 | 1 | Uric acid. | 24 | 24 | 3 | " | " |
| 22 | 6 | M | July 3, '84. | 60 | 10 | 9 & 11 | 6 | 1 | Uric acid and oxalate of lime covering. | 48 | 210 | 8 | " | " |
| 23 | 4 | H | Aug. 22, '84. | 56 | 8 | 7 & 9 | 4 | 1 | Uric acid. | 10 | 38 | 13 | " | " |
| 24 | 11 | H | Nov. 20, '84. | 112 | 8 | 12 | 7 | 1 | Oxalate of lime. | 12 | 308 | 14 | " | " |
| 25 | 2 | M | Dec. 10, '84. | 20 | 7 | 7 | 3 | 1 | Lithic acid. | 12 days. | 5 | 10 | " | " |
| 26 | 8 | H | Jan. 30, '85. | 104 | 8 | 9 | 9 | 1 | Phosphatic. | 60 | 285 | 5 | " | " |
| 27 | 10 | H | Jan. 30, '85. | 85 | 8 | 9 | 7 | 1 | Phosphates and uric acid. | 24 | 170 | 6 | " | " |
| 28 | 9 | H | Mch. 19, '85. | 78 | 8 | 7 & 9 | 6 | 1 | Uric acid. | 12 | 90 | 5 | " | " |
| 29 | 10 | H | Mch. 27, '85. | 10 | 8 | 9 | 1 | 1 | Oxalate of lime. | 24 | 43 | 2 | " | " |
| 30 | 5 | H | Apr. 5, '85. | 58 | 8 | 9 | 6 | 1 | Phosphate of lime. | 6 | 140 | 4 | " | " |
| 31 | 7 | H | Apr. 11, '85. | 31 | 8 | 9 | 3 | 1 | Mulberry with slight covering of phosphates. | 48 | 57 | 4 | " | " |
| 32 | 11 | H | Apr. 13, '85. | 67 | 8 & 10 | 12 | 6 | 1 | Pure mulberry. | 48 | 226 | 9 | " | " |
| 33 | 10 | H | Apr. 28, '85. | 90 | 8 | 9 | 6 | 1 | Oxalate of lime. | 24 | 200 | 5 | " | " |
| 34 | 7 | H | Apr. 30, '85. | 43 | 8 | 9 | 4 | 1 | Oxalate of lime. | 36 | 140 | 3 | " | " |
| 35 | 10 | H | May 2, '85. | 80 | 7 & 8 | 7 & 9 | 8 | 1 | Phosphatic and uric. | 4 | 91 | 11 | " | " |
| 36 | 4 | H | May 7, '85. | 41 | 7 & 8 | 7 | 4 | 1 | Mulberry with phosphatic covering. | 9 | 27 | 3 | " | " |
| 37 | 10 | H | May 27, '85. | 94 | 8 | 9 | 6 | 1 | Urates and phosphates. | 72 | 360 | 8 | " | " |
| 38 | 2½ | H | June 9, '85. | 17 | 7 | 7 | 4 | 1 | Uric acid. | 3 | 11 | 4 | " | " |
| 39 | 2¾ | M | July 9, '85. | 31 | 8 | 7 | 5 | 1 | Uric acid. | 2½ | 32 | 3 | " | " |
| 40 | 8 | H | Aug. 1, '85. | 57 | 8 | 7 & 9 | 5 | 1 | Oxalate of lime. | No record | 28 | 4 | " | " |
| 41 | 2 | H | Aug. 16, '85. | 21 | 7 | 7 | 2 | 1 | Uric acid. | 3 | 8 | 5 | " | Surg.-Maj. Caldecott. |
| 42 | 5 | H | Sept. 9, '85. | 62 | 7 | 7 | 9 | 1 | Uric acid and phosphates. | 6 | 41 | 4 | " | " |
| 43 | 3 | H | Sept. 15, '85. | 18 | 8 | 7 | 3 | 1 | Phosphates with nucleus of oxalate of lime. | 5 | 12 | 3 | " | " |
| 44 | 9½ | H | Sept. 19, '85. | 182 | 11 & 15 | 13 & 14 | 26 | 1 | Uric acid, nucleus oxalate of lime with phosphatic covering. | 24 | 700 | 10 | " | " |
| 45 | 8 | H | Sept. 29, '85. | 36 | 10 | 11 | 6 | 1 | Uric acid and phosphates. | 12 | 176 | 8 | " | " |
| 46 | 12 | H | Sept. 30, '85. | 62 | 11 & 14 | 12 & 13 | 9 | 1 | Oxalate of lime. | 12 | 344 | 4 | " | " |
| 47 | 8 | H | Nov. 1, '85. | 30 | 7 & 8 | 7 & 9 | 5 | 1 | Phosphates. | 24 | 72 | 9 | " | " |
| 48 | 5 | H | Nov. 4, '85. | 24 | 7 & 8 | 7 & 9 | 4 | 1 | Uric acid. | 12 | 32 | 10 | " | " |
| 49 | 13 | H | Nov. 8, '85. | 48 | 11 | 12 | 7 | 1 | Uric acid and oxalate of lime. | 48 | 272 | 12 | " | " |
| 50 | 2¾ | M | Nov. 11, '85. | 30 | 7 | 7 | 4 | 1 | Uric acid with slight phosphatic covering. | 3 | 16 | 4 | " | Dr. Keegan. |
| 51 | 6 | H | Nov. 17, '85. | 12 | 8 | 8 | 2 | 1 | Mulberry and uric acid with slight phosphates. | 6 | 23 | 3 | " | " |
| 52 | 4½ | H | Dec. 16, '85. | 45 | 8 | 8 & 10 | 4 | 1 | Uric acid. | 10 | 118 | 5 | " | " |
| 53 | 3½ | H | Feb. 6, '86. | 37 | 8 | 8 & 9 | 4 | 1 | Uric acid. | 12 | 70 | 8 | " | " |
| 54 | 14 | H | Feb. 12, '86. | 60 | 8 & 11 | 9 & 10 | 6 | 1 | Fawn-colored uric acid. | 24 | 248 | 11 | " | " |
| 55 | 3½ | H | Feb. 23, '86. | 10 | 8 | 7 | 2 | 1 | Oxalate of lime. | 18 | 19 | 4 | " | " |
| 56 | 14 | H | Feb. 27, '86. | 10 | 8 | 9 | 1 | 1 | Phosphates. | 4 | 19 | 2 | " | " |
| 57 | 6 | H | Feb. 28, '86. | 56 | 8 | 8 & 9 | 5 | 1 | Uric acid and oxalate of lime nucleus. | 6 | 105 | 9 | " | " |
| 58 | 6½ | H | Mch. 25, '86. | 39 | 7 | 7 | 6 | 1 | Uric acid and phosphates. | 8 days. | 14 | 5 | " | " |
| 59 | 3½ | M | Apr. 3, '86. | 16 | 7·5 | 8 | 2 | 1 | Soft pale uric acid. | 2¼ | 36 | 4 | " | Surg.-Maj. Caldecott. |
| 60 | 2½ | H | May 6, '86. | 23 | 7 | 7 | 9 | 1 | Uric acid. | 6 | 19 | 2 | " | " |
| 61 | 10 | H | May 11, '86. | 79 | 10 & 8 | 9 & 8 | 11 | 1 | Uric acid. | 60 | 143 | 6 | " | " |
| 62 | 2½ | H | May 13, '86. | 21 | 7·5 | 8 | 4 | 1 | Soft uric acid and phosphates. | 12 | 79 | 7 | " | " |
| 63 | 10 | H | May 20, '86. | 29 | 8 & 7·5 | 8 & 9 | 4 | 1 | Oxalate of lime. | 60 | 49 | 2 | " | " |
| 64 | 8 | H | June 8, '86. | 21 | 7·5 | 9 | 4 | 1 | Uric acid with very thin covering of phosphates. | 24 | 160 | 2 | " | " |
| 65 | 3 | H | July 12, '86. | 24 | 7 & 7·5 | 7 & 8 | 3 | 1 | Uric acid. | 4 | 40 | 14 | " | " |
| 66 | 4 | M | July 18, '86. | 8 | 7·5 | 10 | 1 | 1 | Uric acid. | 3 | 20 | 2 | " | " |
| 67 | 6 | H | July 19, '86. | 28 | 7·5 | 9 | 5 | 1 | Uric acid. | 6 | 47 | 2 | " | " |
| 68 | 5 | H | Aug. 6, '86. | 9 | 7·5 | 8 | 2 | 1 | Uric acid (brick-dust colored). | 24 | 16 | 1 | Died.‡ | " |
| 69 | 2½ | H | Aug. 10, '86. | 14 | 7·5 | 8 | 3 | 1 | Uric acid. | 9 | 40 | 1½ | Died. | " |
| 70 | 2 | H | Sept. 9, '86. | 6 | 7 | 7 | 2 | 1 | Uric acid. | 4 | 3 | 8 | Success | " |
| 71 | 4 | H | Sept. 21, '86. | 17 | 7·5 | 8 | 2 | 1 | Uric acid. | 4 | 82 | 2 | " | Mr. Gunput-singh. |
| 72 | 5 | H | Sept. 24, '86. | 20 | 7·5 | 8 | 3 | 1 | Uric acid. | 12 | 110 | 3 | " | Surg.-Maj. Caldecott. |
| 73 | 6 | H | Sept. 30, '86. | 26 | 7·5 | 8 | 5 | 1 | Uric acid. | 48 | 53 | 4 | " | " |
| 74 | 5 | H | Oct. 11, '86. | 4 | 7 | 7 | 1 | 1 | Uric acid. | 1 | 1 | 6 | " | " |
| 75 | 3½ | H | Nov. 29, '86. | 8 | 7·5 | 7 | 1 | 1 | Urates and uric acid. | 6 | 16 | 3 | " | " |
| 76 | 7 | H | Jan. 3, '87. | 29 | 7·5 | 8 | 5 | 1 | Uric acid with nucleus of oxalate of lime. | 18 | 140 | 14 | " | " |
| 77 | 5 | H | Jan. 15, '87. | 5 | 7·5 | 8 | 1 | 1 | Uric acid. | 36 | 25 | 6 | " | " |
| 78 | 3¾ | M | Jan. 26, '87. | 8 | 7·5 | 7 | 1 | 1 | Uric acid. | 12 | 10 | 3 | " | " |
| 79 | 8 | H | Feb. 4, '87. | 29 | 7·5 | 8 | 5 | 1 | Uric acid. | 6 | 66 | 3 | " | " |
| 80 | 2 | H | Feb. 9, '87. | 3 | 7·5 | 6 | 1 | 1 | Uric acid. | 1 | 5 | 2 | " | Mr. Gunput-singh. |
| 81 | 10 | H | Mch. 7, '87. | 62 | 10 | 10 | 9 | 1 | Uric acid with thick covering of phosphates. | 72 | 296 | 5 | " | Surg.-Maj. Caldecott. |
| 82 | 9 | H | Apr. 4, '87. | 16 | 7 | 8 & 10 | 2 | 1 | Triple phosphates. | 60 | 8 | 6 | " | Dr. Keegan. |
| 83 | 6 | H | May 27, '87. | 33 | 7 | 7 | 5 | 1 | Uric acid and phosphates. | 24 | 54 | 14 | " | " |
| 84 | 3 | H | June 3, '87. | 75 | 7 | 7 & 8 | 6 | 1 | Uric acid. | 6 | 70 | 6 | Died. | " |
| 85 | 3¾ | H | June 18, '87. | 10 | 7 | 8 | 1 | 1 | Uric acid and phosphates. | 15 | 50 | 2 | Success | " |
| 86 | 4 | M | July 15, '87. | 21 | 7 | 7 | 2 | 1 | Oxalate of lime and phosphates. | 6 | 25 | 3 | " | " |
| 87 | 7½ | H | July 26, '87. | 10 | 7 | 7 & 8 | 3 | 1 | Uric acid. | 10 days. | 2 | 2 | " | " |
| 88 | 11 | H | Aug. 10, '87. | 20 | 7 & 9·5 | 10 | 3 | 1 | Oxalate of lime. | 72 | 32 | 3 | " | " |
| 89 | 5 | H | Aug. 14, '87. | 52 | 7 | 8 | 6 | 1 | Oxalate of lime. | 24 | 78 | 4 | " | " |

* No record.

‡ Extensive disease of left kidney.

† Didynamia angiospermid Schreb-gen, N. 1048, is annual, and in good soil grows generally to about three or four feet high.

TABLE SHOWING PARTICULARS OF 114 LITHOLAPAXY OPERATIONS.—*Continued.*

| Serial No. | Age. | Sex. | Date of operation. | Time occupied in operating, in minutes. | No. of rotations of the lithotrite. | No. of crushings. | No. of sittings. | No. of stones. | Composition of stone. | Duration of disease, in months. | Weight of stone in grains. | No. of days in hospital after operation. | Result. | Name of operator. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 | 4 | H | Aug. 22, '87. | 27 | 6 | 8 | 2 | 1 | Nucleus oxalate of lime, with thick covering of phosphates. | 5 | 26 | 2 | Success | Dr. Keegan. |
| 91 | 8 | H | Sept. 8, '87. | 45 | 9·5 & 7 | 10 | 4 | 1 | Oxalate of lime. | 18 | 185 | 4 | " | " |
| 92 | 6 | H | Oct. 19, '87. | 34 | 7·5 | 8 | 4 | 1 | Mixed uric acid and oxalate of lime. | 24 | 85 | 3 | " | " |
| 93 | 9½ | M | Nov. 1, '87. | 35 | 9·5, 7·5, & 6 | 8 & 9 | 4 | 1 | Oxalate of lime with very thin covering of phosphates. | 6 | 168 | 3 | " | " |
| 94 | 10 | H | Nov. 28, '87. | 47 | 7 & 6 | 10 | 5 | 1 | Phosphates with a very small nucleus of oxalate of lime. | 1 | 275 | 3 | " | " |
| 95 | 10 | H | Nov. 29, '87. | 9 | 6 | 8 | 2 | 1 | Oxalate of lime. | 72 | 10 | 3 | " | " |
| 96 | 9 | H | Nov. 29, '87. | 66 | 7·5 & 6 | 8 & 7 | 5 | 1 | Oxalate of lime and uric acid mixed with some phosphates. | 72 | 535 | 3 | " | " |
| 97 | 23 | H | Dec. 18, '87. | 25 | 6 | 6 | 3 | 1 | Mixed lithic acid and urate of ammonia. | 9 | 10 | 4 | " | " |
| 98 | 8 | H | Dec. 22, '87. | 4 | 6 | 7 | 1 | 1 | Oxalate of lime. | 2 | 4 | 3 | " | " |
| 99 | 3½ | M | Feb. 14, '88. | 14 | 6 | 7 | 2 | 1 | Oxalate of lime. | 12 | 30 | 3 | " | " |
| 100 | 5 | H | Feb. 25, '88. | 38 | 6, 7, & 7·5 | 7 & 8 | 5 | 1 | Principally oxalate of lime with a very small quantity of phosphate of lime. | 14 | 130 | 3 | " | " |
| 101 | 6 | H | Mch. 4, '88. | 8 | 6 | 8 | 1 | 1 | Urate of ammonia and phosphates. | 24 | 20 | 2 | " | " |
| 102 | 3½ | M | Mch. 16, '88. | 14 | 6 | 6 | 3 | 1 | Uric acid, principally with some admixture of oxalate of lime. | 4 | 33 | 4 | " | " |
| 103 | 3 | M | Apr. 14, '88. | 19 | 6 | 8 | 2 | 1 | Uric acid | 24 | 49 | 2 | " | " |
| 104 | 3 | H | Apr. 23, '88. | 9 | 6 | 7 | 2 | 1 | Uric acid. | 1½ | 5 | 2 | " | " |
| 105 | 10 | H | Apr. 28, '88. | 86 | 6 | 6 & 7 | 7 | 1 | Phosphatic, with a nucleus of oxalate of lime. | 12 | 122 | 6 | " | " |
| 106 | 8 | H | Apr. 29, '88. | 40 | 6 | 7 | 4 | 1 | Phosphatic. | 18 | 72 | 2 | " | " |
| 107 | 9 | H | Apr. 30, '88. | 50 | 7 & 6 | 8 | 5 | 1 | Oxalate of lime. | 24 | 186 | 3 | " | " |
| 108 | 13 | H | May 20, '88. | 100 | 10·5 & 7·5 | 10 | 7 | 1 | Uric acid with coloring matter, 48·48, oxalate of lime, 51·52. | Unknown | 606 | 8 | " | " |
| 109 | 2½ | H | June 8, '88. | 29 | 6 | 6, 7, & 8 | 3 | 1 | Uric acid and oxalate of lime. | 9 | 90 | 5 | " | " |
| 110 | 4 | H | June 10, '88. | 33 | 6 | 6 & 7 | 4 | 1 | Principally phosphatic. | 24 | 78 | 4 | " | " |
| 111 | 6 | H | June 13, '88. | 6 | 6 | 6 & 7 | 2 | 1 | Oxalate of lime. | Unknown | 3 | 1 | " | " |
| 112 | 11 | M | June 15, '88. | 14 | 6 | 10 & 8 | 2 | 1 | Oxalate of lime. | 12 | 28 | 5 | " | " |
| 113 | 5½ | H | June 16, '88. | 24 | 6 | 7 & 6 | 4 | 1 | Uric acid. | 12 | 30 | 3 | " | " |
| 114 | 8 | H | June 19, '88. | 35 | 6 | 7 & 8 | 4 | 1 | Mixed uric acid and oxalate of lime, with covering of phosphates. | 12 | 87 | 2 | " | " |

Average age of boys operated on, 6·26 years.
Average weight of stone removed, 95·05 grains.

Average number of days spent in hospital after operation, 5·70.
Percentage of mortality following operation, 3·5.

of several stones in male children and boys by means of a No. 6 lithotrite (English scale). This lithotrite, which is fully fenestrated, is 5 in the stem and 6 in the angle, and was constructed for me by Messrs. Weiss & Son, London. I use only fully fenestrated lithotrites in performing litholapaxy in male children and boys, for I consider the use of partially fenestrated or unfenestrated lithotrites in dealing with stones in male children as absolutely dangerous. Indeed, for some years I have discarded the use of partially fenestrated lithotrites in performing litholapaxy in adult males, and, if I could, I would destroy all the flat-bladed, unfenestrated lithotrites that have ever been constructed. Any one who wishes to give the operation of litholapaxy in male children a fair trial must provide himself with a complete set of fully fenestrated lithotrites, beginning at No. 6 (English scale) in the angle and running up to No. 10 or No. 11.

A glance at serial No. 108 in the table appended shows that I successfully disposed of this stone, which weighed 606 grains, by means of a No. 10½ fully fenestrated lithotrite.

The advantages which litholapaxy possesses over its two rivals, suprapubic and lateral lithotomy, when dealing with stones in male children, are chiefly two—namely, rapidity of cure and avoidance of the dangers inseparable from all cutting operations. Are those advantages counterbalanced by a more frequent recurrence of stone after litholapaxy than that which follows suprapubic or lateral lithotomy? I do not think so, for out of 114 male children and boys on whom litholapaxy was performed at the Indore Hospital between December, 1881, and June, 1888, not one has returned suffering from stone for the second time, and I feel quite certain that had any one of them been again troubled with stone he would have sought readmission to this hospital. Time and well-weighed statistics, however, can alone settle this important point, and in the mean time I give it as my opinion that it will be found that stone does not recur with greater frequency after a well-performed litholapaxy in boys than it does after suprapubic or lateral lithotomy.

Time presses, and I will not therefore discuss the relative merits of litholapaxy, lateral lithotomy, and suprapubic cystotomy when performed for the removal of small stones from the bladders of male children. But, as one who may claim some right to speak on this subject, I give it as my opinion that the operation of suprapubic cystotomy will never become a popular one among surgeons in India when dealing with small stones in male children and boys.

Freyer, in this country, has shown, by an unbroken series of 164 successful lateral lithotomies performed in boys and youths, what brilliant results can be achieved by this operation when skillfully performed, and as the period of recovery after suprapubic cystotomy is never likely to be much less than that which follows a lateral lithotomy, and as its percentage of success can never surpass that which follows a well-performed lateral lithotomy in boys, it can never become popular, in this country, in dealing with stones occurring among this class of patients. I have not the slightest doubt in my own mind that, in India at any rate, where surgeons enjoy such unrivaled opportunities of becoming practically familiar with the use of the lithotrite, the future operation for the vast majority of stones occurring in

male children and boys will be litholapaxy. Among this class of patients Bigelow's operation will be supplemented by lateral lithotomy for encysted stones or for stones occurring in sacculated bladders accompanied by extremely fœtid urine, and where it is considered wise that the bladder should be well drained. Suprapubic cystotomy will be reserved for very large or very hard stones which may defy the powers of the lithotrite, and which it may be considered are too large to be extracted by the forceps through the perinæum. Speaking for myself, I can only say that with my present experience I should not feel justified in performing lateral or suprapubic cystotomy for the removal of any uncomplicated stone from a boy's bladder which I had good reason to think I could dispose of by litholapaxy.

And now, gentlemen, as the spokesman of my professional brethren of the Indian Medical Service practicing in this country, I gladly seize this opportunity, so kindly offered me by your president, of expressing our unbounded admiration of the services rendered to suffering humanity by your illustrious countryman Bigelow. He indeed, by his successful revolution in the treatment of stone, has proved himself a true benefactor to thousands of suffering natives of this country, for in India we deal with cases of calculi by the thousand.

Bigelow has solved a problem which has exercised the keenest surgical intellects of every age, from the time of Hippocrates to the year 1878, and as years go by and surgeons become more and more familiar with the use of the lithotrite, his fame among the followers of our art will become imperishable.

## A PRACTICAL POINT IN THE TREATMENT OF POTT'S DISEASE OF THE SPINE.*

By A. B. JUDSON, M. D.

The treatment of Pott's disease is always open to amendment. I propose, therefore, in order to assist the practitioner, a simple rule, as follows: The efficiency of the apparatus used is to be measured by the condition of the skin covering the projection.

A few words in explanation will not be out of place. It is premised that the object of mechanical treatment is to make pressure on the projection with the threefold purpose of (1) enforcing fixation of the bones involved, (2) transferring pressure from the diseased bodies to the healthy processes, and (3) lessening the deformity. If we were dealing with the skeleton deprived of its integument there would practically be no limit to the pressure which might be applied to the projection. But the interposition between the apparatus and the vertebral column of the sensitive skin places a peremptory limit to the degree of force which it is possible to apply. The rule may therefore read: The apparatus may be considered as having reached the limit of its efficiency if it makes the greatest possible pressure on the projection compatible with the comfort and integrity of the skin.

This rule may be followed with perfect regard to the comfort and convenience and relief of the patient. If, contrary to common sense, the apparatus is fastened at once as tight as it can be borne, the skin will react speedily with pain and ulceration. But if the pressure is lightly applied at first, as may be conveniently done with apparatus constructed with this in view, and gradually and carefully increased from time to time, it will be found as the weeks and months go by that the skin has become indurated without losing its integrity or causing inconvenience, and its condition will be unimpeachable evidence that, so far as mechanical means go, the patient is receiving a full measure of the benefit of treatment.

Through the negligence of the nurse or the willfulness of the patient, apparatus designed for use in this way may produce, and occasionally has produced, abrasion and ulceration. But this should not be considered a good reason for condemning the apparatus. It is well to bear in mind that the disease in question is perhaps the most insidious in its progress and disastrous in its results of all the affections to which the young skeleton is liable. Shall we not make use of the most efficient method at hand and, if necessary, redouble our carefulness and painstaking in order to avoid incidental excoriation?

There are methods of treatment to which the rule proposed does not apply very closely. I refer to those methods which have for their principal features suspension and plastic dressings. If the patient is suspended and plaster of Paris applied, the pressure is diffused rather than concentrated, and changes in the skin are less marked and it is less easy to adjust the direction and degree of pressure on given points, while it is especially easy and convenient to do this with a brace constructed of tractable steel. I would not decry the use of plastic dressings in the treatment of this affection. They are daily affording comfort and relief to numbers of sufferers who would otherwise have nothing done for them. They will continue, perhaps, to be used by the general surgical practitioner. But I think the specialist in orthopædic practice can do better. He has a better method at his command in the use of tractable steel modified to meet the varying requirements of the case to which he devotes himself with the patience and ingenuity which are a part of his equipment.

To the practitioner of this class I commend the rule suggested above to the effect that the question of the efficiency of the apparatus is to be determined by the condition of the skin covering the projection, a rule which many of us have doubtless followed in practice, and which it can do no harm to have expressed in words.

4 East Twenty-fifth Street, Madison Square.

* Read before the American Orthopædic Association at its annual meeting, September 18, 1888.

**Variolous Periostitis.**—According to the "Lancet," "four cases of variolous periostitis have been observed by M. Barié. The bones most frequently attacked have been the left tibia, the radius, and the humerus. The periostitis generally appeared five or six weeks after the onset of the small-pox, and manifested itself first by severe pain, limited to one part of the skeleton. There was no redness or heat of skin; a sort of swelling, 'hard œdema,' might be found over the seat of pain, but no fluctuation. Probably its pathology is identical with the periostitis following on or supervening in typhoid fever."

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NEW YORK, SATURDAY, SEPTEMBER 22, 1888.

## ECLAMPSIA AND ALBUMINURIA.

In a recent contribution to this subject ("Arch. f. Gyn.," xxxii, 3) Lantos arrives at the following conclusions:

1. Albuminuria occurs more frequently in parturient than in pregnant women, which may be explained by the fact that during labor the uterus is subject to great contraction and tension, whereby the nerves in the uterine wall are subjected to greater irritation than usual.

2. This occurs more frequently in those who are pregnant and parturient for the first time, for, while the uterine wall itself is able to offer greater opposition to tension, this opposition acts as a nerve impulse.

3. In twin labors and labors at term, therefore, albuminuria is more common, because the increased volume of the contents of the uterus is the cause of greater tension.

4. Protracted labors cause protracted irritation, and favor the existence of albuminuria.

5. The artificial termination of labor can only be regarded as a means of nerve irritation which increases the already heightened reflex excitability of the vaso-motor nerves of the uterus and kidneys. The percentage of cases of albuminuria among those with whom labor has thus been terminated is much larger than with others.

6. Albuminuria occurs most frequently among primiparæ between fifteen and twenty years old, apparently as an expression of the heightened susceptibility to irritation of this period of life. Though the largest number of sufferers from albuminuria are found in multiparæ between the ages of thirty and thirty-five, it is due to the fact that, relatively, the largest number of women bear children during that period.

7. The quick disappearance of albumin from the urine is explained by the subsidence of nerve irritation.

8. The well-settled fact that in the ordinary albuminuria of pregnancy albumin is not constantly demonstrable can not be explained by the mechanical theory. According to that theory, the constant and increasing pressure of the uterus upon the veins as pregnancy advances should have the effect not only of causing albumin to disappear at times, but altogether. On the other hand, these cases are easily accounted for if we assume that the nerve irritation disappears either on account of changes in the position of the fœtus or on account of habituation to the irritant.

It is therefore possible to believe that in cases in which there are no tissue changes in the kidneys, albuminuria of pregnancy and labor may be regarded as of no pathological significance, being a very common symptom arising from reflex irritation of the vaso-motor nerves of the kidneys, excited by irritation of the nerves in the uterine wall. As a dignostic sign of pregnancy this condition may be considered as of some importance.

We have only to look back a century to realize the hold tradition had upon our fathers, and the great advances in our knowledge of to-day. In the article quoted it is plainly taught that the albuminuria of pregnancy may not denote any pathological change, and may even be useful in determining a diagnosis of pregnancy. What would the obstetrician of half a century ago, who saw with the appearance of albumin in the urine of his patient unhappy visions of eclampsia and its frequently unhappy consequences, say to this? It is not long since Roberts remarked that a small quantity of albumin in the urine seemed to have no special significance with some men ("Urinary and Renal Diseases," 1885, page 196), Gull suggesting that the condition is due to atony of the vessels and nerves, and Bamberger that it is due to vaso-motor change in the kidney which may cause slowing of the circulation in the glomeruli. Such a cause is also suggested by Lantos in the article under consideration, other writers being also adduced to establish the neurotic origin—or, perhaps better, a neurotic origin—of the albuminuria of pregnancy. Among recent systematic writers upon obstetrics, Lusk recognizes this possibility, and we do not see that Lantos has made any particular advances upon the opinions which prevailed concerning the ætiology of this condition when Lusk's work first appeared. In removing it from the list of those symptoms which excite alarm, however, he has certainly taken more advanced ground than Rayer and Simpson, who were principally instrumental in introducing the subject, and it is certainly a great advance to remove an alarm-causing symptom to the position of a useful element in the formation of a diagnosis.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 18, 1888:

| DISEASES. | Week ending Sept. 11. | | Week ending Sept. 18. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 73 | 15 | 53 | 15 |
| Scarlet fever | 60 | 23 | 68 | 16 |
| Cerebro-spinal meningitis | 2 | 2 | 0 | 0 |
| Measles | 68 | 6 | 83 | 8 |
| Diphtheria | 52 | 13 | 54 | 17 |
| Yellow fever | 0 | 0 | 1 | 1 |

**The American Gynæcological Society.**—At the thirteenth annual meeting, held in Washington, on the 18th, 19th, and 20th inst., the vote of last year with reference to the entrance of the society into the Congress of American Physicians and Surgeons was reconsidered, and on motion it was unanimously decided that the society should enter the congress. On motion of Dr. Busey, Dr. Fordyce Barker was appointed a member of the executive committee of the congress from the society. The following officers were elected for the ensuing year: President, Dr. H. P. C. Wilson, of Baltimore; vice-presidents, Dr. W. T. Lusk, of New York, and Dr. E. W. Jenks, of Detroit; secretary, Dr. J. Taber Johnson, of Washington; treasurer, Dr.

Matthew D. Mann, of Buffalo; members of the council, Dr. E. Van De Warker, of Syracuse, Dr. J. E. Janvrin, of New York, and Dr. G. J. Engelmann, of St. Louis. It was voted to hold the next meeting in Boston, beginning on the fourth Tuesday of September, 1889.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from August 26 to September 15, 1888:*

A board of medical officers to consist of ALDEN, CHARLES H., Major and Surgeon, STERNBERG, GEORGE M., Major and Surgeon, MCELDERRY, HENRY, Major and Surgeon, and CARTER, EDWARD C., Captain and Assistant Surgeon, is constituted to meet in New York city on October 1, 1888, or as soon thereafter as practicable, for the examination of assistant surgeons for promotion and of candidates for admission to the medical corps of the army. S. O. 203, A. G. O., September 1, 1888.

BROWN, P. R., Captain and Assistant Surgeon. Ordered from Fort Niagara, N. Y., to Fort Sidney, Neb. S. O. 206, A. G. O., September 5, 1888.

PAGE, CHARLES, Colonel and Assistant Surgeon-General, Medical Director of the Department, will proceed to Forts Riley and Hays, Kansas, post near Denver, and Forts Crawford, Lewis, and Lyon, Colorado, and return, on public business. The travel enjoined is necessary for the public service. S. O. 114, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, September 7, 1888.

NORRIS, BASIL, Lieutenant-Colonel and Medical Director, will proceed to Fort Klamath, inspect the medical department at that post, and upon completion thereof return to these headquarters. S. O. 103, Headquarters Department of the Columbia, Vancouver Barracks, Washington Territory, September 3, 1888.

CALDWELL, DANIEL G., Major and Surgeon, is granted two months' leave of absence from September 14, 1888. S. O. 210, A. G. O., September 10, 1888.

AINSWORTH, FREDERICK C., Captain and Assistant Surgeon, will, by direction of the Secretary of War, proceed to Kennebec Arsenal, Augusta, Me., on public business connected with the Medical Department of the Army; on completion thereof will return to his station in this city. S. O. 211, A. G. O., Washington, D. C., September 11, 1888.

BANISTER, JOHN M., Captain and Assistant Surgeon, is granted two months' leave of absence, with permission to apply for an extension of one month, to take effect when his services can be spared. S. O. 211, A. G. O., September 10, 1888.

By direction of the acting Secretary of War, Captain NORTON STRONG, Assistant Surgeon, will report in person at eleven o'clock, A. M., October 18, 1888, to Brigadier-General John R. Brooke, president of the retiring board in session at Omaha, Neb., to give testimony in a case pending before the board. Upon completion of this duty he will return to his proper station. Par. 9, S. O. 212, A. G. O., September 12, 1888.

JARVIS, NATHAN S., First Lieutenant and Assistant Surgeon, is granted one month's extension of leave of absence, on surgeon's certificate of disability. S. O. 210, A. G. O., September 10, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending September 15, 1888:*

CRANDALL, R. P., Assistant Surgeon. Detached from the Saratoga and to await orders.

DUBOSE, W. R., Passed Assistant Surgeon. Detached from the Jamestown and ordered to the Constellation.

ARNOLD, W. F., Nashville, Tenn. Commissioned Assistant Surgeon in the navy. August 18th.

LUNG, GEORGE A., Canandaigua, N. Y. Commissioned Assistant Surgeon in the navy. August 18th.

LUNG, GEORGE A., Assistant Surgeon. Ordered to the Receiving-ship Vermont, Navy-yard, New York.

**Society Meetings for the Coming Week:**

MONDAY, *September 24th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore, Md., Medical Association.

TUESDAY, *September 25th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society (private); Medical Society of the County of Lewis (quarterly), N. Y.; Boston Society of Medical Sciences (private).

WEDNESDAY, *September 26th:* New York Pathological Society; Auburn, N. Y., Medical Association; Medical Society of the County of Albany, N. Y.; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

THURSDAY, *September 27th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland); Pathological Society of Philadelphia (conversational); New London, Conn., County Medical Society (extra—New London).

FRIDAY, *September 28th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

## Letters to the Editor.

### THE USE OF THE DRAINAGE-TUBE AFTER OVARIOTOMY.

NEW YORK, *September 14, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: In your issue for July 14th is an excellent article on "The Use of the Drainage-tube after Ovariotomy." The writer's views are so sound that they commend themselves to every worker in abdominal surgery. In referring to some of my propositions concerning the method to be employed for the purpose of holding forward the retroposed and adherent uterus after freeing it from its pathological attachments he does me scant justice in that he states but a small part of what I said.

It would appear from his article that I placed much stress upon the use of the drainage-tube as an adjunct in the process. At one time I did, but soon found out that it was unsuitable, and therefore in my first reports suggested other means as answering the purpose better. I beg to refer you to the "American Journal of Obstetrics and Diseases of Women and Children" for June, 1887, p. 633: "A word now, Mr. President, in reference to the best means of keeping the uterus up. In two cases I used a simple drainage-tube, carried from the external wound down into Douglas's *cul-de-sac*, the usual position; both cases resulted satisfactorily. In two I supplemented the operation by that of Alexander—one at the same sitting as the laparotomy,

the other two weeks later; both did very well, and I think the position of the uterus and appendages was more satisfactory, in that all were lifted higher in the pelvis. I confess, though, that attachment of the fundus uteri to the lower angle of the abdominal wound (hysterorrhaphy) would seem to be the more rational, because the more simple road to the accomplishment of the object. I have used a pessary, but found it objectionable because of the pain it caused. I can imagine that cotton tampons in the vagina would answer, but the additional risk of attaching the fundus uteri is so slight and the procedure (since the abdominal cavity is already open) so direct that I should commend it as the appropriate measure for the completion of our object. Were Alexander's operation as simple, I should commend it in preference, as it is more lasting in its result. But I believe a six-months' retention of the organ in the upper part of the pelvis will insure to it a permanent retention of normal position."

And to the "Transactions of the American Gynecological Society," volume xii, pages 133, 134:

"In two instances I have sought to accomplish the end in view by the drainage-tube alone, but the ultimate result in both has been less satisfactory than when Alexander's operation has been substituted. As yet I have not used hysterorrhaphy or Mr. Imlach's method, my familiarity with Alexander's making it the easiest one for me. Reverting to the use of the drainage-tube as a means of displacing and holding the uterus and appendages forward, I found that it answered the immediate purpose very well, especially when its outer end was brought well down toward the symphysis, and precaution taken to so attach it as to prevent its displacement by the retching and other movements of the patient; but the uterus in such cases was left quite low in the pelvis, making it necessary (when the proper time had elapsed after the operation) to raise it by packing the vagina."

In the first article, under Case No. II, I point out the fact that the drainage-tube slipped from its place in the *cul-de-sac*, the end resting on the fundus, due, as I suppose, to the movements of the patient in the act of vomiting, or even from moving in bed.

The reason for my refusal to commit myself exclusively to any one of these secondary procedures (I call laparotomy and the disruption of all the adhesions affecting the uterus and appendages the primary procedure) lies in the fact that I suspected conditions might be present in some cases which would prevent one and yet admit of another. This has been confirmed by my experience with cases in which the pelvis is so deep as to make it impossible to bring the fundus of the uterus sufficiently near the anterior abdominal wall to permit of hysterorrhaphy, forcing upon me Alexander's method.

Respectfully, W. M. Polk.

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## THE ANTISEPTIC LOCK FOR SCISSORS AND FORCEPS.

Brooklyn, *September 15, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: I have just noticed in your issue for August 25th that Dr. William H. Wathen describes "A New Uterine Dilator," made by Messrs. Tiemann & Co. To it "has been added a principle that makes it as perfectly aseptic as it is possible to have any surgical instrument. The blades are held together by a modified French lock that admits of the instrument being separated into the different parts in a few seconds, so as to be easily cleaned and made aseptic." If Dr. Wathen will turn to the "New York Medical Journal" for March 24th, page 532, he will find therein described, under the title of "A New Antiseptic Lock for Scissors and Forceps," a lock which I had made by Messrs. Tiemann & Co. and which is identical with the one he makes use of, without taking the trouble to acknowledge its authorship. Yours truly, Charles N. Dixon Jones.

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# Proceedings of Societies.

## CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

*First Triennial Meeting, held in Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, Dr. John S. Billings, of the Army, in the Chair.

A preliminary meeting was held, at one o'clock, in Grand Army Hall, on Tuesday, to receive the report of the Executive Committee and for organization. About two hundred members were present. The meeting was called to order by Dr. William Pepper, of Philadelphia, chairman of the Executive Committee, who read his report, setting forth the *raison d'être* of the congress. The president of the congress, Dr. John S. Billings, of the Army, was then introduced. In taking the chair, Dr. Billings briefly thanked the congress in behalf of the Medical Departments of the Government, and of that of the Army in particular, for the honor of his selection as presiding officer.

The address of welcome was delivered by Dr. Samuel C. Busey, of Washington, who said:

Mr. President and Gentlemen: In behalf of the Committee of Arrangements and of the profession and citizens of this city I bid you welcome. The circumstance of the simultaneous assemblage here to-day of the special medical societies of this country will mark an epoch in the history of the American medical profession which must redound to its honor and renown. In the fact that it brings together at the same time and place those bodies of men which hold in their membership so many who have devoted their lives and energies to the study and development of special branches of medical science, and who have won by their work pre-eminence as skilled physicians and surgeons, in an organization that offers the unusual opportunity by systematic arrangement, for the consideration by specialists equally distinguished in different branches, of subjects as yet unsettled but of general medical interest, it is, perhaps, the most remarkable concourse of medical men that has ever assembled in this country. While it sets forth conspicuously this distinctive feature, it in no manner interferes with the autonomy of the constituent societies, each of which pursues its chosen method according to its own plan of organization. It utters no word in derogation of organized effort through allied associations; nor does it directly or by implication seek to control, direct, or influence the business aspects of the profession, but devotes thought and act solely and exclusively to the advancement of the science of medicine. With such a purpose in view no apology is needed for your presence here.

The gratification it gives me to welcome you is enhanced by the presence of the distinguished men from other countries, who have come to honor and encourage us, and to make "assurance doubly sure" that the promise to contribute something to the common fund of knowledge will be fulfilled. I welcome you also as a citizen of the city located by Washington and planned by L'Enfant, under his supervision, which has grown during the first century of its existence into a city surpassing in beauty and rivaling in attractiveness the more favored and older cities of both the Old and the New World; a city representing in its population sixty millions of free people inhabiting a domain stretching across a continent from ocean to ocean, and

from the frigid North, where the summer solstice finds the earth buried in snow and ice, to the evergreen and tropical South; a city holding together in one compact community a cosmopolitan population, where education and culture need neither the blazonry of titular insignia, the heraldry of ancestral distinction, nor the glamour of wealth to command position and influence; where the lady and the gentleman can always find congenial and cultivated companionship free from the conventional and exclusive formalities which disrupt society into graded coteries of self-constituted notables; where you will not be surprised to find a place of residence that has attracted the cultivated and leisure classes from every State and city in the Union. I welcome you also as a citizen of a city richly endowed by a munificent Government with scientific foundations, not as yet complete in any department, but steadily progressing toward that standard of excellence and usefulness which will in the near future make the political home of the nation the center of its science, literature, and art.

I need hardly tell you, gentlemen, how much this Government has done for our profession. You know of the Medical Library, unequaled in volumes and value, and the Medical Museum, with its anatomical and biological laboratories, unsurpassed by any similar collection in the world, both now located in a building constructed for the purpose, and so arranged as to exhibit their extent to casual inspection and to enhance their value for appropriate and available purposes. In connection with this magnificent library the publication of the "Index Catalogue," which enables the investigator to study any medical subject from its beginning down to the latest publication, and of which it is not too much to say that it will contribute more toward the higher education of the profession than any single act of any nation on the face of the globe. And all this has been accomplished in the life-time of one man, who still lives to prosecute his labors with that diligence, fidelity, and pertinacity which marks the unselfish and conscientious enthusiast.

Then, too, the Government has established, in connection with the Bureau of Naval Medicine and Surgery, a Museum of Hygiene, which offers to every citizen the opportunity to examine and study the relative advantages and utility of every device and appliance for the improvement and perfection of the hygiene of the dwelling. Under the fostering care of a liberal Government and the conscientious discipline of the Naval Bureau of Medicine this establishment has already become an important adjunct to preventive medicine, and will, without doubt, continue to grow in usefulness both to the Government and to the country at large.

The National Quarantine and Marine-Hospital Service is another establishment which allies the Government with the medical profession and brings it close to the people of the country in its beneficent purpose to provide for the sick and disabled sailors of the merchant and revenue marine, and to prevent the introduction and spread of contagious diseases into the country through its maritime ports.

It may be that the Government required these establishments to fulfill its delegated functions, and that it is compelled to secure the services of skilled medical men to superintend their proper administration; nevertheless, even admitting this necessity to be the primary cause for their creation, it in no manner impairs their value to the profession, and their foundation imposes upon us the duty to utilize them for the common good, and invites us to aid in developing and widening the scope of these endowments to the end that we and the people may realize the full measure of their usefulness.

The bureaus of military and naval surgery are also located here. It is true they are corps constituting an important and essential part of the complete equipment of the military establishment of the nation. They are, nevertheless, the instrumentalities through which the Government has been enabled to call into its service medical men of the highest order of professional attainments, and to accomplish so much in promoting the advancement of scientific medicine.

The Government has been equally generous toward other departments of science. If the time and occasion permitted, it would give me great pleasure to lay before you in detail the work being done in the scientific bureaus established and supported by the General Government in this city, and also to refer to the eleemosynary and educational institutions founded and exclusively supported by the Government, as well as to others to which it contributes annually a liberal though partial support. I must, however, be content with the bare statement of the fact that you can carry home with you the conviction which I wish to impress upon you in behalf of our city that, by virtue of the foundations and endowments of the Government, it has become a scientific and educational center equal to any and surpassing most of the older, richer, and more populous cities of the country. In this connection I can not omit reference to her admirable system of common schools and her universities—that of Georgetown, with its department of humanities, philosophy and science, and of law and medicine; the Columbian, with its preparatory scientific, law, and medical departments; the National, limited as yet to law, medicine, and dentistry; the Howard, specially devoted to the education of the colored citizens, with departments of literature, law, medicine, dentistry, and theology; and, finally, the new Catholic, now in course of organization and construction. To all this let me add the Smithsonian Institution, with its annexes of the National Museum and the Fish Commission; the Department of Education; the National Academy of Sciences, which by law is required to hold its annual sessions in this city; and the voluntary scientific organizations, known as the Philosophical, Biological, and Anthropological Societies, which bring together at stated periods the men of learning and science residing here either officially or for convenience or comfort—and you will realize something of the scope and importance of the scientific and educational work now carried on in this city, as well as the prominent position already achieved by science, and the justification for our faith in the greatness of its future. And now, having briefly suggested our present and prospective claims to a prominent place as a scientific center, will you not join with me in the hope that this, the cosmopolitan city of the nation, the heart of its political life, may also speedily become its scientific and educational Mecca as well?

There is yet another relation which the Government holds to its capital, the wisdom of which one can not fully appreciate without a residence long enough to observe its practical bearing. By a provision of the Constitution the territorial area is held under the exclusive jurisdiction of Congress. The Government holds in fee simple the title to all the public highways, the public buildings, and the numerous parks; makes all laws, appoints all officers, levies, collects, and disburses all taxes; and contributes an equal amount to the support of the municipality. To her the citizens are indebted for these beautiful streets, these avenues of shade-trees, the flowing fountains, and decorated parks which adorn the landscape at every turn with foliage, flowers, and sward, and contribute so much to the healthfulness of the city. This is the capital of a great, growing, and prosperous nation, beautiful in design, and susceptible of greater and more magnificent embellishment. Every citizen of the country should share in the wish for its substantial improvement and adornment, that it may become commensurate with its importance and capabilities. The time is not very remote

when the fostering care of a generous Government and the energy of its resident population will make it the most desirable city for residence in this great and populous country; when its suburban elevations will be covered with winter residences and summer villas, rivaling in beauty and grandeur the taste and display along the cliff at Newport.

I need not tell you that Washington is a healthy city, but I will send a message through each of you to the people at your homes, that you may tell them how much their Government is doing to improve the healthfulness of this city. In time past we have read the graphic descriptions of the dreadful malaria that was so dense it could be sliced into blocks, followed people in fierce pursuit at every turn during the day, howled under the eaves at night, stole through the stomach, and sneaked under the nether garments. But, thanks to the Government, the river marshes are being reclaimed, and in the near future the river front of our city will be covered by a magnificent park, washed along its entire shore by the swift current of a river of drinking water. You may tell them too, if you please, that the malaria of the correspondent and casual visitor covers some one or more of a great variety of excesses which prudent people should not commit. Take home with you this message from one who has lived forty years in sight of, and breathed the air coming with every southern wind over, the Potomac flats, and has never yet had the fever and ague.

**The Executive Committee** further reported the following by-laws, which were unanimously adopted:

1. This organization shall be known as the Congress of American Physicians and Surgeons.

2. It shall be composed of national associations for the promotion of medical and allied sciences.

3. It shall hold its sessions triennially in the city of Washington, D. C.

4. The officers of the congress shall be a president, a vice-president, a secretary, a treasurer, and an executive committee.

5. The president shall be elected by the Executive Committee, of which he shall be *ex officio* a member.

6. The presidents of the participating societies shall be *ex officio* the vice-presidents of the congress.

7. The secretary and treasurer shall be elected by the Executive Committee, and they shall be *ex-officio* members of the Executive Committee.

8. The Executive Committee shall be composed of one member from each participating society, and said members shall be elected by the various societies at the next annual meetings subsequent to the congress. It shall be charged with all duties pertaining to the organization of and preparation for the ensuing congress, including the election of all officers and of a Committee of Arrangements. It shall superintend the publication of the transactions of the congress.

9. The expenses of the congress shall be divided between the participating societies in proportion to their membership.

10. The admission of new societies to participation in the congress shall be by unanimous vote of the Executive Committee.

The meeting then adjourned until 8 P. M.

**Intestinal Obstruction in its Medical and Surgical Relations.**—Dr. R. H. Fitz, of Boston, read a paper in which he discussed the diagnosis and treatment especially of acute obstruction. He divided obstructions into mechanical and functional, the former comprising all cases where actual compression brought the walls of the gut into contact, the latter embracing cases of perverted or suspended action in the gut itself, such as spasm, peritonitis, perityphlitis. The danger of error in such cases was referred to, and the risk of killing the patient by drastic remedies, which were of all things contra-indicated. He made a full analysis of the varieties of causes of acute mechanical obstruction. He also referred to its relative frequency in both sexes and at various ages. There were four questions which principally arose for decision by the medical attendant: Was the obstruction acute? Where was it situated? Of what sort? What should be the treatment? The answers depended upon the symptoms. He described different measures of relief, especially by the injection of water or air; massage, the use of the rectal sound, the hand passed into the rectum, each had its limitations and dangers. He admitted that their value was the greatest if used early in the first two days. He believed that the first duty of the physician was to attempt relief by all procedures not surgical in the first two days. In intussusception a longer time was admissible. Here he would try opium, waiting, and massage. When failure was evident, a surgeon should be called. Obstruction by gall-stones or fæces demanded the same treatment, plus washing out stomach.

Dr. Nicholas Senn, of Milwaukee, read a paper strongly advocating a strictly surgical treatment from the first. He believed that all cases belonged to surgery. Functional forms of obstruction were not distinguishable certainly from the mechanical. The mortality until a recent date had been great from both surgical and medical treatment; sixty per cent. died. An improvement in treatment was badly needed. Delay of all things was to be deplored, since the delicate structures involved rapidly altered to a condition where the most skillful surgeon was helpless; fifteen minutes were long enough for efforts at relief and reduction or for the establishment of a diagnosis justifying delay; after that, antiseptic laparotomy presented the safest procedure. In chronic obstruction, waiting was quite different. The preliminary treatment should invariably be irrigation of the stomach with water charged with a non-irritant antiseptic, the removal of pressure, and peristalsis in the gut above the obstruction; the removal of the stomach and part of the gut contents; the prevention of subsequent gas formation; the averting of danger from vomited matter entering the larynx. He placed no trust in the distension of the colon by fluid as a means of treatment and for diagnosis, as only the lower bowel was thus affected, for the ileo-cæcal valve was impervious to liquids. Why, asked he, employ a fluid? He deplored the force necessarily used in overcoming friction and the weight of water, especially if attempts were made to force it through the ileo-cæcal valve. He used the light compressible antiseptic hydrogen gas, which, under one quarter to two pounds pressure, passed the valve, while eight to twelve pounds were needed to injure anything, even if forced from the anus to the mouth; if it escaped by a perforation into the peritonæum it did no harm. The perforation was proved by the escape of gas. Tympanites produced by escaped hydrogen appeared where it collected above the liver. Slowness and gentleness of injection was important. Each one of many perforations was thus successively revealed until all were found. When the valve was passed a gurgle was heard, and the full pressure in the gas reservoir told height to which the gas had gone. The site of the obstruction was thus discovered and easily followed up. Tubage of the rectum was uncertain and limited to the lower bowel. Manual exploration of the rectum was useful for obstructions in the pelvis, as volvulus, bands, tumors pressing upon the viscera, carcinoma of the gut, and intussusceptions. A small hand was essential. Taxis and massage were good only in intramural occlusions and some invaginations. Uniform pressure over the whole abdomen was useful to secure rest and prevent hyperdistension. Enterostomy and formation of an artificial anus should become obsolete, as being only an imperfect means of relief, not securing diagnosis, leaving the necessity for another operation, and establishing a mis-

erable condition for life. Only the inability of the patient to survive a radical operation or other absolute necessity should justify its employment. In less urgent cases, as cicatricial contraction or to prolonge life in carcinoma, enterostomy was equally safe and easy. The edges of the wound approximated by decalcified bone-plates secured rest to the parts united, and union was better during congestion than if congestion was absent. It was equally useful in gastro-enterostomy when the pylorus was occluded.

Dr. WILLIAM PEPPER deferred his paper to enable foreign guests to speak.

Mr. WILLIAM DURHAM, of Guy's Hospital, London, agreed with Dr. Fitz as to the symptoms and diagnosis, and with Dr. Senn as to the need of early surgical aid. The earlier the better, and as soon as a diagnosis could be made. Diagnosis was often difficult or impossible; statistical probabilities were unreliable, so sometimes operation done without diagnosis and in order to make a study of the actual indications and conditions in each case was better than rules. The speaker had learned much from Dr. Senn about treatment. Why was hydrogen better than air? To determine the site of obstruction, if in the small intestine he believed in opening the abdomen; if in the large intestine, less hurry was demanded. He here took issue with Dr. Senn regarding lumbar colotomy, which he considered exceedingly useful, and he had often regretted not employing it for its great, safe, and certain relief, especially in cancer of the colon or rectum. He believed it as safe as the wonderful bone-plates of Dr. Senn, and he had often obtained complete recovery.

Dr. ORD, of St. Thomas's Hospital, London, admitted that the question was not best decided by physicians, and that the physician was only useful early, and not at all after it had been decided whether physiological or mechanical obstruction was present. In blind cases, with few symptoms and signs absent, he admitted that he was a coward and inclined to procrastinate. Many patients recovered unoperated on after a period of threatening symptoms. He dreaded operations, as he had seen bad results follow operations under the best conditions and highest skill.

Mr. ANNANDALE, of Edinburgh, thought it important to distinguish between acute and chronic obstructions. After forty-eight hours of general treatment failed he called a surgeon, who made an artificial anus. He believed inguinal colotomy easy and preferred it.

Dr. SENN, replying, believed that our English cousins were chiefly conservative and tenacious of old ideas. His method had stood the test of a hundred cases, union being found perfect at the autopsy in a few cases where recovery had not taken place because the operation had been done too late. He thought that colotomy was certain to become obsolete.

(*To be concluded.*)

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## AMERICAN RHINOLOGICAL ASSOCIATION.

*Sixth Annual Meeting, held at Cincinnati, September 12, 13, and 14, 1888.*

THE association met at the Gibson House, and was called to order by the president, Dr. C. H. VON KLEIN, of Dayton, Ohio, at 10.15 A.M.

Dr. A. B. THRASHER, of Cincinnati, chairman of the Committee of Arrangements, delivered an extemporaneous address of welcome, in which he expressed very great pleasure in giving the members of the association a hearty welcome on behalf of not only the Committee of Arrangements, but the entire medical profession of the city.

President VON KLEIN delivered his address, which was devoted principally to the progress of rhinology and the distinction it had attained as a specialty during the last few years.

**Chorea of the Soft Palate caused by Hypertrophy and Hyperæsthesia of the Mucous Membrane covering both Inferior Turbinated Bodies.**—Dr. J. E. SCHADLE, of St. Paul, read a paper on this subject. That the origin of not a few reflex nervous disorders could, with a certain degree of exactness, be traced to the presence of morbid conditions of the naso-pharyngeal cavities was, he said, no longer doubted. Some forms of headache and of spasmodic asthma were in many instances the outgrowth of a nasal polypus, a turbinated thickening, or a septal deformity. These reflex neurotic disturbances disappeared soon after appropriate measures of treatment had been directed toward the removal of their cause. A case was related that had first come under the observation of Dr. Baker, of St. Paul. The only thing complained of was a constant contraction and relaxation of the levatores palati. Each contraction carried the uvula upward and backward till it came in contact momentarily with the upper and back part of the pharynx. The relaxation and separation of the moist mucous-membrane surfaces caused a sound like that produced by a rapidly ticking watch, and of the same frequency. The young lady was in excellent health, all the bodily functions being well performed. Dr. Baker's treatment had been, at first, the use of increasing doses of bromide of zinc. This not producing the desired result, he had given tincture of physostigma in doses ranging from fifteen to thirty drops. After continuing this for a time, he had abandoned it and prescribed fluid extract of *Cimicifuga racemosa*, in doses of from half a teaspoonful to a teaspoonful every four hours. On July 7, 1887, the use of galvanism was begun. Eight cells of the McIntosh battery were used, the positive pole with a sponge electrode being placed at the back of the neck; the negative pole with a metal-tipped electrode was applied to the palate just above the uvula. The sittings were of from five to ten minutes' duration, and the number of cells used was increased to eleven. Examination showed enlarged tonsils with evidence of throat and nose disease. The patient was examined by Dr. Schadle on the 16th of April, 1888. She suffered from constipation and flatulence quite frequently. The heart's action was more or less excited, the organ beating tumultuously when she ascended a flight of stairs or any elevation. She complained in a marked degree of obstructed nose breathing. Her voice was impaired, especially when she attempted to produce head-tones, as in singing. The principal affection complained of, and the one for which she had been referred to him, was the spasmodic movement of the velum palati. A faucial examination revealed distinct rhythmical choreiform movements of the velum palati, accompanied by a peculiar clicking sound, distinctly audible for a distance of twelve or fifteen feet from the patient. Anterior rhinoscopic examination revealed chronic hypertrophy of the inferior turbinated bones, and, in a more marked degree, of the middle one, the presence of whose redundant tissue exerted pressure on the septum and produced obstruction of the middle meatus. The treatment was mainly surgical. The first impression entertained was that possibly the enlarged pharyngeal tonsil might have been a source of the trouble and that a thorough removal of it would do away with a foreign element constantly coming in contact with the opposing surface of the velum palati, thus exciting clonic spasms. Snaring was impracticable. By the use of Cohen's post-nasal cutting forceps and the electro-cautery, he reduced the growth in its entirety, a procedure that was followed by cessation of the choreiform movements, which remained absent for a period of two weeks, when they suddenly returned during a spell of nervous excitement from which the young lady was suffering. Attention was next directed to

treatment of the nasal passages. The pathological changes found in them offered a theory for a reflex cause of the affection. Cocainizing the intranasal mucous membrane generally produced relief for half an hour. With a view to reducing the hyperæsthesia and hypertrophy of the turbinated bodies, he employed the electro-cautery, thoroughly burning the affected parts. The trouble at once ceased. Nose-breathing displaced mouth-breathing, and the dry sensation and sticky secretions of the pharynx gradually disappeared. The functional disturbances of the heart and shortness of breath passed off, while the general nervous system gained tone. The patient could now speak and sing with a clearer voice, and the head-tones were improving daily. Beyond a doubt a cure had been produced, the permanency of which had already been severely tested.

Dr. John North, of Keokuk, said that the case had been in the hands of excellent physicians previously, who had overlooked the nasal trouble, and it was especially interesting to rhinologists to learn that the cause of the trouble was found to be in the nose, and that by applying treatment to the nasal passages relief had been obtained.

Dr. J. G. Carpenter, of Stanford, Ky., was convinced that the subject of rhinology was ignored more or less by general practitioners. When a patient presented himself to him with a bronchitis, laryngitis, or asthma, he invariably examined the naso-pharyngeal chambers, and usually found the starting-point there in many affections, and by treating the nasal chambers other troubles were made to subside.

A paper entitled "A Short Criticism of the Prevalent Methods of treating Diseases of the Upper Air-passages," by Dr. R. W. Wilcox, of New York, was read by title.

**The Ætiology and Pathology of Nasal Diseases** was the title of a paper by Dr. T. F. Rumbold, of St. Louis. The author remarked that the ætiology of a disease was of the greatest import. A perfect understanding of its causes and its mechanism was the goal of the pathologist. To be enabled to define with some degree of clearness the various changes that took place, from the first cold in the infant through the various stages of chronic rhinitis, not merely giving the symptoms or a cursory description of its morbid anatomy, but studying its causes and the course that the injurious impressions took to reach the ultimate region where we saw the manifestations of abnormal action, was to do much toward directing its hygienic and therapeutic management. Speaking of hereditary predispositions, he would ask the question, Had heredity anything to do in causing rhinitis? The negation to this question was given in the description of a primary cell and the mechanism of rhinal inflammation. He had long been convinced that heredity as a cause of disease was an erroneous theory. It was a daily occurrence for a patient to express fear concerning the condition of his lungs because of having had a relative die of lung trouble, fearing that the disease might have been inherited. About the first thing many physicians asked such an individual was, "Have you had a relative die of consumption?" On receiving an affirmative answer, a significant nod of the physician's head was all that was wanted to make the poor frightened fellow think of death. All that was required to shorten the life of a person thus afflicted was to thoroughly frighten him and then maintain his mind in this condition; his appetite and sleep would soon be seriously disturbed, which would surely diminish his weight and strength. The histological facts concerning cell life would prove a successful contravention of the theory of heredity.

**The Influence of Morbid States or Conditions of the Body on Local Diseases** was the title of a paper by Dr. H. Christopher, of St. Joseph, Mo. There were several predisposing causes and conditions of a constitutional character which were intimately connected with local diseases, and were to be considered in their treatment. The principal of these were: 1. Diatheses, or constitutional tendencies, with local malignant manifestations or points of eruption. 2. Constitutional tendencies attended or not by local morbid action of a non-malignant character, such as the strumous habit or the rheumatic diathesis. 3. Constitutional disturbances affecting the functions of certain organs, which in turn gave rise to morbid action in others. 4. Abnormal action or deranged function of certain organs, giving rise to morbid action in other organs uniformly or contingently, as in metastases, or functional disorder of the heart from functional derangement of the digestive organs. 5. Purely local morbid action, as in local inflammations and non-malignant tumors and some diseases of the skin. All these states of the body, except the first and last, were not infrequently found to exist with local inflammation of the nasal pharyngeal and aural cavities, and to influence and determine in no small degree their management.

**The Relation of Nasal Diseases to other Diseases, including those of the Brain and Nervous System.**—Dr. John North read a paper on this subject, in which he began by saying that there was no organ in the entire body that had been so neglected as the nose. Obscure and obstinate diseases had not yielded to treatment, because it had been directed to the effect of nasal reflex troubles and not to the nose, the cause of the trouble. In 1886 he had attempted to show that neurasthenia was frequently the result of chronic naso-pharyngeal catarrh, and in support of the theory he reported several cases of neurasthenia that yielded to treatment applied to the naso-pharynx. In a paper read before the association at Washington, in 1887, he had maintained that catarrh, or rhinitis, as it was usually called, was not an inflammation, but a condition produced by a paresis of the ganglia of the sympathetic nervous system supplying the parts. Without doubt asthma was caused by vaso-motor paresis causing a dilatation of the vessels. It was a well-known fact that disease in one part or organ would cause derangement in another organ, even in remote portions of the body, through the agency of the sympathetic nervous system. Dr. Mackenzie, of Baltimore, Dr. Daly, of Pittsburgh, Dr. Roe, of Rochester, Dr. Seiler, of Philadelphia, Dr. Schadle, of St. Paul, Dr. Bosworth, of New York, and others in this country, besides a number of European rhino-laryngologists, had reported cases of asthma and hay fever dependent upon diseased conditions of the nasal cavities.

**The Effect of Nasal Inflammation on the Mind** was the title of a paper by Dr. Rumbold. The normal condition of the mind, he said, depended upon a normal supply of blood to the normal brain. An abnormal supply of blood, even to the healthy brain, would produce an abnormal condition of the mental faculties. He had noticed for many years that in every patient who had suffered an attack of cold in the nasal passages olfaction was almost completely obtunded, with the mental powers more or less lowered in their capacity. It followed that, if an acute inflammation in the nasal passages was accompanied by mental manifestations, mental incapacity of a more severe character must accompany a chronic rhinitis. Clinical observation had shown that this was the case.

**The Ætiology and Pathology of Acute Catarrh.**—Dr. J. G. Carpenter, of Stanford, Ky., read a paper on this subject. Among the most prominent causes he mentioned occupations attended with the production of much dust, smoke, excessive moisture, or a dry, dusty atmosphere, going about insufficiently clad, the evil results of the ordinary slippers, etc. Seal-skin sacques, while they were very beneficial in cold weather, were capable of doing great evil when worn imprudently. Pathologically, acute catarrh was divided into three stages: 1. The dry stage, attended with hyperæmia, redness, heat, tumefaction,

and pain of the mucous membrane, the latter presenting a red, dry, or dark-red appearance. 2. The moist stage, supplementing the first; there was transudation of serum, with diapedesis of the white corpuscles into the connective tissue, cell proliferation, and organization of lymph. The mucous follicles and glands were enlarged and distended and excessively active. 3. The purulent stage, in which there was denudation of the epithelium, giving rise to a raw surface, and the excessive mucous secretion was changed to a muco-purulent or purulent one.

**Intranasal Obstructions.**—Dr. R. S. Knode, of Fort Wayne, Indiana, read a paper thus entitled. He said that of all the mucous surfaces, that of the nose was, perhaps, the most sensitive to irritating gases, vapors, and dusts of different kinds, as well as sudden changes in the atmosphere, and it made but little difference what the condition of the atmosphere might be to the one exposed, whether loaded with dust, an odor offensive or fragrant, hot or cold, pure or irritating; the nose must receive it, filter and purify it, warm and moisten it, for the lungs. Intranasal obstructions might be temporary or permanent, partial or complete, according to the extent of the inflammation or injury that produced them. Temporary occlusion was usually the result of some one of the forms of acute rhinitis. Whatever the cause, with proper hygienic measures the membrane usually regained its natural condition in the course of a few weeks. This, however, was not always the case. Occasionally, from a very severe attack, or from the effects of repeated colds, we might find the membrane overwhelmed with plastic material, causing a loss of nerve power, a pale, flabby, wrinkled condition somewhat resembling polypus, but with more sensitiveness to the touch, the membrane completely filling up both cavities of the nose. In this condition he had found nothing act so promptly as to first use a one-per-cent. solution of cocaine, applied with a probe and cotton, and followed with mildly stimulating solutions of chromic acid, ten grains to the ounce, after which the vaseline treatment should be used. If stenosis returned, a second application of the acid might be made, or slippery-elm plugs, slightly moistened with a weak preparation of cocaine and listerine, might be used.

**A Case of Enlarged Tonsils with Peculiar Symptoms relieved by the Galvano-cautery Snare** was reported by Dr. E. G. Kegley, of Cedar Rapids, Iowa. A man, forty-three years old, consulted him in January, 1888, with regard to a trouble which he termed drooling. The patient presented the appearance of one suffering from hay fever. His eyes were red and swollen, with excessive lacrymation, constant flowing and wiping of the nose, with the addition of a constant spitting of a clear fluid. On examination, he found the nasal mucous membrane highly congested and completely closing the nasal passages. The patient's mouth was constantly filled with saliva, and the tonsils were enormously enlarged, filling the back part of the mouth and throat completely. These spells were very common, and lasted from a week to two weeks. During the attacks he had no appetite, and could not sleep, because of a choking sensation and of the water in his mouth. He had consulted many physicians, but had derived no benefit from their treatment. Dr. Kegley watched the patient through this attack, and told him to report himself when another made its appearance. In the mean time he saw him between the attacks and found the membranes of the nose normal, but the tonsils were very much hypertrophied. He therefore urged the patient to have the tonsils removed. He saw him again in about a month in another attack, but could do nothing for him. He then lost sight of him for a year, when he returned to him and said he was ready to submit to anything. He was now suffering from a very severe attack. Dr. Kegley proceeded to cocainize the tonsils, and removed them both at one sitting by means of the galvano-cautery snare. He saw the patient the next day, and he said the trouble had ceased almost simultaneously with the removal of the tonsils. The patient had had no further trouble.

**The Surgery of Gummatous Growths of the Nasal Cavities.**—Dr. A. G. Hobbs, of Atlanta, Ga., presented a paper on this subject, and reported four cases. In the first case the patient had been brought to him to be treated for stenosis of the nasal passages. She was a young married woman, who had had syphilis for three years. The usual treatment had been adopted, and no syphilitic symptoms had shown themselves during the past year. An anterior examination revealed a purplish-red growth which filled the right nasal space completely, and pressed itself into the left cavity till the stenosis was almost, if not quite, complete. From the history of the case and the appearance of the growth its gummatous nature was suspected; hence it scarcely occurred to him at this time to attempt its removal by any surgical means for fear of producing a destructive ulceration. She was placed upon the use of increased doses of iodide of potassium, together with biniodide of mercury. This treatment was continued for four weeks without any marked benefit. Dr. Hobbs cocainized the nasal passages with a 5-per-cent. spray as thoroughly as possible, then attempted to introduce a Blake's snare, but found it impossible to engage the tumor in the loop. A cutting-spoon was introduced, and several large masses of the growth were cut away. The hæmorrhage was very little. When the flow had ceased she could breathe through the left nostril. Four more sittings, at intervals of three days, were necessary to remove the entire growth. The attachment was by a broad pedicle at the posterior part of the septum, which he seared with the galvano-cautery, when the last particles of the growth that could be seen had been extracted. The patient was furnished with a spray apparatus. No ulceration followed. Six months afterward there had been no recurrence, and the patient had regained her health completely. She was kept on the use of antisyphilitic treatment during the six months.

The second case was one of hypertrophic nasal catarrh. Jarvis's snare was used and the operation was the same as in the first case.

**The Surgical Treatment of Nasal Catarrh.**—Dr. A. B. Thrasher read a paper on this subject. He said there were forms of nasal catarrh that could only be benefited, and not cured, by medicinal treatment. When there were mechanical obstructions to the lumen of the naris of a hypertrophic, hyperplastic, or neoplastic character, surgery offered the most direct path to the removal of the difficulty. These were the cases of nasal catarrh which had passed from one doctor to another, the patients having used all the advertised remedies, so called, and having at last concluded that nasal catarrh was incurable. Since the cavity of the nose was open to inspection, directly and indirectly, it was rather curious that surgeons had been so slow to invade this region. They would cut with impunity into the abdominal cavity and remove or examine the contained viscera, or open the thorax and tie an artery, or evacuate an abscess, or even cut into the brain box to elevate a depressed bone or remove a tumor; and yet stand with folded hands and do nothing to check the symptoms caused by a neoplasm springing from the middle turbinate, or a hypertrophy at the pharyngeal vault. This was not so curious when physicians stopped to think that the removal of a growth from the posterior middle turbinated body required more manual dexterity and tactile skill than to open the abdomen, thorax, or even the cranium itself. When a simple enlargement of the turbinated body was encountered, which it was desirable to reduce or remove, what was the best method of procedure? There were cases in which the application of a chemical caustic answered the purpose admirably. Woakes's gouge or plow would do the work, and by

the aid of cocaine would do it rapidly and painlessly. In uncomplicated cases of chronic hypertrophic rhinitis the conditions to be met were: Obstructions to the lumen of the naris and an abnormal condition of the mucous glands. The causal indications would at once suggest a removal of the redundant tissue. The means employed should look to the accomplishment of this end with the least resulting scar surface, so that the natural condition of the epithelial covering might be simulated as nearly as possible. To reach this result he had met with the most marked success in the use of the galvano-cautery knife. He first anæsthetized the part with cocaine, then introduced the knife to the posterior part of the hypertrophy, turned the sharp edge toward the tissue to be cut, heated the knife white hot, and cut deeply, drawing the knife forward. The result was a deep linear scar in an antero-posterior direction through the hypertrophic tissue. He cut deep enough to destroy a portion of the submucous erectile tissue. When this cut healed the result was a linear scar, and by the natural contraction of the cicatricial tissue the surface became in time practically obliterated.

**Officers for 1889** were elected, as follows: President, Dr. John North, of Keokuk, Iowa; vice-presidents, Dr. A. G. Hobbs, of Atlanta, Ga., and Dr. A. B. Thrasher, of Cincinnati; secretary and treasurer, Dr. R. S. Knode, of Fort Wayne, Ind.; librarian, Dr. N. R. Gordon, of Springfield, Ill.; members of the council, Dr. Hiram Christopher, of St. Joseph, Mo., Dr. J. G. Carpenter, of Stanford, Ky., Dr. Thomas F. Rumbold, of St. Louis, and Dr. J. G. Sinclair.

It was voted to hold the next meeting in Chicago.

# Reports on the Progress of Medicine.

## DISEASES OF CHILDREN.

By ANDREW F. CURRIER, M. D.

**The Ætiology of Trismus or Tetanus in the Newly Born.**—Beumer ("Arch. di patol. inf.," July, 1888) has demonstrated the identity of this disease in infants with that which occurs in children and adults, and also that it is dependent upon the infectious power of the bacillus of tetanus. In the newly born, infection is especially prone to take place through the medium of the umbilical stump. An infant who died upon the eleventh day from birth furnished the author with material for bacteriological investigations, and enabled him to demonstrate that the umbilicus was the gate of entrance for the bacillus of tetanus. From these investigations it appeared that the bacillus was greatly diffused; it was found in the filth and dust of the streets, and in that which accumulates in the house. In smaller numbers and less constantly it is found in clean soil and in the deeper strata of earth in the streets. The umbilical wound may be infected by the bacillus in two ways—either by the hands of the midwife or attendant who ties the cord, or by the medicaments which are usually applied upon a small bit of oily rag. It is therefore evident that the prevention of tetanus must be associated with the most careful attention to the hygiene of the umbilicus; and the umbilical wound, like all other wounds, should receive all necessary antiseptic attention. The attendant must first be certain that his own hands are thoroughly clean and disinfected, and then he can wrap the stump in sterilized cotton-wool. This must be dressed every day after the infant has had his bath until the wound is cicatrized.

**The Operative Treatment of Cephalocele.**—Flothmann (*ibid.*) remarks that the prognosis in cephalocele in general is unfavorable, children who are thus afflicted usually not living more than a few weeks or months. Simple encephalocele differs from the other hernial tumors of the head—hydrencephalocele and meningocele—in the fact that the prognosis is favorable and the disease sometimes curable. The statistics of Schatz have shown that there were 60 per cent. of deaths from all operations on cranial tumors. The author believes that the unpublished cases would raise the percentage to between 70 and 80 per cent.; hence the propriety of publishing each successful case. The child in question was born January 6, 1885, and the tumor was so large at birth that the friends thought there were two heads. The tumor was of oblong form, attached by a pedicle one centimetre below the occipital protuberance, and hung down the back as far as the lower limit of the scapula. It was transparent, soft, elastic, and fluctuating. Its wall was continuous with the skin of the head, and it had fine hairs upon it. The pedicle was transverse, and measured seven centimetres from left to right. Compression caused no cerebral symptoms, but did not diminish the size of the tumor; the latter did not appear to give rise to any symptoms excepting discomfort from its weight. An operation was suggested, the prognosis being grave, and the parents consented. The base of the tumor was transfixed and tied, and the latter was cut away. The edges of the wound were brought together with twelve sutures, and antiseptic dressings applied. There was no shock and no apparent interference with the healing process, the child ate and slept well, and the wound was entirely healed when the last sutures were removed. The contents of the tumor were a red serous fluid containing albumin. It weighed twenty-six ounces. Part of its interior showed a villous structure, the villi of which were found to be developments from the *tela chorioidea*. The dura mater was continuous by a small tract with the cyst wall. The inner layer of the cyst was formed by the pia mater; the external layer by the skin. Eighteen months later the child was seen again, and found to have an enormous hydrocephalus. The fontanelles were dilated, especially the greater one, and the sutures were widely separated. There was a deep depression at the site of the former tumor, and the surrounding tissue was compact. The child was obliged to keep the horizontal posture; the psychical development was not arrested; the appetite and digestion were good, but the body was small, and the muscles were poorly developed. This condition, together with that which existed at birth, were believed to be due to fœtal pathological conditions of the brain and its membranes.

The history of attempts made to cure hydrocephalus, whether by compression, puncture, and subsequent compression, elastic ligature, crushing, linear compression, injection of iodine, or extirpation, show the following results: In five cases, in which the cephalocele was small, cure was obtained in four by simple compression; in the other case the tumor increased in size. Puncture has been tried many times, but has almost always caused death from meningitis. Adams reports a case in which he punctured seven times, the tumor being as large as a hen's egg, and finally it became reduced to the size of a nut. Puncture with injection of sixty grains of a half-per-cent. solution of carbolic acid ended fatally in four days. Puncture associated with the elastic ligature in one case resulted in cure in eighteen days; in a second case death resulted on the eighth day. In Nicoladoni's case of pseudomeningocele a cure resulted in forty days after puncture, injection of odine, and the application of pressure bandages.

**Irrigation of the Stomach in Nursing Infants.**—Seibert ("New Yorker med. Presse," June, 1888) remarks that Epstein was the first to recommend this procedure for infants and children in 1880, but it received little attention, and when Epstein referred to it a second time, in 1887, there were still few who had had much practical experience with it. In Epstein's second paper he reported an experience in 5,000 cases, the results in which had been better than had attended the use of other means. The following are the indications for irrigation of the stomach:

1. Dyspepsia in infants which is characterized by the ejection of a portion of each meal. It often affects children in the first months of life, and may be due to too frequent, too hurried, or too abundant feeding. As a result, not only is the growth of the child checked, but the stomach is so deranged that it readily becomes involved in other diseases. In many cases simple regulation of the diet is all the treatment that is required. But should the vomiting continue, a single washing out of the stomach may be sufficient to correct the indigestion.

2. In acute diarrhœa the removal of the decomposing and fermenting matters which have caused the trouble may suffice. Should this

condition be followed by collapse, it seems rational that the poisonous elements which have caused it should be removed as quickly as possible from the folds of the gastric mucous membrane. The use of the various antiseptics, which act by clearing out the intestines, shows that the prevailing ideas in respect to treatment imply that such evacuations are a necessity. The irrigation of the stomach acts antiseptically, for it clears away septic material. The fact that a single irrigation often suffices to stop vomiting shows the value of this method of treatment. The stomach having been cleared out and the capability of retaining stimulants having been regained, the prognosis in many cases is vastly improved.

3. In chronic catarrh of the stomach and large intestine which defies all treatment by drugs and diet, irrigation has given the most satisfactory results. The intestinal catarrh in such cases is usually caused by the continued retention in the stomach of the products of decomposition, and each new addition of food to the stomach is apt to become infected by the same. Irrigation of the stomach in such cases is like washing out an abscess cavity, and is quickly followed by good results.

**Clinical and Therapeutical Observations concerning Measles.**—Montefusco ("Rev. mens. des mal. de l'enfance," August, 1888) made observations in the course of an epidemic of measles which prevailed in Naples during portions of 1887–'88.

During the period of invasion there was observed in a number of cases the almost complete absence of fever. Some children had simple *malaise* and non-febrile catarrh of the conjunctivæ and the nasal mucous membrane. Usually the fever coincided with the appearance of the eruption. An absence of fever in the early stage seemed to have no bearing on the subsequent course of the disease. Epistaxis was of frequent occurrence during the first stage, but it was never abundant and appeared to have no particular prognostic value.

Among the different varieties of eruption, one was observed which resembled, at first sight, that of hæmorrhagic variola. This hæmorrhagic form, especially in cachectic children, has also been observed by Vogel, Rayer, Willan, and Günzburg. In two cases a persistence of the eruption was observed after the fever had disappeared. The fever disappeared on the eighth day of the eruption; the eruption disappeared from one of the patients two days later, and also from the face and body of the other, while the eruption on the limbs remained unchanged. The temperature exceeded 39° C. (102·2° F.) during the period of invasion in only a few cases. Increase of temperature was usually announced by frequent and irregular chills, though in some cases the chill was single and violent.

The fever in all cases was continuous, ceasing on the seventh or eighth day, very often when the eruption appeared. The urine was diminished in quantity, the chlorides were diminished, and the sulphates and phosphates were sometimes increased. In rare instances a small quantity of albumin was found. The most frequent complications affected the respiratory apparatus. A dry and paroxysmal cough, without expectoration, usually began on the third or fourth day of the period of invasion, dry and sibilant râles being discoverable by auscultation. Symptoms of bronchial catarrh were sometimes apparent before and sometimes simultaneously with the invasion of the measles, full development taking place in the course of the period of invasion. In such cases there was more or less abundant expectoration of mucus with moist râles. During the period of eruption the bronchial catarrh was always more diffuse and the expectoration more abundant. The latter was sometimes sero-mucous, and sometimes there were nummular sputa which were suggestive of phthisis. When the fever and the eruption disappeared there was usually a diminution in the intensity of the bronchial catarrh and the cough became less painful, and the expectoration less abundant and of a serous character. Capillary bronchitis was not infrequently a complication, and often led to fatal results by suffocation or by slow asphyxia. Frequently there were attacks of laryngitis during the period of eruption, with periods of dyspnœa, as in croup. Convulsions were of frequent occurrence, especially during the period of invasion; they occurred less frequently during the period of eruption, and never during convalescence. It was not observed that they had any harmful influence on the course and termination of the disease. Troubles in the digestive apparatus were common. During the period of invasion there was frequently vomiting of greenish mucus. In two cases there were vomiting, meteorism, and diarrhœa during the period of eruption. Diarrhœa was more frequent during the invasion than the eruption, but rarely was it sufficiently severe to be looked upon as a complication. Either erythematous or ulcero-membranous stomatitis was present in almost every case. In regard to treatment, it was believed that no particular intervention was necessary in those cases which ran the regular course. To treat the fever of such a condition by seeking to remove it is irrational; the fever is not the morbid process. This does not signify that high temperature should be disregarded when it reaches such an elevation as to produce granulofatty degeneration of the tissues, or when it diminishes the resisting power of the patient, and produces functional troubles of the heart and brain which may lead to paralysis.

Alimentation is the treatment for such conditions, and the author regards the suggestion of Semmola and Dujardin-Beaumetz to substitute glycerin for alcohol as a very good one. Children who were treated with glycerin by the author retained their strength, showed diminished temperature, and excreted less urea. Glycerin may be administered in amounts of nearly an ounce daily, combined with about eight ounces of water and half a drachm of citric or tartaric acid.

The broncho-pulmonary complications of measles should be treated with a combination of infusion of ipecac, tincture of aconite, and syrup of *Bignonia catalpa*. Iodide of sodium diminished expectoration and respiratory frequency. If the cough was particularly rebellious the author obtained good results by giving the iodide of sodium in combination with the bromide of sodium.

**The Treatment of Diphtheritic Angina by Repeated Local Applications of Concentrated Solutions of Salicylic Acid.**—Ory (*ibid.*) for seven years has been using the form of treatment indicated by the title of his paper. It has generally resulted in a cure by the fifth day, and in no case which was thus treated has it been necessary to perform tracheotomy. The formula which is used by the author is the following:

℞ Infus. eucalypti..... 3 oz.;
Glycerini..... 2½ dr.;
Acidi salicylici..... 4½ gr.;
Aq. laurocerasi..... 15 gr.

Applications by means of a suitable brush or swab should be made every hour during the day and every two or three hours at night. The treatment should be kept up as long as there are any diphtheritic patches in the throat. If it is objected that the author may have erred in his diagnosis and have regarded as diphtheria what was only a pultaceous angina which would tend to recovery without any treatment at all, the reply would be that it is hardly supposable that he has constantly erred during the past seven years in diagnosticating his cases. He believes that the disease begins almost always, if not always, by local manifestations on the pharynx or tonsils, and that if these are destroyed in season, general infection or even extension to the larynx may be prevented. Salicylic acid in solution or in suspension acts rapidly in destroying the false membrane without causing much irritation of the mucous membrane with which it comes in contact. Success with the treatment depends not a little upon whether the application is made boldly and thoroughly or not. The child's head and hands should be immovable, the tongue should be depressed with a finger of one of the operator's hands, and with the other the application should be quickly and thoroughly made. The spasmodic constriction of the pharynx which usually attends the operation favors the application of the medicament, and the author prefers a large dossil of charpie to absorbent cotton for carrying the salicylic acid. The physician himself should make these applications at least three times daily, and with each application he should remove as much of the false membrane as possible. The author attributes the degree of success which has attended his cases to the careful and persistent personal attention which he has bestowed upon them.

**Tracheotomy for Croup, the Anæsthetic being Chloroform.**—Luc ("Jour. de méd.," June 24, 1888) opens by commenting upon the operation of St. Germain, consisting in fixing the larynx between the thumb and forefinger and plunging a bistoury through all the tissues into the trachea at one stroke. This operation is a brilliant one, and cases are narrated in which it was performed and the cannula put into place in fifteen seconds. There are undoubtedly cases requiring

tracheotomy in which a few seconds mean life or death for the patient. A case is also narrated in which the patient died at once from suffocation, the cause being that the bistoury deviated from the middle line of the larynx, and, instead of dividing the lining mucous membrane of the organ, pushed it backward and thus completely stopped up the air-passage. As this is a practical point it must be duly weighed before performing St. Germain's operation, or any other by which one quickly opens the trachea, without stopping to check the hæmorrhage. The advantages of chloroform in performing this operation, as compared with no anæsthetic, or a local anæsthetic like cocaine, are thus enumerated. 1. There is an avoidance of pain which can only be appreciated by comparison with those cases in which one operates without it and with the patient in a half-asphyxiated condition. 2. The patient's agitation is relieved, and this enables one to operate with very little assistance. 3. There is a suppression of laryngeal spasm, which is often due in children to the terror produced by the operation. 4. With chloroform it is not necessary to place the head in forced extension, so that the child can breathe during the operation at least as well as before it. The cases are very few in which death is a question of minutes. 5. The child loses no blood, and, when the trachea is incised, not a drop of blood passes into the air-passages. 6. Since one can usually operate with deliberation under chloroform, it is possible to make the incision in the lower part of the neck. The further the cannula is removed from the larynx the less will be the pain in eating and the less painful the movements of flexion of the head. 7. When this operation is performed under chloroform, instead of being a blind extra-hazardous undertaking in which the operator is very apt to get nervous and excited, it becomes an ordinary surgical operation in which he sees and knows what he is doing, and can proceed with caution and calmness.

# Miscellany.

**The Medical Department of the National Guard of the State of New York.**—The following general orders have been issued from the Adjutant-General's Office by order of the Commander-in-Chief:

1. Upon the recommendation of the Surgeon-General, persons appointed to medical offices will hereafter be examined, before being commissioned, by special boards selected by the Surgeon-General and hereby appointed: For the First Brigade: Major Robert V. McKim, Surgeon First Brigade; Major Daniel M. Stimson, Surgeon Seventh Regiment; Major Nelson H. Henry, Surgeon Twelfth Regiment. For the Second Brigade: Major George R. Fowler, Surgeon Second Brigade; Major John F. Valentine, Surgeon Thirty-second Regiment; Major William E. Spencer, Surgeon Twenty-third Regiment. For the Third Brigade: Major Herman Bendell, Surgeon Third Brigade; Major Lewis Balch, Surgeon Tenth Battalion; First Lieutenant Daniel S. Burr, Assistant Surgeon Twentieth Separate Company. For the Fourth Brigade: Major Roswell Park, Surgeon Fourth Brigade; Major Charles G. Stockton, Surgeon Seventy-fourth Regiment; Major Albert H. Briggs, Surgeon Sixty-fifth Regiment.

Returns of appointments of medical officers will be referred by the commanding officers of brigades to the boards appointed for their respective commands, and all concerned will be governed by the rules prescribed in General Orders No. 14, series 1887, from this office, so far as the same are applicable.

2. Appointees to medical offices shall be further examined in the standard branches taught in legally incorporated medical schools; the diagnosis and treatment of injuries and diseases to which troops may be exposed; the means employed for the urgent relief, and for the transportation, of sick and wounded, including stretcher drill (see provisional manual of instruction U. S. A.); camp and personal hygiene; and as to their knowledge of official papers relating to their department.

3. It appearing that there are hospital stewards who are not qualified, according to the laws of the State, to perform the duties required of them, commanding officers are directed to discharge such from the service at once. Hospital stewards should have passed an examination before the State or County Boards of Pharmacy, and have received licenses as pharmacists.

**A Sanitary Convention** will be held at Hastings, Mich., under the auspices of the State Board of Health, on Monday and Tuesday, December 3 and 4, 1888. The following addresses and subjects to be discussed, are included in the programme:

A brief statement of the objects of the convention, by Hon. John Avery, President of the State Board of Health. Address by the President of the Convention, Hon. D. R. Cook. "The Water-supply of Hastings"; "Plats of Localities in Hastings"; "Disposal of Excreta and Waste in Hastings"; "Ventilation and Heating"; "Prevention of Communicable Diseases"; "The Germ Army—How it may be Routed"; "Duties of the Local Health Officer"; "School Hygiene"; "Prevention of Insanity"; "Prevention of the Diseases of the Eye and Ear"; "Food and its Adulterations"; "Degenerations of Age"; an address by Professor Vaughan, of the University.

Information in regard to the convention may be obtained by addressing Mr. A. E. Kenaston, Secretary, Hastings, Mich.

**The Health of Michigan.**—According to the State Board of Health's summary of returns for the month of August (the five weeks ending September 1st), that, as compared with the same month in the preceding nine years, there was no disease more than usually prevalent, while intermittent fever, cholera morbus, whooping-cough, remittent fever, diphtheria, amygdalitis, cholera infantum, typho-malarial fever, influenza, and diarrhœa were less prevalent.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending September 14th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending August 25th corresponded to an annual rate of 18·1 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 11·5, and the highest in Wolverhampton, viz., 28·7 in a thousand. Small-pox caused 1 death in Oldham and 1 in Nottingham. Diphtheria caused 3 deaths in Manchester.

*London.*—One thousand four hundred and thirty-eight deaths were registered during the week, including measles, 47; scarlet fever, 21; diphtheria, 17; whooping-cough, 28; enteric fever, 7; diarrhœa and dysentery, 192; simple cholera and choleraic diarrhœa, 7. Diseases of the respiratory organs caused 172 deaths; different forms of violence, 47; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 17·5 in a thousand. In greater London 1,821 deaths were registered, corresponding to an annual rate of 17·2 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 58; diphtheria, 8; and measles, 13.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending August 25th in the sixteen principal town districts of Ireland was 17·5 in a thousand of the population. The lowest rate was recorded in Lisburn, viz., 4·8, and the highest in Wexford, viz., 29·9 in a thousand. In Dublin 121 deaths were registered, including measles, 3; enteric fever, 2; scarlet fever, 1; diarrhœa, 4.

*Scotland.*—The deaths registered in eight principal towns during the week ending August 25th corresponded to an annual rate of 16·7 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Aberdeen, viz., 13·5, and the highest in Paisley, viz., 21·1 in a thousand. The aggregate number of deaths registered from all causes was 421, including measles, 5; scarlet fever, 4; diphtheria, 3; whooping-cough, 4; fever, 10; and diarrhœa, 16.

*Hobart Town, Tasmania.*—One hundred and sixty-seven deaths were registered during the quarter ending June 30, 1888, including 12 from enteric fever.

*Martinique.*—The United States consul, in his dispatch dated August 29th, states that "in the fortnight preceding the 25th of this month there were in all 99 cases and 22 deaths from small-pox in the interior

of the island, and that prior to the 12th of August there were 3 sporadic cases of yellow fever and 2 deaths therefrom."

*Cardenas, Cuba.*—The consular report dated August 31st states: "Good health in town and harbor. Weather dry and hot. Only one American vessel in port."

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever | Diphtheria. | Measles. | Whooping-cough. |
| Paris | August 18. | 2,260,945 | 869 | .. | .. | 2 | .. | 8 | 5 | 24 | 24 | 5 |
| Paris | August 25. | 2,260,945 | 910 | .. | .. | 1 | .. | 11 | 3 | 25 | 18 | 4 |
| Glasgow | August 25. | 545,678 | 190 | .. | .. | .. | .. | 3 | 1 | 1 | .. | .. |
| Warsaw | August 18. | 444,814 | 273 | .. | .. | 11 | .. | .. | 10 | 8 | .. | .. |
| Calcutta | July 28. | 433,219 | 169 | 15 | .. | .. | .. | .. | .. | .. | .. | .. |
| Rome | July 21. | 391,188 | 199 | .. | .. | .. | .. | 4 | .. | .. | .. | .. |
| Amsterdam | August 25. | 389,916 | 153 | .. | .. | .. | .. | 3 | .. | .. | .. | .. |
| Munich | July 21. | 275,000 | 150 | .. | .. | .. | .. | 1 | 1 | 2 | .. | .. |
| Munich | August 11. | 275,000 | 187 | .. | .. | .. | .. | .. | 1 | 7 | .. | .. |
| Palermo | August 18. | 250,000 | 84 | .. | .. | .. | .. | .. | 3 | 1 | .. | .. |
| Palermo | August 27. | 250,000 | 78 | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Belfast | August 25. | 227,022 | 74 | .. | .. | .. | .. | .. | 1 | 5 | .. | .. |
| Bristol | August 18. | 226,510 | 58 | .. | .. | .. | .. | .. | 2 | .. | .. | .. |
| Bristol | August 25. | 226,510 | 50 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Genoa | August 18. | 179,720 | 86 | .. | .. | 2 | .. | .. | .. | .. | .. | .. |
| Genoa | August 25. | 179,698 | 87 | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| Trinidad | August 11. | 178,270 | 42 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Trinidad | August 18. | 178,270 | 32 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Leipsic | August 25. | 170,000 | 87 | .. | .. | .. | .. | .. | .. | 1 | 2 | .. |
| Trieste | August 18. | 154,500 | 75 | .. | .. | 5 | .. | .. | .. | 1 | .. | .. |
| Toronto | August 24. | 130,000 | 26 | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Toronto | August 31. | 130,000 | 31 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Stuttgart | August 25. | 125,500 | 45 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Bremen | August 18. | 122,000 | 30 | .. | .. | .. | .. | .. | .. | .. | 2 | .. |
| Havre | August 18. | 112,074 | 102 | .. | .. | .. | .. | 21 | 1 | 1 | .. | .. |
| Havre | August 25. | 112,074 | 89 | .. | .. | .. | .. | 17 | 1 | .. | .. | .. |
| Barmen | August 25. | 109,000 | 40 | .. | .. | .. | 1 | .. | .. | .. | .. | .. |
| Leghorn | August 19. | 101,854 | 37 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Leghorn | August 26. | 101,854 | 36 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Mayence | August 4. | 65,802 | 23 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Mayence | August 11. | 65,802 | 27 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Cadiz | August 25. | 65,028 | 34 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Curaçoa | Sept. 1. | 25,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Vera Cruz | August 30. | 23,800 | 22 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Gibraltar | August 19. | 23,634 | 9 | .. | .. | .. | .. | 1 | .. | 1 | .. | .. |
| Kingston, Can | Sept. 7. | 16,216 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Antigua | August 19. | 15,847 | 26 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Antigua | August 26. | 15,847 | 24 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Bermuda | Sept. 6. | 15,260 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Cartagena, Col'a | August 4. | 13,000 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Cartagena, Col'a | August 11. | 13,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Matamoras | August 18. | 12,000 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Matamoras | August 25. | 12,000 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Laguayra | August 25. | 7,428 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Laguayra | Sept. 1. | 7,428 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Turk's Islands | August 15. | 5,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Turk's Islands | August 22. | 5,000 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| San Juan del Norte | August 13. | 500 | 1 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| San Juan del Norte | August 16. | 500 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |

UNITED STATES.

*Lake City, Fla.*—Dr. J. L. Posey arrived at Lake City August 23d, and in his report to the Supervising Surgeon-General, dated September 1, 1888, states that—

Lake City is the county seat of Columbia County, situated in Middle Florida, with an elevation of 250 feet above sea-level. The city covers an area of half a mile square, its center rising to an elevation of 17 feet and sloping from east to west, with an average fall of 5 feet, giving an almost perfect natural surface drainage, the water being rapidly carried off after the heaviest rainfalls, which are of rare occurrence in this locality. There are three small fresh-water lakes in the immediate vicinity of the city—viz., Lake Hamburg in the southwest, Lake De Soto east, and Lake Isabella, the largest and prettiest of the trio, southeast of the city. The latter named is about a mile wide and of considerable depth, and is the source whence the city derives its water-supply for public uses. The water almost exclusively used for drinking purposes is supplied by wells, which yield an abundance of clear cool water at a depth of from 20 to 30 feet. I visited the city water-works recently erected, located on the shore of Lake Isabella, and examined the large cemented brick reservoir, into which the water is first pumped from the lake, and, after filtering through a bed of charcoal, is forced into a wooden tank elevated at a considerable height, and thence distributed through iron mains to hydrants placed 210 feet apart. The water of Lake Isabella is clear, cool spring-water, odorless, tasteless, and apparently free from organic matter. Mr. Collins, the president of the water-works company, informed me that an analysis had been made by a competent chemist, and the water found free from organic matter. I deem it perfectly wholesome and fit for drinking purposes.

A general and thorough inspection and survey of Lake City revealed an excellent sanitary condition of its streets and drains, as also of the premises. The municipal health board had just completed a general cleaning and disinfection of the closets, which are open and on the surface of the soil, which is a sandy loam with a substratum of clay. The fæcal accumulations were removed beyond the corporate limits and put into a large trench, being thoroughly disinfected with lime. The garbage from premises and streets likewise removed beyond the corporate limits, and, after saturation with resinous matter, entirely burned.

The quarantine measures established against infected points (this city being only 60 miles by rail north from Jacksonville) are efficient and stringent, and are rigidly enforced by the city board, composed of gentlemen of intelligence and ability, who are deeply impressed with the conviction that the only means of escaping an invasion of yellow fever is by maintaining a strictly military quarantine. In addition to these measures, a weekly house-to-house inspection has been ordered, to compel residents to preserve the present fine sanitary condition of the city. They are required to disinfect their closets once or twice a week with a saturated solution of sulphate of iron and carbolic acid.

At the date of my inspection I met the president of the city health board and the principal physicians practicing there, and was afforded every facility for making a complete investigation of its sanitary state. They all assured me that there was not at that time, or had been previous, a single case of yellow fever, or any case that they deemed suspicious—in fact, not even a case of any type of malarial disease.

A type of malarial remittent fever prevails in some of the alluvial lands, which the natives call "yellow disease," and which is an aggravated form of hæmaturia, usually fatal, and occurring in persons who have been the subjects of repeated attacks of intermittent fever, who have become cachectic and leucocythæmic.

I subjoin a few notes giving the data requested in your letter of instructions:

Name of Mayor of Lake City, W. R. Bush. Health Officer, Dr. D. A. Watts. Water-supply, well-water and lake-water. Disposal of sewage, surface drainage. Burial permits, none issued. Distance of cemetery from business center, half a mile; mode of interment, six feet below surface. Number of deaths from May 1 to October 1, 1887, 8; number of deaths from May 1 to August 24, 1888, 5—total, 13. Population (white and colored) estimated at 2,000.

In conclusion, I desire to state that, from the conditions of soil, elevation, and general cleanliness of Lake City, I am of the opinion that the occurrence of a case of yellow fever in its limits would, upon immediate isolation, fail to establish a focus for the development of an epidemic atmosphere or rapid spread of the specific infecting matter of yellow fever. The statements of the oldest resident practitioners and other residents tend to corroborate this view, as 2 cases of yellow fever occurred in 1876 in the city, which were clearly traced to importation, both cases resulting in recovery and no other cases developing from them. During a period of twenty-five years there has not been an epidemic of any disease prevailing in Lake City. A few cases of cholera occurred in 1867, without any tendency to develop an epidemic. In face of such a health record, I entertain the firm conviction that this charming City of the Lakes is justly entitled to be ranked as one of the most salubrious of the cities of Middle Florida. The average temperature, I think, is about 75° F.; the nights and mornings, at the time of my visit, delightfully cool and invigorating, and, during the noon and afternoon, cool, balmy breezes sweep over its richly wooded hills of pine, oak, and magnolia. I submit this brief sketch of the sanitary conditions of the attractive City of the Lakes as the result of close personal observation and thorough inspection of its situation and surroundings.

*Tampa, Fla.*—Dr. J. P. Wall telegraphed as follows:

September 8th: "Three cases reported to-day, making 7 since last report. It continues mild. No deaths."

September 9th: "One new case here. No deaths."

*Manatee, Fla.*—Dr. M. B. Harrison reports for the week ending September 7th: "Three new cases for Manatee, and 2 for Palmetto—total, 51. No deaths."

*Jacksonville, Fla.*—Dr. Neal Mitchell, president of the Board of Health, telegraphed as follows:

September 9th: "For twenty-four hours ending 6 P. M.: New cases, 19; deaths, 7. Total number of cases to date, 604; total number of deaths to date, 75."

September 10th: "For twenty four hours ending 6 P. M.: New cases, 32; deaths, 5. Total number of cases to date, 636; total number of deaths to date, 78."

September 11th: "For twenty-four hours ending 6 P. M.; New cases, 48; deaths, 11. Total number of cases to date, 684; total number of deaths to date, 90."

September 12th: "For twenty-four hours ending 6 P. M.: New cases, 59; deaths, 10. Total number of cases to date, 743; total number of deaths to date, 100."

September 13th: "For twenty-four hours ending 6 P. M.: New cases, 44; deaths, 4. Total number of cases to date, 785; total number of deaths to date, 104."

*Camp Perry, Fla.*—The Secretary of the Treasury has received the following telegrams from Supervising Surgeon-General Hamilton:

September 10th: "Arrived to-day, 1 P. M. Refugees in camp, 132; in fever hospital, 4. Died at fever hospital, 1. Four officers present."

September 12th: "Morning report: Officers, 5; guards, 7; employees, including carpenters, 59. Refugees received, 16; discharged, 64; remaining, 86. In fever camp, 6 patients."

Mortality Table, Cities of the United States.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Varicloid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York, N. Y. | Sept. 8. | 1,534,676 | 716 | .. | .. | .. | .. | 1 | .. | 17 | 19 | 18 | 8 | 23 |
| Chicago, Ill. | Sept. 8. | 800,000 | 291 | .. | .. | .. | .. | .. | .. | 14 | 2 | 19 | 1 | 4 |
| Baltimore, Md. | Sept. 8. | 431,879 | 177 | .. | .. | .. | .. | .. | .. | 9 | 1 | 3 | .. | 3 |
| Boston, Mass. | Sept. 8. | 415,000 | 175 | .. | .. | .. | .. | .. | .. | 2 | 1 | 5 | .. | .... |
| San Francisco, Cal. | August 31. | 330,000 | 114 | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .... |
| Cincinnati, O. | Sept. 8. | 255,139 | 93 | .. | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | 3 |
| New Orleans, La. | Sept. 1. | 248,000 | 114 | .. | .. | .. | .. | .. | .. | 2 | .. | 10 | .. | 1 |
| Pittsburgh, Pa. | Sept. 8. | 230,000 | 70 | .. | .. | .. | .. | .. | .. | 7 | 1 | 5 | .. | 2 |
| Washington, D.C. | Sept. 8. | 225,000 | 83 | .. | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | 7 |
| Milwaukee, Wis. | Sept. 8. | 195,000 | 82 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | 3 |
| Minneapolis, Minn. | Sept. 7. | 180,000 | 48 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |
| Kansas City, Mo. | Sept. 8. | 180,000 | 38 | .. | .. | .. | .. | .. | .. | 5 | .. | 1 | .. | .... |
| St. Paul, Minn. | Sept. 8. | 175,000 | 41 | .. | .. | .. | .. | .. | .. | 9 | .. | 2 | .. | .... |
| Rochester, N. Y. | Sept. 8. | 120,000 | 47 | .. | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | .. |
| Detroit, Mich. | Sept. 7. | 116,340 | .... | .. | .. | .. | .. | .. | .. | 4 | 1 | 2 | .. | 2 |
| Denver, Col. | Sept. 7. | 96,000 | 37 | .. | .. | .. | .. | .. | .. | 7 | 1 | 2 | .. | .... |
| Columbus, Ohio | Sept. 8. | 93,000 | 30 | .. | .. | .. | .. | .. | .. | 4 | .. | .. | .. | .... |
| New Haven, Conn. | Sept. 8. | 82,000 | 21 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| Toledo, Ohio | Sept. 8. | 80,000 | 20 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Nashville, Tenn. | Sept. 8. | 65,153 | 19 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .... |
| Fall River, Mass. | Sept. 8. | 65,000 | 24 | .. | .. | .. | .. | 2 | .. | .. | .. | .. | .. | .... |
| Charleston, S. C. | Sept. 8. | 60,145 | 43 | .. | .. | .. | .. | 1 | .. | .. | .. | .. | .. | .... |
| Cambridge, Mass. | Sept. 8. | 59,660 | 34 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 3 |
| Evansville, Ind. | Sept. 6. | 53,000 | 21 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .... |
| Savannah, Ga. | Sept. 7. | 52,827 | 21 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Lynn, Mass. | Sept. 8. | 50,000 | 18 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Mobile, Ala. | Sept. 8. | 40,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Galveston, Tex. | August 31. | 40,000 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Portland, Me. | Sept. 8. | 40,000 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| E. Saginaw, Mich. | Sept. 8. | 33,000 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Davenport, Ia. | Sept. 8. | 30,084 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Altoona, Pa. | Sept. 1. | 29,546 | 14 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Salem, Mass. | Sept. 8. | 29,000 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| New Albany, Ind. | Sept. 8. | 28,689 | 11 | .. | .. | .. | .. | 1 | 2 | .. | .. | .. | .. | .... |
| Yonkers, N. Y. | Sept. 10. | 28,000 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| New Bedford, Mass | Sept. 8. | 26,845 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Auburn, N. Y. | Sept. 1. | 26,000 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Auburn, N. Y. | Sept. 8. | 26,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Haverhill, Mass. | Sept. 8. | 25,000 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Jackson, Mich. | Sept. 8. | 22,500 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newton, Mass. | Sept. 8. | 21,105 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Poughkeepsie, N.Y. | Sept. 8. | 21,000 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | 1 |
| Newport, R. I. | Sept. 6. | 20,466 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| N. Brunswick, N.J. | Sept. 8. | 20,000 | ..... | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |

**The Intercolonial Medical Congress of Australia.**—The second session will be held in Melbourne, January 7 to 12, 1889. The sections comprise medicine, of which the Hon. Charles Kinnaird Mackellar, M. B., of Sydney, is president; surgery, Edward Charles Stirling, M. A., M. D., of Adelaide, president; hygiene, forensic and state medicine, Henry Norman MacLaurin, M. A., M. D., of Sydney, president; anatomy and physiology, Professor T. P. Anderson Stuart, M. D., of Sydney, president; pathology, Joseph Bancroft, M. D., of Brisbane, president; obstetrics and gynæcology, Ferdinand Campion Batchelor, M. D., of Brisbane, president; diseases of the eye, ear, and throat, Mark Johnston Symonds, M. D., of Adelaide, president; psychological medicine, Frederick Norton Manning, M. D., of Sydney, president; and pathology, Baron Sir Ferdinand von Mueller, M. D., president. There will also be a sub-section in diseases of the skin, and one in diseases of children. The governors of the Australasian colonies have consented to act as patrons of the congress. One of the most important features of the congress is the proposal to hold special general meetings at which subjects of general interest—such as the climates of Australia, colonial fevers, etc.—will be discussed. The organizing of a congress museum is also proposed. The meeting promises to be of much interest and importance to the Australasian colonies. Accredited members of the American profession who visit Australia are assured a hearty welcome, and will be invited to participate in the work of the congress.

## ANSWERS TO CORRESPONDENTS.

*No. 225.*—It would not be possible to give a satisfactory reply within the space allotted in this department. We therefore refer you to Pepper's "System of Medicine." It is a well-known fact that the disease is fatal in cattle and that it is usually due to some substance that they have eaten.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

Intestinal obstruction is frequently due to localized peritonitis, especially that of traumatic origin, which may have been so slight as to escape recognition. Martin has recently called attention to the fact that a certain amount of aseptic peritonitis follows every ovariotomy, although it may not give rise to symptoms. Adhesions naturally result, and since the intestines lie directly in contact with the stump and the abdominal wound, they are most likely to be imprisoned. A single loop of gut may be attached by a slender band, but this is sufficient to prevent this portion of the intestine from sharing in the peristaltic movements and to constitute a source of constant pain and annoyance. There is little doubt that the colicky pains and constipation, of which many patients complain after recovery from laparotomy, are to be ascribed to slight intestinal adhesions. But the consequences may be still more serious. A loop of gut, adherent within the pelvis or to the anterior abdominal wall, may become distended with gas which accumulates in the portion above the point of attachment and causes a sharp bend in the gut, whereby the lumen is completely obstructed. Fatal results have followed from such apparently insignificant causes. The same accident may result from the adhesion of a small portion of the omentum to the subjacent intestine, or from the attachment of one loop of intestine to another loop; or a portion of the gut may slip under a band and be thus constricted. The small intestine, by reason of its situation and mobility, is, of course, most liable to contract adhesions, but obstruction of the colon by constricting bands is not unknown. The important point is that the inflammatory process which resulted in the formation of adhesions may have been so slight as to escape recognition clinically, so that we are seeking for a recent cause for the obstruction, when it is actually one of long standing. It is a curious fact that intestinal obstruction is due far more frequently to localized than to general peritonitis. It is surprising how often we find at the post-mortem the intestines fused into a solid mass by a dense inflammatory deposit, so that they are hardly distinguishable, yet there is no obstruction; or a portion of gut is buried in a cancerous mass, which, however, does not obstruct the lumen. Every laparotomist, when separating firm and extensive intestinal adhesions within the pelvis, is struck with the degree to which the gut can be imprisoned without interfering with its functions. On the other hand, a few threads of lymph attached to a single coil may cause serious disturbance, as has been shown. The difference lies entirely in the mobility of the intestine in the two cases. When it is entirely fixed, even though it is exposed to a considerable amount of pressure from inflammatory deposit or morbid growths, obstruction is less likely to occur than when it is freely movable and its wall is soft and pliable instead of being thickened by chronic inflammation. This was well illustrated in a case of laparotomy for acute obstruction at which the writer recently assisted. Although the patient had never had marked symptoms referable to malignant disease of the abdomen, carcinoma of the omentum was discovered, with old general peritonitis. The intestines were greatly distended, and, on looking for the point of obstruction, it was found, not where the adhesions were most dense and extensive, but where the gut was least imprisoned. This fact should serve as a guide to the surgeon when searching for the cause of an acute obstruction; the chances are that it will not be in that portion of the intestine which is rendered immovable by firm adhesions.

Ascites has been mentioned as an occasional result of localized peritonitis. It is alluded to here because it might readily be attributed to visceral disease, the true cause being overlooked at the autopsy. Compression of the great vessels by old adhesions is rare as compared with occlusion of other more exposed canals. The thickness of the vessel-walls is a further protection against external pressure. The writer has observed a case in which ascites was apparently due to partial occlusion of the vena cava inferior from the pressure of a mass of indurated tissue, the result of localized inflammation, and another in which one of the great vessels was obstructed near the brim of the pelvis by surrounding adhesions. Slight and obscure as are the inflammatory processes to which reference has been made, they possess some clinical as well as pathological interest. The presence of chronic pyelitis having been positively recognized (which, by the way, requires careful observation of the patient and repeated examinations of the urine), it ought not to be difficult to exclude the more common causes of this condition—renal calculus and chronic cystitis. Remembering that the ureter is most liable to be compressed at the base of the broad ligament, the detection of a considerable induration in this region will at once suggest the possibility that the occlusion of the duct is due to it. This at once suggests an important reason for palpating the ureters in every pelvic examination (as urged by Kelly), a proceeding which has been generally regarded as of little practical value. The writer has demonstrated to his own satisfaction in three autopsies that this manœuvre would have revealed the true condition of affairs in two cases of obstruction of the ureter from peritoneal adhesions, and in one of impacted calculus. In none of the cases was the point of obstruction more than two inches from the bladder. Catheterization of the ureter, either by the touch or directly through an artificial fistula (according to the method recently elaborated by Bozeman), would afford positive information, especially when combined with vaginal palpation. The cause of acute intestinal obstruction is often unsuspected, but a careful review of the patient's history may give a clew to the true condition by indicating some former obscure abdominal trouble, which was doubtless localized peritonitis. If since this attack the patient had been troubled with constipation and frequent colicky pains, this would serve to confirm the suspicion that old adhesions existed. The fact that these symptoms dated from a previous laparotomy would, of course, render the diagnosis reasonably certain, and would also serve to locate the probable seat of obstruction. Assuming that the presence of a peritoneal adhesion has been shown, or has been strongly suspected to be the cause of a visceral affection, is it possible to remove the obstruction and to prevent its injurious effects? In view of the recent advance in pelvic and abdominal surgery, an affirmative answer may be given. In

the case of the urinary tract the prognosis may be less hopeful, but, since the changes resulting from obstruction are essentially chronic, there seems to be no reason why the diagnosis of ureteritis from this cause should not be made before the renal pelvis is affected and the obstruction be overcome by dilating the duct, as is done in stricture of any other accessible canal. In these cases the direct exposure of the opening of the ureter through an artificial vesico-vaginal fistula, as practiced by Bozeman, offers a valuable means of reaching the seat of obstruction. For obvious reasons, an attempt to dissect out an indurated mass from the broad ligament after opening the abdomen will not commend itself to any one who is familiar with the anatomy of the parts and the post-mortem appearances in such cases. Such an attempt would almost certainly result in laceration of the ureter, not to speak of the injury done to other important structures in the vicinity.

The separation of intestinal adhesions by laparotomy is a rational procedure, which will doubtless be adopted still more frequently than it is at present when surgeons have learned to localize more exactly the point of obstruction. Guided by the history of the patient and the locality of the original pain, the operator will be able to determine more definitely where to seek for it. Since the adhesions are often so slight, it is evidently better to make a large incision and to remove the intestines so that they can be thoroughly inspected than to introduce one or two fingers and feel around blindly, as is sometimes the custom with the gynæcologist as distinguished from the general surgeon. If the latter method is adopted, the operator may break up the extensive adhesions, and yet fail to reach the small isolated band which is really the cause of the trouble.

In conclusion, it may be stated that the recognition of the condition thus briefly described may be regarded as one of the best tests of an accomplished diagnostician.

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## STONE IN THE BLADDER

### IN CONNECTION WITH ENLARGEMENT OF THE SPLEEN.*

By CHARLES WILLIAMS, F. R. C. S.,
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Thomas P., aged thirty-two, a farm laborer, was admitted into the Norfolk and Norwich Hospital under my care, March 24, 1888, suffering from a stone in the bladder. He was a short, thick-set man, having a profusion of black hair, and was fairly well nourished. When he presented himself for admission it was noticed that his conjunctivæ and eyelids were effused with blood, caused, as he informed us, by the efforts he made in straining to pass his water.

He had been an inmate in the above institution two years previously under my colleague, Sir Peter Eade. He was then the subject of inflammatory dropsy, and had a semi-mixœdematous condition of the tissues. The urine contained a large amount of albumin. The face, hands, and abdomen were œdematous. The spleen was found to be much enlarged and very hard; the liver was also enlarged. He stated that two months before this attack he had suffered from acute bronchitis, and that the dropsical symptoms appeared about a week previous to his admission. He remained in the hospital several weeks, and when he left his health had greatly improved. The general swelling had disappeared, but the spleen was still large and the liver slightly so. The abdomen generally was hard and full.

On readmission in March of this year, he informed me that the symptoms of stone showed themselves about a year previously, and they began by a frequency of micturition, which became more urgent as time went on, and this was succeeded by an inability to retain any water, which was now constantly dribbling away; and it scalded him severely. He had noticed sand and gravel in the urine for six or seven months. Occasionally there was blood in it. About a month before admission hæmorrhage took place into the conjunctivæ and eyelids of both eyes, caused, no doubt, by the efforts made by the bladder to expel the stone rather than to expel any urine, which was not permitted to accumulate.

He had always been a most temperate man, taking occasionally mild beer, and no spirits. He had neither suffered from ague nor syphilis, nor fever of any kind. He had a good deal of color in his cheeks and lips. One could hardly imagine him to be very ill; he certainly had not the appearance of being so, although his skin generally was of a yellowish color and looked like wax. The sight was good; appetite bad; tongue pale and lightly furred. The heart-sounds were feeble but normal, the lungs resonant on percussion, but the breath-sounds coarse at the right base.

The spleen was greatly enlarged; it extended inward an inch to the right of a line drawn from the ensiform cartilage to the umbilicus, and downward two inches below the level of the navel; its surface was smooth and particularly hard. The liver was plainly felt a little below its normal line. The urine was very acid; it contained a small quantity of albumin and the specific gravity was 1·015. Œdema of the legs and feet usually made its appearance toward evening. On sounding the bladder, a hard calculus of large size was readily detected. An attempt was made to measure it; this could not be accomplished, inasmuch as the bladder was found to be firmly grasping the stone, and, as this viscus had not retained any quantity of urine for several months, it was not considered prudent to dilate suddenly with water an organ that had been so long in a contracted condition.

The general aspect of the patient and the peculiar symptoms he was laboring under made it evident enough that he was not only affected by this irritant in his vesical organ, but that he was the subject of *splenic leukæmia*. Examination of his blood showed that the leucocytes were greatly in excess of the red corpuscles. This unfortunate state of his system precluded the idea of an operation for the relief of the stone until the general condition of his health should be in a more improved state, and for the next seven weeks he underwent several kinds of medical treatment, but without any beneficial result. He now became impatient and clamorous to be relieved of the calculus, which was causing him a large amount of distress and discomfort. In the end I yielded somewhat reluctantly to his wish, as I still considered him to be in every respect a most unfavorable subject on which to perform any operation, but that, under the circumstances, litholapaxy would be, perhaps, the best and safest procedure to adopt. This was accordingly performed on the 11th of May, after he had been fully placed under the influence of ether. The stone was hard and tough. The *débris* removed, when dry, weighed 256 grains, and was composed almost wholly of uric acid.

The next day he complained of much pain over the region of the bladder and along the urethra. He passed a good deal of blood, as well as several pieces of stone, and he perspired

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting, September 19, 1888.

freely for several days. On the fifth day the patient was well enough to undergo completion of the operation, again under the influence of ether, which he inhaled badly and recovered from with difficulty. The *débris* weighed 435 grains, and, with the former, amounted to 691 grains. Shortly after, he had a severe rigor, which lasted several hours. Three days later he complained of a violent pain in the hypogastric region. A colliquative diarrhœa set in, consisting of thin, yellow motions. His temperature was 102°; pulse 120; tongue dry; no sickness; features pinched, and great prostration ensued. These symptoms became daily more marked, and were not alleviated by any form of treatment; to them he succumbed on the eighth day, the diarrhœa persisting to the end.

An examination of the abdomen was made after death, and there was found a good deal of pus over the bladder, which was matted to the pelvic fascia. The bladder was contracted to a size just large enough to contain the stone. Its walls were extremely thick; several small fragments of stone and some turbid urine were seen in it. The mucous membrane was congested, and presented a few white patches. The rugæ were very prominent; the prostate not enlarged. The kidneys together weighed fourteen ounces; they were pale. On section, the cortex seemed to be somewhat diminished. The papillæ were enlarged and well marked, and the pelvis of the right one dilated—on the whole, they looked remarkably well and healthy. The liver weighed six pounds, and was firm on section. The spleen weighed four pounds and a half, and had contracted firm fibrous adhesions to the chest wall. The surface was mottled, and, on making a section, its structure was seen to be dense and firm. The application of tincture of iodine gave a well-marked reddish-brown reaction; it presented, indeed, a good example of amyloid degeneration.

My reason for bringing this case to your notice is, that it presents several features of considerable interest, and especially one which I may venture to say is, so far as I can learn, new to surgery.

The number of diseases the patient had in a short space of time is singular. He, first of all, suffered from an attack of acute bronchitis; after his recovery from this, acute albuminuria supervened. From this he appears to have got well, or nearly so. He was then found to have an enlargement of the spleen; this was followed by a condition of leukæmia, and the formation of a stone in his bladder.

It was a difficult matter to ascertain how long he had been the subject of splenic disease. He was known to have had the enlargement certainly for two years, inasmuch as this condition was noticed by Sir Peter Eade when the man was under his care in 1886, at which time the patient made no complaint of bladder trouble. He probably had a very small stone in that viscus, or perhaps none at all; anyhow, the calculus was of not more, or very much more, than two years' growth, and must have weighed, with the powder that was lost in the urine, together with the fragments found in the bladder, not less than twelve drachms; it consisted entirely of uric acid and urate of ammonia.

I need not say that this is an unusually rapid formation of a vesical calculus, but it is explained by a singular fact, that in cases of enlarged spleen, especially in those suffering from anæmia, there is usually a large amount of uric acid found in the urine. Senator, in "Ziemssen's Encyclopædia of Medicine," vol. xvi, observes: "There is much reason to believe that the spleen is, if not the only, yet a very important source of uric acid, and when the spleen is enlarged, uric acid is produced in larger quantity than usual; we see this in splenic anæmia." Ranke found that in such cases uric acid was increased by one half—from 0·648 to 0·915 parts in a thousand. Pettenkofer and Voit found the average of five normal men to be 0·872, while that of a leucocythæmic patient was 1·424, an increase of 64 per cent. Ossikoosky also found an increase, the excretion being on an average about twenty-two grains in the twenty-four hours. A similar increase was noted by Schmuziger and by Berrell. In the case of the latter, a boy aged seventeen excreted 18·28 grains daily—1·50 parts in a thousand—the average for a boy of the same size and weight, on scanty diet, being, according to Parkes, only six grains. Bartels found an enormous increase in one case, the daily excretion being 4·2 grammes, or about 60 grains.

The formation of so large a stone in so short a space of time in this case is thus reasonably accounted for, the usual rate of growth in ordinary cases, as observed and recorded by the late John Green Crosse, being about two drachms in the year.

The next point presents a circumstance of great interest and significance, especially to the operating surgeon. In *splenic leukœmia* or *anœmia* the blood is found to be deprived to a great extent of its red corpuscles, and the number of leucocytes is very much increased; in such cases there is a tendency to hæmorrhage, and the consequence is that those unfortunate persons who are afflicted with this affection are bad subjects on which to perform any kind of operation, major or minor. The low vitality of the blood and a tendency to disintegration of tissue scarcely render recovery possible. Even the operation adopted in this case does not seem to be a particularly safe one.

This singular fact, that leukæmic subjects usually succumb to fatal hæmorrhage after operations, has not been recognized by the profession, certainly not by authors on practical surgery. I have searched a large number of surgical works and periodicals, and the only allusion to the subject that I could find was by Sir Joseph Fayrer, in the "Medical Times" for 1874, in which he refers to anæmic inhabitants of malarious climates, and observes that "in such cases the slightest wounds have been followed either by gangrene or by hæmorrhage." Again he says: "Surgical operations, excepting such as are immediately necessary to save life, should be avoided in this state, the tendency to hæmorrhage, gangrene, or embolism being very great." These remarks are very valuable, though they apply more especially to the natives of India.

The unfortunate result of my case fully bears out the truth of Sir Joseph Fayrer's remarks. There was indeed a great disposition to hæmorrhage, as shown by the effusion of blood into the conjunctivæ and eyelids, as well as from the bladder. It was only as a matter of urgent necessity that the attempt was made to relieve him, and it ended fatally.

With the hope of obtaining further information on this interesting subject, I appealed to my professional brethren in the pages of the "Lancet" in May of this year. The only response was on the part of my colleague, Mr. Cadge, who kindly forwarded notes of two very instructive cases

that had fallen under his observation. Mr. Cadge says in 1861 he assisted a medical friend with a troublesome case of stone:

The man was aged fifty four, corpulent and asthmatic. Three years previously an ineffectual attempt had been made to do lithotrity; the stone was broken, but not removed. The man continued to suffer, and had constant and great bladder irritation and cystitis.

Two large stones were removed. The operation was tedious from repeated slippings of the forceps. There was free, but not serious, hæmorrhage. No plug was used. The patient died two days after the operation. The prostate was freely divided. The bladder was contracted; the mucous membrane thickened and congested; the muscular coat thickened; the ureters, pelves, and tubes of the kidneys were much dilated. The spleen was of an enormous size—nearly as large as the liver.

The next case, which occurred in 1866, was that of a gentleman aged sixty-four, a florid, almost purple-faced, gouty man. The stone was removed by median lithotomy. The operation was easy and quick, and no bleeding occurred at the time.

In a few hours hæmorrhage came on, apparently from the prostatic veins; it did not escape externally, but filled the bladder, and clots were frequently extruded. It ceased in twenty-four hours, and the urine then became clear, and he seemed in every way doing well for four days. On the fifth day he ate an indigestible meal; this was followed by oppression, and in a few hours by a sharp rigor and perspiration; rigors followed every day or two. He became delirious, and died a fortnight after the operation, apparently from pyæmia.

At the post-mortem examination the bladder was seen to be healthy; the mucous membrane pale; the parts about the prostate rather congested, but no pus was found anywhere. The kidneys were large and congested. There were two or three small stones in one, and some pyelitis. The liver was large and very congested; the spleen, four or five times its normal size, tinged with blood, soft, and easily lacerable.

Mr. Cadge remarks: "I have always felt uncertain as to the exact cause of death in this case. The symptoms were those of pyæmia, but the pathology was certainly not consistent with that view."

These two cases go far to establish the fact that those persons who may happen to be the subjects of enlargement of the spleen are as liable to serious risk, should any surgical operation be performed on them, as are those who suffer from splenic leukæmia, in which condition the tendency to hæmorrhage is so great as to render an operation of any kind scarcely justifiable. In corroboration of this view, Sir Joseph Fayrer, in a private communication, says: "In case of splenic enlargement I would avoid all operations not absolutely necessary to save life and relieve suffering, even although there be no leucocythæmia or apparent anæmia."

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**Antipyrine for Sea-sickness.**—"The public attention given to the latest remedy for sea-sickness and many other affections to which flesh is heir," says the "Lancet," "has its percentage of evil as well as good. Every medicament is not an unmixed advantage, and to suppose that antipyrine may be taken recklessly any more than chloral is to adopt a position of a dangerous kind. Antipyrine has on several occasions been administered with unexpected results. It is a drug which has undoubtedly powerful effects on the nervous system, especially as tending to produce a lowering action. We must strongly protest against its indiscriminate employment without the supervision of a medical man."

## SUMMER DIARRHŒAS OF CHILDREN.*

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The subject of my essay to-day is one that crops up for discussion in almost every medical association throughout the land with the regularity of the season from which it derives its name, and, if my memory serves me aright, it has been the theme for debate in many previous meetings of this society. This is good evidence that the subject is an important one. Notwithstanding all that has been said and written concerning it, there yet remains a vast unexplored territory to be traversed. This, perhaps, is most evident in the domain of therapeutics. Our anxiety to increase our knowledge of this disease is quite excusable when we stop to consider how very fatal it is to the young community of this country in particular.

Statistical records tell us that no less than 75 per cent. of infantile deaths recorded in the United States during the summer season of recent years have been due to diarrhœa. These figures are certainly appalling, and a sad reflection upon us as a profession. If there be such a thing as a national disease, this is pre-eminently one. The celebrated Benjamin Rush, in the early part of this century, gave a very graphic description of this disease, and I believe it was he who christened it the "pestis infantum Americana"—a name suitable and appropriate even now as we approach the threshold of a new century. I do not wish it to be understood by these remarks that summer diarrhœa is unknown among children of other climes and nations. Other countries than ours have to contend with it, but, so far as my knowledge extends, it is more rampant and fatal in the United States than elsewhere. Personally, I greatly regret that I have so little to say that will materially add to our advancement in treating this disease. There have been seasons and occasions when I was sanguine enough to believe that some progress had been made, but when another year came round I found that the hopes and successes of a preceding one could not be realized, and my ideal treatment, which appeared so full of promise a year ago, had in the mean time lost its youthful vigor to such an extent that I was compelled to relinquish it for something better.

This disease appears to be so intimately connected with climatic and meteorological laws that, unless careful, one is exceedingly apt to drop into the error of attributing every good effect visible in the patient to the drugs employed, whereas, in reality, the improvement is due to some favorable change in the weather.

The foregoing remarks, you will admit, make a gloomy statement of my past experience of this disease. Lately, however, owing to a complete change in my conception of the disease, and more particularly with a certain form of it, I have modified the treatment so that it accords with my present views, and the results thus far have been very gratifying, and certainly a great improvement upon my treatment in former years. I propose to speak of summer diarrhœa under three heads or divisions—viz.: I. The mechani-

* Read before the Luzerne County Medical Society, at Glen Summit, Pa., August 8, 1888.

cal or simple irritative. II. The toxic. III. The inflammatory—the last being subdivided into the acute and the chronic. This classification, I acknowledge, is somewhat arbitrary, but, indeed, how can it be otherwise when our knowledge of the subject is so imperfect and inaccurate? It is not to be supposed that each separate division always bears the impress of sharply defined signs and symptoms which the veriest tyro in medicine can readily distinguish and recognize. This is frequently an impossibility, even to the most scrutinizing clinician. Oftentimes it will be found that a diarrhœa of one kind is very apt to change its type and run hurriedly into another form of the disease, and that that which a short time previously appeared to be nothing more than a simple bowel disorder may, under certain unfavorable conditions, assume a very aggravated aspect, and eventually terminate in the inflammatory variety, accompanied by all the evils which usually attend ulceration of the bowels.

I. *Mechanical Diarrhœa.*—I shall now invite your attention to a brief description of the mechanical or simple irritative diarrhœa. By this form I mean a diarrhœa which is caused by the presence of a substance (usually belonging to the vegetable kingdom) in the alimentary canal, whose action is simply that of a foreign body—a body over which digestion has no influence. In this variety of the disease the diarrhœa is to be regarded as a physiological effort of nature to rid itself of a substance which has, so to speak, no business there. A diarrhœa of this description is not essentially a summer affection, but, as the substances which usually give origin to it are more abundant at that season than any other, and many of them not to be found except at that period, I feel justified in placing it for consideration under the title of this paper. Respecting its symptomatology, I may state that pain in the abdomen is the earliest symptom to manifest itself. Vomiting, as a rule, does not often occur unless the irritant remains in the stomach, and when this happens free emesis usually results in its expulsion, and there is no further trouble. Generally, however, the irritant is allowed to pass into the bowels, and its presence there very soon sets up a violent diarrhœa. This diarrhœa is always accompanied by severe tormina, and, if the foreign substance is not voided after the alimentary canal has been almost emptied of its contents by the severe purging, tenesmus is added to the patient's misery. The diarrhœa does not make its appearance until three or four hours after eating have elapsed—not until bowel digestion commences. The character of the stools is at first the natural contents of the bowels, but if the irritant has not escaped, it eventually assumes a muco-sanguineous nature, with probably a more or less admixture of pure bile—in fact, the discharges soon become characteristic of the inflammatory form of diarrhœa.

The bowels, when not irritated to a pathological degree by the foreign substance, assume their natural quietude with the expulsion of the offending material. This happy termination, unfortunately, is not always to be counted on, and the disease passes on to the inflammatory kind. The irritant, by nature of its irregular and oftentimes rough exterior, lying in close contact to the intestinal tube, may, during the excitement of peristalsis, injure its delicate mucous membrane to such a degree as to cause the injured surface to inflame. Here, then, is an example of twofold importance. In the first instance we see how a simple diarrhœa may degenerate under unfavorable influences into a severe form of the disease; and, secondly, an opportunity is given us to observe that it is possible for the means adopted by nature as a cure to become, through intensity of action, a source of further mischief.

*Treatment.*—A diarrhœa of this nature is best treated by those remedies which control peristalsis. Opium and belladonna, administered in alkaloidal form, separately or in combination, are the most suitable drugs to employ. The dose must, of course, be carefully regulated according to the age of the patient.

If it be for a young child, it is probably safer to give the crude drugs in powder or tincture form. Great caution should be exercised in prescribing cathartics for this form of diarrhœa. I acknowledge that the temptation to give a cathartic to get rid of the irritating material is great. At first sight this seems a very rational treatment, but I am convinced it is one very apt to be followed by disastrous results. If, however, the diarrhœa has been moderate, there may be occasions when a mild laxative may do good. Under these circumstances it would be advisable to combine it with an opiate. I should for such cases give preference to that very elegant preparation of the United States Pharmacopœia—the aromatic syrup of rhubarb—or to a dose of emulsified castor-oil, adding to either remedy a few drops of laudanum.

II. *The Toxic Diarrhœa.*—This form may be said to be the antithesis of the one we have just described. It is, I believe, the true summer complaint or cholera infantum. You will remember that I spoke of the other form as being due to the presence of a simple irritant in the bowels, and that generally pertaining to the vegetable kingdom. The kind under discussion at present is never, I think, caused by vegetable ingesta, but arises from the presence of an animal poison or poisons closely allied to, if not identical with, the ptomaines. Oftentimes these poisons are introduced from without through the medium of the food administered—*e. g.*, with milk, gelatin, cheese, eggs, fish, and butcher's meat. They are, however, in most instances formed within the body, and are probably the products of animal decomposition resulting from a pernicious digestion. Undoubtedly a high temperature plays a very important part in their development, acting, as it does, through the nervous system upon the digestive secretions. The influence which heat has upon cerebral tissue is apparent to us all, adults as well as children. Upon the latter, however, whose nervous system is yet in its infancy, it comes with a crushing force. It is difficult to tell what these changes are which undoubtedly do occur. Certainly it is no gross lesion. Very probably it is some form of molecular disturbance in the cerebral cells, which tends to break up their harmonious action. To be practical, we shall call it a form of enervation, and, as a result arising therefrom, the quality as well as the quantity of the digestive ferments is changed. The ferments, having been robbed of their healthy vigor, can perform only a partial digestion. The bile, too, probably loses its anti-

septic properties, so that decomposition of the nitrogenous matter is allowed full play, and, as a result, animal alkaloids are generated, which, becoming absorbed into the general system, manifest their presence by a peculiar train of symptoms so well known to us all. Vomiting is a prominent accompaniment of this variety of summer diarrhœa; indeed, it is frequently a very annoying precursor of it. It is not unusual for this distressing symptom to cease entirely toward the last stages of the sickness, and the inexperienced and unobserving are apt to regard this change as of favorable import, but the watchful physician knows full well that, if there are no accompanying improvements manifested in the other symptoms of the disease, cessation of vomiting indicates a complete paresis of that center which governs this action of the stomach, and that dissolution is not far off. Diarrhœa plays the leading rôle in this disease. It is not always an early symptom. Sometimes it is tardy in making an appearance. Usually, however, it soon assumes an alarming character, and the life of the patient will depend upon its behavior. It is a relentless and an unmanageable symptom. Sometimes it is more moderate than others, and during these remissions the patient may gather enough strength to make a successful combat with it, should it be inclined to make a fresh onslaught. As a rule, however, the victim is so severely dealt with at the beginning that, if a moderation of the diarrhœa does occur, the patient has no strength to withstand it, even in a mild form. In typical cases of this disease the discharges from the bowels are at first fæcal and bilious, but, as the choleraic type develops, they soon become watery and inodorous. They are never bloody. Children who are brought up on the bottle are more prone to take this disease than those who are naturally fed, but it is by no means confined to the former. Filth, impure air, bad drainage, and unsuitable food favor its development, but paramount among causes must be regarded a high atmospheric temperature. This fact is well exemplified when we recall to mind that this disease is not essentially a disease of cities and tenement-houses. It is known to make its appearance in the most salubrious of places, along the sea-coast and on the mountain heights, and in places where we have every reason to believe in the purity of the atmosphere.

The nervous system soon shows evidence of great irritation and exhaustion, and a spurious form of hydrocephalus, the result of an anæmic brain, very frequently appears, and which I have on more than one occasion seen mistaken for an active inflammation, and treated accordingly. Convulsions frequently close the scene. Before leaving the symptomatology of cholera infantum, let me say that very often there may be seen what I shall term a prediarrhœal stage. This stage may last for several days, or even for a few weeks; but, if recognized sufficiently early and treated judiciously, it may be thwarted in its progress, and the disease prevented. The leading features of this stage are advancing pallor of the face, vomiting, and emaciation. Associated with these are certain nervous disturbances, such as restlessness, fretfulness, and sleeplessness—the results of an irritated brain. The post-mortem signs are vague and indefinite. Oftentimes nothing can be learned from an inspection of the bowels; generally, however, there is a more or less pallor of the mucous membrane, and sometimes a few inflamed glands may be seen. The mucous membrane of the stomach is frequently congested; the brain is anæmic, and the liver has a shrunken appearance. The gall-bladder may or may not contain bile.

The treatment of this disease has always been a *vexata questio* with physicians. Respecting the benefits derived from hygienic measures we are all of one opinion, but the medicinal and dietetic part of the treatment is as varied as it is unsatisfactory. The one which appears the most rational to me, and which I have most confidence in, I shall now very briefly portray. In the first instance, let the patient be removed to a cool, airy room; one with a northern aspect is to be preferred. There is no objection, when practicable, to an out-door position, especially if it be a shady and breezy place. All superfluous bed-clothing should be removed. Parents and nurses frequently insist that the patient, in order to get well, should be wrapped and re-wrapped in several layers of woolen covering, and this when the temperature outside is a tropical one. I am convinced that this practice, which I know to be common, is productive of much evil. If there is anything suspicious in the quality of the food, I order it stopped, and if there are indications that the stomach is extremely irritable, it is best to cease giving for a time anything that is ordinarily known as "food." The child, however, may be allowed to partake of small quantities of lime-water, barley-water, or ice-water, with a little good brandy or whisky added to it.

A teaspoonful of iced champagne, administered frequently, is one of the best of stomach soothers with which I am acquainted; and I can recall to mind many pleasurable instances where I have seen the dulled eye become bright again, and the flickering pulse at the wrist revive, as each dose of the wine was being retained and absorbed.

When speaking of the ætiology of this form of diarrhœa I stated that I was inclined to believe that it originated from a pernicious form of digestion, and that the immediate cause of it was the presence of certain poisons which had probably been generated during the decomposition of the animal albuminoids contained in the food administered, and which had undergone not only a partial but also a peculiar digestion. This theory, from a clinical standpoint, has everything to recommend it, and, to a certain extent, it has been sustained by chemical analysis. It can not be doubted that animal matter, when in a state of decomposition, is not the comparatively inert substance that a vegetable compound is under similar circumstances. If the above theory of its origin be correct, it is evident that animal food in the form of milk, eggs, cheese, butcher's meat, etc., is a very unsuitable diet for a patient suffering from this disease, and I think this has been abundantly verified, when a change for one containing vegetable albuminoids has been made, by the marked improvement manifested in the patient and his symptoms. I do not, however, wish to convey the impression that we have a purely vegetable food that is equivalent in nourishment to those just mentioned; but I do maintain that, when necessary, the vegetable albuminoids will answer the purpose fairly well for a short time, and especially if

supplemented by alcoholic stimulants freely diluted with simple water, or with water that has been impregnated with lime or with the salts of certain cereals. The glutin of wheat, for instance, is a vegetable fibrin, and albumin and casein are known to occur in the juices of seeds and plants. It has become somewhat fashionable of late to administer in this and other diseases predigested foods into the stomach when that organ is deficient in digestive power; and there are some persons who claim that this is rational practice, but to my thinking it is one opposed to every law of nature. I am a firm believer in Nature's dominancy under whatever condition she is placed, and when she can not perform what we call a healthy action she will, in preference to performing no work at all, adopt a method of labor peculiar to and in accordance with the forces that prompt her into activity, and any material which is not the result of her own labor will be disdainfully rejected for use in the structure undergoing erection. She must be the sole contributor, and other work than her own will not suit. To express this in clearer and briefer words, I will say that predigested food is useless to the economy, so far as its predigestibility is concerned. I suppose that the nearest approach to an artificial food suitable for children suffering from this complaint is that preparation recently brought out by an eminent New York firm of druggists. It has, however, two disadvantages, one being that it contains a certain amount of animal albuminoids in the form of desiccated milk; the other, that it happens to be the most recent preparation of its kind in the market; but this time will erase. Great caution and discretion must be exercised when a return to the ordinary diet of the patient is contemplated. There is great danger in doing this too soon. The nervous system must first be fortified by improving the digestion, and we should not attempt making the change until we have good reasons for believing that every vestige of decomposed matter, formed by the unhealthy digestive ferments, has been removed. There is no positive means of discerning this, and we must, therefore, take the general symptoms and appearance of the patient as guides and criteria.

I shall now proceed to the more congenial part of the treatment—viz., the medicinal—and, at the risk of being considered pedantic, I shall mention, in the order of their merit, those prescriptions which I have found the most efficacious, assuming that the patient is about a year old.

℞ Pepsinæ puræ..... gr. viij–xij;
Acidi hydrochlorici dil..... ♏lxxij;
Tinct. opii deodor..... ♏x;
Syrupi..... ʒiv;
Aquæ..... ad ℥iij.
M. Sig.: A teaspoonful every or every other hour.

℞ Hydrarg. subchlor..... gr. ¼;
℞ Hydrarg. c. cretæ..... gr. ½;
M. Sig.: Either of the above to be given dry upon the tongue every two hours.

℞ Acidi nitrici dil..... ʒj;
Acidi carbolici puræ..... gr. iv;
Tinct. opii deodor..... ♏x;
Aquæ..... ad ℥iij.
M. Sig.: One drachm every two hours in water.

℞ Bismuthi subnit..... gr. xlviij;
Sp. ammon. co..... ʒij;
Tinct. opii deodor..... ♏x;
Misturæ cretæ..... ad ℥iij.
M. Sig.: One drachm every two hours.

You will observe that I have given the place of honor to those remedies which aid digestion, and I can safely say that I have seen better results from their use than from any other treatment that I have tried. So far, their action appears to uphold the theory I entertain in regard to cholera infantum.

A reliable preparation of pepsin is a great desideratum. I never prescribe the saccharated form, as I do not think it trustworthy, and it is to be hoped that it is a drug of the past.

III. *Inflammatory Diarrhœa.*—This variety of diarrhœa usually makes its appearance late in summer or during the autumn months. Dampness and moisture favor its development, and it is therefore more prevalent during a rainy season and when the disparity between diurnal and nocturnal temperatures is greatest. Miasmatic influences, by originating congestion of the portal system, also play an important part in its causation. A diarrhœa of this nature is very liable to assume a dysenteric character, and, indeed, it frequently becomes a difficult question to decide which disease is present. Dysentery, however, can generally be recognized by that peculiar odor which usually attends the stools, and which is so characteristic of that disease. This is generally absent in the disease under consideration. The stools in inflammatory diarrhœa are extremely liable to vary in character; one day they may be serous or muco-purulent, while on the next they may be of a fibrinous or a bloody nature. There is usually more or less constitutional disturbance present, but the fever is never very high. Vomiting is not a frequent symptom: indeed, it is often conspicuous by its absence. The abdomen feels hotter than any other part of the body. It is tender to pressure, and has a tense feel. This disease, if not cured within a week, has a great tendency to become chronic, and it may then last for several weeks or months. It is frequently fatal in its acute form, and death is generally the result of asthenia, brought on by the frequent discharges and from the severe pain which attends the tenesmus. When tenesmus is marked the stools are either entirely composed of mucus or of blood. When the disease passes into the chronic form the diarrhœa is very capricious. It may cease entirely for a day or two and appear again as vigorous as ever. It is rare, however, for two consecutive evacuations to be alike. The tongue becomes very characteristic. It is perfectly clean, red in color, and looks as if it had been glazed. Sometimes it is studded with aphthous ulcers. The patient is usually very thirsty, but this symptom is not so much due to the intensity of the fever as it is to the drying up of the tissues, brought on by the continual drainage from the bowels. Evidence of anæmia soon shows itself, and the patient becomes greatly emaciated. Death generally occurs from exhaustion. The anatomical lesions are of an inflammatory character. The mucous membrane, glands, and follicles of the large intestines, notably the colon, are

the parts usually attacked. The small intestines generally escape, but sometimes the ileum bears traces of the disease. The mesenteric glands appear red and swollen, and when the disease has existed for some time evidence of ulceration is present. In strumous children, and in those who are predisposed to phthisis, the degenerative form of glandular disease is apt to be developed.

*Treatment.*—Children who are liable to be attacked by this disease should always be warmly clad. A woolen roller placed over the abdomen is a good safeguard. The feet, also, should be kept warm and dry. Mercurials are often of great service in this kind of diarrhœa, especially in its acute form. It is a good plan to administer a dose of castor-oil to get rid of scybala, which may be present, before commencing the mercurial treatment. When there is reason to suspect a malarial taint a mixture composed of small doses of sulphate of magnesia, quinine, and sulphuric acid oftentimes gives happy results, and it is said that counter-irritants applied over the hepatic region are very beneficial. In the chronic form mineral and vegetable astringents may be used with advantage. Iron is specially indicated when the patient is anæmic. The most serviceable ferruginous preparations, in my experience, have been the liquor ferri perchlor. and the liquor ferri pernit.

Before concluding this paper I must say a few words in reference to the bacterial theory of summer diarrhœa, and I suppose some of you wonder why I have tarried so long without doing so. The theory of bacterial origin is one that has many stanch and learned adherents, and it is probably getting to be the most generally-accepted theory. We are told that bacteria are always present in matter which is undergoing putrefactive decomposition, and that they are known to always exist in the intestinal canal; but are we safe in ascribing the various forms of putrefactive decomposition to the *presence* of these micro-organisms? I do not feel competent to answer this question in the negative, neither am I, on the other hand, inclined to accept this theory in its entirety. I think it is extremely doubtful if bacteria are actually concerned in the processes connected with putrefactive decomposition. That they are present whenever these changes occur can not be denied, but may they not be drawn hither instinctively (if you will allow the term)? and are not such places their native abodes? We have seen that they are always present in the alimentary canal, whether their host be healthy or diseased, and bacteriologists have yet to tell us how we are to distinguish the natural *habitués* of the bowels from their relatives which are said to visit these parts on special occasions only. I think it is the matter which surrounds these organisms, and in which they delight wallowing, that contains the poison, and that this poison is of a chemical nature. You will also probably have noticed that I have said nothing concerning the treatment of diarrhœa by medicated injections into the bowels. I have tried this method to some extent, but have never been satisfied with its utility. The bowels, as a rule, resent them, and their use interferes with the treatment of rest to a diseased part. And, lastly, the influence which dentition is said to have in causing diarrhœa is another subject which has not been dealt with. I have omitted it advisedly, as I have never been able to clearly see that it plays any part in the causation of summer diarrhœa. That diarrhœa frequently exists as a complication of dentition can not be denied, but to raise the latter to the dignity of a cause is more than my experience can allow.

## THE INCREASE OF INSANITY AND MENTAL DEFECTIVENESS.

By H. K. PUSEY, M. D.,
LATE SUPERINTENDENT OF THE CENTRAL KENTUCKY LUNATIC ASYLUM AND MEMBER OF THE MEDICO-LEGAL SOCIETY OF NEW YORK.

The frequency with which the inquiry is made of physicians as to the cause of the great increase of insanity suggests some thoughts on that subject. That insanity in the United States is increasing in a ratio greater than the relative increase of the native white population is, I think, questionable; yet the belief that it is is generally accepted, and explanations have been sought in the changed habits of our people, resulting from the quickened movements of late years in all the departments of human pursuits, and from the development and discovery of new subjects of thought and of excitement.

To admit this as a fact would be to allow the conclusion that education and civilization are promoters rather than preventives of mental defectiveness, and that our race is consequently deteriorating. This would be at variance with well-established physiological laws, and with the accepted aphorism, *mens sana in corpore sano*, toward which all psychological study is tending.

The brain and nervous system are as dependent on proper nutrition, training, and exercise for healthy development as are the muscles and other organs of the body. That our systems of education, training, and pursuits are not materially defective, or at least that progress is being made in that line, is demonstrated by the fact that the average duration of human life is regularly increasing, and that no period of the past has presented so many evidences of mental and physical vigor of the race as have the preceding and present generations.

The very much larger percentage of the insane among our foreign population and the obvious increase of insanity among the negroes of the South accounts, I think, for a large percentage of the real increase in the ratio of the insane over the sane population. But, after all, this great increase of insanity over which the public mind is so greatly exercised is more apparent than real. It was only by the late census that all of the mentally defective population in the United States became statistical. No statistics previous to the last census were sufficiently accurate to be of any value in arriving at conclusions.

Most of the States now, not only from a humane sense of duty, but from policy also, are attempting to provide for all of this class of their diseased and defective population. This is done in a way that brings them prominently before the public. The great improvement in the construction of hospitals and asylums for the insane, and the methods of treatment and care of them, has done so much toward subduing prejudice against these institutions that every

class of society now seeks admission for their afflicted, thus appearing to add largely to the number of the insane and mentally defective who are only brought into account by institutional care.

It may be admitted that there is more discovered and even more real insanity among civilized than among uncivilized people, and yet civilization, except so far as alcohol is chargeable to its account, is not responsible for its origin; unless that responsibility is incurred by a humane and Christian conservation of the weak and defective, that character of population and offspring that is eliminated from barbarous populations by the inexorable law of "the survival of the fittest." It is a mistake to conclude that there is but little mental or cerebral defectiveness among uncivilized peoples. The same is said with reference to bodily defects and disease, which is true only because such are destroyed or are allowed to die from neglect and want of care. A great deal of insanity is eliminated by races who have made progress in civilization and enlightenment by persecution and neglect of its unfortunate victims. It has not been long since witches were burned at the stake in our own country, and since then none were considered to be insane unless they were raving maniacs or jabbering idiots. The impulsive, the delusional, and reasoning maniacs were deemed "to be moved and instigated by the devil," and were strangled or burned at the stake.

Much of this barbarous sentiment survives to the present day, and is exhibited in the clamor for the blood of the victim who, under an irresistible impulse or a fixed delusion, commits a homicide or other act that in a sane person would be a crime. Examples are not wanting in which this sentiment has influenced the verdict of juries both in this country and in Europe.

Another important factor in the apparent increase of insanity is the facility with which it is now detected, and the diminished opportunities and motives for concealment on the part of the friends of the patient. With these facts before us we are only bound to admit that we know of a larger percentage of insanity than was known fifty, or even twenty-five, years ago. Whether, however, this constitutes a larger percentage than the methods now pursued would have revealed at any other period of our history, we have not the means to determine.

The popular and generally received idea that insanity is one of the penalties of civilization and higher intelligence at least admits of doubt. The cases of insanity resulting from emotional and intellectual strain are more than compensated for by the other extreme—ignorance, poverty, and depravity—prolific causes of insanity that are eliminated by the higher degree of civilization and enlightenment.

The subject on which the delusions of insane persons rest is often noted as the cause of their insanity. Persons are said to be insane on the subject of religion, on the subject of mechanical inventions, on electricity, steam, dynamite, etc., thus extending the causes of insanity *pari passu* with the developments of science and the inventions of civilization. The mind can not grasp in its insane delusions subjects of which in its normal condition it has no knowledge. The character of the delusion is determined by the mental culture of the individual rather than by the subject on which the disordered mind may rest. The subject has not rendered the man insane, but has become the subject of his delusion because he is insane.

That there is a very much larger and increasing percentage of insanity among our foreign than is found in our native population is a fact that is fully recognized. This results more from the circumstances attending these than from any racial predisposition. The change of habits and of relation to society, homesickness, anxiety about a living, and worry about making money, and in many instances defective nutrition, all operate as exciting causes of insanity. Intemperate habits, often engendered from these causes, is also an important factor in the causation of insanity.

The insane neurosis or predisposition of the individual whose restlessness and discontentment possibly determined his immigration to this country brings a larger than a proportionate number of that class who, with their offspring, go to swell the numbers of insane among the foreign population of the country.

The same cause operates to increase the percentage of insanity in large cities and in dense populations. The individual who is tyrannized by an insane organization, whether hereditary or acquired, who is unstable in his habits, is restless, discontented, and perhaps intemperate, is more liable on this account to drift to a city; others, impelled by delusions of their own importance and of extravagant purposes, find their way to a city in order to carry out plans of reform, to complete inventions, or to establish great enterprises. That more insanity results from causes operative in cities than in thinly settled rural populations, such as we have in Kentucky, I think is questionable.

It is usually assumed that there is more poverty, crime, and intemperance in cities than in the country. If this be true, it is fully counterbalanced by the feeling of solitude and of anxiety inseparable from an isolated mode of life and the absence of that sense of safety that comes from well-protected and closely organized society. The insane age—from twenty to thirty-five years—is represented in our asylums by a large number of married women and men who have begun life without means, and perhaps on a rented farm or on one purchased with deferred payments. The struggle for a living and the anxiety for the future at once become intense; the drafts of maternity and the presence and responsibility of children are soon added; disappointment or defeat too often follow these exhausting efforts, or, even if moderately successful, the strain has been too great, and an organization that might have borne the individual through more favorable circumstances succumbs to acute melancholia or mania.

In the condition of servitude there was very little of insanity known or observed in the negro race. There was considered to be more of idiocy and imbecility in proportion to the insane than was found in the white race; yet, owing to the lower intelligence of the negro and the *régime* and discipline of the slave code in which the care of the negro in every condition devolved on his owner, these were not as obvious as were similar defects in the white race.

The case now is widely different. Generally poor and naturally improvident, the negro family having a defective member at once seeks the aid of the State for the afflicted one. In this way all are gathered together in the asylums, poor-houses, or county jails, or are cared for in the family at the expense of the State. Being thus paraded before the public, a marked impression is made on the minds of those who remember the negroes before their emancipation, and can rarely bring to mind a single case of insanity among them.

After making due allowance, however, for these facts, it is still recognized that insanity is increasing among the colored people at a rate that, if continued, will soon equal and exceed the percentage in the white population. This is owing to causes that are readily appreciated. The negro is essentially an emotional and superstitious character; liberty is accepted by him in a large measure as a license to cultivate his emotions and superstitions, and to indulge his appetites without the restraint imposed by a corresponding mental culture. His religious excesses are as unrestrained as are his physical and moral debaucheries. Intemperance in all the habits of the race is doing much to induce insanity and mental defectiveness.

The sudden transition from a condition of servitude, with its enforced habits of temperance, prudence, and industry, to one of freedom and self-dependence, brought with it privileges and responsibilities for which the race was unprepared either physically or mentally.

Large numbers of the colored people have made an honest effort to meet the obligations that their changed relation to society has imposed upon them, and have thereby subjected the brain and nervous system to strains up to which they had not been developed by previous education and training. Poverty, with its consequent defective nutrition and mental worry about a living for themselves and families, is doing much toward ingrafting the insane neurosis upon the negro race.

The fact that general paresis is becoming common in the negro indicates that his race enjoys no immunity from the influences operating to induce insanity in the white man, and that until time shall accommodate his organization to the requirements of his new surroundings, the negro may be more subject to mental defectiveness than the white race.

**Urticaria Pigmentosa.**—"In an elaborate monograph on this disease, containing an exhaustive analysis of previously recorded and several new cases, and some interesting chromo-lithographs," says the "Lancet," "Dr. Paul Raymond discusses a disease of much interest, first studied in England. This affection of early infancy is characterized by urticarial eruptions succeeded by raised or flat patches of a brown color. It has a variable duration, averaging about ten years, and the author thinks it allied to urticaria, but differing very distinctly clinically and in its pathological anatomy. He concludes that it is a special angio-neurosis, marked by a vaso-motor hyperexcitability, and an independent dystrophy or tropho-neurosis of the dermis, ending in the formation of the peculiar cells described as 'mastzellen.' The peculiar and characteristic coloring of the eruption, which is so interesting a feature, is thought to be due to the accumulation of 'mastzellen' and superadded elements, and secondarily to hæmatin crystals and pigmentation of the lowest cells of the epidermis."

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## HABITUAL CONSTIPATION IN CHILDREN.

Dr. Eustace Smith ("Brit. Med. Jour.," July 7, 1888) enumerates the causes of habitual constipation in children as follows:

First. Improper feeding. An excess of starch or of any article which overtaxes the digestive power may burden the alimentary canal with a large undigested residue and thus set up a costive habit.

By such means a mild catarrh of the intestinal mucous membrane is excited and maintained. There is an excess of mucus, and the fæcal masses, rendered slimy by the secretion, afford no sufficient resistance to the muscular contractions of the bowel, so that this slips ineffectually over their surface.

Second. Dryness of the stools. Even in the youngest infants the evacuations may sometimes be seen to consist of small, hard, round balls, like sheep's dung. This form of costiveness is generally due to insufficiency of fluid taken. The food is made too thick, or the needs of the system in the matter of water are overlooked. But, whether the constipation be due originally to excess of mucus or deficiency of fluid, it can not continue long without affecting injuriously the peristaltic movement of the bowels. As the colon grows accustomed to be overloaded, the intestinal contents can no longer exert a sufficiently stimulating influence upon the lining membrane, and the muscular contractions begin to flag. If the infant be badly nourished, this languor of muscular contraction may be aggravated by actual weakness of the muscular walls; and as, under these conditions, the bowel is apt to be overdistended by accumulation of its fæcal contents, the expulsive force at the disposal of the patient is seriously impaired. Constipation due to the above-mentioned causes is often made more serious by the infant's own efforts to delay relief. A baby whose motions are habitually costive knows well the suffering which undue distension of the sphincter will entail, and often yields to the desire to go to stool only when it is no longer possible to resist. The pain is sometimes aggravated by the formation of little fissures, and the violent action of the sphincter, set up by their presence, forms an additional impediment to free evacuation.

Third. The use of opium, generally given secretly by a nurse for her own purposes. So long as the sedative is given, the bowels are costive, the child often vomits, his relish for food in great part disappears, and he lies, with pupils firmly contracted, in a dull, heavy state, from which he can not easily be roused.

An infant whose bowels are habitually costive is not necessarily injured by the want of daily relief. Often the child

seems perfectly well, and, except for occasional local discomfort when he gets rid of an unusually large or hard mass, may appear to suffer no inconvenience at all. In other cases there is flatulent distension or frequent colicky pain, the child sleeps badly, has a furred tongue, and cares little for his food; the motions are often light-colored from undigested curd, and are passed with violent straining efforts, during which the bowel may prolapse or the navel start. This straining is not an uncommon cause of hernia. In relieving this condition, attention to the feeding and clothing of the baby are of little less moment than the use of drugs. When the infant is at the breast a teaspoonful of syrup given three or four times a day before a meal will often quickly restore the normal regularity of the bowels. If the stools are habitually dry and hard, the child should take a sufficiency of liquid with his food. In addition, it is useful now and then to make him drink some plain filtered water. In the case of a baby in arms, the possibility that the child may be thirsty and not hungry seems rarely to be entertained; but in warm weather, when the skin is acting freely, the suffering among young babies from want of water must often be acute. At such times the urine is apt to be scanty and high-colored, and may deposit a streak of uric acid on the diaper. When fluid is supplied, the secretion both from the bowels and kidneys quickly becomes more healthy; and a dessertspoonful of some natural aperient water, given at night, aids the return of the stools to their natural consistence.

The form of constipation due to mild intestinal catarrh is common enough in young infants. This is owing, no doubt, in great measure to overabundant feeding with starchy matters, or to the giving of cow's milk without taking due precautions to insure a fine division of the curd. Still, it can not be denied that we sometimes find the same derangement in infants whose diet is regulated with proper judgment. In them the intestinal catarrh is often the result of exposure, for the sudden withdrawal of all protection from the legs and belly which the process known as "short-coating" too commonly involves is a fruitful cause of chill. Under such conditions the bowels are, no doubt, often kept in a state of continued catarrh from rapidly recurring impressions of cold. When constipation is due to this cause our first care must be to protect the child's sensitive body so as to put a stop to the series of catarrhs. To do this it will not be sufficient to swathe the belly in flannel. The legs and thighs must also be covered, for so long as a square inch of surface is left bare the protection of the child is incomplete. The infant's diet must next be regulated with due regard to its powers of digestion. Excess of starch must be corrected, and it is best to have recourse to one of the malted foods. Mellin's food is especially valuable in cases where there is this tendency to constipation, as in many children the food has a very laxative effect; but, as Mellin's food contains no unconverted starch and can do nothing to prevent the formation of a dense clot when the curd coagulates in the child's stomach, it is advisable, when giving it with milk, to insure a fine division of the curd by the addition of some thickening material, such as barley-water. A certain variety in the diet is of importance in all cases where the digestive power is temporarily impaired. Therefore it is advisable to order an additional food to be given alternately with the Mellin and milk. Benger's "self-digesting food" is useful for this purpose, and rarely disagrees. It must be given, like the Mellin, with cow's milk, but without the barley-water, for the pancreatin it contains has a digestive action on the curd and removes the tendency of the latter to firm coagulation. In addition to the above, if the child has reached the age of ten months, he may take a meal of veal-broth or beef-tea once a day, and with this it is advisable to give some vegetable, such as broccoli or asparagus, thoroughly well boiled. At this age, too, the milk of the morning meal may be thickened with a teaspoonful of fine oatmeal and sweetened with a teaspoonful of malt extract. In the case of many infants suffering from habitual constipation, the appetite is very poor, and great difficulty is found in persuading them to take a sufficient quantity of nourishment. This indifference to food is almost invariably associated with coldness of the extremities, and usually disappears when measures are taken to supply necessary warmth to the feet and legs.

In addition to the regulation of diet and clothing, the bowels should be regularly stimulated by manipulation. The sluggishness of peristaltic action may be very materially quickened by judiciously applied frictions. The nurse should be directed to rub the child's belly every morning after the bath. She should use the palm of the hand and ball of the thumb, and, pressing gently down upon the right side of the abdomen, carry the hand slowly round in a circular direction, following the course of the colon. The frictions may be continued for five minutes. In obstinate cases the child may be placed upon the bed, and the bowels gently kneaded with the thumbs placed side by side, the movements following the course of the colon.

In addition to the above-mentioned general treatment, more especial measures may be necessary. These may be divided into suppositories and enemata, and medicines given by the mouth. The time-honored piece of Castile soap for a suppository is recommended, and the now popular enema of thirty or forty drops of pure glycerin. Large enemata of soap and water should be used only rarely, as great dilatation of the rectum and permanent loss of muscular tone are very apt to follow their continued use.

For the permanent cure of habitual constipation, remedies given by the mouth are greatly to be preferred, but strong purgatives are worse than useless. The aim should be to find the smallest dose which will awaken a normal degree of peristalsis, and to give this dose regularly so as to excite a habit of daily evacuation. The daily dose is most efficient when combined with a remedy which tends to give tone to the muscular coat of the bowel. For this purpose a useful draught is composed of half a drop of tincture of nux vomica, combined with ten drops of tincture of belladonna and twenty of infusion of senna, made up to a fluidrachm with infusion of calumba. This should be given at first three times a day before food, and subsequently reduced to twice, and then to once daily. The liquid extract of cascara is useful in many cases, especially

when combined with tincture of belladonna. Twenty, thirty, or more drops of cascara extract, with ten of tincture of belladonna, may be given with a few drops of glycerin every night. In the west of England a favorite remedy is half a grain of sulphur, colored red with cochineal, and, when given regularly every night, it is often efficacious.

When the motions are drier than normal, a saline may be given in addition to the liquid already recommended to be added to the diet. The saline may be combined with small doses of nux vomica and quinine. For a baby of five or six months, five to ten grains of sulphate of sodium may be given, with a quarter of a grain of quinine, half a drop of tincture of nux vomica, and a minim of aromatic sulphuric acid, in a teaspoonful of water, three times a day before food. If the remedy has been well chosen, its quantity may soon be diminished, and finally it may be discontinued.

## *MINOR PARAGRAPHS.*

### MICRO-ORGANISMS IN THE GENITAL TRACT OF THE HEALTHY WOMAN.

Winter ("Ctrlbl. für Gynäkologie," No. 17, 1888) has examined all parts of the genital canal during life for micro-organisms, and believes he has the material to answer the two following questions:

1. What parts of the genital canal contain organisms?
2. Are any pathogenetic organisms found in the genital canal of a healthy woman?

The results of his inquiries are as follows: The normal tubes contain no micro-organisms. The uterine cavity generally contains no bacteria; but they may easily be carried there, as, for instance, by the uterine sound. The cervix and vagina always contain abundant organisms. In the search for pathogenetic organisms Winter found one which he is inclined to believe the *Staphylococcus pyogenes albus*, and this was certainly found in half of all the cases in the parts affected by bacteria. He also found the *Staphylococcus pyogenes aureus* four times, the *Staphylococcus pyogenes citreus* once; streptococci were found three times. The grounds on which Winter bases his belief in the presence of true staphylococci are their absolute conformity to the culture characteristics; and with the *Staphylococcus pyogenes aureus* and *citreus* the characteristic pigmentation. To prove the identity and virulence of the organisms, Winter made many attempts to inoculate animals, but all without result. Nevertheless, he believes in their identity. The practical result of his researches is to prove that in operations on the lower parts of the genital tract thorough disinfection should be resorted to, to prevent possible self-infection of the wound.

### ACTINOMYCOSIS IN MAN.

M. Nocard reported the first case of this disease which has been observed in the human subject in France to the Académie de Médecine. The patient was a stable-boy in whom, after certain injuries to the left buttock and thigh in the spring of 1887, what seemed to be a deep-seated chronic abscess developed in the limb. This was opened in July, and other abscesses appeared in October and November. The pus contained a considerable number of small white bodies, which, on microscopic examination, were found to be masses of actinomyces. In July, 1888, there was still an obstinate fistula which from time to time became inflamed and discharged pus presenting the characteristics already described. The patient is now able to walk, and his general health is better than it was, but he is not cured.—*Brit. Med. Jour.*

### THE CONDITION OF THE BRAIN IN CASES OF CONCUSSION.

Mr. Bryant, in his lectures on cranial and intracranial injuries ("Lancet," Sept. 1, 1888), devotes considerable time to the changes found in the brain after so-called concussion of its substance, or rather shaking of its structure. In his experience, concussion has always been synonymous in a pathological sense with contusion or laceration of the brain. Sir Prescott Hewett, thirty years ago, said: "In every case in which I have seen death occur shortly after and in consequence of an injury to the head, I have invariably found ample evidence of the damage done to the cranial contents." Mr. Hilton, who followed him, wrote: "We ought to consider a brain which has been subjected to concussion a bruised brain." And Mr. Le Gros Clark, who lectured later, stated: "I have never made or witnessed a post mortem after speedy death from a blow on the head where there was not palpable physical lesion of the brain." Neudorfer, of the Austrian army, declares that he has never seen concussion, as so called, since in all cases he has examined cerebral injury was found to exist.

After citing numerous cases of physical changes in the brain substance as a result of so-called concussion, Mr. Bryant says: "With these facts and conclusions before us, am I therefore wrong in assuming with some confidence that you will see with me the expediency of combining with the term 'concussion' that of 'injury,' and of describing such cases in the future as those of injury of the brain from concussion?" The term "concussion" by itself is vague and delusive, while that of "injury" is clear and true, and conveys at once a meaning the force of which can not be misunderstood. The word "concussion" later on may be dropped, and the simple term "injury" retained. With this starting-point, it would naturally follow that fractures of the skull in all their varieties, hæmorrhage into the cranium in all its forms, and compression of the brain, however brought about, will be regarded as complications of the one common and essential factor, cerebral injury, and not, as now, be regarded as separate and individual troubles to be dealt with independently. And even scalp wounds, the result of external violence, would assume a position in the surgeon's mind they ought to have, but have not yet attained; and consequently receive the attention to which they are entitled, not so much perhaps on their own individual account as simple wounds, but as wounds mostly brought about by direct violence applied to the cranium, and consequently liable to be complicated with some contusion of the cranial bone or intracranial injury.

### THE REMOVAL OF PROLAPSED INTESTINE.

Mikulicz ("Deutsch. Gesellsch. f. Chir.," xvii) recommends the following procedure for the removal of prolapsed rectum or intussuscepted colon in cases in which such a plan of treatment is determined upon. In one case two feet and a half of prolapsed colon were amputated, the patient making a good recovery. The patient is placed in the lithotomy position. Two strong threads are passed through the extremity of the prolapse and looped for fixation. Irrigation should be continuous throughout the operation. A transverse incision is made through the anterior part of the prolapse, going carefully through its thickness, all bleeding being checked. When the serosa of the intussuscipiens is cut through, exposing the serosa of the intussus-

ceptum, the two serous membranes are stitched together with a circle of fine sutures, thus closing all communication with the peritoneal cavity. Just beyond the sutures the anterior part of the intussusceptum is also cut through, and the two ends of the gut are now sutured together to the entire extent of the incision by silk threads, including all the coats. The threads are left long, and used to steady the bowel till the completion of the operation. Finally, the remaining periphery of the two intestinal lumina is secured, the numerous mesenteric vessels tied, and the union of the gut completed by the deep sutures. The line of suture is dusted with iodoform, the long ends of the stitches cut away, and what remains of the prolapse reduced. No drainage-tube or bandage is used, and opium is given for eight days.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending September 25, 1888:

| DISEASES. | Week ending Sept. 18. | | Week ending Sept. 25. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 53 | 15 | 55 | 15 |
| Scarlet fever | 68 | 16 | 68 | 12 |
| Cerebro-spinal meningitis | 0 | 0 | 1 | 1 |
| Measles | 83 | 8 | 62 | 11 |
| Diphtheria | 54 | 17 | 44 | 11 |
| Small-pox | 0 | 0 | 3 | 0 |
| Yellow fever | 1 | 1 | 0 | 0 |

**A Reception** was given by Dr. W. Gill Wylie, on Saturday last, in honor of Dr. Graily Hewitt, of London, and on Wednesday evening Dr. Robert F. Weir and Dr. William T. Bull gave a reception at the New York Hospital in honor of Professor Esmarch.

**The Eastern Dispensary.**—Examinations will shortly be held by the Board of Trustees of the Eastern Dispensary of this city preliminary to making the following appointments in the medical staff: One attending physician to the Department of General Medicine, one attending surgeon to the Department of General Surgery, and two district or visiting physicians. Two hours' service daily is required of the attending physicians at a yearly salary of $400, and the district or visiting physicians are to render two hours and a half daily service at an annual salary of $500.

**The Medico-chirurgical Society of German Physicians.**—At the next meeting of this society, to be held in the Arion Building, corner of Park Avenue and Fifty-ninth Street, next Monday evening, Dr. W. Freudenthal will speak on "The Ætiology of Hernias," and Professor F. von Esmarch, of Kiel, on "Articular Neuroses." After the scientific proceedings, there will be a reception in honor of Professor von Esmarch.

**Society Meetings for the Coming Week:**

MONDAY, *October 1st:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Monmouth, N. J., County Medical Society (Freehold); Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

TUESDAY, *October 2d:* New York Obstetrical Society (private); New York Neurological Society; Elmira, N. Y., Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg, N. Y., Medical Association; Medical Societies of the Counties of Broome (annual), Columbia (annual—Hudson), Orange (semi-annual—Goshen), and Schoharie (semi-annual), N. Y.; Medical Association of Northern New York (annual—Malone); Essex, N. J. (annual—Newark), Hudson, N. J. (Jersey City), and Union, N. J. (quarterly—Elizabeth), County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston); Baltimore, Md., Academy of Medicine; Chittenden, Vt., County Medical Society.

WEDNESDAY, *October 3d:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Philadelphia County Medical Society (regular).

THURSDAY, *October 4th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua; Boston Medico-psychological Association; Washington, Vt., County Medical Society; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

FRIDAY, *October 5th:* Practitioners' Society of New York (private); Baltimore, Md., Clinical Society.

SATURDAY, *October 6th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

# Proceedings of Societies.

## AMERICAN ASSOCIATION OF GENITO-URINARY SURGEONS.

*Second Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, DR. EDWARD L. KEYES, of New York, in the Chair.

**Pyæmia as a Direct Sequel of Gonorrhœa.**—DR. ROSWELL PARK, of Buffalo, in this paper gave the history of a case of gonorrhœa occurring in a man, contracted a month prior to his entrance into the hospital. The urethral discharge had ceased after two weeks, and swelling of one knee had developed, which his physician had attributed to gonorrhœal rheumatism.

When he entered the hospital the left knee was much swollen and fluctuating, the right in a less degree; the patient's general condition was typhoidal. The typhoidal symptoms increased in severity; it became necessary to tap one knee because of extreme distension; cloudy serum was withdrawn. Sordes developed on the tongue, the patient became delirious, septic symptoms increased, and ended fatally. At the autopsy there was found erosion and a collection of pus at the sterno-clavicular articulation, pus in other joints, enlarged mesenteric glands, etc. The case had occurred some years ago, and the author could not undertake to say whether it had been in the first place one of specific urethritis caused by the gonococcus of Neisser. It had not yet been shown that the gonococcus could produce abscess, whatever might be its influence upon mucous membranes. Pyæmia as a direct sequel of gonorrhœa was extremely rare. In text-books this condition had often been confounded with septicæmia, endocarditis, and pericarditis. The speaker had frequently found in what were commonly regarded as normal urethræ bacteria usually present in surgical cases, and to these he thought it probable the pyæmia in the case referred to was

due. Why they did not frequently cause pyæmia in gonorrhœal inflammations he was unable to say.

**Clinical Observations on Gonorrhœa, with Special Reference to Ætiology, Duration, and Treatment.**—Dr. J. P. Bryson and Dr. E. C. Burnett, of St. Louis, presented the paper, which was founded on observation of 1,394 cases. The longer their experience the more were they inclined to regard gonorrhœa as a disease of special nature. The disease always began at or near the meatus. There was no case in which there was high inflammation without the presence of the gonococcus. In cases diagnosticated as non-specific urethritis the patients had been granted permission to marry, and the wife had remained well; in other cases, on the other hand, men with presumable specific gonorrhœa had married in opposition to medical advice with serious consequences. In the latter cases the gonococcus was present in the discharge. This evidence of continuation of the disease might be found long after all discharge from the meatus had ceased. The greater number of gonorrhœal cases became chronic. The discharge might be present as long as eight or even sixteen years after the attack. In many cases a chronic gonorrhœa passed into a stage of quiescence until something occurred to relight it.

In the first and second stages germicidal treatment had not been successful. Astringents were of benefit in the third stage, and internally copaiba and oil of sandal-wood. They could not affirm that these agents did not produce their effect by destroying the microbes.

**Retroinjections in Gonorrhœa.**—A paper on this subject was read by Dr. E. R. Palmer, of Louisville. (It will be published hereafter.)

**The Use of Nitrate of Silver in the Local Treatment of Chronic Urethral Discharges.**—Dr. F. R. Sturgis, of New York, in this paper took the ground that in general a urethral discharge was not chronic until after four weeks' duration. Deep injections of nitrate of silver solution had, during the last few years, attracted considerable attention. The difficulty in making the injections consisted in limiting them to the affected part. If it could be confined to the diseased tissue much pain and discomfort would be avoided. He had arranged the endoscope so that the whole canal could be illuminated, and thus was enabled to make the application just where it was needed. Under their use the granular patches became less congested, finally disappeared, and the discharge ceased. He had used as much as sixty grains to the ounce. He had also made local applications of nitrate of silver in chronic urethral inflammation after stricture had begun to form, with success.

**The Diagnosis and Treatment of Chronic Urethritis, with Demonstration of Instruments.**—The paper, sent by Dr. Oberländer, of Dresden, read by Dr. J. B. Fordyce, contained a brief description of the different forms of urethritis according to the pathological appearances under the endoscope, an instrument which the author regarded as of much value in diagnosis and treatment. In stricture, as a rule, he preferred dilatation to all cutting operations. The dilating instrument, the blades of which were covered by rubber, was exhibited, together with an endoscope and electric light. A weak solution of nitrate of silver in quantity was injected. Out of five thousand cases treated, in none had there been death or severe urethral fever.

Dr. R. W. Taylor thought that one was liable to be deceived by the appearances under the endoscope, mistaking the mucous membrane forming a ridge in front of the tube for a papillomatous growth. The instrument was not of as much value in actual practice as one might presuppose.

**The Connection between Masturbation and Stricture of the Urethra.**—Dr. Samuel W. Gross, of Philadelphia, in this paper referred to one published by him in 1877 first calling attention to this subject. He wished again to call the attention of the general practitioner to the very common occurrence of stricture in the masturbator. Out of a total of 331 patients who were masturbators, stricture was present in 291, or in about 88 per cent. The examinations were of patients who had never had gonorrhœa nor injury of the perinæum. Of 82 solitary strictures, 65 were at or near the meatus, 13 were in the bulbous division. As a rule, the stricture was of large caliber, single, and near the orifice.

Dr. R. F. Weir, of New York, referred to investigations which he had made about 1879, and stated that coaptations of the urethra were very common in patients who had had no venereal trouble; he had found them even in the newly born. He had therefore been forced to the conclusion that coaptations were to be expected in urethræ normal in development.

Mr. Reginald Harrison, of Liverpool, had not been able to satisfy his mind that masturbation had led to any permanent contractures of the urethra. He regretted having entered the room after the reading of the paper.

Dr. Gross, in closing the discussion, said that in nine tenths of all masturbators there was marked tenderness and irritability when instruments passed over the strictures, showing that there was abnormal sensitiveness, and the endoscope demonstrated hyperæmia, which must, when long continued, lead to the formation of stricture.

**Notes upon the Prognosis of Organic Stricture of the Urethra.**—Dr. E. Hurry Fenwick, F. R. C. S., of London, sent a paper on this subject, which was read by Dr. Taylor. The author impressed the importance of systematic examinations of the residual urine in cases of organic stricture, and gave the results in seventy-five cases under his observation. Residual urine existed in most cases of stricture, and ought to be measured; its removal was of value in enabling the vesico-ureteric muscles to regain power and in preventing chronic cystitis and calculus.

**The Operative Treatment of Hypertrophy of the Prostate, with Stereopticon Demonstration of Specimens.**—Dr. F. S. Watson, of Boston, read a paper with this title. He pointed out the variance of surgical opinion regarding the propriety of radical operative treatment of any sort, and suggested a rationale which should underlie operative treatment. There were two sorts of data—the anatomical and clinical. Stereopticon views of thirty-four anatomical specimens were shown and three points bearing on operative treatment were made manifest: 1, the distance from the junction of the membranous and prostatic urethra to the most distant part of the median enlargement within the bladder, which he called the perineal distance; 2, the form of the median enlargement; 3, whether the bladder was of small capacity and non-distensible, or the contrary. On the nature of these three factors the choice of operation depended. If the perineal distance was not greater than two inches and three fourths or three inches, the enlargement could be operated upon through the perinæum. But if the median enlargement was salient, it could be better approached by the suprapubic operation. The distensibility of the bladder made possible the modern technique of the suprapubic operation. In about two thirds of the thirty-four cases the obstacle could have been successfully reached through the perinæum. This operation had proved the safer. Radical treatment had been less disastrous than palliative. The author had operated in two cases, with one marked success; the other patient had died as a result of the operation.

**Prostatotomy for Enlarged Prostate at the Age of Forty-two Years.**—Dr. Abner Post, of Boston, read the history of an unusual case of prostatotomy occurring in a man aged forty-two, the prostate being very hard, its division being audible,

and attended with difficulties. The patient had dated his urinary troubles back twenty-one years. Prostatotomy had afforded complete relief. The enlargement was not cancerous; its exact nature had not been determined.

**The History of the Filaria Hominis; its Discovery in the United States, and especially the Relationship of the Parasite to Chylocele of the Tunica Vaginalis Testis.**—A paper on this subject was read by Dr. W. M. MASTIN, of Mobile. (It will be published hereafter.)

**Case of Removal of Both Testicles for Recurrent Carcinoma.**—Dr. F. W. ROCKWELL, of Brooklyn, read the paper. (It will be published hereafter.)

**Some Points in the Differential Diagnosis of Bladder and Kidney Affections.**—Dr. A. W. STEIN, of New York, read the paper. He prefaced his remarks with the statement that in certain obscure ailments of the urinary tract the following questions not infrequently arose: Were the bladder symptoms due to renal disease? Were the kidney symptoms due to vesical disease? Were they independent of each other? and, When one kidney was involved, was it the right or the left? In answer to the latter question, various methods for collecting the urine from one ureter were discussed, and a new catheter for introduction through the urethra into the bladder and to cover the mouth of the ureter was presented. It had been tried only on the dead subject, and was believed by the reader to be practical.

The PRESIDENT referred to a case of large diseased kidney on one side, while the other was pronounced healthy by Freund, who had based his judgment upon examination of urine collected from the ureter. Freund advised removal of the enlarged kidney, and when the patient returned to New York the speaker had done the operation, not, however, without misgivings as to the condition of the other organ. For some days after the operation the patient had done well, but he had died after a few weeks, when the remaining kidney was found cirrhotic.

**Demonstration of a Perfected Evacuator, and an Improvement in the Method of Removal of Debris from the Bladder.**—Dr. FESSENDEN N. OTIS, of New York, read the paper, and presented the latest evacuator of Professor Bigelow and a very recent one of Sir Henry Thompson, and contrasted them with his own, which he had further improved within two years. An important advantage of his own was its light weight, being ten ounces empty and eighteen filled with fluid, while the weight of Professor Bigelow's empty was twenty-four ounces, and of Sir Henry Thompson's twenty-seven ounces. His own required no wire screen or valve to prevent return of débris into the bladder.

**Stone in the Bladder in Connection with Splenic Leukæmia.**—A paper with this title, by CHARLES WILLIAMS, F. R. C. S., of Norwich, England, was read by Dr. Taylor (see page 342).

**Litholapaxy in Male Children.**—Surgeon-Major D. F. KEEGAN, of Indore, Central India, contributed a paper on this subject (see page 320).

**Operations on the Kidney.**—Dr. WILLIAM H. HINGSTON, of Montreal, read the paper, which was discussed in connection with the next paper.

**A Case of Nephrolithiasis, complicated with Hydronephrosis, in which Lumbar Nephrotomy was performed.**—Dr. FRANK W. ROCKWELL, of Brooklyn, reported the history of a case which illustrated in a marked degree the difficulties and uncertainties of exploratory operations as practiced in the lumbar region, and certainly for small calculi in normal or slightly diseased kidneys. The man had first consulted him in the fall of 1887. When a boy he had suffered from hæmaturia and a calculus had been passed. When seen by Dr. Rockwell he had renal colic, hæmaturia, and at times there was fullness in the right flank. Retention of urine had occurred more than once. Dr. Keyes had seen the patient in consultation, and had advised, if other measures failed, an exploratory operation. The posterior incision was chosen, and performed in December. There was much difficulty in reaching and palpating the kidney. At one time the reporter thought he felt a hard substance in the kidney, but was unable to feel it again, and the wound was dressed. The patient continued to suffer until the latter part of January, when much relief followed the passage of a stone. Again in March another fragment was passed, but he had not yet entirely recovered from his former symptoms. Dr. Rockwell thought that if what he had felt during palpation of the kidney was the stone, he had probably hastened its passage down the ureter.

**A Renal Calculus removed by Lumbar Nephrotomy.**—The specimen was exhibited by Dr. PARKS, of Chicago. He had first seen the man last May, and learned that he had suffered from intermittent attacks of pain and symptoms of renal calculi for ten years, the pain always being referred to the neighborhood of the left kidney. The symptoms in general pointing to renal calculus, he had performed lumbar nephrotomy. There was great difficulty in fixing the kidney so as to carefully palpate it. He punctured the kidney in various places, but was still unable to feel the stone, and was about to give up the operation, when he again introduced his hand, and on the posterior surface of the kidney felt a hard substance. The stone was rough, had numerous facets, and was grasped tightly on all sides, but he was enabled to remove it by a pair of slender forceps. The man made a good recovery and was quite relieved. He had performed nephrectomy in one case, removing a tubercular kidney as large as a man's head through a lumbar incision which was extended around in front of the anterior superior spinous process of the ilium, and the point of the last rib was tilted out of the way. Regarding the diagnostic significance of the circumscribed area of resonance referred to by Dr. Hingston, he, with others, had mistaken an ovarian tumor for a diseased kidney because of the presence of resonance limited to the inferior right iliac region.

Sir WILLIAM MCCORMACK mentioned the case of a young man who had had symptoms of renal calculus sufficiently distinct to lead a surgeon in St. Bartholomew's to undertake nephrotomy by the lumbar incision, but no stone had been found. The patient afterward came under his care at St. Thomas's when the symptoms were very severe, but, in view of the negative results of the former operation, he had hesitated to interfere. He sent the patient away, but he returned after a time, and, as the pain was referred more particularly to a point corresponding to about the middle of one ureter, he explored this canal, but found nothing and closed the incision. He learned that the patient afterward passed an examination for admission to the army, and was then perfectly well.

Dr. R. F. WEIR, of New York, had done two nephrectomies, three nephrotomies, and had had one case similar to that narrated by Dr. Rockwell. In this case the kidney had been thoroughly palpated, but no stone could be felt, and the operation was abandoned. Within twenty-four hours afterward the patient had been entirely relieved, and the urine had been changed only in being somewhat bloody and containing a large number of uric-acid crystals. He was rather loath to believe, therefore, that the trouble was due to only a recently formed calculus. Yet it was known that the handling of the kidney in searching for a stone, none being found and none being passed, had in several instances resulted in relief of the patient. Regarding Sir William McCormack's case, he suggested giving the patient the trial of drainage before proceeding to nephrectomy. While he

agreed at present with Dr. Lange in his preference for the posterior incision in cases of danger from sepsis, yet his conviction was not so firm but what he might soon change it. Might not the peritonæum be stitched to the edges of the wound in a way to prevent danger of septic matter entering its cavity?

Dr. Annandale, of Scotland, had cut down upon the kidney and palpated for stone in a number of cases, and, finding none, had closed the wound, yet the patients, excepting one, had afterward been relieved of their symptoms.

The discussion was closed by the author.

**On the Effects of Rapid Changes of Altitude in an Advanced Case of Interstitial Nephritis.**—Dr. George Chismore, of San Francisco, read the history of the case, that of a man who had peculiar aggravation of conditions related to his kidney affection when reaching the high points in the mountains on a journey from San Francisco to New York, in which latter city his case had terminated fatally. The paper was a pioneer one in this line of investigation.

**Resume of an Experience of Seventeen Years with the Operation of Dilating Urethrotomy.**—Dr. F. N. Otis, of New York, in this paper traced the successive improvements made in his dilating urethrotome since its invention in 1872, showed the advantages of this method of treatment over previous and other more recent methods, and the discoveries which it had led to, as the relative size of the penis to the urethra. He had used the dilating urethrotome in more than a thousand cases, and had never had a death nor abscess result. He used only the short, straight instrument, and pointed out the dangers of the other, which instrument-makers would not take off the market. The incision should be exactly in the median line, on the roof, not on the lower surface. As to the radical cure of stricture by this treatment, he had tabulated a number of cases which he had been able to trace some years after the operation, and in a large percentage there had been no recontraction. The first case he ever operated upon with the dilating urethrotome presented recently the same size of the urethra as after the operation years ago.

**Case of the Bowel ending in the Urethra of a Child Four Weeks Old; Relief by Operation.**—Dr. Arthur T. Cabot, of Boston, presented the paper. When the child was constipated the urine became slightly discolored with fæces, showing that since the operation for the formation of an anus there still existed a small communication between the bowel and urethra, which, however, caused no inconvenience. Whether a further operation would be necessary as the child advanced in age time would determine.

**Perineal Litholapaxy.**—Mr. Reginald Harrison, of Liverpool, read a paper and related some cases in which, instead of crushing and removing stone through the urethra, he had found it advisable to make external perineal urethrotomy, then introduce the finger to stretch the vesical urethra, crush the stone with forceps and flush out the *débris*, and afterward drain. This procedure should be revived at this day in some cases in which the bladder affection gave rise to the stone rather than the reverse, and in which recurrence of stone could be predicted were ordinary litholapaxy resorted to.

**An Unusual Case of Urethral Calculus.**—Dr. Harvey G. Mudd, of St. Louis, related the history of a case occurring in a negro, aged forty-eight, who had passed a stone when a youth. He had had trouble with urination five or six years; there had been blood in the urine. Having difficulty with urinating, and recognizing some obstruction in his urethra, he had been in the habit of pushing a knitting-needle down the urethra in the hope of freeing the passage. "It felt as if it struck a lot of bones." Forward of the bulb Dr. Mudd had removed by external urethrotomy a stone, weighing 281 grains, three inches in circumference. Several smaller stones, altogether weighing 82 grains, were removed posteriorly and from the bladder. The patient had recovered from his septic symptoms, and was now healthy.

**"Syphiloma of the Vulva,"** a paper by Dr. J. Nevins Hyde, of Chicago, was read by title.

**Officers for the Ensuing Year** were elected as follows: Dr. R. W. Taylor, of New York, president; Dr. John P. Bryson, of St. Louis, vice-president; Dr. Arthur T. Cabot, of Boston, secretary. The next meeting will be held at Newport some time in May, the exact date to be fixed by the council.

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## CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

*First Triennial Meeting, held in Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, Dr. John S. Billings, of the Army, in the Chair.

(*Concluded from page 329.*)

**Cerebral Localization in its Practical Relations.**—In a paper with this title Dr. Charles K. Mills, of Philadelphia, Pa., gave the history of the development of this branch of medical science. He mentioned as among its practical applications various results now obtained in psychological medicine and medical jurisprudence, and in therapeutics. He spoke of the results of trephining for the relief of insanity, with the excision of diseased areas in the cortex, guided by certain subjective signs, such as hallucinations of sight and hearing, whose localization in the cortex was known. Cerebral localization led to diagnosis, and directed operation, in a class of cases comprising brain tumors, dural or intracephalic; cysts; fractures of the cranium; abscesses; hæmorrhages within or upon the brain; and discharging cortical areas. Taking up tumors, he referred to twenty autopsies in which he had found one half of the tumors accessible to operation, and fully a fourth in which operation would have led to recovery. He believed from his own experience that old gummata and sometimes tubercular growths could be excised. The conditions justifying the removal of brain tumors related to their site, accessibility, solitariness, and size. In fractures where the amount and sort of damage could not be told from the outside, cerebral localization might often guide to it. Hæmorrhages of both the cortical and the meningeal series of blood-vessels, if the clot were located, might be removed, even from about the ganglia and capsules; but not where the ventricles were inundated. The best point from which to operate in these cases, he had concluded from dissections, was the anterior portion of the first or second temporal convolution. Epilepsies, originally caused reflexively from some peripheral irritation in the body, as in the scalp, the eye, the nose, a tooth, a cicatrix, but which had become centrally located in a discharging cortical area, he believed in treating by excision of that area. If it were asked "what areas of the brain were accessible to the surgeon?" he would rather change the question to "what were inaccessible?" for the latter were being rapidly narrowed down. Even the ventricles could be reached. Only the middle regions of the base of the brain, with the bordering convolutions, the corpora quadrigemina, and the pons were forbidden ground to the surgeon of to-day. As for the accessible areas, at least one successful operation was on record for each one of the ascertained centers. A localizing diagnosis could be made for lesions situated anywhere in the entire motor area, including that of phonation; in the visual area in the cuneus, causing lateral hemianopsia; in the intracerebral visual tracts; the lateral convolutions of the occipital lobe; or possibly in the angular gyre.

Approximate localization sufficient for surgical purposes

could be made, by the study of positive symptoms aided by exclusion and differentiation, for lesions in the cerebellum, the prefrontal lobe, the temporal lobe, and sometimes in the intracranial portions of some of the cranial nerves.

He considered the old method of dividing the motor area into perpendicular zones as insufficient; the horizontal subdivisions were quite as important, of which seven or eight were distinguishable. The surgeon must be guided to them by a study of the initial symptoms of the serial order of combined movements, the extent and character of the temporary paralysis following the seizure, and of that which persisted.

He agreed with Ferrier that the center for eye and head movements was in the second frontal gyrus, and that often when the spasm began with a turning of the eyes and head at once, this convolution was pointed to. But the reason why paralyses of the oculo-motorius were not permanent, even when lesions were known to exist here, was because the oculo-motor nuclei had such peculiar connections at the base of the brain. He thought that the movements of the orbicularis palpebrarum had a separate center not far below the oculo-motor center.

Among the sources of error in localization were reflexively caused disturbances, especially those coming from the dura mater. The unilateral convulsions of uræmia and lead poisoning, and the symptoms of hysteria and hystero-epilepsy, needed careful exclusion. A comparison between these and the true cortical epilepsies had been made by Franck, showing some points of difference.

Some of the ascertained sensory areas were the gyrus fornicatus, the hippocampus, the precuneus, and the lateral postero-parietal region. He believed there was a region for general sensation, neighboring and closely connected with and yet separate from the allied motor areas. It included centers for touch, pain, temperature, and perhaps for pressure and muscular sense, in different parts of the body. He believed with Bechterew that the loss of sensation in animals in which the motor area had been destroyed was apparent and not real; the animals felt pain but were unable to show it by any movement of the injured part. He thought that not much reliance could be placed on disturbances of sensation as a means of localization. The data were not yet sufficient.

Peculiarities in the configuration of the cortex and its gyres, in the parieto-occipital region, in the position of the angular gyre, and even of the central and parieto-occipital fissures, and the fissure of Sylvius, did not, as a rule, cause confusion in operating on the motor areas if the rules of Broca, Thane, and others were followed.

**Surgery of the Brain, based on the Principles of Cerebral Localization.**—A paper with this title was read by Dr. Roswell Park, of Buffalo. (It will be published hereafter.)

Dr. David Ferrier, of London, said that it had long been a cherished idea with him that, with an accurate determination of the functions of the brain, some of the most distressing ailments of mankind would one day fall under surgical treatment. He reviewed the difficulties attending the introduction of cerebral surgery to the profession; it had long been in ill repute. He read an extract of a scathing criticism published in the "Lancet" not very long since on the uselessness of labors in this direction, insisting that the skull would never be opened like the abdomen, that only lives forfeited would be the result from prosecuting science in this direction, and ridiculing any conclusions reached from experiments on the brains of monkeys. The speaker warned his hearers against the danger of overdoing, and reminded them that danger was not solely from infection. He had seen several unsuccessful operations and deaths, though recoveries predominated. He was disappointed at the results in Jacksonian epilepsy or discharging irritative lesions of the cortex. There were some cures and some relapses. The cure of some injuries left a worse state in their place. Thus hemiplegia and loss of speech might outweigh all the gain. Much remained still unaccomplished in locations and diagnosis. There were still unknown regions in the brain; the source and location of thought were still mysterious. Differences in opinion as to localizations only showed a healthy activity of investigation.

Mr. Victor Horsley, of England, speaking from the results of his own experiments, but equally from those of his colleagues, Professors Shäfer, Beevor, Gotch, and Dr. Semon, knew no way of being of service to them in speaking of so enormous a subject, except to take up a single line of investigation and give in detail its latest developments. He believed that in the motor region three functions were represented: slight tactile sensation; the muscular sense, so called; and, predominantly, movement. He called attention to the fundamental principles that underlay our information in this direction. We must understand that these functions are closely wrapped up together, and correspond to the same parts of the body. Furthermore, that in each particle of the cortex are represented, in a varying degree, all sections of the body. Though he believed with Dr. Hughlings Jackson that the large cells of the fourth layer were the chief site of movement impulses, it seemed to him certain that the small gray cells of the uppermost layer also had tactile and muscular sensation. Experimental and clinical evidence to this effect he had published at length.

He discussed divisions of the cortical motor area as corresponding to parts of the body, but also to different kinds of motion in the same part, such as flexion and extension.

Dr. Beevor said he believed that by laborious investigation it would be possible to split up these motor centers into very minute subdivisions. They divided up the motor area into squares measuring only two millimetres, and excited each one with the weakest faradaic current which would give any perceptible movement. As an illustration of their results attained, he said the cortical representation of the movements of the thumb was found to be focused in front of the lower end of the intracranial sulcus, and to extend over a large part of the upper-limb area, gradually diminishing in intensity as they passed upward. Now the shoulder and the thumb movements were the two most important ones in the arm (or upper limb). They found the shoulder represented in a part of the upper-limb area exactly opposite to that of the thumb, and, conversely to it, diminishing in intensity downward.

The study of the limitation of the whole area of representation of a given part was most important. Dr. Ferrier had always believed in fixed boundaries to the centers for the different movements. He regretted that he could not now follow his honored teacher here. His experiments had shown him that there were no hard and fast lines of separation, but that a given movement had a focus surrounded by a diffused area of somewhat indefinite extent, blending with other adjoining areas. There were also border centers which represented combined movements from both areas. Dr. Ferrier himself had called attention to one center from which movements of both limbs arose. There were many others; thus, for combined movements of the face and arm there was such a border center, and two "signal" symptoms would result from a lesion at that spot.

Another point to which attention was called was that representation of the larger muscles, such as those of the trunk of the body, was at the top of the motor area; that of smaller muscles, as of the eye, was lowest.

Speaking of differences in location, according to character of movement, he gave two out of many examples. At the upper part of the upper-limb region extension of the elbow is repre-

sented, in the lower part of the same region flexion, and between the two there is confusion or various gradations of combination. The second example, and especially interesting to him, was their knowledge as to the exact spot where extension of the wrist was represented mainly—that is, the anterior border of the upper-limb region. This gave him peculiar pleasure, because they were already in a position to show that extension of the wrist must precede every fine movement of the limb.

To prevent errors from the use of monkeys of different tribes in his experiments, he had for the past two years confined himself to a single species, and the one nearest to man in cerebral configuration—viz., the bonnet monkey, or *Macacus sinicus*.

Referring to epilepsy of cortical origin, he said it was exceedingly necessary to securing recovery that not only the damaged area be completely excised, but also a rim of surrounding degenerated cells. Else there would be a relapse.

Cortical epilepsy had several stages—a preliminary aura, a tonic convulsion, then a clonic period, succeeded by the stage of exhaustion or paralysis. For five years he had been trying to discover which of these different sorts of spasm came from the cortex alone and which might arise in the spinal system, or whether both tonic and clonic spasm came from the cortex. By tapping the pyramidal tract in its dorsal portion, and introducing a delicate electrometer into this connection between the cortical and spinal motor centers, above the latter, they were able to see what sort of a line of variations the electrometer would give, from an electrical irritation of the cortical motor area alone, as it streamed down the pyramidal tract. Of course, they knew nothing about nerve-energy except its speed of transmission, but it was perfectly justifiable to assume that variations in current would correspond to those in nerve-impulse. They obtained thus a tracing exactly similar to that of a convulsed muscle in epilepsy: a marked level uprising indicating the tonic stage, succeeded by a sudden fall and pause, then little waves corresponding to the clonic stage, then a full stop, indicating exhaustion. So it was proved that the whole of the character of a convulsion might be due to the cortex alone.

Turning to the subject of cerebral surgery, he advised marking the point determined on with a fine drill through the scalp. Then he trephined a small exploratory opening an inch in diameter. Then with a large circular saw (which he afterward exhibited) he cut nearly through the skull, separated the dura with an instrument passed through the small opening, then with a heavy brim forceps, carefully cleaned, he cut away the area of bone deeply marked out by the circular saw. Opening of the dura was, in his opinion, always essential to making an exploration complete. Faradaic stimulation of the cortex was often of service in diagnosis, and was more employed in America than in Europe. One practical point in connection with this aid to diagnosis was that if the carbolic or bichloride solution came into contact with the cortical surface a few times it would so benumb it that not many points would remain sensitive to faradaic stimulation. He advocated the giving of morphine, ergot, or cocaine to lessen the flow of blood to the head and prevent parenchymatous oozing, but insisted that catgut ligatures, tied with gentle and even traction on the two ends, be applied wherever possible. Plugging the wound always gave disastrous results. It was particularly dangerous to operate on a patient under drug influence, especially that of bromide of potassium. Shock was not to be feared in the condition already existing when such patients reached the surgeon. Early operation was best. It required much courage, for the operation was always attended with liability to death of the patient. Where the epilepsy returned he believed it was on account of incomplete removal of the diseased area, and of a rim of surrounding cells at least one centimetre in thickness. He was alive to the danger of overdoing in certain cases, but also thought there was considerable danger of our being unduly influenced in our opinions by statistics.

Dr. W. W. Keene, of Philadelphia, remarked that the body had three cavities—abdomen, chest, and cranium—each containing, certainly in the case of the two former, various organs with different functions, and with diseases corresponding. He thought that it was proved now that the head did not, as once supposed, contain a single organ, but many viscera and sites for independent diseases. Overdoing was a liability in its surgery, as happened in abdominal surgery, as in the removal of ovaries and tubes, and the repair of lacerated cervix. Boldness had replaced timidity in abdominal as it would in cerebral surgery, with successes corresponding, as experience was gained. Opening of the cranium would become justifiable, even for securing diagnosis. Cases had occurred where trephining brought relief to an unknown lesion resulting from a fall followed by intense headache, and in some unknown way.

Dr. R. F. Weir, of New York, mentioned ten cases of his own, of various parts, which showed that forbidding operation, as did Bergmann, on patients in coma and with enormous tumors, was without basis, as both were successfully done now. He spoke of the relief to the pressure of hæmorrhage, etc., by merely removing a piece of the skull, sometimes enabling patients to recover. As to the limits of interference, sinuses could be stripped up, tied, even wounded, the anterior brain lifted until the clinoid process was exposed; the foramen magnum he had felt with his finger, and the floor of the middle fossa could be reached nearly as far as the foramen ovale. He had recently tapped a cerebral abscess on the under surface of the sphenoid, just anterior to the foramen rotundum, being led to this region by evidences of necrosis. He believed many other portions of the brain could be reached if we had information about them from the neurologists.

Dr. M. Allen Starr, of New York, being called on, gave a synopsis of his paper, which he decided not to read, the time being short. He called attention to the fact that the leading discoveries in cerebral localization have been attained by comparing large numbers of cases of localized brain diseases in man. He thought progress in the future would depend on careful recording by physicians of all cases of cerebral disease. But a proper record required an accurate examination, and especially in cases of disturbance of speech.

He thought it was too common to refer the representation of speech almost solely to Broca's center, in the third left frontal convolution. The fact was that only the motor factor in speech production was located here. In a number of the convolutions posterior to it there were centers just as necessary to that compound of faculties connected with intelligent speech production. Wernick first showed a distinction between sensory and motor aphasia and in a few instances located the former in the first temporal convolution. Finally, Charcot had carefully separated and distinguished the four elements of speech. He had recognized an auditory memory by which we grasp the sense of words heard, a visual memory or picture of written words, a motor memory of articulation, and another motor memory of the movements used in writing. Each, being distinct, can be lost and leave the remainder intact. So we have word-deafness, word-blindness, motor aphasia, and agraphia, independent of each other.

Another important distinction was that speech and thought were independent of each other. We had memories of shape, form, sound, odor, taste, and color connected with bodies, which might furnish thoughts about objects seen, felt, heard, tasted, or smelt. Yet, if speech centers were impaired, no name might

be recognized as having a relation to them. Or memories of odor, taste, or sound being lost, perception of an object might awaken no recognition of its nature or use. This condition, termed apoaxia, was found with aphasia in some cases, in others not.

As for localizations, motor aphasia was produced by lesion in Broca's center, or in the tract connecting that center with its cranial-nerve nuclei. In the latter case it was temporary. The site of the lesion giving rise to agraphia was unknown. Word-deafness was due to lesion in the first temporal convolution, and was associated with word-blindness when the lesion extended to the supramarginal convolution and angular gyrus. The condition of apoaxia arose from lesions in or beneath the angular gyrus. Motor agraphia was produced by a lesion whose site was unknown.

The integrity of tracts connecting the memory centers of various kinds was also necessary to speech, and could be tested; thus by having a patient repeat or write words spoken to him, or copy or read aloud from a printed page. Investigations in this line were incomplete as respected localizations. Lichtheim had described some lesions in these tracts.

The speaker concluded by showing how accessible to surgical interference the speech centers were, and urged the examination and recording of all cases of speech disturbance for the reasons given at the outset of his remarks.

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## OBSTETRICAL SOCIETY OF PHILADELPHIA.

*Meeting of September 6, 1888.*

Dr. J. C. Da Costa in the Chair;
Dr. J. M. Baldy, Secretary.

**A Year's Work in Oophorectomy.**—Dr. William Goodell, in a paper with this title, stated that during the year 1887 he had had nineteen cases, with one death; but, including those that he had since had, there was only one fatal result in twenty-nine cases. The cause of death in this fatal case was uræmic coma from suppression of urine. How far the administration of ether was to be blamed for this renal complication he was not prepared to say, but he was inclined to think that chloroform was not so liable to cause congestion of the kidneys. The operation was performed for diseased ovaries and tubes, which were greatly crippling the patient. The eighteen successful operations were performed for the following reasons and with the following results: Uterine fibroids: cured, 5; improved, 1. Menorrhagia and ovaralgia: cured, 2; improved, 1. Ovaralgia: cured 3; improved, 1. Epilepsy: improved, 1. Hystero-neurosis: cured, 1. Insanity: unimproved, 2. Pseudo-muscular hypertrophy: unimproved, 1. In his experience, the removal of the ovaries for uterine fibroids was almost always followed by a cure—that was to say, menstruation ceased, the tumor rapidly lessened in size, and no further inconvenience resulted from bulk pressure. Of the three cases of menorrhagia associated with ovaralgia, the lack of complete success in one was due to the fact that only one ovary could be removed. The other ovary was so matted in organized exudation as not to be distinguishable. The failure in one of the cases of ovaralgia was due to the persistence of menstruation after a thorough extirpation of both ovaries. This was a very rare result, but it would occasionally happen. Menstruation usually ceased in these cases after the lapse of a few months.

In the case in which the ovaries were removed for epilepsy the result had not thus far been a cure, but the attacks occurred at longer intervals. Hardly time enough had elapsed for the woman to reap the full benefit of the operation, for she still had regular catamenial molimina, accompanied by bloody expectoration. Time enough had not yet elapsed to decide whether the two insane patients would be improved or be cured by the operation. Each one was an invalid and each one became physically well, but not mentally so. In the speaker's experience, which had not been a small one, those cases which exhibited aberration of intellect only during the menstrual periods would almost always be cured by the removal of the ovaries. But cases of insanity in which the hallucinations were continuous, yet much exaggerated at the catamenial periods, were by no means so likely to be cured by the operation, although they were generally very much improved. In any case, about two years' time must elapse before the nerve perturbations of this artificial change of life wholly disappeared, and a cure should not be expected before that lapse of time. What was true in mental cases and in purely nervous ones was also true in a measure when even coarse lesions of the ovary were found. Hence the surgeon must not look for full results, or for complete freedom from groin-aches and pelvic pains, directly after the removal of even diseased ovaries and tubes. He must wait patiently for the ovarian nisus or habit to cease—until, in fact, the menopause had been wholly and fully established in every way.

In the foregoing nineteen cases the spray was not used, but every other antiseptic detail was carefully carried out. The pedicle was tied with silk; the wound was closed by the same material, and dressed with gauze dipped in a glycerole of carbolic acid. Drainage was employed but once, and that in the fatal case, but this had nothing to do with the issue. Eleven of the cases were treated at his private infirmary, seven at the Hospital of the University of Pennsylvania, and one at the patient's own home.

Dr. H. A. Kelly liked the moderate tone of the paper just read. He believed that here as in other fields of work we must be often satisfied with relative results. He liked the term "ovaralgia" now better than he once did. Until we were better able to differentiate the exact nature of the lesion in some of these cases, he thought the term "ovaralgia," used generically, was a good one. He had had a rare case of salaam convulsions which had been treated for a long time. He had been called in to decide the advisability of an operation, and had refused to remove the ovaries. Two years later the ovaries had been removed and the patient cured. There did not seem to be any distinct connection between the pelvic and the general condition.

Dr. M. Price asked Dr. Goodell if in these operations he had ever noticed on ligation any change in the number of the heart-beats? He had had several patients in whom, on the evening of the day of operation, he had found the pulse as low as 48. He had noticed somewhere that an operator found a drop of the pulse from 80 to 35 on ligating the ovarian nerve. Since then he had had the pulse-beats counted on a number of patients at the time of the ligation, and had found a drop of only 4 or 5 beats at most.

Dr. J. Price said that Dr. Johnston, of Danville, Ky., had dwelt on the matter of slowing of the pulse very fully. He thought that the explanation of continued pain after an operation was to be found in the adhesions of the intestines, etc. Some of his most satisfactory results had been obtained in cases of extensive adhesions. In a recently reported case the patient had complained of agonizing abdominal pain. An adherent omentum and a knuckle of intestine had been separated and complete relief obtained. He had operated on a number of cases where the only lesion found was a general adhesion of the whole mass of intestines. He had thoroughly separated them and had obtained most satisfactory results. Mr. Tait had repeatedly reoperated to free adhesions. He felt that operation for nervous disturbances was of very doubtful benefit, and he

never operated unless he found actual disease. He preferred handing the patient over to others.

Dr. M. Price related a case in which the whole trouble had been due to adhesions. It had been supposed to be a case of gall-stones. No disease and no gall-stones had been found, but the intestines had been matted together. The adhesions had been released and no pain had been felt afterward.

Dr. Joseph Hoffman said that Dr. Price had referred to lowering of the heart-beat after application of the ligature. In a case of his own the pulse—which on the day of operation, before ether had been given, had been 120—had gone down in a few hours after the operation to 58. After ten days it rose to 80. This low register of 56 to 58 had been sustained even in spite of the temperature being 101° or 102°.

Dr. B. C. Hirst had operated on a case in which a small portion of one ovary was left. The patient had ceased menstruating even in spite of the part left behind. A stitch had passed through the remaining piece.

Dr. W. S. Stewart wished to know the effect of removal of both ovaries on menstruation; if, at the time it should occur, there were any evidences, such as acceleration of the pulse, etc., as seen at the menopause.

Dr. Goodell said that he had referred to the point suggested by Dr. Stewart in his paper, and he said that just such symptoms appeared in these cases as appeared after the natural menopause. The full results were not obtained until after these ceased. He had never noticed a fall in the pulse-beat as referred to, but he had often seen serious collapse follow the pinching of the ovary. He had seen the temperature fall to 97°, and in one case below this. He thought that a counterfeited aneurysm was by no means an infrequent symptom of ovarian disease. He had had a patient from a distance suffering from ovarian enlargement, aortic pulsations, and other nervous disturbances, for which he had prescribed. Afterward a local surgeon had insisted that the patient had aneurysm. A second examination convinced him that such was not the case. This was afterward made evident by the patient passing through an exceedingly difficult confinement safely. There were two conditions in which he was willing to operate for the removal of the ovaries, although he found no disease. One was epilepsy, the other was insanity, for in these cases a woman should never conceive. He believed that the State should interfere to prevent men and women who suffered from epilepsy or from insanity from getting married. Indeed, he was not sure that the day might not come when by act of legislature an insane man would be castrated and an insane woman would have her ovaries removed. He had had a good deal of experience with removal of the ovaries for insanity, and had had some happy results; on the other hand, he had been disappointed at times. In cases of epilepsy he had not had so much experience. He wished that gentlemen who had had such cases would report them.

Dr. C. M. Wilson had had three cases such as spoken of by Dr. Goodell. In two the result had been negative. One patient had been apparently benefited for some months, but recent reports indicated that there was a gradual relapse into the former condition.

Dr. Kelly had, about three years ago, operated on a girl with a brachial paresis, resulting from infantile palsy, with also epileptic attacks, pre- and post-menstrual in character. For some months there had been no improvement, but lately she had become better. Dr. Kerlin had remarked to the speaker that if in a good many of these cases of hopeless idiots operations were performed removing the respective organs during the period of active growth, they would not develop some of their worse features, and would be more easily managed.

Dr. J. M. Baldy had had a case which at the time of operation had looked like true epilepsy. There had been excessive pain, vaginismus, and other symptoms. The pain had been relieved, but not the vaginismus, for which a subsequent operation had been performed. The epileptic attacks had continued. They were, however, becoming much less frequent than formerly. Some two years had now elapsed.

Dr. J. Price had operated on a patient with double pyosalpinx and epilepsy at the menstrual period and at no other time. The recovery had been complete and the relief absolute. Some ten months after, the patient had gone to another institute complaining of pain, and had again been opened. He wished to know whether or not in these cases convulsions came on during the period in which the patient was in bed after operation.

Dr. Hoffman had had a case of three months' standing in which the patient had suffered from hæmatosalpinx and suppurating appendix. The patient had been having epileptic attacks. She had been entirely free from them since the operation.

Dr. Stewart said he did not think that the ovaries should be removed in all cases of epilepsy, as suggested by Dr. Goodell. He had had an epileptic patient whom he had confined several times, and whose children showed nothing wrong about the intellectual development. He had removed the ovaries of a woman suffering from epileptic seizures and she had received no benefit from the operation. She was now in an insane asylum.

Dr. Goodell said that there was no disease so likely to be inherited as epilepsy and insanity. If Dr. Stewart lived long enough he would find the children referred to develop the disease.

**Cæsarean Section.**—Dr. Kelly reported the history of a case on which he had operated, April 17th of this year, delivering a living child and saving the life of the mother. The patient, a slight woman, four feet four inches in height, had been in labor two weeks, her physician, Dr. Ireland, having watched by her bedside constantly for nine days previous to the operation. The waters were discharged four days before the operation. The estimated actual conjugate diameter was two inches and a quarter, although the pelvis was so choked by general œdema and hard cellulitic masses that it was impossible to recognize any structures with satisfaction, much less reach the presenting part of the child. The patient's pulse at the time of the operation was 142. The operation lasted thirty-five minutes. The after-condition and convalescence was one of comfort and rapid recovery. This made the ninth case operated on in Philadelphia, the first being by Professor Gibson in 1835—the historic case of Mrs. Reybold. Dr. Kelly stated that he had since that time also operated upon another case for a relative indication, in preference to performing craniotomy upon a living child, with the result of saving both mother and child; this question, however, of the relative indication was one of such importance, deserving such careful consideration, that he would reserve it for a more elaborately prepared paper at a future date.

**The Abuse of the Cæsarean Section.**—Dr. J. Price read a paper on this subject. As to the legitimacy of the Cæsarean section there could not be now, he said, under certain restrictions and limitations, a question. In extreme cases, where hasty operation was necessary in order to save the life of the mother, where there was impaction, or where a tumor was blocking up the uterine or the vaginal outlet, discussion or hesitation had little place, and he could operate best who had all resources at command and acted without hesitation. The real points for discussion in the light of the necessity of the Cæsarean section, in order to terminate a labor with greatest safety, first to the mother and then to the child, were, first, *the degree of contraction in the pelvis*; second, *the advancement of pregnancy*; third, *the chances for the induction of premature labor.* As to the

large male child. In a short experience at the Preston Retreat he had dealt with two cases of greatly contracted pelves, in both of which Dr. Goodell had twice or thrice induced labor, extracting living children. Recently two cases had been sent in for induced labor or Cæsarean section. The consultants had determined on the induction of labor. Both cases had terminated favorably with living children; one of them was a forceps delivery, the other normal. These were only typical cases—but few of the many he could cite in his own experience. If Dr. Kelly was satisfied that the last case given in the paper was his second Cæsarean section, he was sure he was welcome to his knowledge, as no one else would wish to lay claim to it.

Dr. Price exhibited a specimen of a small male fœtus, at about the third month, removed from a case of extra-uterine pregnancy. The patient was healthy and twice married. There had been numerous attacks of pain. Recovery from operation was rapid. The following week he did an abdominal section on a woman who was unconscious and removed a fœtus, extra-uterine. The patient died twenty-six hours later. This was the sixth case of extra-uterine pregnancy which had developed in his practice in four weeks. One case he had gone into the country to operate on and found the patient dead when he arrived. Dr. Formad had told him that this was a very common result in his experience as coroner's physician. He also showed a dermoid cyst removed from a woman who had suffered from chronic peritonitis for years. Her physician had given her as much as a grain of morphine hypodermically and had sat up all night etherizing her to relieve her pain. She was greatly emaciated, with a rapid, feeble pulse, high temperature, and had been in bed for six weeks. The whole tumor was enucleated. No ligatures were required. Intestines separated and irrigated —glass drainage. This was the ninth day and she was rapidly convalescing.

# Book Notices.

## BOOKS AND PAMPHLETS RECEIVED.

Secondary Mixed Infection in Typhoid Fever. By Bayard Holmes, M. D. [Reprinted from the "Chicago Medical Journal and Examiner."]

Cellular Digestion; its Utility in Pathological Processes. By N. S. Davis, Jr., A. M., M. D., of Chicago, Ill. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

On the Relief of Excessive and Dangerous Tympanites by Puncture of the Abdomen. A Memoir. By John W. Ogle, M. A., M. D. Oxon., F. S. A., etc. London: J. & A. Churchill, 1888. Pp. 111.

A Text-book of Pharmacology, Therapeutics, and Materia Medica. By T. Lauder Brunton, M. D., D. Sc., F. R. S., Fellow of the Royal College of Physicians, Assistant Physician and Lecturer on Materia Medica at St. Bartholomew's Hospital, London. Adapted to the United States Pharmacopœia. By Francis H. Williams, M. D., Boston, Mass. Third Edition. Philadelphia: Lea Brothers & Co., 1888. Pp. 1–9 to 1261. [Price, $5.50.]

Swine Plague, with Especial Reference to the Porcine Pests of the World. An Ætiological, Patho-anatomical, Prophylactic, and Critical Contribution to General Pathology and State Medicine. By Frank S. Billings, Director of the Patho-biological Laboratory of the State University of Nebraska, Lincoln, Neb., 1888. Pp. 4–7 to 414.

Seventh Annual Announcement of the College of Physicians and Surgeons of Chicago. Session of 1888–'89.

Some of the Advantages of the Union of Medical School and University. An Address delivered at Yale University, June 26, 1888. By William H. Welch, M. D., Professor of Pathology in Johns Hopkins University. [Reprinted from the "New Englander and Yale Review."]

Session of 1888–'89. Annual Announcement of the New York Polyclinic and Hospital. A Clinical School for Graduates in Medicine and Surgery.

Diffendetevi. Dott. Carlo Ruata, Prof. di Materia Medica all' Universita di Perugia.

Annual Report of the Commissioner of Pensions for 1888.

A Report of Cases (Surgical and Medical). By J. Harris Jones, L. R. C. P. Edin., etc. [Reprinted from the "Lancet."]

Pathogénie et traitement de la kérato-conjonctivite phlycténulaire (ophthalmie des scrofuleux). Par le Dr. V. Augagneur, Agrégé à la faculté de médecine, etc. Lyon: Vitte & Perrussel, 1888. Pp. 5–30.

Sixth Annual Announcement of the Medical Department of Niagara University, Buffalo, N. Y. Session of 1888–'89.

A Eulogy upon Cornelius Rea Agnew. Read before the New York Academy of Medicine. By T. Gaillard Thomas, M. D. By appointment of the Council, June 7, 1888.

Transactions of the State Medical Society of Arkansas. Fort Smith, 1888.

Sur la pelade; nature, transmissibilité, origines, modes de propagation et de transmission, prophylaxie publique et privée. Par M. Ernest Besnier, Membre de l'Académie de médecine, etc. Travail lu à l'Académie de médecine dans sa séance du 31 Juillet, 1888. Paris: G. Masson, 1888, pp. 5 to 48.

Considérations sur le traitement du catarrhe chronique des fosses nasales. Par le Docteur Léonce Lacoarret, à Salies-de-Béarn. Paris: Octave Doin, 1888, pp. 11–13 to 150.

Eighth Annual Report of the State Board of Health of New York, Transmitted to the Legislature, February 27, 1888.

Report of Ten Cases of Pleuritic Effusion with Aspiration of the Chest. Fourth Series. With a Case of Injection of Carbolized Iodine into a Lung Cavity. By F. Peyre Porcher, M. D., Charleston, S. C. [Reprinted from the "Transactions of the South Carolina Medical Association."]

Transactions of the Texas State Medical Association, Twentieth Annual Session, held at Galveston, Texas, April 24, 25, 26, and 27, 1888.

Intorno ad una forma speciale di febbre remittente palustre. Lezione clinica del Prof. Dott. Tommaso Senise, Raccolta dal Dott. Egidio Guerrieri. [Estratto dagli "Annali clinici dell' Ospedale degl' Incurabili."]

Chemical Experiments for Medical Students, arranged after Beilstein. By W. S. Christopher, M. D., Demonstrator of Chemistry, Medical College of Ohio. Cincinnati: Robert Clarke & Co., 1888. Pp. 6–7 to 84. [Price, $1.]

A Case of Poisoning by Sulphate of Atropia; Recovery. (Read before the Medical Society of the District of Columbia, March 28, 1888.) By Llewellyn Eliot, M. D. [Reprinted from the "Journal of the American Medical Association."]

Physicians' Interpreter in Four Languages. Specially arranged for Diagnosis by M. von V. Philadelphia: F. A. Davis, 1888.

A Text-book of Human Physiology. By Austin Flint, M. D., LL. D., Professor of Physiology and Physiological Anatomy in the Bellevue Hospital Medical College, New York; Visiting Physician to Bellevue Hospital, etc. With Three Hundred and Sixteen Figures in the Text, and Two Plates. Fourth Edition, entirely rewritten. New York: D. Appleton and Company, 1888. Pp. xvii–1 to 872. [Price, $6.]

# Miscellany.

**The Fifth Annual Meeting of the New York State Medical Association** will be held at the Hotel Brunswick, New York city, October 9, 10, and 11, 1888.

There will be a morning session at 9 o'clock, an afternoon session at 1 o'clock, and an evening session at 7.30 o'clock each day.

At the first session papers will be presented by Dr. Oliver P. Hubbard, on "A Case of Anæsthesia by the Inhalation of Nitrous Oxide, supposed to be the First on Record"; by Dr. George E. Fell, on

first, as an epitome of the latest generally received opinion, we had the statement of Greig Smith: "The operation [Cæsarean section] is said to be justifiable when the contraction is so great that we can not expect to extract the fœtus *per vias naturales*, with or without embryotomy, and save the mother. The degree of contraction is generally stated as an inch and a half, and below; but, in cases in which much distortion exists, may have an upward limit of two inches." Here, then, was a plain expression of conservative opinion as to the degree of deformity necessitating or justifying the operation. "As to the induction of premature labor," says Playfair, "there are few practitioners who would not deem it their duty to spare the mother the dangers of the Cæsarean section," this being especially true since "there is no amount of deformity, however great, in which we could not succeed in bringing on miscarriage by some of the numerous means at our disposal."

The time at which premature labor should be brought on, the speaker said, varied, of course, with the degree of deformity of the pelvis; the tables of direction had been admirably constructed by Kiwisch. Briefly, the period for induction of labor lay between the thirtieth and thirty-sixth week, and the corresponding sacro-pubic diameter varied between two inches and six lines and three inches and five or six lines. Here, then, naturally followed a discussion of the means for inducing premature labor. Of the many methods proposed at various times, the one seemingly the best was the use of the soft catheter. Its introduction well into the uterus for a distance of six or seven inches was an almost certain means of speedily producing labor-pains safely. He considered the British rule—that Cæsarean section should never be an operation of election, but one of necessity—in general terms, as the safeguard of puerperal women. Once establish the precedent that the Cæsarean section was an elective procedure in obstetrics, and thereby lay down also the principle that abdomino-uterine section was a safer procedure than the introduction of a soft catheter into the uterus before full term, and the way would be laid open to every aspirant for obstetric fame, who was the fortunate possessor of a knife, to find cases for his zeal at every court and corner in the city, if perchance he could of himself persuade the parturient woman of the necessity of delivery by "*the new natural method of delivery.*"

An axiom as to the operation was laid down by Lusk: "The precise limits at which the dangers of delivery through the pelvis rise to the level or exceed those from Cæsarean section is not easy to determine. It depends partly upon the size and ossification of the child's head, and largely upon the experience and dexterity of the operator." The converse of this proposition was true also. The greater the experience and the more careful the observation of the operator, the less frequently would he be led to resort to Cæsarean section, if he held in mind that it was an operation of necessity, not of election.

Two cases would illustrate the dangers here referred to, and the justness of these forebodings. Case I: A woman already delivered of a living child, yet living at four years. Three other deliveries at term with the forceps. All of these children dead. No attempt at premature labor. In the fifth pregnancy she was decided upon as a case for Cæsarean section. She passed into the hands of another attendant, who, after careful pelvic measurements with a consultant, decided on premature labor. The woman delivered herself, without instruments, of a child whose head had a biparietal diameter of three inches and a quarter, the period of gestation being eight months and a half, the previous measurements of the pelvis having decided upon an antero-posterior diameter of three inches and a half. Case II was an actual operation—a woman in her third pregnancy. The first child was extracted after thirty hours' labor with instruments, dying soon after birth. Second pregnancy: she delivered herself of a child of normal proportions *at full term without instruments.* The child was yet living. Third pregnancy: *Cæsarean section.* Recovery after protracted convalescence. Child still living.

Here were lessons full of instruction. What did they teach?

Dr. M. PRICE thought that the duration of labor had nothing to do with the choice of Cæsarean section. He had delivered a woman two weeks since who had been in labor seven days. It was an occipito-posterior position, and the cervix did not dilate more than enough to permit the introduction of two fingers. He introduced his hand, dilated the os, and applied Simpson's forceps. The delivery occupied an hour and a half, but the woman made a good recovery. Had the case been delayed a few days longer there might have been a necessity for Cæsarean section. Where there was an inflammatory and œdematous condition of the pelvis he thought there should be some forcible measures adopted for the delivery of the patient.

Dr. GOODELL thought that the title of Dr. Price's paper was not a fortunate one, for the gentlemen who were called upon to perform Cæsarean section were usually not the attending physicians, and they had had nothing to do with the previous medical attendance on the patient. He believed in the induction of premature labor, and would do it in preference to the performance of Cæsarean section. But often the patient herself would not submit to the induction of labor. Dr. Price would probably admit, one day, into the "Retreat" an Irish woman who had had the most frightful labors and who had persistently refused, from conscientious motives, to permit the induction of labor. He could conceive of cases where it would be better to perform Cæsarean section, although he had never as yet done so. Probably in some of the cases in which he had formerly opened the head he would now do the Cæsarean section. He thought a woman might go on safely in labor for an indefinite time, so long as the bag of waters had not ruptured, with very little danger to herself.

Dr. KELLY remarked that the bag of waters had ruptured four days before the operation. The pains had been very hard before this time and did not change in character afterward, although the woman soon dropped into collapse. The pelvis was so choked by hard cellulitic mass that it would have been impossible to dilate anything or reach anything above the mass. The second paper evidently referred to his case, in which the operation was performed on a relative indication in preference to craniotomy. That case he had not yet reported, reserving it for a full, careful discussion. Where any such garbled, distorted particulars had been hunted out he did not know, nor could he reply to criticisms offered in such a tone. His profession was his life, and he came here to impart, and still more to receive, information in a spirit becoming the dignity of the profession, and he would not make life unhappy by taking part in any miserable bickering.

Dr. J. PRICE said that in a long experience in the Obstetrical Department of the Philadelphia Dispensary he had had numerous cases of deformed pelves and illy developed women, some of them very young. He would simply call attention to two typical cases: No. 1: A case in which Dr. Eliot Richardson had five times done craniotomy or complete evisceration. This woman had applied in her sixth pregnancy to the Philadelphia Dispensary and had been assigned to Dr. Joseph Fox for induced labor; in a period of five years he had induced labor three times in this patient, delivering by forceps and saving two children—one still-born. Case No. 2: Also a Dispensary patient, who in her five previous labors had had the children destroyed; the sixth had been provoked at eight months and two weeks, and she had been delivered with forceps of a fine

"Forced Respiration: History, Apparatus, Report of Six (or more) Cases, Effects of, on Narcotized Human Subjects, Adaptability of, in Cases of Drowning or Shock"; by Dr. William D. Garlock, on "The Origin and Medical Treatment of Uric-acid Calculi of the Kidney"; by Dr. Charles W. Brown, on "Railway Injuries."

At the afternoon session on the first day the discussion will be upon nosography. It will be opened by Dr. Alfred L. Carroll with a paper on "What general principles should govern classification and nomenclature, irrespective of their particularization in medicine?" This will be discussed by Dr. M. L. Britton and Dr. Simeon T. Clark. Question 2. "What are the advantages of a nosographical system based upon anatomy?" Discussion by Dr. Edward G. Janeway and Dr. Frank W. Ross. Question 3. "Does a nosography based upon anatomy afford satisfactory means for the registration of clinical phenomena?" Discussion by Dr. E. D. Ferguson, Dr. H. D. Didama, and Dr. Charles G. Stockton. Question 4. "What place in nosography should be assigned to bacteria, ptomaines, leucomaines, and 'extractives,' respectively: [*a*] From a bio-chemical, [*b*] from a clinical point of view?" Discussion by Dr. Elwyn Waller, Dr. Charles A. Doremus, and Dr. Nelson B. de Sizer.

At the night session on the first day the following papers will be read: "Hiccough, with Notes on Treatment," by Dr. Frederick W. Putnam; "Diphtheritic Paralysis," "The Treatment of Diphtheria," by Dr. J. Lewis Smith; "A Case of Supposed Partial Twist of the Intestines," by Dr. George E. McDonald; "A New Treatment of Pneumonia," by Dr. Godfrey R. Martine; "Rheumatoid Arthritis," by Dr. E. J. Chapin Minard; "The Use and Abuse of the Forceps in Obstetrics," by Dr. John P. Garrish.

On the second day in the morning Dr. William H. Carmalt will deliver the Address on Surgery. This will be followed by papers on "Ocular Palsies," by Dr. Alvin A. Hubbell; "Heredity in Certain Classes of Cases of Chronic Diffuse Nephritis," by Dr. B. A. Church.

At the afternoon session there will be a discussion and general consideration of tumors from a surgical point of view, opened by Dr. John W. S. Gouley. The questions to be discussed are: 1. "What are neoplasmata, and what are the characters which differentiate them from blastomata, and these from inflammatory processes?" 2. "What are the advantages of naming and arranging the neoplasmata in accordance with their histogenesis?" 3. "What is the value of the anatomical basis to the clinician when the question of malignity arises?" 4. "What are the objections to the grouping of neoplasmata in accordance with benignity and malignity?" These questions will be discussed by Dr. Hermann N. Biggs. Question 5. "What constitutes malignity, histologically and clinically?" 6. "What is the mechanism of the necrotic process which so often occurs in certain neoplasmata?" These questions will be discussed by Dr. Charles B. Nancrede and by Dr. Nathan Jacobson. Question 7. "What is the *rationale* of the recurrence of excised neoplasmata in distant parts or in the viscera?" 8. "What is the explanation of the tendency in certain neoplasmata to involve secondarily neighboring lymphatic ganglia?" These questions will be discussed by Dr. Joseph D. Bryant, Dr. Uri C. Lynde, and Dr. Leroy J. Brooks. Question 9. "What therapeutic deductions are to be drawn from the analysis of the genesis and history of a given neoplasm?" 10. "What are the indications and contra-indications of the excision of neoplasmata?" These questions will be discussed by Dr. Frederic S. Dennis, who will also discuss Question 13. Question 11. "What is the average duration of life from the time of the appearance of a malignant neoplasma which has not been treated?" 12. "To what extent does the excision of malignant neoplasmata prolong life?" These will be discussed by Dr. William T. Bull, Dr. Charles W. Browne, and Dr. E. M. Moore, all of whom will discuss No. 13. Question 13. "Are malignant neoplasmata ever cured?" This will be discussed by Dr. Charles T. Parkes, Dr. William H. Carmalt, Dr. Stephen Smith, and Dr. William S. Tremaine, who will also discuss Questions 10 and 12.

At the night session on the second day the discussion on tumors will be continued.

At the morning session on the third day the address on medicine, entitled "Medical New York in 1800," will be delivered by Dr. John Shrady. The papers will be: "Mechanism of Posthumous or Post-mortem Inversion of the Uterus," by Dr. Isaac E. Taylor; Address on Obstetrics, by Dr. George Tucker Harrison.

On the afternoon of the third day the discussion will be on puerperal septicæmia, and will be opened by Dr. Carlton C. Frederick with the following questions: 1. "What facts can be cited in support of the doctrine that the puerperal febrile diseases owe their origin to the action of micro-organisms?" Discussion by Dr. Hermann M. Biggs. 2. "Is there a specific febrile disease peculiar to the puerperal woman, or are the various forms of puerperal fever the result of septic or putrid infection similar to or identical with that familiar to surgeons as septicæmia? What ætiological relations exist between the zymotic diseases and some forms of puerperal febrile diseases, and in what manner are the zymotics modified by implantation upon the puerperal state?" These questions will be discussed by Dr. Everard D. Ferguson and Dr. S. B. Wylie McLeod. Question 3. "What conditions of the woman predispose to the development of puerperal septicæmia? To what extent are the accidents of childbirth, together with the manipulations of the accoucheur, to be considered as ætiological factors in puerperal infection? Are there any antiseptic measures before, at, or after labor, under any and all conditions or complications, that may be relied upon as prophylactic to puerperal septicæmia?" These questions will be discussed by Dr. Frank W. Ross and Dr. John Shrady. 4. "Are the lesions resulting from puerperal infection always the same? If various lesions result, can an accurate differential diagnosis be made between them, based alone upon the history and symptoms?" This will be discussed by Dr. William H. Robb. 5. "What is the pathology of each of the several forms of puerperal septicæmia? What conditions or circumstances incident to puerperal septicæmia, and what forms of the disease, tend to render it fatal?" Discussion by Dr. Frank Grauer. 6. "What plan of antiseptic treatment can be employed with a large degree of success in each of the several forms of disease? Does every rise of temperature above 100° F. in the puerperal woman constitute an indication for immediate resort to irrigation? When should irrigation be intra-vaginal and when intra-uterine? When irrigation is employed, how often should it be done, and when should it be discontinued? What hygienic, medicinal, and dietetic treatment is to be used in addition to the local antiseptic measures? To what extent should alcoholic stimulants and antipyretics be used?" Discussion by Dr. William T. Lusk and Dr. Rollin L. Banta. 7. "What sequelæ of puerperal septicæmia tend to impair the subsequent health of the woman in case of her recovery? To what extent do chronic diseases of the pelvic organs owe their origin to puerperal septicæmia?" Discussion by Dr. John G. Orton.

At the night session on the third day the discussion on puerperal septicæmia will be continued.

**The Catskill Mountains as a Health Resort.**—It would seem, from certain indications of the past summer, that the pre-eminence which the Adirondacks have so long enjoyed in this part of the country as a resort for invalids is at least to be contested by the Catskills. Individual capital and enterprise have laid open the heart of the Catskills to New Yorkers, so that an invalid can leave the city in a parlor-car and reach an altitude of twenty-five hundred feet in five hours without change. Business men have not been slow to take advantage of this condition and to prepare the way for the crowds of visitors who are availing themselves of these facilities.

In climatic advantage there seems little choice between the two regions. The altitude is about the same, and, with the exception of the lakes, the country is the same. Should it be proved that the air is equally good for invalids—and of this there seems to be no doubt—then the newer resort will have greatly the advantage, for the ability to reach it from New York by a five-hour ride in a parlor-car is an advantage which the Adirondacks will never overcome.

It seems strange that this nearest considerable altitude to such great cities as New York and Philadelphia should so long have remained practically unknown to the seekers after health and rest. We do not refer to the old Mountain House or the newer Kaaterskill—immense white caravansaries filled with the noise and bustle of a summer hotel—but to the quiet, little-visited regions in the heart of the mountains, back an easy driving distance from the Hudson; regions where the bear and fox are so plentiful that a beautiful little inn, built for the Onteora

Club, has been named from them "The Bear and Fox." Here the highest temperature recorded during the past summer was 86°, and that only for a few hours one morning. On the warmest days the man who leaves his newspaper on his piazza has to look for it where the breeze may have deposited it; and, as the evening comes on, he seeks the cheerful warmth of the log fire.

Whatever comfort the sick or the overworked can derive from a high mountain region, plenty of game, pure spring water, no sewers, absolute quiet, a table equal to Delmonico's, beautiful drives, unsurpassed views, and immediate communication by rail and telegraph with two great cities, is now to be had in this region. We predict its rapid development.

**Milk Inspection in New York City.**—"The Medical and Surgical Reporter" for September 8, 1888, contains the following well-deserved compliment to one of the members of the Board of Health:

"There is one thing which they seem to do pretty well in New York—namely, the inspection of the milk supply. This is due not so much to good laws as to the fact that they are executed by a most efficient and zealous public officer, Dr. R. H. Nevins, who carries out the duties of his office in a way which indicates his appreciation of its importance. One of the measures he adopts to make his inspections fulfill their object is to make sudden and unannounced descents upon milk-dealers at the railway stations through which most of the milk supply of New York passes, and then to have the milk in their cans subjected to certain immediate tests by a number of his assistants, and to pour into the gutter the contents of any cans of milk which are below an appointed standard of purity. By this means he reaches more dealers than he can touch, for the fear of an unexpected test must keep many honest who would swerve from the right path if the inspections were made in any other way."

The "Reporter" goes on to say that, valuable as these tests may be, the inspection of the milk dealt from wagons and so-called milk depots in the poorest parts of large cities would be much more valuable; and that a tour of inspection among the retailers of milk to the poor would do more to correct the horrible cheating which goes on in this article of food than all the investigations conducted at railway stations. This is a very good suggestion—the only fault with it being that it is exactly the system followed by the New York Board of Health in every part of the city, rich or poor. But the poor woman in the slums, when her milk is tested and thrown out, complains bitterly that she sells merely as she buys from the country producer; and it is to reach the fountain-head that the milk is examined as delivered at the railroad depots.

**The Health of Kansas City, Mo.**—According to the "Weekly Return of Births and Deaths" to the Health Department for the two weeks ending Saturday, September 22d, there were 67 deaths, including 2 from cholera infantum, 1 from cholera morbus, 2 from diarrhœa, 1 from diphtheria, 3 from malarial fever, 2 from remittent fever, 1 from scarlet fever, 4 from typhoid fever, 2 from typho malarial fever, 1 from whooping-cough, and 2 from meningitis.

## THERAPEUTICAL NOTES.

**Lactic Acid in the Treatment of Tubercular Diarrhœa.**—MM. Sézary and Aune have reported ("Lyon méd.," No. 35, 1888) some noteworthy results with lactic acid in the treatment of diarrhœa in tubercular patients. The action of the acid in local manifestations of tuberculosis has already been noted many times. Laryngologists have for many years been curing tubercular ulcerations of the larynx with concentrated solutions; and recently Blanc, chief of clinic of Leon Tripier, has observed the remarkable effects produced by it in tubercular ulcers of the tongue, when used in concentrated solutions. Struck by these facts, the authors decided to try and discover whether it might not be the long-sought-for specific for tubercular ulceration of the intestine—the parasiticide of the bacillus of Koch. The lactic acid was administered as follows: Commencing with a dose of 2 grammes in a solution of 120 grammes, if that was found to be insufficient it was rapidly increased to 6 or 8 grammes, taken in teaspoonful doses during the twenty-four hours. With this dose the patients complained often of gastric disturbance and setting of the teeth on edge, which disappeared by adding one gramme of chlorodyne to the solution. After the second day the passages diminished in frequency, and they became normal about the fourth day, and remained so. Nine very successful cases are reported.

**Chlorophyll.**—According to the "Lancet," "Pringsheim asserts that the green coloring matter of plants is not the agent which breaks up carbonic acid and eliminates oxygen, chlorophyll being but a screen to protect the living protoplasm from the powerful action of the sun. In certain conditions, he maintains, the cells can give off oxygen in the dark, and even colorless cells can do this. He has studied the movements of the protoplasm in green cells placed in various gaseous media without oxygen. Even a short exposure in an oxygenless atmosphere destroys the decomposing power of the cell for carbonic acid. This condition of 'inanition,' as it is called by Pringsheim, disappears when oxygen is readmitted, but not if the cell has been 'asphyxiated' by too long deprivation of oxygen. He avers that no evidence of the presence of free oxygen in the vegetal tissues has ever been adduced, and he believes that the breaking up of carbonic acid results in the making up of a compound body from which oxygen is evolved as it is discharged from the cell by osmosis."

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### THE CURABILITY OF URETHRAL STRICTURE BY ELECTRICITY.

*AN INVESTIGATION.**

BY E. L. KEYES, M.D.

A WIDE-SPREAD belief exists in the community, lay as well as medical, that material progress has been made of late years in the use of electricity as applied to the cure of urethral stricture. This belief includes the three presumptions: (1) That any one, by following rules, may use the method successfully; (2) that electricity does no harm to the urethra; (3) that stricture cured by electricity is dissipated by absorption, and the urethra remains permanently open.

In the autumn of 1887 a gentleman with stricture came to me from South America for treatment by electricity. His surgeons at home had failed to cure him by dilatation; he declined cutting there, and came to New York, where, he had learned at home, strictures are permanently cured by electricity. Not having commenced my experiments at that date, and not wishing to trifle with a private patient, I declined to accept his case, and he sought other advice.

Shortly afterward a physician of New York in excellent standing wrote that he had a relative whom he wished to place in my hands for urethral treatment by means of electrolysis. I also declined to receive this case. Subsequently another gentleman, under my care for a neurotic condition of the urethra, left me with my consent, and was treated by his family physician electrolytically for an alleged stricture, which the physician promised to cure, assuring him that it was the cause of all his trouble. Not getting well under this physician's care, he consulted Dr. Robert Newman as an authority upon urethral electrolysis, who assured him he had no stricture, but still proposed to remove his urethral symptoms by electricity. The patient returned to me unrelieved, declining further trial of electricity.

In these and many other ways it has come to my knowledge that confidence in the value of electricity for the treatment of stricture has of late been rapidly growing throughout the land; therefore I determined to investigate the matter, and I turned to Dr. Robert Newman, of New York city, who is the apostle of this creed, and who alleges that he has radically cured two hundred cases (or thereabouts) of stricture by its use, and asked him for instruction and his co-operation in my investigation of the subject, which I assured him was honest, stating that, if my results justified his assertions, I would advocate the method, and advise its use generally for the benefit of strictured mankind.

Dr. Newman kindly accepted the proposition, sent me his pamphlets, assured me that following his rules would convince me of their truth, and accepted from me a dispensary patient to treat that I might personally verify the result attained by himself. I therefore procured from various dispensaries seven pronounced typical cases of urethral stricture; three of these I treated personally, with all the ability I possessed, commencing in January, 1888, following Dr. Newman's rules as closely as I was able.

Three patients I turned over to my assistant, Dr. E. Fuller, who treated them independently, fortified with extra knowledge gained by personal observation of Dr. Newman's operative method as practiced by himself (one case of urethral spasm was also treated by Dr. Fuller). The seventh case was sent to Dr. Newman, who received the patient kindly, and treated him about once a week from February 6th until June 27th—nearly five months. My assistant, Dr. Fuller (once Dr. Garrison), always accompanied this patient on his visits to Dr. Newman, and immediately upon leaving him wrote down in a case-book what had happened during the interview.

One other case previously treated came to me, and out of this material I propose to construct my report.

Having entered the investigation without bias and in the hope of learning something, I make my report without fear of being misjudged, and from no motive except that of attempting to throw light upon a subject which is usually shrouded in much mystery.

To prepare properly for my work, I purchased the insulated urethral conductors of Newman, employed an admirably constant battery of A. Gaiffe (Paris), one having a milliampèremeter in the circuit, so that the amount of current used was constantly recorded under the eye of the operator. Dr. Fuller used the same battery upon his patients. In order to assure myself that the milliampèremeter in the circuit of the Gaiffe battery was accurate, I procured a Barrett milliampèremeter, so as to test the foreign gauge with one of the best of native make; they were both joined on the same circuit, and accorded absolutely for all the lower measures of quantity, and for any combination of sets of cells in the battery. There was a moderate variation in the marking of the instruments between the points of 25 and 50 milliampères; but, as all my experiments were conducted at 5 milliampères and below, I must conclude that the battery was a proper one and its action satisfactory, more especially as the cells were small, ten being required to give five milliampères, so that gradations of smaller quantities of electricity became easy.

Before detailing my cases I wish to remark that Dr. Newman is largely responsible in this country for the modern electrolytic fervor as relating to urethral matters, since his statements of results have been the most pretentious. I will therefore call attention to some of Dr. Newman's rules and assertions, that it may be seen how nearly my results correspond to his statements.

Other literature upon the subject I shall mainly disregard, to escape needless repetition. The whole subject, from a literary standpoint, has very recently been discussed in an admirable manner by Dr. F. Tilden Brown, of New York.* To those interested in this branch of the subject

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting.

* "An Essay read before the Surgical Section of the New York Academy of Medicine upon the Limitations of Electrolysis as a Thera-

I commend a perusal of Dr. Brown's paper. He has digested the literary material and found it wanting in that concordance of fundamental sentiment (as to operative method, appropriate cases, and result) which might be expected from the advocates of a new system, if that system had a solid basis upon which to repose.

Indeed, I feel I can do no better, to sum up his conclusions, than to quote from his paper where he says: "I feel an apology is due for presenting before this section of the Academy a paper upon a theme with the status of which it has long been so well satisfied. If, before testing it in practice, I had reviewed the literature of the subject as carefully as since, I should have seen that no further evidence was needed to assure the incredulous of its narrow scope, and equally well have recognized the futility of hoping to convince its advocates of any self-deception in the matter."

Dr. Brown gives his own personal results and condemns the method in so far as the alleged effect of permanently removing organic stricture is concerned, while he allows to electricity a certain effectiveness in removing spasm, an effect which Newman, in a letter to me, denies that it possesses in any degree.

In December, 1871, I published the result of my attempt to cure ten patients of urethral stricture by electrolysis applied according to the only method then existing—that of Mallez and Tripier. The merits of this method had been set forth most glowingly and with the same insistence and assurance of success that we now find made use of by Dr. Newman and those who employ his method.

My ten cases turned out badly. Most of the patients bolted the hospital, being unwilling to endure the treatment, which was very painful; none were long under observation; several remained in hospital,* but absolutely refused to continue the electricity, preferring "cutting" or other methods.

The most pungent criticism I can make upon this my first effort to cure urethral stricture by the use of electricity is to relate the following incident:

On a certain day, less than a year after terminating my experiments at the Charity Hospital, I accidentally encountered a man, evidently in great distress, near Bellevue Hospital, toward which institution his course was directed. He was leaning against a post in the street, making serious efforts in the vain endeavor to pass his urine. I was moved by natural sympathy, and, approaching him, pleasantly asked him what his trouble was, and whether I could be of assistance to him. He looked up and replied: "Don't you know me, Dr. Keyes?" "No," I said; "who are you?" "I am one of the men," he replied, "whom you cured of stricture at Charity Hospital, and I can not pass my water."

The Mallez and Tripier method of using strong currents and cauterizing the stricture with the negative pole, so that a circular slough comes away, is no longer used and is justly condemned. I indeed have been criticised for employing it; and Dr. Newman has plainly stated that I misjudged the value of electricity in the urethra, because I employed electro-cautery and not electrolysis—a strong current instead of a weak one. I have accepted the criticism, being only justified by the assertions of Mallez and Tripier, which I was testing.

My present personal investigation covers the modern method—namely, that advocated by Dr. Newman, who alleges such phenomenal success by it in the permanent cure of organic stricture.

As to just where electro-cautery ceases and electrolysis begins in the urethra of man when the electrical current is used, I can not say. Ström,* of Christiania, found by experiment that stricture (after three or four weeks) could be produced in the urethra of the rabbit by the use of from two to eight elements, and sittings of from five to ten minutes. The amount of current in milliampères is, unfortunately, not given.

Dr. Robert Newman may be cited as to four of his published articles—two being sets of one hundred successful cases each, one a defense of the merits of the method, and one rules for its safe and efficient performance.

In August, 1885,† the first table of one hundred cases of permanent cure appeared. It is maintained that all became and remained permanently well, the cure being proved by examination in attestation of the fact at varying periods—the shortest, three and a half years after the alleged cure, the longest, eleven years—without intervening treatment and without relapse.

The duration of the malady before treatment is stated to have varied from one to twenty-five years. The stricture was single or multiple, situated at points varying from close to the meatus up to nine inches. The average number of sittings required to effect a cure was about *five or six*, and *two or three months* about the average time.

In no instance was the urethra brought up to a size larger than 28 (F.); most of the patients were discharged cured taking about 22 (F.).

Newman's‡ second tabulated one hundred cases of radical cures were published in September, 1887. The term "cured" is omitted in this list; many patients are reported as not heard from in verification of their having retained the dilatation reached during treatment; others were still under treatment; some are reported "well" at intervals varying up to five years. The strictures had existed before treatment from one month to thirty years. The average number of sittings was *five or six*, the time required for treatment about *two to three months*.

Traumatic strictures and the result of recontraction after previous internal urethrotomy appear among the cases treated, and the patients are reported as being well for the time specified without relapse. I quote a few of the statements made:

"Electrolysis is applicable to all strictures in any part of the urethra."

"Electrolysis will pass and enlarge any stricture when

peutic Agent in Organic and Spasmodic Stricture of the Urethra, with Cases," "Journal of Cutaneous and Genito-urinary Diseases," July, 1888.

* "Practical Electro-therapeutics . . . Electrolytic Treatment of Stricture," etc., "N. Y. Medical Journal," December, 1871, p. 569.

* "Internat. Ctrlbl.," 1887.

† "New England Medical Monthly."

‡ "Journal of the American Medical Association."

other instruments or the skill of surgeons fail, which I have often demonstrated."

"It relieves at once—no relapse takes place."

In his defense of the method, Newman* alleges as causes of failure—

1. Incompetence of the operator.
2. Mismanagement.
3. A mistaken diagnosis.

He cites cases, accuses those who have used a strong instead of a weak current, advocates a special electrode, great gentleness, weak currents, long intervals between the sittings, etc., and concludes by stating that "electrolysis can not fail, but operators may and do."

Finally, in his article giving the method in detail,† and referring to a long list of contributions from others upon the general subject, he gives twenty rules for the management of cases, which I need not repeat here, including specifications as to the battery, the galvanometer, the employment only of the negative pole, the use of his egg-shaped bulb electrode, and how to turn the current on and off. In another paper ("Jour. of the Am. Med. Assoc.," Sept. 24, p. 390) he says, speaking of his last one hundred cases: "Each séance lasted from two to ten minutes. I do not like to prolong it more, except for good reasons."

He advocates the avoidance of pain, advises that the patient be in the erect position, condemns the use of two electrodes in succession at one sitting, denounces the use of force or the employment of the treatment when the urethra is even subacutely inflamed, objects to anæsthetics, and states again: "All strictures are amenable to the treatment by electrolysis." He adds that the patients may keep about, that the method relieves at once and is devoid of pain, danger, or inconvenience, and not followed by hæmorrhage, fever, or other unpleasant consequences, and that no relapse takes place.

I wish to state here that all my relations with Dr. Newman have been most amicable; he has been particularly courteous in supplying me with his pamphlets, and instructing my assistant, Dr. Fuller, in furthering my study of the subject; and that I, on my part, entered into the investigation in the hope of demonstrating that the method did possess value, and to decide how much.

In the following cases I have observed the rules laid down as nearly as possible, always using the negative pole of Newman's electrode, lubricated with glycerin, and employing mild currents; deviating from the rules somewhat occasionally, but not so much, it will be observed upon close reading, as Dr. Newman himself deviated in the case he kindly consented to treat for me in the presence of my assistant, Dr. Fuller.

It is necessary in a question of this kind to be rather full in the history of the cases; therefore I give them more at length than might otherwise seem necessary. The case of J. D. (VIII), treated by Dr. Newman for me, is condensed from the note-book, the notes being written up by Dr. Fuller immediately after each sitting.

* "Is Electrolysis a Failure?" "Med. Record," Sept. 25, 1886.

† "The Armamentarium for the Treatment of Urethral Stricture by Electrolysis," "Med. Register," Philadelphia, 1887.

Other physicians have tested the treatment in a few cases and furnished me with their unpublished conclusions. I can not, however, reproduce them here, nor any of them, unless I brought in all; my excuse is that this investigation is a personal and not a statistical one, and I must of necessity confine my conclusions to the results of cases which have passed under my own eye and those subject to my personal direction.

CASE I—*January 27, 1888.*—A. M., aged seventy-four, a man in the possession, apparently, of full and vigorous health in spite of his years, passes acid urine, somewhat turbid with pus, every two hours in a small stream, with straining. Thirty-five years ago Dr. Van Buren treated him for a deep urethral stricture by the use of steel sounds. Since that time no instrument has been used. At five inches I find a tight stricture admitting only a filiform whalebone. At two inches and a half slight contraction, admitting 22 F. bulb.

*30th.*—Electrode 16 (F.); five milliampères; three minutes; no effects.

*February 3d.*—Electrode 16 (F.); five milliampères; four minutes; no effects.

*7th and 14th.*—No. 16 (F.); four and five milliampères; four minutes; no effect.

Much local disturbance followed this last effort, although the deep stricture was not passed and no blood appeared at the moment of operating; pain, however, followed, with fever, blood, excess of pus, and much increased local vesical irritability, confining the patient to bed for a week.

*March 2d.*—I therefore determined that more electricity and greater length of time were not desirable, but that the stricture must be dilated in any case, and introduced into the bladder easily over a whalebone guide a metallic 9 (F.) steel tunneled sound. As a result, there was little or no local disturbance, pus diminished, the stream became larger, the intervals longer.

*9th.*—Over a whalebone guide I attempted to pass a No. 12 (F.) electrode, using no force, five milliampères for five minutes, and failed to pass the stricture; considerable pain was complained of at once. The patient wrote to me twice afterward during a month that great local disturbance followed, confining him to bed with local inflammation and much increase of pain, pus, and irritability. Then he wrote, making an appointment to come up, but failed to appear. Six months later (September 13th) I examined him and found his condition and his stricture practically what they had been at our first interview. Filiform enters with difficulty; No. 9 tunneled engages, but will not pass.

Surely in this case the electricity was not suitable, and, without the employment of force, produced more local disturbance than the use of ordinary dilatation with force had done at a previous sitting.

CASE II—*January 30th.*—L. F., aged thirty-one. Ten years ago, one year after gonorrhœa, Dr. E. A. Banks, at Bellevue Dispensary, passed a No. 18 (F.) steel sound, and told him he had stricture. Gleet continued, but no further instrument was introduced until two or three years ago, when, having a retention of urine, he applied at the Bellevue Dispensary, and Dr. S. Alexander passed sounds, commencing with a small instrument and rapidly working up to 27 (F.). He remained well for a year, except for a continuous gleet, when retention again came on after drinking. He applied to Dr. Creary, at Bellevue, who relieved him with a catheter. Five weeks ago, again having retention after drinking, and applying at Bellevue, he was re-

lieved by the passage of sounds Nos. 15, 17, 18, and 20 (F.), and since that time has had no retention, but a little vesical irritability.

The meatus takes 30 (F.) at two inches and a half; a moderate annular stricture admits 23 (F.) at the bulbo-membranous junction; 19 (F.) goes easily through a soft area; a drop of blood follows withdrawal of the instrument. I use 30 (F.) bulb, five milliampères, four minutes, and fail to pass the stricture at two inches and a half.

*February 6th.*—Bulb 27 (F.), four milliampères, four minutes, and fail to pass stricture at two inches and a half; 22 (F.) bulb, four milliampères, four minutes, passes easily.

*13th.*—No. 25 (F.) bulb, used carefully as a test, will not pass. I use 22 (F.) bulb, therefore, with three milliampères, for five minutes. It passes, but with more difficulty than a week ago; this is upon the two-and-a-half-inch stricture.

*20th.*—Slight irritation followed, but the gleet is decidedly better; 22 bulb to-day will not pass. I use, therefore, 16 (F.) bulb, three milliampères, six minutes, and pass the two-and-a-half-inch stricture without pain, bringing no blood. This 16 bulb passes the deep stricture also easily without electricity.

*27th.*—No. 18 bulb passes anterior stricture. I use 16 bulb again, five milliampères, ten minutes, and enter the bladder again easily, this time with the current on.

*March 5th.*—No. 20 bulb, five milliampères, five minutes, passes two-and-a-half-inch stricture with a little effort; 17 bulb, five milliampères, half a minute, passes deep stricture.

*19th.*—No. 22 bulb, five milliampères, five minutes, passes anterior stricture; 20 bulb, five milliampères, four minutes, passes deep stricture.

*April 2d.*—No. 25 bulb, five milliampères, ten minutes, will not pass anterior stricture; 22 bulb, five milliampères, passes and also enters bladder.,

*3d.*—I test stricture to-day at two inches and a half; 23 bulb will not go; 19 goes without electricity, then 21, and then with some effort 23. I then use 25 bulb, five milliampères, twenty-five minutes, holding it firmly against the anterior stricture. It will not pass, so that in this case, after more than two months' persistent treatment, the stricture is absolutely at the same size as when I commenced, 23 (F.). The deep urethral congested area, being soft and yielding to dilatation, has advanced three sizes French.

*September 13th.*—Re-examined; 18 bulb will not pass two-and-a-half-inch stricture; 15 goes, and then with force I pass the 18 bulb; 18 blunt steel sound then enters, but will not pass deep stricture.

Case III—*February 4th.*—F. S., aged thirty-three, complains of frequent urination in a small stream, due to stricture following a gonorrhœa acquired eight years ago; not previously treated; 14 (F.) bulb detects double linear stricture at two and three inches; 12 soft bougie easily enters bladder. I use 16 (F.) bulb, five milliampères, four minutes; it will not pass.

*8th.*—No. 16 (F.) bulb, four milliampères, one minute, will not pass anterior strictures; 10 (F.) bulb, four milliampères, held in the strictured area four minutes, brings trace of blood. I do not attempt to pass the deep urethra.

*15th.*—Patient reports the stream smaller, and that he is worse; this is doubtless because I did not pass the deep urethra at the last visit. I therefore now pass 12 (F.) soft bougie into the bladder, and use 12 (F.) bulb, three milliampères, ten minutes, in the anterior strictures; no blood.

*23d.*—Mistaking the number, I try with some force to pass 21 (F.) soft (instead of 12); it will not go, but dilates the stricture, so that 16 (F.) bulb enters anterior strictures and allows me to use four milliampères for six minutes, with a trace of blood.

*28th.*—Retention of urine for twenty-four hours after last sitting; 16 bulb goes with more difficulty than last time, but with it I use five milliampères for ten minutes.

*March 7th.*—No. 17 bulb goes with a little difficulty, bringing some blood, under the use of five milliampères for eight minutes.

*16th.*—No. 20 (F.) bulb, five milliampères, ten minutes, will not pass.

*22d.*—To-day, in despair of help from electricity, I use an ordinary conical steel sound, 21 (F.); it goes, bringing a faint trace of blood; I follow it with 20 bulb, using five milliampères for five minutes.

In this case, therefore, retention of urine was produced by the treatment, which was finally abandoned, and ordinary dilatation substituted for it.

Case IV *—*February 16th.*—J. H., thirty-five, complains of difficulty in urination, and having had retention three times during the past eighteen months, gonorrhœa seven and two years ago; treatment by sounds at New York and Chambers Street Hospitals; stricture at bulbo-membranous junction. Filiform whalebone enters bladder, and over it a 19 (F.) tunneled steel sound; the stricture is of the soft variety, a congested surface with underlying spasm.

*24th.*—Relief followed the sound, and no disturbance. To-day, 12 (F.) tunneled electrode, five milliampères, two minutes, passes the stricture; electricity continued in all six minutes.

*March 2d.*—A chill and fever followed the electrical treatment, causing the patient to lie up for three days; 17 (F.) tunneled electrode, five milliampères, passes stricture in three minutes. The current was kept in the stricture for nine minutes longer.

*9th.*—Twenty-four hours after last sitting chill, fever, and vesical tenesmus laid the patient up for two days. Stream is now better than formerly; 20 (F.) tunneled bulb, four milliampères, fifteen minutes, enters bladder; current continued two minutes longer.

*April 6th.*—No trouble after last sitting. Blunt 16 (F.) sound enters bladder without electricity; 20 (F.) bulb will not go; 22 (F.) bulb, five milliampères, enters bladder in eight minutes.

*13th.*—Only trace of blood follows. Retention occurred during the week, but now stream is again satisfactory; 22 (F.) bulb, five milliampères, ten minutes, will not pass.

*20th.*—Great complaint of pain and trouble in urinating during the entire week; worse than before the use of the electricity, which he strenuously objects to. Electricity abandoned; gradual dilatation with conical steel sounds by old method up to 26 (F.).

*27th.*—No trouble followed last sitting; steel sounds used easily up to 32 (F.).

In this case urethral fever, laying the patient up in bed, was produced by the electricity, retention of urine and great pain and distress; so that the treatment was abandoned, and ordinary dilatation substituted.

Case V—*March 27th.*—M. C., aged thirty-two, complains of stricture following gonorrhœa, and has retention at the time of application. No instruments have been ever used, except a sound in exploration just before his visit; at two inches and a half, triple linear stricture, admitting 19 (F.) blunt steel sound, which enters the bladder.

*30th.*—The patient for a time since the exploration has

* Cases IV, V, VI, and VII treated for me by Dr. E. Fuller.

had to use a 16 (F.) catheter in order to urinate. Soothing means were employed in the usual way, and a few deep urethral injections, until the catheter was discontinued and urination comfortably performed, the patient being apparently well.

*April 6th.*—No. 17 (F.) bulb, three and four milliampères, eight minutes, passes into bladder; tingling pain complained of.

*13th.*—Retention followed electricity, and two days later perineal swelling and great local tenderness, making it difficult to walk. Brawny perineal induration remains. No electricity to-day.

*20th.*—Better, but lump in the perinæum persists, although subsiding.

In this case the electricity nearly produced perineal abscess, and was abandoned.

Case VI—*April 2d.*—W. W., forty, complains of difficult urination in small quantities, following numerous attacks of gonorrhœa; never had retention, and no instrument has ever been passed. Meatus takes 20 (F.), which just detects a tightness at two inches and a half; 13 (F.) is arrested at the bulbo-membranous junction. Filiform whalebone enters bladder easily; over it a No. 11 (F.), tunneled electrode, 4 milliampères, enters the bladder easily, without resistance, in one minute; trace of blood; no pain.

*9th.*—Meatus forcibly dilated to 22 (F.); 22 (F.) electrode, four milliampères, one minute and a half, enters bladder easily; trace of blood; electricity continued in all two minutes.

*17th.*—Stream smaller again, and some vesical irritability complained of. No electricity to-day.

*23d.*—Meatus dilated to 26 (F.); 26 (F.) electrode, five milliampères, ten minutes. It was resisted for eight minutes, and then passed.

*May 6th.*—Some discharge from the urethra since the last application; 22 (F.), is the largest bulb that will pass the two-and-a-half-inch stricture.

No attempt was made to test the size of the deeper stricture, and no electricity used. The patient now ceased to attend, and could not be found for a time, but he continued taking an alkaline medicine, which comforted him.

*28th.*—A blunt steels ound, 22 (F.), enters the bladder; the stream is larger than formerly, and there is less difficulty in urinating, but otherwise all symptoms remain as they were when patient applied for treatment—namely, precipitous urination of a fluid full of deep urethral shreds, pain at the head of the penis, and imperfect erection. In other words, the element spasm is better for the dilatation, and the addition of electricity to the dilatation did no harm.

Manifestly there never was any deep urethral fibrous stricture in this case, or a jump from an 11 electrode (passed in one minute with four milliampères) to a 22 electrode, which would pass in one minute and a half with four milliampères one week later, would have been impossible. I say "impossible" advisedly, referring to my experience in other cases with the method.

Clearly this is the kind of case that deceives the unwary and those who wish to be convinced. The type of case is not very unusual. A man has several attacks of gonorrhœa; then he begins to urinate in a smaller stream. He has no gleet, but his urine is full of angular, thickish clumps of pus from the deep urethra; he often has pain in the penis and imperfect erection, and his urination is liable to trouble him by the precipitant urgency of the call.

Examined with the bulb, the orifice, as usual, is a little small, and at two inches and a half is the habitual point of physiological narrowing. The steel sound hesitates at the bulbo-membranous junction; perhaps it will not enter at all, even in competent hands.

Such a case is often called one of deep urethral muscular spasm, due to anterior stricture of large caliber. It gets well by cutting the anterior strictures if—and, in my opinion, only if—the deep urethra is also dilated.

It gets well under ordinary dilatation. It remains permanently well in either case if, and only if, by the dilatation, by subsequent deep urethral injections, by deep urethral irrigation, or by soothing internal medicine, the catarrhal surface yielding the shreds of pus is much bettered or cured.

It often gets well without electricity, without cutting anteriorly, without dilatation of the deep urethra, under the use of deep urethral instillations of the nitrate of silver carefully applied. But dilatation always improves the facility of urination in these cases, while failing to dissipate the shreds of pus and the other symptoms, and electricity added to the dilatation manifestly does no harm, possibly good. I can not now decide this point.

Certain it is that the amount of dilatation effected by the instrument carrying the electricity afforded the patient in this instance a larger stream, and allowed him to urinate with less effort; but to assert that it cured any fibrous stricture of the deep urethra is begging the diagnosis.

*September 14th.*—Re-examined to-day, this patient's condition is satisfactory. No. 20 bulb passes with moderate effort, the stream remains good, the symptoms of deep urethral inflammation have disappeared, the spasm has not recurred. Whether the electricity helped the dilatation and the alkaline medicine in accomplishing this cure I can not say. If so, it is useful in spasm.

Case VII—*April 10th.*—M. T., aged thirty-two, has had numerous attacks of gonorrhœa, and has noticed gradual diminution of the size of the urinary stream for the past three years, with sometimes delay for more than an hour in starting the urine. He has passed a No. 8 (F.) soft bougie upon himself from time to time during the past year. At five inches and three quarters there is a stricture admitting No. 8 (F.); over filiform, 12 (F.) electrode, tunneled, five milliampères, enters the bladder in eleven minutes; the current was passed six minutes longer, a total of seventeen minutes.

*13th.*—No after-effect of a disagreeable sort from the electricity, but the same difficulty and slowness of urination continues.

*20th.*—Reports that he can not now use his own instrument; he has had an attack of retention, partly relieved spontaneously; he is frightened, and objects to further use of electricity. Not even a filiform instrument can be made to enter to-day. The patient desires to enter a hospital. No further treatment used, as he is allowed to go to hospital.

The case treated by Dr. Newman:

Case VIII—*February 4, 1888.*—J. D., aged forty-four, had gonorrhœa sixteen years ago; fifteen years ago, for retention of urine, meatotomy was performed in Bellevue Hospital, with dilatation.* No sounds were used subsequently, and in six or

* This patient stated at first that he had been cut, and it was supposed by Dr. Newman and myself that his stricture had been cut internally. When questioned finally, he affirmed that the cutting was meatotomy.

eight months recontraction manifested itself through frequent and difficult urination, and he was dilated up to 30 (F.). He then omitted the dilatation, and gradual recontraction occurred, but it did not seriously incommode him until two years ago, when for retention he was again dilated at the Demilt Dispensary up to 30 (F.). Ceasing the use of instruments again, recontraction asserted itself, and yesterday he again had retention, and applied at a dispensary. No. 21 (F.) conical steel sound was introduced, and the patient sent to be treated by electrolysis. At four inches and a half from the meatus there is a double linear (fibrous) stricture, which can be detected by No. 15 bulb, although 21 (F.) steel sound passed yesterday.

Dr. Newman kindly consented to cure this patient, although he objected that it was not a perfectly suitable case, since it had once been, as he then supposed, cut internally; however, he attempted its cure with confidence.

*6th.*—Dr. Newman used 11 bulb, three milliampères, ten minutes upon a guide, passing it several times back and forth through the stricture. He orders an injection of sulphate of zinc in water (gr. iij—℥ iv) to be used four times daily, and says the case is not typical, since there is a little pus, and a trace of blood follows the instrument; yet he purposes to continue.

*15th.*—No. 14 (F.) bulb, tunneled, four milliampères. Some force is required to get the instrument through; then the current is used, the instrument being passed back and forth through the stricture for ten minutes.

*22d.*—No. 17 (F.) bulb, five milliampères, passes after twelve minutes' pressure. More blood than usual.

*March 7th.*—Silver tunneled conical catheter, 18 (F.), is passed without appreciable obstruction; this instrument is connected with the battery, and five milliampères employed.

*14th.*—No. 21 (F.) bulb, five milliampères, twenty minutes, will not pass; patient asserts that his stream is smaller.

*21st.*—Patient still states that his stream is no better. No. 21 (F.) bulb, five milliampères, seventeen minutes, fails to pass, the patient perspiring profusely; then the same silver tunneled catheter which had been used March 7th was threaded upon a guide connected with the battery, and, after about ten minutes' trial, the attempt to get into the bladder was abandoned, the instrument being grasped very tightly by the stricture. It was withdrawn after almost fifteen minutes, the patient feeling faint. Quinine ordered, and belladonna suppository. Dr. Newman maintains that the reason the instrument will not enter is "spasm."

*28th.*—Patient states that after the last visit he was very sore for five days, and passed considerable blood.

Dr. Newman admitted that the force used at the last visit had been a mistake, and that he had lost ground thereby. He denied that the spasm was due to the treatment, but stated that it was due, like many other queer things, to the "blizzard"—the storm which had prevailed on March 12th—stating that he had another case acting in the same way from the same cause. No. 20 (F.) bulb, five milliampères, fifteen minutes, fails to pass, and Dr. Newman admits that now the stricture is tighter than before. He advises two weeks' rest, and will begin again.

*April 11th.*—Conical metallic tunneled 18 (F.) sound passed on a guide. The milliampèremeter was not used, but the current was turned on until the patient said the instrument felt pretty warm. Considerable force was employed, and in about two minutes the sound entered the bladder; it was allowed to remain about four minutes and then withdrawn, followed by a fair amount of blood.

*17th.*—Dr. Keyes tested the patient as to his condition to-day. He found that only 12 (F.) would pass easily; the stricture bleeds; the meatus takes 29 (F.).

*18th.*—Dr. Newman tries 21 (F.) bulb, but, failing to pass, gives it up, using no electricity.

*25th.*—Dr. Newman injects a solution of cocaine into the deep urethra before introducing the electrode, 21 (F.), bulb; no milliampèremeter is attached, but the current is increased until the patient complains of heat. The bulb will not pass, therefore 18 (F.) conical steel sound, tunneled, is used with the current; some blood escapes.

*May 2d.*—Patient states that there has been no improvement since commencing electricity.

Dr. Newman tries 21 (F.) bulb, but fails after ten minutes; he then takes a conical instrument on a guide and *dilates* up to 21 (F.), applying the current through this instrument; he now again introduces 21 (F.) bulb, which enters the bladder. Altogether electricity was applied three times in succession at this sitting; considerable blood followed.

*16th.*—Dr. Newman uses 23 electrode without guide, five milliampères, ten minutes. The instrument will not pass, and patient declares that his stream is as small as ever.

*23d.*—No. 25 electrode, five milliampères, ten minutes, will not enter the bladder.

*25th.*—Much blood followed the last operation, and is still flowing to-day. Dr. Keyes tests the stricture and finds it at four inches and a half (full) refusing to admit 14 bulb.

*30th.*—No. 18 metallic conical sound introduced by Dr. Newman upon a guide with five milliampères, and deep urethra dilated; then 18 electrode, which now passes the stricture under five milliampères, ten minutes. Considerable blood appears.

*June 6th.*—No. 23 electrode, with electricity, without guide, by Dr. Newman (Dr. Garrison being present), fails to pass the stricture, a failure ascribed by Dr. Newman to spasm.

*13th.*—No. 25 electrode, five milliampères, fails to pass. This time Dr. Newman ascribes the arrest to the triangular ligament. Much blood.

*17th.*—No. 27 electrode, five milliampères, six to eight minutes, will not pass. Dr. Newman states that the obstruction is spasm, that the stricture is cured, and that the spasm will probably soon get well if let alone. He prescribes belladonna and opium suppository.

*20th.*—Dr. Newman introduces filiform bougie, and over it 17 electrode, five milliampères; much force used; considerable blood and pain. The instrument finally goes through.

*24th.*—Considerable blood now after each sitting. Patient getting restless and discouraged. Dr. Newman to-day tries 22 tunneled electrode on guide, five milliampères, ten minutes, but, failing to pass, withdraws the electrode and substitutes over the guide a 17 tunneled electrode. This he passes through with considerable effort. Much blood.

*27th.*—No. 25 electrode, five milliampères, ten minutes, fails to pass.

To-day Dr. Keyes explores. No. 17 bulb encounters stricture at four inches and a half. It passes through, finds no spasm beyond, and enters the bladder. On withdrawal, it is firmly detained behind the stricture at a distance measured, after its removal, of four inches and three quarters. The double linear stricture therefore, after nearly five months' treatment by electrolysis, will take a bulb two sizes (French) larger than at the commencement; its double linear character has disappeared; it is tougher, more fibrous, thicker than ever. Dr. Newman writes Dr. Keyes that the stricture at four inches and a half is cured, but that another stricture at five inches and a quarter is not yet well. This latter is the same stricture, in all certainty, the differences in alleged depth from the meatus being due to the fact that traction is made upon the penis in one instance and not in the other.

*September 10th.*—To-day, ten weeks and a half after cessation of all treatment, Dr. Keyes examines the patient, who complains that his stream is getting very small, that he urinates frequently and with effort, and sometimes dribbles involuntarily. No. 17 bulb stops at four inches and a half. No instrument will go until size 8 is reached. This passes, is followed by 12. Then a 12 bulb goes through by exercising force, and catches distinctly upon withdrawal. Blood follows. No large instrument will pass. The result, therefore, is a loss of at least three sizes by fibrous recontraction in less than eleven weeks.

Dr. Newman called upon Dr. Keyes early in September in response to an invitation to attend the congress and discuss this paper, and stated that he would not acknowledge the result in this case, whether good or bad, as conclusive evidence for or against the method.

The natural comment upon Dr. Newman's case (VIII) is that relief did not occur at once or at all, that cure was not effected, that blood was brought, pain caused, the electricity not always measured, and that more than one electrode was used at a single sitting. His treatment lasted nearly five months—a time, according to his published statements, ample for effecting a cure.

As for my own several test cases, I may summarize them by saying that in no instance did any more benefit appear from the electricity than could have been obtained by ordinary dilatation; that most positive failure of cure must be reported for all; that pain, local inflammation, putting the patient to bed, and threatened perineal abscess must be noted as among the complications of treatment; that relapse as to recontraction of the stricture was found in all the cases tested, after a moderate interval, being most marked, however, in the case of the patient treated by Dr. Newman for me. For his sake I regret this fact, since he was most kindly in his efforts to help my study, and I regret that his patient at least did not have a better fate.

I must add one more case observed by myself before I commenced this investigation.

Case IX.—E. S. E., aged thirty-eight. The patient I now present for your inspection is a lamentable instance of the harm that may be done by the use of electricity in the urethra in careless hands, the current in this case having been undoubtedly used at a strength capable of producing caustic effect.

This patient visited me in August, 1887, stating that, being strictured in the anterior urethra at about two inches and a half, a physician passed 25 (French) sound upon him. Afterward, in Brooklyn, being assured by a homœopath that he could cure him radically, he went to the latter, who, by treatment, so burned the urethra at the strictured (?) point as to inflame the canal, causing it to swell sufficiently to produce retention of urine, and left him permanently worse, with the hard lump which you will now feel as large as a small marble, nearly as hard as bone, and surrounding the urethra at about the middle of the pendulous portion.

The patient then went to Dr. Newman, who treated him with mild currents about twelve times, assuring him he could

| Case. | Name. | Age. | Number, size, and quality of strictures. | Symptoms. | Former treatment. | No. of sittings. | Sizes of electrodes. | Amount of current and time of employment. | Results during treatment. | Duration of electrical treatment. | Duration of entire observation. | Final result when last tested. | No. days between last application of electricity and final testing of urethra. | Result. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | Days | Days | | Days. | |
| I. | A. M. | 74 | 2½ inches, linear, 22 F., films, 5 ins. filiform. | Frequent urination; small stream; purulent urine. | Dilatation 35 years ago. | 5 | 16 & 12 F. | 4 & 5 milliampères; 3 and 5 minutes. | Great irritation; failure to pass stricture. | 37 | 228 | Recontraction. | 188 | Failure. |
| II. | L. F. | 31 | 2½ inches, 23 F., films, 5 inches, 19 soft. | Repeated retention. | Relief by sounds. | 9 | 30 & 19 F. | 4 & 5 milliampères; 4 and 25 minutes. | Moderate gleet; comfort in urination as after form'r use of sounds | 82 | 225 | Recontraction, 5 sizes. | 143 | " |
| III. | F. S. | 33 | 2 and 3 ins., double linear films. 14. | Frequent urination; small stream. | Nothing. | 8 | 10 & 20 F. | 4 & 5 milliampères; 4 and 10 minutes. | Retention from dilatation once. | 46 | 46 | Treatment abandoned; dilatation substituted. | Not found later. | " |
| IV. | J. H. | 35 | 5 inches, 19 F., linear, soft. | Frequent urination and retention. | Sounds. | 5 | 12 & 22 F. | 4 & 5 milliampères; 3 and 17 minutes. | Retention once, pain often. | 48 | 56 | " | " | " |
| V. | M. C. | 32 | 2½ inches, 19 F., triple linear. | Retention. | Nothing. | 1 | 17 F. | 3 & 4 milliampères; 8 minutes. | Threatened perineal abscess. | 1 | 24 | " | " | " |
| VI. | W.W.* | 40 | 2½ inches films, 20 F., 5 inches, soft, 13 F. | Frequent urination; small stream. | Nothing. | 3 | 11 & 26 F. | 4 & 5 milliampères; 1 and 10 minutes. | Vesical irritability and urethral discharge. | 21 | 200 | Increase of 9 sizes F. | 144 | Soft, non-fibrous stricture, with spasm, overcome; cure permanent. |
| VII. | M. T. | 32 | 5½ inches, 8 F., linear films. | Partial retention; small hesitating stream. | Soft bougie, No. 8 F. | 1 | 12 F. | 5 milliampères; 17 minutes. | Retention. | 1 | 11 | Treatment abandoned to enter hospital. | Not found later. | Failure. |
| VIII | J. D. | 44 | 4½ inches, films double linear, 21 F. | Repeated retention. | Meatotomy, subsequent courses of dilatation | 20 | 11 & 21 F. | 3 milliampères to an unmeasured quantity; 10 & 20 minutes. | Pain; blood; local distress; stream smaller under treatment. | 142 | 219 | Worse by 3 sizes than before tr'tment, or by 9 sizes if sound is accept'd as gauge | 75 | " |

* Case of spasm. Cases IV, V, VI, and VII treated by my assistant, Dr. Fuller. Case VIII treated for me by Dr. Robert Newman.

help him,* yet producing no favorable effect, either upon the lump or upon the symptoms.

The patient concluded, therefore, that he had had electricity enough, having suffered from retention a number of times during his treatment, and getting under Dr. Newman's rather worse than better. He therefore applied to me, that other means of relief might be instituted.

When I saw him, in August, 1887, he had painful and most pronounced chordee during erection. The lump, still present in his urethra, was insensitive to pressure; the strictured area admitted with difficulty No. 11 (F.).

I cut this man more extensively than any patient I have ever performed internal urethrotomy upon—namely, on August 22, 1887, to 40 (F.) on the roof of the urethra. The penis is not very large, measuring only three inches and a third; but I endeavored to cut through the limit of the morbid tissue. In this I failed, and the subsequent use of instruments did not prevent recontraction. The sounds passed with pain and brought blood, and the stream of urine was not materially increased in size. Therefore, on October 2, 1887, nearly a year ago, I cut him again internally on the floor of the urethra, and, being determined to be through, I cut him to 44 (F.), cutting through the sheath of the urethra—indeed, cutting everything except the skin. Considerable subcutaneous hæmorrhage, and at one time a moderate urinary infiltration, followed; but my object was accomplished, the cicatricial ring was fairly divided, the inflammatory symptoms were easily subdued, and the patient has since grown fat and enjoys the best of health, passing a full stream at proper intervals. The hard lump remains, but is slightly smaller. The patient passes for himself easily, once a week, a No. 34 French bougie. The chordee persists, there is no gleet, and the bladder is not irritable.

To what extent, or whether ever, the cicatricial lump caused by the electricity will be absorbed, I can not say.

*In conclusion*, I may state that electrolysis with a very mild current—I prefer to put it at less than two milliampères and a half—does no harm; in fact, does nothing that I can appreciate, and does not interfere with the benefit to be derived from ordinary dilatation. I believe that a strong current is full of danger, both immediately from irritating effect and ultimately from cicatricial effect; and that employment of the negative pole does not prevent this.

My study of the subject and the experience it has brought me, digested with all the impartiality I possess, lead me to state that the allegation that electricity, however employed, is able to remove organic urethral stricture radically, lacks the requirement of demonstration. The confidence of its advocates that it will radically cure organic fibrous stricture is, in my opinion, due either to the combined credulity of the patient and imagination of the surgeon, or to some special but fortuitous act of Providence, upon the co-operation of which, in the case of his own patients, the general practitioner can not with any confidence rely.

1 Park Avenue, New York, *September, 1888.*

**The Second Congress of the German Gynæcological Society,** which has been held in Halle, has resolved, in consideration of the International Medical Congress to be held in Berlin in 1890, to hold its next congress next year. Freiburg is chosen as the place of meeting.—*Brit. Med. Jour.*

* Dr. Newman informs me that he declined to continue in the treatment of this patient, knowing his not to be a suitable case, and says that he sent him to me.

# PERINEAL LITHOTRITY.*

By REGINALD HARRISON, F. R. C. S.,
SURGEON TO THE LIVERPOOL ROYAL INFIRMARY, AND LECTURER ON CLINICAL SURGERY IN THE VICTORIA UNIVERSITY.

In view of the splendid results which have been obtained by Bigelow's operation of litholapaxy in all parts of the world, one naturally feels some hesitation in drawing attention to any other method of removing a stone from the bladder in which crushing forms a part. Let me, however, justify my advocacy of an exceptional proceeding, as applied to exceptional circumstances, by a few preliminary or explanatory observations.

One great advantage lithotomy possesses over lithotrity is that it permits the operator to ascertain the condition of the bladder and prostate, and to satisfy himself, by the use of his finger, that every fragment of stone has been withdrawn. The absence of this process in lithotrity is an important circumstance in explaining why recurrences or relapses should be more frequent after crushing than after cutting operations. In a personal experience of lithotrity which, though not large for statistical purposes, includes considerably over one hundred examples in different males, I infer, not only that the liability to relapses after lithotrity is greater than after cutting operations, but that such recurrences are, as a rule, traceable to some purely mechanical cause which either the operation or the operator fails to meet.

In a paper † by Mr. Donald Day, of Norwich, "On Repeated Lithotomy," he analyzes the cases of recurring stone, at the Norfolk and Norwich Hospital, in 1,024 individuals. He divides these recurrences into four groups, in the order of their frequency, viz.: (*a*) stones formed quite independently of the previous ones, (*b*) stones undetected at the first operation, and (*c*) stones formed on a fragment left behind at former operations; group *d* includes stones of bladder formation, due to chronic cystitis. Though the figures from which my own conclusions in reference to this point are drawn are insignificant compared with those at Mr. Day's disposal, they tend to support his classification, with this difference, that, as my stone cases have been drawn from an area which, unlike the eastern counties of England, is not favorable for the development of calculus, I should put the spontaneous recurrence of stone, independently of a previous operation or other assignable cause, at the bottom of my list instead of at the top.

Taking the fifty cases of recurring stone in Mr. Day's analysis, twenty of these belong to group *a*, where the stones appear to have formed independently of the previous ones, thus leaving thirty cases where the recurrences were due to local causes, including undetected stones, stones formed on a fragment left after the previous operation, and cystitis. It will thus be noted that three fifths of the recurrences, or three out of the four groups, were traceable to purely local causes in which the bladder, including its outlet, was involved. Though these figures of Mr. Day's

* Read before the American Association of Genito-urinary Surgeons at the second annual meeting.

† "British Medical Journal," February 13, 1886.

only include lithotomy cases, they will also apply to lithotrity, but with probably a greater force. From the careful examination of evidence of this kind, as well as from clinical observation, it appeared that if the advantages of litholapaxy could be combined with those of lithotomy, so far as the latter proceeding relates to the digital exploration of the bladder, much advantage would follow the adoption of such a procedure in certain cases where a recurrence after lithotrity might almost with certainty be anticipated, by reason of the existence of structural complications which the operation of crushing did not attempt to cope with. For this purpose perineal litholapaxy seemed to be well suited, inasmuch as it would permit of (1) the digital exploration of the bladder and associated parts, both before and after the removal of the stone, (2) the rapid evacuation of the stone, and (3) the drainage and irrigation of the bladder, should this prove necessary. It appeared that all this could be accomplished by a perineal urethrotomy, without encroaching on the neck of the bladder, so far as the necessary incision was concerned. Such a proceeding is thus referred to by Dr. Gouley, of New York,* who, writing in 1873, says "the name of perineal lithotrity was given, in 1862, by Professor Dolbeau, of Paris, to an operation completed in one sitting, by which the membranous portion of the urethra is opened, the prostate and neck of the bladder dilated, instead of being cut, and a large stone crushed, and the fragments immediately extracted."

I have now had occasion to perform this operation in a somewhat modified form, presently to be described, in four cases of stone in the bladder; in three of these the prostate was large, and I was desirous of draining the bladder after the stone had been removed; in two of these instances litholapaxy had been previously performed; in my fourth and last case the stone was very large. The following are the particulars:

A young man, aged eighteen years, was under my care in the Liverpool Royal Infirmary during the past summer. He was suffering from a large phosphatic stone in the bladder, which it was thought could be removed by litholapaxy. The patient being placed under ether, I found it impossible to grasp the stone with the lithotrite in such a way as to enable me to crush it, for, though I could seize it easily enough, the blades could not be approximated sufficiently to permit of my locking the instrument. I therefore proceeded with a perineal lithotrity, making my superficial incision as for lateral lithotomy. I opened the membranous urethra, and readily passed my finger on into the bladder, as for ordinary exploration. Finding the calculus to be fully as large as anticipated, a strong forceps was introduced into the bladder, with which the stone was crushed and extracted. When the finger showed the bladder to be free, the latter was well washed out with a perchloride solution, and then a large drainage-tube was inserted. The tube was kept in for four days, and then withdrawn; the patient was well and up on the eleventh day, passing all his urine by the urethra. Though the stone weighed about three ounces, it was broken up and evacuated in something under five minutes. In the three other cases referred to a similar proceeding was practiced. In one of these the stone was uric acid, the remaining two being phosphatic. In two the ordinary median boutonnière operation was practiced, while in the third a preliminary lateral incision was made, as in the case narrated in detail.

So far as dilating the neck of the bladder was concerned, I have been able to accomplish this with my finger, aided sometimes by Wheelhouse's small gorget. I wish, however, to draw attention more particularly to the forceps employed for crushing and evacuating the stone. The specimen I am now showing, you will see, consists of a strong ordinary bladder forceps, with a cutting rib down the center. It is sufficiently strong to break any stone which can be fairly grasped; the blades are, in fact, constructed on the same principle as those of a lithotrite, and are intended for use in the same manner.*

Looking at the fragments of the stone removed from the young man whose case I have just related, it can be judged what this forceps is capable of doing, both in crushing and in extracting. In this instance it enabled me to break up and remove a calculus in a few minutes—a process which I do not think could have been safely accomplished under half an hour by the ordinary lithotrite and water evacuation.

I hardly think I need apologize for bringing under your notice an operation which may, in some cases, be revived with considerable advantage. Circumstances are now very different from what they were twenty-five years ago, when perineal lithotrity had numerous advocates; Thompson had not then taught us the great value of digital exploration in diseases of the bladder; Otis had not demonstrated the full capacity of all parts of the male urethra to dilatation; Bigelow had not shown us the tolerance of the bladder to prolonged but gentle manipulations; nor had we learned the value of drainage and irrigation of the bladder, and how much operative surgery was capable of doing for the enlarged prostate when this was found to complicate stone. In the presence of these advances, I believe that perineal litholapaxy will be found of considerable service, and that its more general employment will tend to reduce the number of stone recurrences after litholapaxy as usually practiced.

* "Diseases of the Urinary Organs," 1873.

* It is made for me by Messrs. Krohne and Sesemann, of London.

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# ANEURYSM OF THE ARCH OF THE AORTA, OR OF THE INNOMINATE ARTERY.

## SIMULTANEOUS LIGATION OF THE RIGHT COMMON CAROTID AND RIGHT SUBCLAVIAN ARTERIES.

*RECOVERY.*

By JOHN A. WELLS, M. D.,
ENGLEWOOD, N. J.

The recorded cases of the simultaneous double distal operation for aneurysm of the great vessels at the root of the neck are so infrequent, especially in American journals, that the accompanying history is offered as a contribution to the literature of the subject:

Mrs. P. B., colored, married, aged seventy, first came under the writer's observation on April 15, 1888. Rheumatism and strumous manifestations were family characteristics on both sides, and Mrs. B. had been subject to attacks of the subacute form of rheumatism for many years. On two occasions she

had had acute articular rheumatism, the last attack, two years ago, having been followed by pleuritis with effusion. There had been no cardiac involvement at any time to her knowledge, and a stethoscopic examination revealed no murmur. Eight years since, vision in the left eye had been destroyed by cataract. There was no history of trauma, and specific disease was denied. No appreciable evidences of tertiary trouble are present. For many years a small cervical gland situated near the apex of the superior carotid triangle has been subject to occasional enlargement, associated with much pain of a throbbing nature, pulsation being apparently transmitted from the external carotid artery. For the past two months the pain in this region has been much more severe than on any previous occasion, and two weeks ago she noticed for the first time that there was a slight fullness of the right side of her neck just above the clavicle, with an exaggerated pulsation, not present on the other side. While there was no pain whatever in this region, the pain in the region supplied by the external carotid had been so severe as to require the employment of opiates regularly for the past six weeks.

On inspection, the external carotid was evidently dilated, tortuous, and transmitting its pulsation through a small lymphatic gland which could be readily isolated from the artery. There was no expansile character to the pulsation of the external carotid and no bruit. In the right subclavian triangle there was present a second area of visibly exaggerated pulsation, heaving in character and expansile, but there was no distinct tumor either above or below the clavicle. On stethoscopic examination, a loud, rasping double bruit could be heard over a space about 3 ctm. in diameter above and below the clavicle. The point of greatest intensity was about 5 ctm. from the center of the episternal notch. The radial pulse being equal in time and volume in both arms, and there being no dyspnœa, cough, dysphagia, or enlargement of the superficial veins of the head and neck, with an exaggerated pulsation in the right carotid, would seem to the writer to favor more a diagnosis of aortic than of innominate aneurysm, while the absence of a distinct tumor above the clavicle and absence of dullness below the same, with no indications of pressure on the right vagus, trachea, or œsophagus, would indicate that there was no backward or lateral pressure. The location of the bruit and its particularly loud and rasping character, in conjunction with dilated vessels elsewhere and the negative symptoms mentioned, would seem to imply a fusiform dilatation of the ascending segment at about the junction with the transverse segment. Dr. Lewis A. Stimson, of New York, kindly saw the patient with me, confirmed the diagnosis of aneurysm, and agreed as to the advisability of operative procedures. The gravity of the operation was explained to the woman, and she eagerly expressed herself as willing to take any risks if there was a fair prospect of relieving her pain. On the 2d of May, with the assistance of Dr. Stimson and Dr. Banks, of Englewood, under antiseptic precautions, the right common carotid above the omohyoid and the right subclavian in its third division were exposed by the writer, with the usual incisions, and ligated successively with Am Ende asepticized catgut ligatures of the size known as No. 6. The carotid ligature was applied first. The vessel, when exposed, was seen to be decidedly dilated, probably to twice its natural size, and to the finger felt hard and incompressible. On tightening the ligature, a very slight degree of traction gave to the fingers the sensation of cutting calcified vessels. The subclavian was exposed without great difficulty, and was found to be less dilated than the carotid. An aneurysm needle with a double curve, designed for use upon the right side, was readily passed around the vessel. Both ligatures were cut short, small drainage-tubes introduced, iodoform was sprinkled on the surface, and an antiseptic dressing of bichloride and iodoform gauze applied. Half an hour after removing the patient from the table the left radial pulse became very rapid, irregular, and feeble, with alarming syncope. Free stimulation with brandy and ether hypodermically, and the use of hot bottles about the patient, brought about reaction in a few hours. Several hours of sleep were obtained during the night, under the influence of half a grain of morphine hypodermically, and on the following morning the pulse was 100, temperature 100° F., and respiration 18. There was no pain whatever over the external carotid, and at the expiration of thirty-six hours, when the drainage-tubes were removed, the pulsation over the region of the innominate was seen to be manifestly reduced. Before reapplying the antiseptic dressing, a careful stethoscopic examination revealed but the faintest bruit. The temperature during her subsequent convalescence did not rise above 100° F., and was normal on the third day. The left radial pulse at this time was 84; at the time of operation it was 92. The right radial pulse returned so as to be perceptible on the twenty-second day. The dressings were removed on the twelfth day, and found to be quite dry. Both wounds were entirely healed throughout. She was allowed to sit up on the twenty-first day, and under a tonic regimen was soon about, apparently as well as before her neck commenced to trouble her. Before she left her bed no bruit whatever could be heard for several visits in succession, but after moving about considerably, in attending to her household duties, it became again appreciable, but much diminished in intensity and not heard at all below the clavicle. There has been at no time since the operation, now four and a half months ago, any return of the pain, for which the old woman is profoundly grateful, and no morphine has been necessary since. The pulsation is no more forcible at this date on the right than on the left side of the neck, and she expresses the opinion that her neck is entirely cured. A very slight bruit can be made out at this date, after physical exertion on her part of any kind, but entirely inappreciable when she is lying down or at rest. The ability to discontinue the opium, which the operation has afforded her, has of course been of signal service in improving her general health.

Whatever difference of professional opinion there may be in regard to the simultaneous double distal operation as a curative measure, the history of this case would tend to prove, as much as a single instance can do so, that advanced age, atheromatous arteries, and wretched surroundings are not necessarily insuperable obstacles to the success of an operation hazardous at best.

## Correspondence.

### LETTER FROM PARIS.

*The Action of Iodine and its Salts.—Inoculation for Cholera.—Government Investigation of the Treatment of Tuberculosis in the United States.*

Paris, *September 12, 1888.*

The action of iodine and its salts is so important a subject in medicine that I can not pass over the late communication of Professor Germain Sée to the Academy, as it sums up his clinical lectures during last winter at the Hôtel Dieu on that subject. Before giving Dr. Sée's ideas I must state that there is quite a little war declared between him and those who follow his opinion and Dr. Henri Huchard with his friends, in regard

to whether we should give iodide of potassium or iodide of sodium. Dr. Huchard's opinion is that the potassium salt should be banished from the treatment of such maladies as arterio-sclerosis on account of the frequent localization of its action on the kidneys, exposing such patients to attacks of uræmia, or rather what he calls *potassiémie*. He also thinks that iodide of potassium injures the heart, if given for a long time, and he gives his preference to iodide of sodium, which he says is just as active and more inoffensive, as well as more easily assimilable. Professor Sée studies this question with great care, and his results are so interesting that I give them in some detail.

It was formerly wrongly supposed that the iodides acted by dissolving the blood, which would certainly be against their use in the treatment of aneurysm, where the coagulation of blood is desired; but recent studies have shown that iodides neither coagulate nor dissolve the blood; that only by toxic doses can a dissolution of the red globules be brought about; and that under ordinary conditions the albuminates and other elements of the blood (even solutions of hæmoglobin) can absorb a considerable quantity of iodine without losing their characteristic properties, *iodo-hæmoglobin* giving under the spectroscope the same spectrum as *oxy-hæmoglobin*. These facts prove to Dr. Sée that iodide of potassium can be given for long periods without the slightest inconvenience—just so long, in fact, as it can be tolerated—and does not produce more than a slight iodism of the mucous membranes and skin. When an iodide is pure and not mixed with an iodate it can often be given for years without digestive troubles or even diarrhœa; but there are any number of exceptions to this, and even when given in milk or cider it will sometimes disagree. Iodide of sodium in this respect has no advantage. Iodide of potassium is partly transformed into iodide of sodium in the stomach, so that the action of the latter drug is only better than that of the potassium salt *in theory;* the heart's rhythm, the vaso-motor action, and the blood-pressure, as well as the cerebro-spinal functions, remain intact under the use of all the iodides alike. Dr. Sée then gives his interpretation of the therapeutic effects of the iodides and finds that they have, clinically, three species of action: 1. *Anti-dyspnœic.* This is well shown by their undoubted efficacy in asthma when given in sufficient doses. 2. *Hyperæmic.* We know by clinical experience as well as by experimentation that iodine brings about a hyperæmia of the mucous membranes and the skin, sometimes producing epistaxis, metrorrhagia, ecchymotic stains, and hæmoptysis. Thus iodine causes the blood to circulate more rapidly, renews it, and prevents stagnant blood from acting on the centers in the medulla oblongata. All the vital changes are increased in activity. Respiration is made easier, as stated above, and the dyspnœa seen in asthma is readily cured, as well as all symptoms of suffocation and asphyxia. It is therefore a *pulmonary* medicine. This has been proved experimentally in Dr. Sée's service by M. Calmeils, who has shown that the iodides accumulate in large quantity in the lungs more than in any other organ. The intra-pulmonary circulation is increased by iodides, which seem to act by causing a hyperæmia of the pulmonary tissues and breaking up all venous stasis. 3. *Oxidizing or Atrophic.* This denutritive action is shown in the physiological state by reduction in the amount of the tissues and glands, and above all of the adipose tissue. In pathological states they produce an atrophy of the lymphatic glands and reduce syphilitic neoplasms, hypertrophied glands, such as the thyreoid and mammary, and scrofulo-tubercular inflammations.

The therapeutical uses of the iodides are summed up by Professor Sée as follows: 1. As an anti-dyspnœic, as they liquefy all catarrhal products. 2. In all circulatory troubles, as they produce a hyperæmia of the organs, particularly of the intra-pulmonary tissues, and suppress venous stasis. 3. To reduce the volume of an aneurysm, as they retract the walls and the tissues that surround them. 4. By reducing the bulk of tumors to take away pain resulting from pressure on nerves.

Professor Sée gives thirty-grain doses of iodide of potassium, as in the following:

℞ Iodide of potassium ..... 1½ oz;
Syrup of diacodium ..... 6 oz;
Syrup of bitter orange ..... 9 oz.
M. Sig.: A teaspoonful to a dessertspoonful.

(The diacodium syrup is, in the French codex, a syrup containing one sixth of a grain of opium to five drachms of syrup.)

The differences of opinion between the "sodiumists" or the *potassiophobes*, as Dr. Sée calls them, and himself, are shown by the eminent professor to be wide. He finds that the sodium has no advantage over the potassium salt.

M. Pasteur, the eminent chemist, has presented to the Academy of Medicine a note from Dr. Gamaleïa, a Russian physician, who was formerly a student in Paris, and is now attached to an anti-hydrophobic laboratory in Odessa. He proposes to introduce inoculation for Asiatic cholera. It is understood that, so far, his experiments have been made on animals. He shows that if one inoculates a cultivation of the comma bacillus in a guinea pig and thence carries the virus to a pigeon, one obtains a very active virus, which is contained in the pigeon's blood. After a few passages have occurred, one or two drops of this choleraic pigeon's blood will kill healthy pigeons in from eight to twelve hours with symptoms of real cholera. This point settled, M. Gamaleïa thought that immunity from cholera could be obtained. Heating his cultivations up to 248° F. to destroy all living elements, he found that there remained a chemical substance that was very active, and, on inoculating this progressively in pigeons, they were cured of their cholera and remained refractory to it afterward. This new method of *chemical inoculation* is quite difficult to believe in. We have always been led, at least in modern days, to think that there was a vital element in disease. It is easy to find all sorts of objections to this new theory, and M. Gamaleïa will find great difficulty, when he comes to Paris this fall and winter, in making us believe in his addition to science. We all follow with great interest the work of M. Pasteur's students and hope that it will come to something definite and practical; but we can not refrain from giving a note of warning. The normal temperature of pigeons is about 104° F. or over, while in man it is 98 69° F. The conditions are not the same, and we trust there will be no haste in applying this new cure to man, notwithstanding the large numbers of enterprising journalists and others who offer themselves for inoculation. Without wishing to depreciate M. Pasteur's great talents, we can say that the results from the inoculation for rabies are not good, and the lists of deaths from hydrophobia *after treatment* are daily growing larger. Professor Peter has constantly spoken against the premature attempts made of this kind, which only result in a defeat for real science.

We have but little local medical news, as the faculty does not open till next month. Dr. H. Frémy has just been instructed by Government to visit the United States and study the public and private establishments there where tuberculosis is treated. The French Government gives such missions constantly to local men who desire them. Dr. Dujardin-Beaumetz goes to Russia to study the system of hospitals and medical study there, and Dr. Viaul to Spain; others are sent to study up specialties, such as of the eye and throat. On their return they make up a good report, from which the best is taken for use in France. I should like to suggest that the United States also send medical men on missions to study up "how it is done" in Europe for the benefit of science, but I fear there are great difficulties in the way.

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## THE MECHANISM OF THE SEPARATION OF THE PLACENTA.

Dr. D. Berry Hart, of Edinburgh, a most ingenious student of obstetrical problems, has recently suggested an explanation of separation of the placenta which differs from all the theories that have heretofore been advanced. It is the outcome of certain post-mortem investigations that he has made with reference to the anatomy of placenta prævia. He found that complete longitudinal sections of the anterior wall of the uterus showed a segment 11·25 ctm. long, covered with peritonæum and having remnants of placenta on its inner surface, its lower limit being a circular vein marking the contraction ring; a lower corporeal segment 3 ctm. long, uncovered by peritonæum and having placental remnants on the upper half of its inner surface, its lower limit being the os internum; and the cervix, 3·7 ctm. long, ending in the os externum and lined only with cervical mucous membrane. It was evident that during labor the uterine muscle above the contraction ring was contracted and shortened, while below the ring it was expanded and lengthened. In placenta prævia, therefore, the placenta was inferred to be separated from the lower uterine segment not by contraction, but in the course of expansion. This being the case, Dr. Hart reasons that a similar process may obtain in cases of normal placental implantation. The objections which he raises to the usual theories of the separation of the placenta—that it is due either to retraction of the uterus, to the formation of a retroplacental blood clot, or to the extrusive force of the uterus—are: 1. Diminution of the placental bulk occurs *pari passu* with that of the placental site as the uterus retracts. If separation were due to the retraction of the uterus, it would occur with the latter, and there would not be a simultaneous diminution of both the placenta and its site of attachment. 2. The retroplacental clot can not be the essential cause, for it does not always form. 3. The extrusion, or detrusion, theory seems plausible, but there are some cases of adherent placenta in which the lower part becomes separated and not the upper, and in those cases it is evident that the separation is not due to detrusion.

Hart therefore suggests that the probable mechanism of separation is as follows: The placenta separates not from diminution of the placental site, but during the expansion of that site after retraction. The placenta does not increase in area after retraction of the uterus, as its site of implantation does, but remains smaller than the latter. This can not be proved directly, but is inferred from the fact that the blood in the fœtal portion has been aspirated by the child, and the uterine muscle must increase in bulk more rapidly than the placenta, as the blood returns to it first. In the third stage of labor, therefore, the placenta separates as in placenta prævia. This will explain the occurrence of the retroplacental clot, which is the consequence and not the cause of placental separation during uterine relaxation.

The author of these suggestions admitted that they were not based on direct observation, but on analogy, and that the latter might not be sustained by subsequent investigations. Moreover, the new views were not received unhesitatingly by the members of the Edinburgh Obstetrical Society, before whom they were uttered. Professor Simpson expressed a doubt as to the existence of sufficient force to effect the separation of the placenta during uterine relaxation; Milne Murray still adhered to the belief that increase in the blood-pressure during relaxation caused the separation; and Freeland Barbour objected to the proposition that the placenta did not expand with the uterus after contraction, since it expanded without separation during the first stage of labor, also in the second stage, and probably in the beginning of the third stage—in placenta prævia, the expansion of the uterine wall caused the latter to separate from the placenta, but the case was different in the third stage of normal labor, when the placenta was not stretched as in placenta prævia, so that it was not possible to reason from one condition to the other.

It must be admitted that this question is a difficult one, and that, as Hart says, if the expulsion of the placenta depended on an obstetrician's knowing how it separated, no woman in labor would complete her third stage. There is good reason for thinking that all the theories that have been advanced have been founded on observed facts, and it is rather presumptuous to say that any observer has erred in his interpretation of the facts. In many cases the so-called third stage of labor is in the highest degree an arbitrary division, for the placenta and membranes are evidently separated by the same forces that expel the child, and follow it with no perceptible interval of time.

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## EXECUTION BY ELECTRICITY.

In connection with the law recently passed in New York State providing that after a certain date capital punishment should be carried out by the application of electricity instead of by hanging, we notice that our English contemporaries are prepared to see the experiment end in failure, and we confess to a fear that this may be the result. It will be remembered that the law was only adopted after the committee appointed to investigate and report on the question had tried to get an expression of opinion as to the easiest mode of death from many of our prominent men. As we remember the printed questions, the choice lay between the use of hydrocyanic acid and that of electricity. Probably the majority of answers were in favor of the latter, as the Legislature adopted the report and immediately passed the law in favor of electricity.

It has more than once been suggested by scientific men that electricity was too uncertain a means of causing death to ever be thoroughly reliable. Cases of stroke by lightning, in which the sufferer has been rendered unconscious, the body badly

seared, and the victim apparently killed outright, but from which recovery has rapidly taken place, have been cited, and the inference has been drawn that, if lightning in such quantity would not always kill, no certainty could be placed in any artificial means of applying electricity.

The "Lancet" (August 4, 1888), in an article on "Painless Killing," quotes Benjamin Franklin's letter to his friends Dubourg and D'Alibard in 1773, on the painless killing of animals for food by electricity; and one to Collinson, in which he gives an account of his own experience in killing a turkey by electric shock. In this experiment he very nearly killed himself.

Owing to the recent advances in electric science, and judging from the frequent deaths reported from electric wires in New York, there would seem to be little doubt that the means may be made effectual without danger to the operators, but we shall watch the practical trial of the method with great interest.

Dr. Richardson, before the Royal Society for the Prevention of Cruelty to Animals, in 1869, demonstrated that the process was full of difficulties. In these trials sheep were stricken down by the shock, but a charge of ninety-six feet of surface was required to be sure of the effect; with every precaution the workmen were exposed to great danger; and the expense was found to be very great when many animals were to be killed.

Besides the question of the practicability of the method in the case of criminals, there is the doubt of the expediency of euthanasia for criminals, the probability being that any such scheme will deprive the death penalty of many of its supposed deterrent effects. It is a fact, we believe, that more than one answer to the committee's inquiries as to the best method of inflicting the death penalty was to the effect that it should not be inflicted at all, either by hanging or by any less painful method.

## *MINOR PARAGRAPHS.*

### THE CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

We have refrained from comment on the first meeting of the congress until the impression made by it could be appreciated clearly. We have no hesitation in saying now that it seems to have been in every way profitable and enjoyable. The proceedings of the general meetings were properly confined to the president's address and to the consideration of scientific subjects, to the utter exclusion of the miserable quasi-political matters that so often distract the attention of large meetings. There is reasonable assurance that this excellent policy will be adhered to in the future, and we can hardly doubt that the organization is destined to exert a beneficent influence on the American profession. We think, however, that a change for the better might be made in regard to a minor detail, that of the time of holding the meeting. In our opinion, it would be far better to hold it in May or June than in September. Under the present arrangement, the secretary of each participating society must either stay at home all summer or else neglect his work. Moreover, the proceedings would stand a much better chance of adequate publication in the journals during the summer months than in the autumn, when the pressure of other matter brought out by the opening of the season of society work is likely to lead to a curtailment of the reports.

### FLIES AS CARRIERS OF INFECTION.

A contributor to "Nouveaux remèdes" cites a statement by a Brazilian physician to the effect that in hot countries flies are the most active agents in the propagation of yellow fever, and adds that M. Spilmann and M. Hanstoutter attribute the same rôle to those insects in spreading pulmonary consumption. When a fly has lingered on tuberculous sputa, it is said, its intestine and excreta contain the bacillus of tuberculosis, which it may deposit on various articles in an apartment. Flies are credited also with being the chief instrument in the dissemination of Egyptian ophthalmia, and Koch is cited as of the opinion that they may play the same part in spreading cholera.

### THE QUESTION OF THE CONNECTION BETWEEN UNIVERSITIES AND MEDICAL SCHOOLS.

Probably nobody who is well informed on the subject doubts that in some respects medical teaching in this country would be improved if every medical school could be made, as a few of them are now in reality and several more nominally, a department of some university worthy of the name. To those whose information on this matter is defective, and, indeed, to all who are likely to be interested in a scholarly and logical presentment of the question, we commend an address on "Some of the Advantages of the Union of Medical School and University," recently delivered at Yale University, by Dr. William H. Welch, professor of pathology in the Johns Hopkins University, which has been reprinted in pamphlet form from the September number of the "New Englander and Yale Review." In many instances, notably in New York, there are great practical difficulties in the way of such a union at present, but it must come sooner or later, and then perhaps we shall realize the truth of this statement, made to Dr. Welch by a professor of physiology in a German university: "When America does wake up to the necessity of these things, then let Europe look to its laurels."

### THE DIURNAL MINIMUM OF VITAL FORCE.

The daily recurrence, even in health, of a period of depression of the vital forces, when unfavorable changes are prone to show themselves in the course of acute diseases, has often been made the subject of study, and writers are pretty well agreed that such a period takes place in the early morning hours. The matter has lately been treated of anew by Dr. Thomas Linn, an American physician practicing in Paris, in a monograph entitled "De l'habitude et de ses rapports avec l'hygiène et la thérapeutique." Dr. Linn's conclusions are that there are certain laws of habit that deserve the attention of physicians, inasmuch as they furnish therapeutical and hygienic indications; that one of the most important manifestations of the periodicity of habit is the period of vital depression that occurs between four and six o'clock in the morning; that special pains should be taken to tide sick persons over this period of feeble resistance, thereby possibly saving many patients' lives; and that the causes of habit and functional periodicity should be further investigated, with a view to improvement in managing them. Dr. Linn treats of various collateral topics of interest, and his brochure is well worth careful study.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the follow-

ing statement of cases and deaths reported during the two weeks ending October 2, 1888:

| Diseases. | Week ending Sept. 25 | | Week ending Oct. 2 | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 55 | 15 | 95 | 20 |
| Scarlet fever | 68 | 12 | 77 | 10 |
| Cerebro-spinal meningitis | 1 | 1 | 4 | 4 |
| Measles | 62 | 11 | 60 | 4 |
| Diphtheria | 44 | 11 | 80 | 16 |
| Small-pox | 3 | 0 | 0 | 0 |

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 16 to September 29, 1888:*

By direction of the President, the Army Retiring Board at San Francisco, California, convened by War Department order dated July 20, 1886, published in S. O. No. 168, July 22, 1886, from Headquarters of the Army, is dissolved. Par. 1, S. O. 217, A. G. O., September 18, 1888.

Woodhull, Alfred A., Major and Surgeon. By direction of the Acting Secretary of War, the leave of absence granted in S. O. No. 148, June 27, 1888, from this office, is extended fifteen days. Par. 14, S. O. 218, A. G. O., September 19, 1888.

Gibson, Robert J., Captain and Assistant Surgeon is, by direction of the Acting Secretary of War, relieved from duty at Alcatraz Island, California, and will report in person to the president of the Army Medical Examining Board, New York city, on October 16, 1888, for examination for promotion; on completion of his examination, Captain Gibson will proceed to Fort Trumbull, Connecticut, and report for duty to the commanding officer of that post, reporting by letter to the commanding general, Division of the Atlantic. Par. 13, S. O. 217, A. G. O., September 18, 1888.

Morris, Edward R., First Lieutenant and Assistant Surgeon, is, by direction of the Acting Secretary of War, relieved from duty at Fort Thomas, Arizona, and will report in person to the commanding officer, Fort Shaw, Montana, for duty at that post, reporting by letter to the commanding general, Department of Dakota. Par. 14, S. O. 217, A. G. O., September 18, 1888.

Sternberg, George M., Major and Surgeon, by direction of the President, will proceed to Decatur, Alabama, and to such other points in the infected districts of the Southern States as he may deem necessary, to continue his scientific investigations of yellow fever. Par. 8, S. O. 224, A. G. O., Washington, September 26, 1888.

Under authority from Headquarters of the Army, A. G. O., dated September 22, 1888, Major Charles B. Throckmorton and Batteries K and M, Second Artillery, comprising the garrison of Jackson Barracks, New Orleans, La., will proceed at once, by sea, to New York Harbor, and upon arrival there will take post at Fort Wadsworth, New York Harbor. A small guard of enlisted men will be left at Jackson Barracks. Major John W. Williams, Surgeon, will accompany the troops to New York Harbor. Major Harvey E. Brown, Surgeon, will remain at Jackson Barracks. Par. 12, S. O. 202, Headquarters Division of the Atlantic, Governor's Island, New York city, September 26, 1888.

White, Robert H., Major and Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month. Par. 7, S. O. 199, Headquarters Division of the Atlantic, Governor's Island, New York city, September 22, 1888.

Woodruff, Ezra, Captain and Assistant Surgeon, is granted, by direction of the acting Secretary of War, leave of absence for six months on surgeon's certificate of disability with permission to leave the Division of the Missouri. Par. 5, S. O. 223, A. G. O., September 25, 1888.

Matthews, Washington, Captain and Assistant Surgeon, is detailed, by direction of the acting Secretary of War, as a member of the Army Medical Examining Board appointed to meet in New York city, October 1, 1888, by Special Orders No. 203, September 1, 1888, from this office, vice Major George M. Sternberg, Surgeon, hereby relieved from his detail as a member of the board. Par. 3, S. O. 224, A. G. O., Washington, September 26, 1888.

Hoff, J. Van R., Captain and Assistant Surgeon, upon the recommendation of Captain Daniel Weisel, Assistant Surgeon, senior medical officer, camp of instruction of the Fifth Cavalry, is assigned in charge of active operations of the hospital corps in that camp. Par. 2, S. O. 121, Headquarters Department of the Missouri, Fort Leavenworth, Kan., September 22, 1888.

Wilson, George F., Captain and Assistant Surgeon, is granted, by direction of the acting Secretary of War, leave of absence, to include May 3, 1889. Par. 14, S. O. 223, A. G. O., September 25, 1888.

The resignation of Captain George F. Wilson, Assistant Surgeon, has been accepted by the President, to take effect May 31, 1889. Par. 15, S. O. 223, A. G. O., September 25. 1888.

By direction of the acting Secretary of War, the following-named officers of the Medical Department will report in person, on October 9, 1888, to the president of the Army Medical Examining Board, Army Building, New York city, for examination for promotion: Benjamin Munday, Captain and Assistant Surgeon; William O. Owen, Jr., Captain and Assistant Surgeon. Upon the completion of their examination to rejoin their stations. Par. 15, S. O. 225, A. G. O., Washington, September 27, 1888.

**Naval Intelligence.**—*Official of List Changes in the Medical Corps of the United States Navy for the two weeks ending September 29, 1888:*

Cabell, A. G., Passed Assistant Surgeon. Ordered to the Naval Hospital, Chelsea, Mass.

Baker, J. W., Passed Assistant Surgeon. Detached from the Naval Hospital, Chelsea, Mass., and ordered to the Palos.

Leach, Philip, Passed Assistant Surgeon. Detached from the Palos and granted six months leave abroad.

Simons, M. H., Surgeon. Detached from the Naval Academy and to wait orders.

Harmon, G. E. H., Surgeon. Ordered in charge of the Naval Academy.

Pickrel, George McC., Assistant Surgeon. Detached from the New Hampshire and ordered to the Ossipee.

Arnold, W. F., Assistant Surgeon. Ordered to the New Hampshire.

Henry, C. P., Assistant Surgeon. Detached from the Ossipee and granted sick leave.

Cordeiro, F. J. B., Assistant Surgeon. Promoted to the rank of Passed Assistant Surgeon.

Spear, J. C., and Rhoades, A. C., Medical Inspectors. Placed on the retired list September 14th.

Hudson, Adrian, Medical Inspector. Ordered for examination preliminary to promotion to Medical Director.

Bates, Newton L., Medical Inspector. Ordered for examination preliminary to promotion to Medical Director.

Cooke, George H., Surgeon. Ordered for examination preliminary to promotion to Medical Inspector.

Bradley, Michael, Medical Inspector. Ordered as member of Naval Examining Board.

WELLS, HENRY M., Medical Inspector. Relieved from duty as member of Naval Examining Board.

SIMONS, MANLY H., Surgeon. Ordered to Widow's Island Naval Hospital.

HEFFENGER, A. C., Passed Assistant Surgeon. Detached from Naval Hospital, Widow's Island, and to wait orders.

**Society Meetings for the Coming Week:**

MONDAY, *October 8th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, *October 9th:* New York Medical Union (private); Medical Societies of the Counties of Albany (annual), Chenango (tri-annual), Greene (semi-annual—Cairo), Jefferson (quarterly—Watertown), Oneida (quarterly—Utica), Rensselaer, Schoharie (semi-annual), Tioga (quarterly—Owego), Wayne (semi-annual), N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Bergen, N. J., and Cumberland, N. J. (semi-annual), County Medical Societies; Litchfield, Conn., County Medical Society (annual); Baltimore Gynæcological and Obstetrical Society.

WEDNESDAY, *October 10th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Tri-States Medical Association (Port Jervis); Pittsfield, Mass., Medical Association (private); Franklin (quarterly—Greenfield), Hampshire (quarterly—Northampton), Middlesex South (Cambridge), Mass., Medical Societies; Vermont State Medical Society (annual—Montpelier); Philadelphia County Medical Society.

THURSDAY, *October 11th:* New York Laryngological Society; Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; Medical Society of the County of Cayuga, N. Y.; South Boston, Mass., Medical Club (private); Pathological Society of Philadelphia.

FRIDAY, *October 12th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y. (anniversary).

SATURDAY, *October 13th:* Obstetrical Society of Boston (private); Worcester, Mass., North District Medical Society.

# Proceedings of Societies.

## AMERICAN OTOLOGICAL SOCIETY.

*Meeting, Supplementary to the Twenty-first Annual Meeting, held at Washington, September 18, 1888.*

The President, Dr. J. S. PROUT, of Brooklyn, in the Chair.

**The Primary Physiological Purpose of the Membrana Tympani.**—A paper with this title was read by Dr. S. O. RICHEY, of Washington, in which a history of the comparative development of the eye, the lungs, and the ear, as animal life progressed from the lower to the higher forms of life, was given. Change of environment brought with it gradual alteration in organic form, better calculated for the perpetuation of the life of the individual and of the species. The existence of a large labyrinth or perceptive organ in the lower forms inhabiting water was remarked, and that this became smaller in the better-developed amphibian and the land animal; that it was smallest in mammals.

The writer thought that this small labyrinth in man needed protection from the desiccating influence of the air, and that the membrana tympani was designed primarily for this purpose; that its function, as a part of the mechanism for the transmission of sound, was *secondary*, and *because it already existed.* Water was a good conductor of sound, and the animals inhabiting it needed only a perceptive organ which was relatively large. Those which lived out of the water had the smaller labyrinth more deeply situated. The drum membrane prevented the drying and parching of the tissues of the middle-ear cavity, exosmosis of the labyrinthine fluid through the membrana secondaria, and its evaporation and consequent exhaustion, by the exclusion of unmodified air. In oto-sclerosis profound deafness might take place by this process, because of the dry nares and pharynx, and the free access by way of the Eustachian tube, of enlarged caliber, though the membrana tympani was intact. By this evaporation the tissues of the middle ear were rendered less pliable and delicate, and by diminution of the labyrinthine fluid less motion was transmitted by the conducting apparatus receiving the impact of sound waves to the auditory perceptive filaments. The following conclusions were made:

*First.*—The primary purpose of the tympanic membrane was that of protection to the tympanic cavity from the evaporating influence of the air; to prevent parching and stiffening of the membrana secondaria, the joints of the ossicula, and the tendons of the tympanic muscles.

*Second.*—It, being necessary for the protection of the cavity, was modified into part of a transmitting mechanism by the existence of the ossicula and their attachments; a secondary physiological purpose.

*Third.*—A permanent opening of the membrane might, under given circumstances, temporarily improve the function of hearing, but was harmful to the ultimate condition of the organ.

*Fourth.*—The tendency of the membrane to heal was an effort on the part of nature to preserve the function of hearing from the effects of disease or ill-advised surgical interference.

Dr. C. H. BURNETT, of Philadelphia, thought we must all admit that the function of the membrana tympani was in great measure protective—primarily so, perhaps—and he considered its rapid healing and the persistence with which it healed after surgical interference as very significant. But there was one function which the reader had not mentioned; that was its adaptability by means of the tensor tympani muscle to the different character of the sounds which it transmitted.

Dr. JOHN GREEN, of St. Louis, said that the tympanum was a mucous and not a synovial cavity.

Dr. WILLIAM H. CARMALT, of New Haven, said that, in considering the character of the tympanic cavity, we must remember the method of its development in the embryo, which was such as to enable us to classify it as mucous.

Dr. RICHEY said, in closing the discussion, that there was no fixed amount of secretion in the labyrinth, but a dryness of the middle-ear surfaces allowed a passage of moisture through tissue from the former cavity to the latter, where the evaporation took place.

**A Case of Cerebral Abscess following extensive Necrosis of the Temporal Bone; Operation; Death from Secondary Hæmorrhage; Autopsy.**—Dr. GORHAM BACON, of New York,

read a paper with this title, in which he gave the history of a patient, aged thirty, who came to the New York Eye and Ear Infirmary, September 27, 1887, on account of a chronic purulent discharge from the left ear of two years' standing. His general health had always been good, and he denied ever having had syphilis. The left auditory canal was filled with granulations and polypi. These were repeatedly removed with the snare and cauterized, but speedily returned. The patient was under observation during the following winter, but did not always attend regularly, and was very imprudent about taking care of himself. There was evidence of extensive necrosis of the temporal bone taking place, and a sinus was found in the anterior wall of the cartilaginous canal, leading forward and inward. There was a large polypus attached at the opening of the sinus. It was very difficult to keep the auditory canal pervious, and to allow a proper escape for the pus. All through December the patient suffered great pain in the ear, especially at night. There was no evidence of mastoid disease. This condition of affairs continued until about January 10th, when facial paralysis developed on the left side. In the latter part of January an abscess appeared just above the pinna. This was opened, and a probe introduced passed downward in front of the ear. The patient was considerably relieved, but this was but temporary. The polypi returned in the auditory canal. On February 24th the patient entered the infirmary as an inmate, and, after ether was given, the author found that this abscess cavity communicated with the sinus through the wall of the auditory canal. A drainage-tube was passed through from the opening above the pinna, and brought out at the sinus in the auditory canal. The cavity was washed out with a bichloride-of-mercury solution and dressed with iodoform. There was found extensive necrosis of the anterior wall of the auditory canal and tympanum. An incision was made over the mastoid and the bone perforated, but nothing was found here except extreme hardness of the bone. The patient then seemed to improve very rapidly, and was soon able to go out every day, and the pain seemed to be relieved. It was necessary to make another counter-opening to drain the abscess.

Suddenly, on March 7th, the patient complained of pain through the forehead and down the side of the neck. At 11.30 P. M., having been restless all the evening, he pulled off his bandage, although he did not object to having it replaced. The only answer the house surgeon could get from him was "Yes, sir," to every question, although he seemed to make an effort to say something else. He would put out his tongue, and give his right hand when told to. The pupils were normal in size, and responded readily to light. No sensory or motor paralysis and no photophobia were present. An examination of the eyes showed nothing. Urine normal. Temperature in the mouth 102·3° F., pulse 106, respirations normal.

*March 8th.*—Temperature 101° F., pulse 93, and respiration normal. Cerebral condition exactly the same. The dressing over the ear contained an increased amount of pus and there were bogging and swelling over the zygoma and malar bone. There was puffiness of the left lower eyelid. Cerebral abscess was suspected and Dr. R. F. Weir was called in consultation. At Dr. Weir's suggestion, an opening was drilled in the mastoid antrum, but it was only found that the bone was very dense and hard as before. Dr. Weir then carried the incision above the auricle forward, cutting the temporal artery and displacing the auricle forward so that an examination could be made of the parts in front of the ear.

As Dr. Weir was present, the speaker asked him if he would kindly describe the further steps in the operation.

Dr. Weir said that it was his intention, being here, to be of any service possible in case of a discussion, by speaking of the matter as it presented itself to him, and he would gladly do so. Here was a patient with pre-existing ear disease, suddenly attacked with ataxic aphasia and a certain amount of temperature elevation. There were two points to be considered—viz.: First, it must be made sure that it was not mastoid trouble. This was done by cutting down on the mastoid, which gave no evidence of disease. The second point was to eliminate or to discover any subdural inflammation. This might have been done by continuing the same opening and making it deeper, and opening the cranium above the petrous bone. On account of the healthy condition of the mastoid, this was thought to be unnecessary. The anterior sinus was explored and found to lead to an opening in the sphenoid bone, where a pulsating mass was found. On puncturing this, pus was let out, and subsequently the opening was enlarged and about half an ounce of pus and broken-down brain tissue was removed. A drainage-tube was then put *in situ* and the wound subsequently dressed. Between midnight and the following morning the patient had some lucid moments, although he subsequently relapsed into the same state he had been in before the operation. Then, after consulting with Dr. Seguin, by trephining, a counter-opening over Broca's convolution was made and a rubber drainage-tube was inserted, and brought out through the first opening. He specified this method because he thought it had much to do with the unfortunate result from secondary hæmorrhage, on account of the proximity of the middle cerebral artery, which was probably injured by the tube or by the string attached to it in its introduction, so that it probably gave way.

Dr. Sexton asked Dr. Weir if he would operate in case of pachymeningitis.

Dr. Weir said that that was a question of speculative surgery. It might be said that it would be difficult to get drainage in such a case, but a good deal could be done; the parts could be separated more or less with the finger, and catgut or horse-hair inserted.

**Abscess of the Neck associated with Suppurative Otitis Media and Iritis.**—Dr. O. D. Pomeroy, of New York, reported the history of a case occurring in a man, aged fifty, who had been treated by him last winter for otitis media purulenta, and had recovered. Some months after that he had had an iritis with synechiæ. The globe was not painful. He had suggested an iridectomy, not thinking that atropine would break up the adhesions. The patient was not under the speaker's care at the time. The next week he had heard that he had pus in the anterior chamber, and a week later the anterior chamber was full of highly organized purulent matter. A paracentesis was done, and the wound was kept open with a probe. Applications of hot water were used. The speaker was sure that the eye would be lost, and in a few days the sclera became perforated and pus was discharged. About this time a swelling was noticed in the neck, which was thought to be rheumatic. After consultation with Dr. Webster, the eye was enucleated. The conjunctiva and sclera were united by many adhesions. After a few days the trouble in the neck was so much worse that it was thought it might be a complication of the eye and ear affections, and examination gave evidence of a fluctuating tumor under the lobe of the ear. A day or two before, an examination of the eye had revealed no pus, and the ear had been treated with nitrate of silver. The next day the swelling was opened, and discharged one or two ounces of pus; a probe was passed into the meatus and dead bone was found. No connection could be made out between the abscess in the neck and the trouble in the ear. The patient was now doing well, and the drum membrane was healing up. During the latter part of the trouble the temperature was raised, and blood-poisoning was suspected. Few cases of this kind had been reported. Dr. Kipp, of New-

ark, had had two, and explained the eye trouble as coming either from septic material which had passed into the blood, or from a meningitis which had extended to the eye by way of the optic nerve. In Dr. Kipp's cases enucleation had not been performed, but in this case the man could not well take time for a slow recovery.

**Chronic Purulent Inflammation of the Tympanic Attic.**—Dr. Burnett, of Philadelphia, read a paper on this subject based upon the observation of ten cases additional to ten cases already published. The history of the cases showed that the disease was characterized by great diminution of hearing, obstinacy of discharge, scanty and offensive in odor, and practically incurable by the ordinary means of treatment heretofore in use. Children were rarely afflicted by this chronic disorder. The most important considerations in the treatment of this disease were cleansing and disinfecting the diseased attic, best accomplished by injections of carbolic acid and peroxide of hydrogen, effected by means of the tympanic syringe; a free drainage, best accomplished and maintained by enlarging the perforation in the membrana flaccida; or excision of the membrana tympani and the malleus and incus.

**Excision of the Drum-head and Ossicles for the Cure of Chronic Purulent Inflammation of the Attic of the Tympanum.**—Dr. Samuel Sexton, of New York, read a paper on this subject, in which he said that in the usual medical management of such cases with syringe, cauteries, and astringents, either wet or dry, according to vogue, it was surprising how much ineffectual work might be done in a conventional way in so small a receptacle for medicaments as the drum of the ear. He had been much impressed with the advances made in general surgery, and especially interested in several operations about the joints. He had, on reflection, been very much struck with the analogy the condition of these patients offered to what existed in chronic suppurative disease of the attic of the drum, where there might be chronic inflammation of its muco periosteal lining with caries of its bony walls and of the ossicles, together with synovitis of the articular surfaces of the latter. The aural cases in which excision was indicated constituted a much larger class than was embraced in the comparatively few long-standing examples where the more prominent symptom was the occasional occurrence of slight discharge through a sinus in the membrana flaccida. A radical cure by the knife seemed called for, as in diseases of the joints, in run-down, cachectic subjects, especially those who had been long neglected or badly treated, and where the condition of the attic offered great obstruction to drainage. In chronic suppuration of the tympanic attic it was often found that the greater portion of the drum-head, comprising the membrana vibrans, was largely or wholly absent, and the membrana flaccida infiltrated, thickened, and often inverted, while the cavity itself contained more or less granulation tissue, thickened folds of muco-serous membrane, and useless portions of the transmitting mechanism. The muco-purulent secretions now found a precarious outlet through one or more sinuses; painful accumulations took place, and, owing to the near proximity of the drum to the brain, danger to life was much greater than in similar conditions elsewhere. Even where the attic disease ceased to be active and had seemingly been cured by an expectant course or other treatment, the trouble was apt to break forth again and again, along with invasions of the middle-ear tract during the existence of head colds, when the surgeon could but regret not having removed the remains of the defective mechanism and other diseased tissues from the attic at an early day, since exacerbations of purulent discharge might thus be avoided, while hearing was usually very much improved. It was the author's experience that, while we could not under all circumstances treat the ear so antiseptically as might be done in the joints, we could generally insure free drainage, which constituted the main feature of treatment in chronic suppurative diseases.

**The Employment of Boric Acid in Solution in the Treatment of Otitis Media Suppurativa.**—Dr. Samuel Theobald, of Baltimore, read a paper upon this subject. In the ordinary cases of chronic suppurative otitis media, in which there was usually extensive destruction of the drum-head, he used boric acid in powder, applying it by means of insufflation; but in acute cases and in chronic cases in which the destruction of the drum-head was not extensive, and in which a closure of the perforation might be anticipated, he preferred to use a saturated solution of boric acid. The advantages which he alleged for the solution in such cases were, that the healing of the perforation in the drum-head was more certain to be brought about when it was used than when the powder was employed, since the latter, by too suddenly drying the ear, and also by its mechanical action, frequently prevented the restoration of the drum-head; that in acute cases it was safer, since it could not obstruct the free escape of discharge from the middle ear, as the powder sometimes did; and that it could be applied more effectually than the powder could by unskilled hands. In his own practice no serious consequences had ever resulted from the application of boric-acid powder to the ear; but reference was made to the three fatal cases of suppurative inflammation of the middle ear, reported by Dr. Gruening, in which the fatal result was attributed to the introduction—in two of the cases by packing, in the other by insufflation—of boric-acid powder into the auditory canal. The strength of the solution which he commonly employed was fifteen grains to the ounce. If the discharge was profuse, the ear was syringed with this three times a day, and less frequently as the otorrhœa declined. In office practice it was more convenient, after having cleansed the ear by means of the syringe or cotton-holder and the Politzer bag, to instill the boric-acid solution (saturated) with a pipette. Several cases were related which illustrated the good effects of this method of treatment, especially in acute suppurative otitis media.

Some discussion followed in which it seemed that the experience of different members of the society in regard to the use of boric acid was not the same.

**Nasal Difficulties in Ear Diseases.**—Dr. J. O. Tansley, of New York, read a paper in which he mentioned the following points which he wished to consider: 1. Anything which wholly or partially occluded one or both nostrils. *a*. Deviated septum. *b*. Œdematous tissue. *c*. Hypertrophied tissue, such as exostoses, hyperostoses, etc. *d*. Nasal polypi. 2. Hypertrophied tissue peculiarly placed, but not necessarily occluding. 3. Hypertrophied tissue exciting as well as mechanically pressing upon the Eustachian tube. 4. Bands of tissue seemingly cicatricial, stretching from the posterior wall of the pharynx to the Eustachian tube. 5. Atrophic or cicatricial rhinitis, with unusually patulous Eustachian tubes. 6. Simple naso-pharyngeal catarrh. *a*. Simple mucous catarrh. *b*. Muco-purulent or hyperplastic catarrh. *c*. Fibrous catarrh. *d*. Ozænic catarrh with inspissated crusts. Finally, anything which wholly or partially occluded one or both nostrils. The author took up each point separately, and concluded the paper by saying that nasal difficulties caused ear diseases in four ways: 1. The blood dyscrasia or catarrhal diathesis which caused one would also cause the other, and in these conditions there was no natural sequence whatever from one to the other. 2. The gradual invasion of one mucous cavity by the catarrhal disease of an adjoining and communicating mucous cavity; here there was a natural sequence from the nose to the ear. 3. The congestions, suddenly occurring and

often repeated, which were brought about by the difficulty of clearing the nasal cavity, and that nasal difficulty which offered the most resistance to the free passage of air through the nasal cavities would cause the greater number and most serious diseases. 4. The influence which peripheric nerve irritations of the nose might have upon the ear. This latter was undoubtedly a present fact in many ear diseases, but the speaker was not then prepared to state his views on the subject.

These four facts being proved, our indications were simple and definite, and as follows: *Firstly*—to combat the blood dyscrasia. *Secondly*—to cure the catarrhally inflamed mucous membrane and restore its normal function. *Thirdly*—and, if anything, the most important of them all—to free the nasal and naso-pharyngeal cavities from all obstructions and encourage nasal breathing.

**Influence of the Use of the Telephone upon the Hearing Power.**—A paper on this subject by Dr. Clarence J. Blake, of Boston, was read by Dr. John Green, of St. Louis. The author said that the assertion made by him several years since, that the habitual use of the telephone would be prejudicial to the hearing in many cases where the hearing was already impaired, was based upon the well-known facts of the process of accommodation in the middle ear for the transmission of tones of low intensity, of the susceptibility of the percipient apparatus to shock from sharp sounds of high intensity under the conditions of that process, and upon the results of measurements of the vibrations of telephone discs made for the purpose of determining approximately the loss of power between the transmitting and receiving telephones. These experiments, the results of which had been embodied in a paper read before the British Society of Telegraph Engineers in London in 1878, consisted in connecting two hand telephones, similar to those at present in general use, by means of flexible wires, and recording the excursions of the discs of both the transmitting and receiving telephones by means of fine platinum wires tracing upon smoked glass. The excursion of the transmitting telephone disc without the magnet was first recorded, and the average for all the readings for a constant tone of 448 v. s., measured under the microscope with micrometer eye-piece, was 0·2625 millimetre. The deflection of the center of the disc under magnetic attraction was 0·061 millimetre, the result of this being a decrease of the excursion in response to the same tone to 0·180 millimetre, a difference in the length of the excursion of 0·0725 millimetre, or about 27·65 per cent.

Under the condition of fatigue, of relaxation, the ear became peculiarly susceptible to the shock imparted by such sharp metallic sounds as were constantly apt to occur in the practical use of the telephone from sudden variation in current and the breaking of connections, the danger to the ear, already impaired in its accommodative power by a middle-ear disease, being both from the tax upon its enfeebled accommodation and from the sudden shock of sounds to the ear, for protection from which there could be no voluntary preparation, the danger to the ear being always greater from such forms of receiving telephones as were attached to the head, and a proper precaution being that the telephone should be held at a short distance from the ear or at an angle of about forty-five degrees in front of it.

Later experiments had been made by Professor W. W. Jaques, who had arrived at very similar results. The author concluded by saying that these facts so amply confirmed the previous statements that they should be well borne in mind, especially since the telephone was an instrument the use of which would in the future increase rather than diminish; and since it was, moreover, not likely with our present knowledge to be essentially improved, the principal gains in clearness and distinctness of sound transmitted having to come from improvements in the means of communication rather than from changes made in the receiving instrument itself, all attempts at dampening the high metallic over-tones and improving the qualitative distinction between the consonant sounds by changing the structure of the receiving telephone having resulted in a corresponding loss of that intensity of which, as had been shown, there was so little to spare.

## AMERICAN OPHTHALMOLOGICAL SOCIETY.

*Special Meeting held at Washington, September 19, 1888.*

Dr. Henry W. Williams, of Boston, in the Chair.

**Tenotomy for the Correction of Heterophoria, with Results.**—A paper on this subject was read by Dr. David Webster, of New York. Fifty-seven operations had been done on forty patients. A slight over-correction had been aimed at, and mostly obtained. The tendon was divided from the center each way, and always completely divided just at its insertion. Of four epileptics, none had been cured, though two were thought to have been somewhat benefited. Of two cases of chorea, both had been benefited. In three hysterical cases strikingly good results had been obtained. Most of the operations had been done for muscular asthenopia. The author had reached the conclusions that tenotomy should not be done for heterophoria causing no inconvenience; very slight degrees might require tenotomy; but all other methods of treatment should be tried first. It should be performed under the influence of cocaine, and the eyes tested from time to time, to determine when a sufficient effect had been produced. In judiciously selected cases the results had been quite as good as those obtained with most other surgical procedures. Dr. H. D. Noyes had found apparent vertical deviations of the visual axes to be due to asymmetrical development of the bones of the face and orbit; and that in these deviations both prisms and tenotomy had failed to give an ultimately satisfactory result. He would never do a tenotomy for muscular insufficiency unless the muscle to be divided showed a distinct surplus of power.

**Is Astigmatism a Factor in the Causation of Glaucoma?** was the subject of a paper by Dr. S. Theobald, of Baltimore. He was convinced that, when the meridian of lowest refraction was vertical or nearly so, there was more asthenopia, headache, and likelihood of pathological changes in the eye than when that meridian was horizontal or nearly so. This variety of astigmatism the author had found associated with glaucoma, and, as it was the rarer kind, he thought the association not accidental. It would act through hyperæmia of the ciliary muscle, producing an undue flow of fluid into the vitreous, when, if the anterior drainage apparatus was inadequate, glaucoma would be apt to result. Cases were given of glaucoma with this kind of astigmatism, and of this kind of astigmatism with symptoms of threatened glaucoma.

**The Treatment of Ulcers of the Cornea** was the title of a paper by Dr. P. A. Callan, of New York. The ulcers occurred in young persons, and were often phlyctenulæ of the cornea, in which neglect and lid friction had caused absorption and an ulcer. A salve of the yellow oxide of mercury should be placed between the lids once daily; atropine and cocaine should be used, if necessary, also tonics and open-air exercise, regulated diet and airy sleeping quarters, smoked glasses, but no bandages or dark room. For ulcers due to conjunctivitis, that affection should be treated. In gonorrhœal ophthalmia, ophthalmia neonatorum, or granular conjunctivitis, we should redouble our efforts when the cornea was threatened; cutting the canthus, applying leeches or ice compresses, etc. Referring especially to ulcers without apparent cause, due to some constitutional

trouble—malaria, syphilis, etc.—the author said that the constitutional remedy should be employed, and, under cocaine, the ulcer cleansed with a piece of absorbent cotton wrapped on a holder. Then, with another piece of absorbent cotton, it should be swabbed with a two-grain solution of nitrate of silver, leaving no part of the ulcer untouched. This might have to be repeated two or three times in as many days. The eye should be bathed with hot water (120° to 130° F.), half an hour, three times daily. If much corneal irritation existed, it should be bathed with a boric-acid solution; then atropine and cocaine used, and the eye kept bandaged. The point was to get a clean wound, and this was obtained better and more safely by use of the nitrate-of-silver solution than by any other means known to him. Besides clearing the ulcer, it stimulated repair.

Dr. W. F. Mittendorf, of New York, thought the electro-cautery should be used on sluggish ulcers and on those inclined to spread rapidly with sloughing edges.

**Meridional Astigmatism** was the name proposed by Dr. Edward Jackson, of Philadelphia, to designate that kind of "normal irregular astigmatism" which consisted in a difference between the refraction at the center of the pupil and that at the margin. For practical purposes it was to be studied by skiascopy, the shadow-test. There were two forms: a positive, the most common, in which (as in spherical aberration) the center of the pupil was more hyperopic or less myopic than the margin; and a negative, rarer, form, in which the margin was the more hyperopic or less myopic. The latter occurred in conical cornea and incipient nuclear cataract. The practical importance of the defect lay in its liability to lower the acuteness of vision in some cases when it encroached on the contracted pupil, the uncertainty it caused in determinations of myopia or hyperopia made with the pupil dilated, and the need for a correcting lens when the pupil was contracted different from that required when it was somewhat dilated.

**The Numbering of Prisms according to their Refractive Power.**—The committee, consisting of Dr. Jackson, Dr. Burnett, and Dr. Noyes, appointed to consider this subject, made a report recommending the indorsement of the following propositions: 1. Prisms ought to be designated by the number of degrees of "minimum deviation" they produce. 2. Where intervals of less than one degree are desired, half-degrees and quarter-degrees should be used. 3. To indicate that degrees of deviation are meant, the letter d. should be added. Thus, prism 2° d. will indicate a prism producing a minimum deviation of two degrees.

**An Instrument for demonstrating the Laws of Refraction** was exhibited and explained by Dr. J. Oscroft Tansley, of New York. It consisted of a box with glass sides, fitted with lenses and screens, which was to be filled with smoke, and then have the light from a magic lantern thrown into it, the course of the rays as refracted by the different lenses being rendered visible by the smoke.

**Acute Cocaine Conjunctivitis.**—Dr. W. F. Mittendorf, of New York, reported three cases occurring in his own practice in which the use of a four-per-cent. solution of cocaine had caused severe conjunctivitis, with great swelling of the lids, which were quite shiny, and a profuse, extremely irritating discharge. Two of the patients were elderly ladies, who were unrelieved by any treatment until the use of the cocaine was stopped, and in one of them a second attack was caused by resuming the use of the drug. The third was a man who had three successive attacks from the application of different samples of the drug. It was not remarkable that there should occasionally be found an idiosyncrasy against this as against other drugs. The probable explanation was that cocaine had a paralyzing effect on the sympathetic nerve fibers of the part.

**An Apparatus for the Diagnosis of Refraction.**—Dr. Swan M. Burnett, of Washington, exhibited the Javal ophthalmometer, and a disc of lenses for use in the shadow-test. The latter was arranged so that it could be used at any desired height, and would swing entirely out of the way when not in use.

**Blepharospasm.**—Dr. Carl Koller, of New York, read a paper on this, which he regarded rather as a symptom than a disease. Cases might be grouped under three heads, viz.: The neurotic, the hysterical, and those due to reflex irritation of the corneal and conjunctival nerve endings. In these latter cases, which were the special subject of the paper, cocaine, even when applied freely, gave relief for only a short time. An important factor was a fissure that was formed by the action of the tears near one canthus, usually the outer. The spasm resembled that of fissure of the anus. It could be relieved by cutting the canthus, but this was not usually necessary. Commonly it was enough to treat the accompanying corneal or conjunctival trouble, to cauterize the fissure with copper sulphate, and to apply an ointment of the yellow oxide of mercury to the lids.

**Uni-ocular Neuro-retinitis.**—Dr. R. H. Derby, of New York, reported a case in a girl whose father had had syphilis, but who had no other manifestation of a constitutional taint. She had first a central scotoma, then an optic neuritis. The swelling of the papilla amounted to 7 D. and all perception of light was lost. But under mercurial inunctions and large doses of potassium iodide the swelling diminished and vision equal $\frac{7}{10}$ was recovered.

**Extraction of the Luxated Lens by Means of Agnew's Bident.**—Dr. Oren D. Pomeroy, of New York, reported five cases with satisfactory results, securing good vision. By keeping the head bent forward the lens was brought into the anterior chamber, and the bident introduced before placing the patient in position for the extraction. The extraction must be accomplished with a sharp hook or lens-scoop, and care must be taken not to have the lens crowded too closely against the cornea.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of September 12, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

**Syphilis of the Larynx, Trachea, and Bronchi.**—The President read the following paper:

Syphilitic processes are among the most important morbid processes affecting the larynx and trachea. Not only do they injure the structural integrity of the organs directly, but, by their location in the regions occupied by the origin and course of nerve supply, they lead to denutrition of the tissues generally and to serious motor impairments of the muscles of the larynx. So varied are the manifestations of syphilis, and so important to the welfare of the patient is their timely recognition, that considerable detail is proper in their elucidation. In hardly any other department of living pathology has the laryngoscope been of more signal service than in dispelling obscurities in the conception and comprehension of syphilitic disease of the larynx.

The distinctions between secondary and tertiary syphilis, as manifested in the upper air-passages, are so irregular and uncertain that many writers prefer the terms recent and tardy. In fact, however, secondary lesions are sometimes tardy and tertiary lesions sometimes precocious. Secondary lesions are sometimes present as the sole manifestation of that period. Sometimes they precede cutaneous manifestations. Most frequently they occur in subjects already affected with what are known as mucous patches in other portions of mucous membrane or with early cutaneous syphilides.

*Pathology.*—The earliest and far most frequent manifestations are subacute and diffusely hyperæmic conditions of portions of the mucous membrane of varied extent and intensity, an erythema with turgescence, but without supersecretion, occurring within from six to ten weeks after infection. The affected surface exhibits at first the usual rose-color of congestion, but, as stases, infiltrations, and hæmic transudations occur, it becomes more or less livid in patches which present mottled or flaky discolorations. Superficial erosions often ensue. Occasionally deep seated ulceration occurs. Sometimes paresis of the muscles of the larynx is produced. The erosions may be due simply to denutrition of epithelium from mere pressure by infiltrations, or to disintegration of a characteristic proliferative lesion known as the papule or mucous patch, by some termed broad condyloma, a product, according to Virchow, of the same histological character as the indurated chancre and the various gummatous formations—namely, an infiltration of tissue with nucleated embryonic cells. These papules are characteristic but by no means frequent syphilitic products in the larynx, and are so infrequent in the trachea that their occurrence there is denied by authorities the very highest. They are multiple recurrent lesions, almost invariably associated with mucous patches on other mucous membranes; usually lasting from three to five weeks, and sometimes much longer. They are observed from within a few weeks to a few months after infection; sometimes earlier, occasionally as late as eighteen months. They are far the more frequent in tuberculous subjects who have contracted syphilis.

The opinion is held by some that superficial ulceration is always due to their disintegration, and that they must have existed in many cases in which they have not been observed. Histologically they are composed of small-celled infiltrations into the corium and into dilated hypertrophied papillæ. Hence they occur in localities where papillæ exist. Consequently they can not occur below the vocal bands. They are quite red when recent, but soon change to light gray as the epithelium thickens; they then appear as small, wrinkled, opalescent, flattish, ovoidal elevations, varying in size from pin-heads to small peas; depressed in the center when mature, and when recent circumscribed with a peripheric inflammatory areola. They may subside without trace. When erosion takes place, the surface becomes punctatedly red from exposure of the papillæ. They may undergo destructive ulceration. They may become the starting-points of small pointed vegetations histologically identical with papillomata. These are probably non-specific in character, though due to irritation excited by specific processes. They do not undergo ulceration, and rarely undergo absorption under specific medication. When forcibly removed, they repullulate quickly. Similar vegetations sometimes project from the edges of ulcerated patches of tissue. Though usually small, sessile, and multiple, they may acquire such bulk as to interfere seriously with respiration.

The erosions which occur on the surface of the papules or upon simply erythematous mucous membrane are usually superficial, but may extend through the mucous membrane and beneath it, under bad hygienic conditions. Under slight provocative exposures to cold and wet, fluxionary œdema sometimes takes place in their vicinity, occasionally to such an extent as to be menacing to life. The epiglottis often becomes very much thickened; the vocal bands thickened and dentatedly eroded. There seems to be no tendency for secondary lesions to extend from the larynx to the trachea.

Tertiary lesions come under notice most frequently in the stage of ulceration, usually following the liquefaction of gummatous nodules, gummatous infiltrations, or true gummata, as may be. The epiglottis is the most frequent seat—so frequently that its lingual and lateral ulceration has been erroneously deemed pathognomonic of syphilis; but destructive lesions may occur in every portion of the larnyx. The ulceration is both serpiginous and deep-seated, and, while more commonly unilateral, there seems practically to be little limit to its phagedenic destructive ravages under unfavorable conditions, as it destroys and penetrates all the tissues, soft and cartilaginous. Slight provocation may produce fluxionary œdema in this stage also, which may be of the most serious character. Serious hæmorrhages may occur from penetration of blood-vessels; and apnœa may ensue from incarceration of fragments of necrosed cartilages and soft tissues. Ulceration may be attended with proliferative vegetations which may occlude the air-passages. Superficial ulceration may heal with moderate cicatrization which eventually becomes hardly noticeable. Deep and extensive ulcerations heal under peculiar whitish, lustrous, stellate, retractile cicatrices, similar to those which follow burns. Instead of cicatrization, adhesions may take place between contiguous raw surfaces, and strictures of various kinds be formed in consequence.

The gummatous lesions preceding these ulcerations are of three kinds: Small gummatous multiple nodules or nodular syphilides; diffuse gummatous infiltration; and gummata proper usually isolated.

Small gummatous nodules (nodular syphilide, Lewin) vary in size from that of small bird-shot to that of peas, and are usually grouped in well defined determinate figures in the body of the mucous membrane, and often so contiguous as to appear confluent. Gummata proper present themselves as firm hemispherical nodules or tumors, from the size of peas to that of cherries or almonds, and sometimes much larger, in the connective tissue beneath the mucous membrane; usually uniform in outline, sometimes lobulated; undiscolored or reddish at the base and yellowish at the summit. Gummatous infiltrations present themselves as more or less longitudinal or more diffuse submucous thickenings corrugating the surface of the mucous membrane. All these products may undergo absorption.

When not absorbed, gummatous nodules undergo purulent liquefaction. At this time they become softer and more yellowish at the summit, the mucous membrane at the base becoming more inflamed and thickened, the whole mass looking not unlike a furuncle. The summit becomes perforated, and gives exit to thickened, yellow pus, with granular admixture of débris at first. The orifice rapidly enlarges by ulceration until it becomes fully as large in circumference as the nodule was, or larger; and readily coalesces with ulcerations from contiguous nodules. The ulceration extends in depth until it occupies the entire volume of the nodules, and then may penetrate all the tissues beneath, even to the perichondrium and cartilage.

The ulceration of the nodulous syphilide, as studied in a series of cases by Lewin, is said to take place more from periphery to center than the reverse, being shallow at first, and then gradually deepening. The ulcer is round, depressed, and sharply bordered. Its bed is covered with a secretion which, from previous fatty degeneration or purulent metamorphosis, is either thickish, or nearly lardaceous, or composed of purulent detritus.

The more longitudinal and the more diffuse gummatous infiltrations undergo liquefactive ulceration much more slowly; but the subsequent ulceration, when unchecked, extends much more rapidly and becomes more readily serpiginous and phagedenic; so that, coalescing with similar conditions in the vicinity, large surfaces in continuity become involved in its ravages. As it extends in superficies it penetrates slowly in depth until it also involves the deeper structures close to the perichondrium, and sometimes to the cartilage. Ulceration varies in rapidity,

extent, and penetration, according to the succulence or resistance of the tissues contiguous. The ulceration from diffuse gummatous infiltration is preceded, according to Lewin, by extensive fatty degeneration of its surface, which gives it an almost grayish-white tinge. This is soon followed by actual defects which, at first shallow, increase in depth, and gradually penetrate to the perichondrium and the cartilage. These ulcers are characterized, like those from the nodules, by sharp definite circumscription, and by their being surrounded with an inflammatory swollen zone. They appear often as though a piece of swollen tissue had been cut out. The edges are often beset with slight crenations, which give them a gnawed appearance, but are never undermined; and their bottom is covered with a yellowish-white adherent mass, composed of pus, fatty detritus, and shreds of tissue. Gummata proper sometimes remain unchanged for prolonged periods. When they undergo degenerative metamorphosis there is formed, according to Lewin, only the characteristic viscid fluid, suppuration being exceptional. Ulceration takes place, however, in some instances, and penetrates deeply into the tissues beneath, as in the other two forms. Under unfavorable hygienic conditions of system, or of surroundings, the phagedenic ravages may become uncontrollable. They have been known to attack an artificial opening made to prevent suffocation by a gumma (Holden, "New York Medical Journal," January 29, 1887).

Perichondritis and chondritis being set up after either form, the ulceration may penetrate the cartilage to the tissues external, forming a perichondrial abscess, which ruptures externally by a more or less circuitous route, whence the fragments of dead tissues are discharged.

Taken in point of frequency, the cartilaginous structures seem to be vulnerable in the order following: epiglottis, posterior vocal processes, arytænoids, supra-arytænoids, cricoid, cuneiform, and thyreoid. Coming to the softer parts, the vocal bands are attacked next in frequency to the epiglottis, the left band far more frequently than the right; the interior supraglottic walls of the larynx, the ary-epiglottic folds, the interarytænoid fold, the posterior wall, the ventricular bands, the subglottic walls of the larynx, the exterior of the soft parts in the pyriform sinus. When the cartilages are attacked, whether primitively or consecutively, the chain of morbid phenomena is perichondritis, chondritis, calcification, caries, necrosis, and elimination of sequestra in crumbled masses and in fragments. The elimination of dead cartilages may consume months, and even years. It usually takes place by the interior route, occasionally by the exterior. In both instances abscess and fistula are formed, and elimination of large fragments by the interior route sometimes produces suffocative paroxysms, and occasionally actual suffocation.

The epiglottis, as repeatedly noted, is especially vulnerable to the syphilitic process, and every variety of lesion possible may ensue in any extent, from insignificant erosion to complete destruction, the character of the lesion depending upon that of the structure destroyed. It is this, as pointed out by Seiler, which gives such an irregular conformation to the epiglottis when its glands have been destroyed. Exulceration of the entire mucous membrane at the edge reveals the exposed cartilaginous structure as a yellowish-white stripe imbedded between two thickened masses of spongy-looking tissue. Ulceration of the cartilage often commences at the anterior surface in the form of a round ulcer with thickened excavated edges. Destructive ulceration usually progresses from the side and from the edge. When the valve is only partially destroyed, its remains may present two or more irregular fragments separated by fissures of varying depth, or a single fragment of any breadth, from a small stripe to nearly the entire bulk.

When totally destroyed, the orifice of the larynx is separated from the post-lingual sulcus by a more or less irregular ridge of ulcerated tissue, which, after cicatrization, presents itself as a pale, deformed stump. This, however, does not, as a rule, prevent deglutition, and in some instances does not even interfere with it, the occlusion of the larynx being effected by the base of the tongue on the one hand, and by close approximation of the ventricular bands and sphincter-like approximation of the ary-epiglottic folds on the other.

The other cartilages, when the subject of destructive progressive ulceration, are macerated out of their investments, as it were. The ulcerative process extends into the cartilage, surrounding it, if it is a small one, or circumscribing a portion of it, if it is a large one. The cartilage then perishes by necrosis, is laid bare, and becomes detached from its connections, in some instances remaining entangled in a sort of pocket scooped out of the soft tissues. The necrosed cartilage finally breaks through to the interior, and is usually discharged by expectoration. If it is situated below the glottis, paroxysms of suffocation may ensue, or even actual apnœa, as from any other foreign body. Exfoliations of the cricoid cartilage are the most frequent source of these untoward results, which, however, sometimes ensue from exfoliations of the thyreoid. The ulcerative process sometimes penetrates blood-vessels, and hæmorrhage follows. Such hæmorrhage has been known to terminate fatally (Turck).

The vocal bands frequently sustain permanent lesion varying from minute losses of substance to entire destruction. Transverse dentated erosion of the border is not uncommon, and detachment from the posterior vocal processes not infrequent. Sometimes abundant irregular papillary proliferations take place, forming mobile, projecting, pyramidal, or irregular dentritic vegetations, which project like soft, mobile stalactites into the interior, and which are large enough, in exceptional instances, to demand operative interference. Similar conditions and productions may prevail with the ventricular bands. Superficial ulcerations may heal with moderate cicatrization, which eventally becomes hardly noticeable. In deep and extensive ulcerations, when cicatrization occurs, a peculiar lustrous, whitish, stellate, contractile cicatrix is formed, similar to the syphilitic cicatrix in other mucous membranes. Instead of cicatrization, adhesions often take place between ulcerated surfaces, and thus a variety of injurious morbid conditions occur. The vocal bands may become united by a broad fibrinous band stretching between them, or by a similar obturator formed of their thickened and distended mucous membrane. The membranous web thus formed between the vocal bands usually unites them for a variable distance, commencing at the commissure, the posterior border of the structure being crescentic in outline. Exceptionally the cords may become involved throughout their entire length, with an orifice in the central portion of the web (Navratil). This membranous union has been known to take place in six days (Rossbach, Langenbeck's "Archiv," vol. xiv). In a case watched by Sommerbrodt ("Berlin. klin. Woch.," April 1, 1878) the anterior third united in fourteen days, and the union of the bands was complete in six weeks. In other cases the vocal bands become united without any membrane intervening. Other adhesions sometimes take place, which may seriously impair deglutition, phonation, and even respiration. These comprise depression of the epiglottis to one side or the other, or to an ary-epiglottic fold, and preventing proper closure of the valve or complete elevation; adhesion of the epiglottis to either lateral pharyngeal wall; adhesion of ventricular to vocal band, sometimes preventing closure of the glottis, and often producing a shrill, weak, piping voice; adhesions anteriorly of the two vocal bands or of the two ventricular bands; adhesions of the inner surfaces of the mucous membrane of the arytænoid carti-

lages, so as to fix the vocal bands immovably in the median position. Other results of syphilitic laryngitis are hypertrophies, diffuse and discrete, of mucous membrane, connective tissue, or muscular substance, and consequent stricture, varying in extent, locality, and interference with function; myopathic paralysis, muscular atrophy; and the development of morbid growths.

Perichondritis or chondritis, whether following ulcerative destruction of the soft tissues or preceding it, usually excites considerable fibrinous infiltration into the adjacent submucous connective tissue, producing a chronic fibrinous œdema. When extensive, this produces suffocative symptoms, and may threaten asphyxia. Sometimes the submucous infiltrations become organized and transformed into dense fibrous tissue incapable of undergoing absorption, and thus they produce deformity, occlusion of the larynx, and stricture. The strictures are often incapable of yielding to systematic dilatation, even when instituted early; and hence tracheotomy is usually necessary to provide artificial means for respiration below the seat of obstruction. After tracheotomy, the process may progress to complete obliteration. These strictures are of the most varying form and caliber, some of them distorting the configuration of the interior of the larynx almost beyond recognition. Fortunately, most of them occur in the supraglottic region, where they are far more accessible to effective treatment.

Lesions of either soft tissues or cartilage in the neighborhood of the important crico-arytænoid articulation excite non-specific inflammation of the joint which may produce true or false ankylosis. Syphilis is probably the most frequent cause of this lesion. When the specific process invades the joint, the ligaments and perichondrium suffer, and true ankylosis, or luxation, or disarticulation, and even discharge of the arytænoid and supra-arytænoid cartilages, may ensue. In the latter stage of unrestrained lesion the cachexia is much the same as in analogous advanced stages of tuberculosis.

Myopathic paralyses of the muscles of the larynx may occur in the later periods of secondary syphilis, and at any period of tertiary syphilis. They are most frequently unilateral, the left side being affected far oftener than the right. The onset is often sudden or acute, following severe or sudden exposure to cold and dampness. The paralysis often affects the dilator muscles, and bilateral paralysis of the dilators is not infrequent. Paralyses of the arytænoid muscle and of the entire constrictor group are the most frequent varieties. These paralyses differ in their pathological origin from other examples of paralysis in syphilis which are due, respectively, to compression of the tract of the nerve-supply by diseased tracheo-bronchial glands or other structures, and to neural or cerebral lesions which present themselves in the latter stages of the confirmed dyscrasia.

Tertiary lesions of the trachea are first observed so very frequently in the stage of ulceration that it has been assumed that tertiary syphilis of the trachea always produces ulceration (Vierling). Schech and others have reported instances of resorption of gummata under specific medication. The clinical tendency, however, is to ulceration. Tracheal ulcerative lesions are sometimes unassociated with lesions elsewhere in the aerial tract. Much more commonly they are found associated with similar lesions in the larynx, in the bronchi, or in both.

Pharyngeal syphilis exists in many instances (thirty out of forty-six collated by Vierling), and pulmonary syphilis in not a few (six out of fifty, Schech). They are often found associated with additional syphilitic lesions at a distance. In a large proportion of instances a primitive bronchus is affected, the left one the more frequently; in some, both primitive bronchi; in a few, the smaller ramifications (Vierling); and, exceptionally, even the minutest (Lancereaux). In some instances syphilitic lesion is confined to the bronchi (five cases by Vierling). The upper portion of the trachea suffers most when the larynx is involved; the lower portion, when the disease is isolated or associated with syphilis of the bronchi. In some instances the middle portion alone suffers (Vigla and Charnal, Berger, Mackenzie of Baltimore, Semon); exceptionally, the two extremities, with complete conservation of the middle portion (Tessier, cited by Rey).

When not occurring in direct continuity with similar lesion in the larynx, the most frequent seat of ulceration is in the anterior surface of the lower portion of the trachea just above the bifurcation, whence it extends upward, or in patches continuously sometimes as far as the cricoid cartilage; sometimes almost completely around the interior in periphery, occasionally completely around. Multiple perichondritis is easily set up and results in abscess, denudation of cartilage, calcification, caries, and necrosis. Portions of dead cartilage are sometimes coughed up in fragments. Sometimes semi-detached portions project into the interior and interfere seriously with respiration and with expectoration. The ulceration usually begins in a number of small ulcers which extend in depth and in periphery, baring the perichondrium, and causing portions of the cartilaginous rings, or entire rings, to undergo denudation, necrosis, and exfoliation. Coalescence with similar ulcerating surfaces or phagedenic extension sometimes produces very extensive ravages which may involve nearly the entire circumference of the trachea, and nearly, occasionally quite, its entire length. Flaps of detached membrane sometimes fall over, producing valvular impediments to inspiration, or to expiration, according to the position of the attachments. The cicatrization of annular ulcerations produces stricture often so low down as to be beyond relief even from tracheotomy, the parts not being well adapted to respond to artificial dilatation. The strictures are irregularly ovoidal in shape, sometimes funnel-shaped, and of varying thickness, from a few lines to that of several rings. These cicatrices may reduce the caliber of the trachea so considerably as to prevent respiration. Occlusion to the caliber of a crow-quill is not uncommon, and still greater occlusion has been noted in some instances. Annular stricture at the bifurcation may become so great as barely to admit the passage of a delicate probe (Obtulowicz, "Ctrlbl. f. Chir.," 1879, No. 7). Irregular annular dilatation of the trachea is often produced by the pressure of the air-current above the stricture and sometimes below it. Even dilatation of the bronchi has been noticed. Projecting ridges of cicatricial tissue below the point of stricture are sometimes so located as to occlude the inferior orifice of a tracheal cannula more or less, a point not sufficiently recognized, for it might be practicable in some instances to push a cannula into a position which would allow its inferior extremity to pass the obstruction.

Stricture of the bronchi is rare. It affects the left bronchus more frequently (Verneuil *et al.*); sometimes the right one (Wilks *et al.*); occasionally both (Virchow *et al.*). The connective tissue around the strictured portions usually undergoes permanent sclerotic proliferation. Sometimes there is great peritracheal sclerosis, sometimes none. The peritracheal glands may undergo great enlargement. All these conditions, superadded to the internal stricture, may greatly increase stenosis.

Ulceration sometimes penetrates through the trachea, producing abscess opening into the œsophagus or the mediastinum, the aorta (Rokitansky, "Path. An.," Bd. 111, p. 22; Wilks, "Trans. of the Path. Soc. of London," 1865, p. 52), the pulmonary artery (Kelly, *id.*, 1872, p. 45), or the vena cava (Turner, *id.*, xxxvii, p. 117). In at least two instances of ulceration of the left bronchus the left branch of the pulmonary artery has been found perforated (Vierling).

Inflammation around the trachea or bronchi sometimes produces adhesions to the œsophagus or to other tissues, which depresses the trachea and larynx and impairs their upward movements in deglutition. Sometimes it produces peritracheal or tracheo-bronchial abscess. Abscess of a bronchus, sometimes deeply seated, has occurred after tracheotomy, apparently as a result of too assiduous swabbing of the cannula.

The lesions of hereditary syphilis are almost identical with those of the gummatous infiltrations of tertiary syphilis. They sometimes appear very early. Ulcerations have been noticed in infants at two months of age (Parrot, "Prog. méd.," 1878, p. 653). Stricture from perichondritis has been noticed at the same age (Fränkel, "Wien. med. Woch.," 1868, No. 18; Parrot, *loc. cit.*).

(*To be concluded.*)

## Book Notices

*Nature's Hygiene:* a Systematic Manual of Natural Hygiene, containing a Detailed Account of the Chemistry and Hygiene of Eucalyptus, Pine, and Camphor Forests, and Industries connected therewith. By C. T. KINGZETT, F. I. C., F. C. S., Past Vice-President, Society of Public Analysts, etc. Third Edition. London: Baillière, Tindall, & Cox, 1888. Pp. xii–439.

THE thinly veiled purpose of this large volume is to vaunt the antiseptic and disinfectant virtues of peroxide of hydrogen in particular connection with the "Sanitas" compounds invented by the author; but, as might be expected from a chemist of such high repute, the argument which underlies the advertisement possesses scientific interest and value.

A careful review of the present position of the "germ theory" leads Mr. Kingzett to the opinion that the causes of infectious disease are to be sought in the chemical products to which certain micro-organisms can give rise in suitable media, and he intimates that, on the one hand, "a number of different organisms are capable of producing the same disease by the like production of the same chemical product," and, on the other hand, "since these products may vary with the nature of the media in which they are produced, we may expect to find different diseases or modifications of the same disease induced by one and the same micro-organism acting under different conditions." From this point of view it is an easy step to the conclusion that an antiseptic agent, by sterilizing the medium or by neutralizing the poisonous product, is as efficient as a "germicidal" disinfectant—a conclusion to some extent supported by practical sanitary experience, despite the contradictory laboratory experiments of bacteriologists.

Having pointed out that the so-called ozonometric tests are, as has long been known, rather measures of peroxide of hydrogen, the author demonstrates that the pure terpenes and many of the essential oils yield peroxide of hydrogen in large amount when their oxidized products are treated with water, and that such is especially the case with the pine, eucalyptus, and camphor, a consideration of the properties of which occupies nearly half the book.

### GENERAL LITERARY NOTES.

AMONG recent foreign publications we note the following:

F. ALCAN, Paris.—Malgaigne, "Manuel de médecine opératoire." 9th ed., ed. by L. Le Fort. (16*fr.*) —— A. and G. Bouchardat, "Formulaire magistral." (4*fr.*) —— F. Lagrange, "Physiologie des exercices du corps." (6*fr.*)

P. ALCAN, Paris.—C. Sabourin, "Recherches sur l'anatomie normale et pathologique de la glande biliaire de l'homme." (8*fr.*)

ASSELIN & HOUZEAU, Paris.—Tillaux, "Traité de chirurgie clinique." Vol. ii, part 1. (6*fr.*)

J. B. BAILLIÈRE & FILS, Paris.—Després, "La chirurgie journalière." (12*fr.*) —— F. Guyon, "Leçons cliniques sur les affections chirurgicales de la vessie et de la prostate." Ed. by Guiard. (16*fr.*) —— Rafin, "Étude clinique sur le massage appliqué au traitement des fractures juxta-articulaires." (1*fr.* 50.) —— R. Chabannes, "Traitement de la dyspnée par les inhalations d'acide carbonique." (2*fr.*) —— Moreau, "La folie chez les enfants." (3*fr.* 50.) —— Riant, "Les irresponsables devant la justice." (3*fr.* 50.) —— J. Luys, "Petit atlas photographique du système nerveux: le cerveau." (12*fr.*) —— A. Cullerre, "Les frontières de la folie." (3*fr.* 50.) —— H. Bourru and P. Burod, "Variations de la personnalité." (3*fr.*) —— E. Périer, "La seconde enfance." (2*fr.*) —— G. Bouilly, S. Duplay, L. Picqué, E. Schwartz, P. Segond, L. Poisson, A. Pousson, and R. Harrison, "Chirurgie des organes génito-urinaires de l'homme et de la femme." (17*fr.* 50.) —— J. Cyr, "Scènes de la vie médicale." (3*fr.* 50.) —— Bouveret, "Traité de l'empyème." (12*fr.*) —— E. Duval, "Traité pratique et clinique d'hydrothérapie." (10*fr.*)

O. BERTHIER, Paris.—H. Huchard, "Quand et comment doit-on prescrire la digitale?"

A. DELAHAYE & E. LECROSNIER, Paris.—C. Bataille, "Traumatisme et névropathie." (4*fr.*) —— C. Viry, "Manuel d'hygiène militaire."

O. DOIN, Paris.—G. Patein, "Manuel de physique médicale et pharmaceutique." (7*fr.*) —— G. Pichon, "Les maladies de l'esprit." (7*fr.*) —— A. Tripier, "Varices viscérales." —— G. Treille, "De l'acclimatation des Européens dans les pays chauds." (2*fr.*) —— Dujardin-Beaumetz, "L'hygiène thérapeutique." (6*fr.*) —— Joal, "De l'épistaxis génitale."

LECROSNIER & BABÉ, Paris.—Berrez, "De l'ulcère simple de l'œsophage." (2*fr.* 50.) —— J. M. Dupain, "Étude clinique sur le délire religieux." (5*fr.*)

G. MASSON, Paris.—H. Peyraud, "L'immunité par les vaccins chimiques. Prévention de la rage par le vaccin tanacétique ou le chloral." (2*fr.* 50.) —— A. Gouguenheim and P. Tissier, "Phthisie laryngée." (8*fr.*) —— Verneuil, "Mémoires de chirurgie." Vol. v. (15*fr.*) —— P. Miquel and Rueff, "Traitement de la tuberculose pulmonaire par les pulvérisations biiodo-mercuriques et technique des pulvérisations." (3*fr.*) —— J. Batuaud, "Essai de séméiologie gynécologique. Des troubles gastriques . . . d'origine génitale . . . en dehors de la grossesse."

MEURILLON, Paris.—E. Dupouy, "Le moyen âge médical." (5*fr.*)

OLLIER-HEURY, Paris.—C. Le Page, "Des résultats éloignés de la cure radicale des hernies épigastriques."

G. STEINHEIL, Paris.—A. Ruault, "De quelques phénomènes névropathiques réflexes d'origine amygdalienne." —— J. Besnier, "De la typhlite stercorale."

H. GEORG, Geneva.—J. L. Prévost and P. Binet, "Recherches expérimentales relatives à l'action des médicaments sur la sécrétion biliaire et à leur élimination par cette sécrétion."

J. F. BERGMANN, Wiesbaden.—R. Fleischer, "Lehrbuch der inneren Medicin." Vol. i. (5*M.* 40.) —— M. Knies, "Grundriss der Augenheilkunde." (6*M.*) —— H. Nebel, "Beiträge zur mechanischen Behandlung." (2*M.*)

C. BUROW, Heidelberg.—F. Langheineken, "Extraktionsmethoden am nachfolgendem Kopf." (0*M.* 75.)

M. COHEN & SOHN, Bonn.—K. Schröder, "Lehrbuch der Geburtshilfe mit Einschluss der Schwangerschaft und des Wochenbettes." 10th ed., by Olshausen and Veit. (16*M.*) —— O. Witzel, "Allgemeine chirurgische Semiotik und Diagnostik." (3*M.* 60.)

W. ENGELMANN, Leipsic.—J. N. von Nussbaum, "Ueber Unglücke in der Chirurgie." 2d ed. (0*M.* 90.)

F. ENKE, Stuttgart.—E. Fröhner, "Lehrbuch der thierärztlichen Arzneimittellehre." Part i. (5*M.* 40.) —— A. Adamkiewicz, "Die degenerativen Krankheiten des Rückenmarks." (7*M.*)

G. FISCHER, Jena.—O. Hertwig, "Lehrbuch der Entwicklungsgeschichte des Menschen und der Wirbelthiere." 2d ed. (11*M.*)

G. FOCK, Leipsic.—E. Riese, "Die Seekrankheit." (1*M.* 50.)

E. Grosser, Berlin.—A. Baginsky, "Ueber Rückgratsverkrummungen der Schulkinder." (0.M. 50.)

F. W. Gelsow, Leipsic.—F. Ahlfeld, "Abwartende Methode oder Crede'scher Handgriff?" (1.M.)

L. Kressner, Würzburg.—G. Tarrasch, "Die Aetiologie des Uterusprolapses." (1.M. 20.)

Lipsius & Tischer, Kiel.—Jacob, "Ueber simulirte Augenkrankheiten." (1.M.) —— H. Rohwedder, "Der primäre Leberkrebs und sein Verhältniss zur Lebercirrhose." (1.M.) —— G. Breese, "Ein Beitrag zur Statistik und pathologischen Anatomie der Hirnblutung." (1.M.) —— A. David, "Beitrag zur Kenntniss der Wirkung des chlorsauren Natrums." (0.M. 80.) —— J. P. A. Morck, "Beitrag zur pathologischen Anatomie der congenitalen Syphilis." (1.M.)

E. S. Mittler & Sohn, Berlin. —— E. Leyden, "Die Entzündung der peripheren Nerven." (1.M. 20.)

G. Nelenhahn, Jena. —— A. Engelhard, "Zur Diagnose der Ovarientumoren." (1.M. 20.)

M. Niemeyer, Halle.—W. Zopf, "Untersuchungen über Parasiten aus der Gruppe der Mondaminen." (6.M.)

P. Noordhoff, Groningen.—A. P. Fokker, "Untersuchungen über Heterogenese." Part iii. (3.M.)

C. Schmidt, Zurich.—T. Gsell-Fels, "Die Bader und klimatischen Kurorte Deutschlands." Part ii. (6.M.)

K. J. Trübner, Strassburg.—J. Schreiber, "Praktische Anleitung zur Behandlung durch Massage und methodische Muskelübung." 3d ed. (8.M.)

Veit & Co., Leipsic.—J. Steiner, "Grundriss der Physiologie des Menschen." (10.M.)

F. C. W. Vogel, Leipsic.—O. Schmiedeberg, "Grundriss der Arzneimittellehre." 2d ed. (6.M.)

C. Winter, Heidelberg.—C. F. W. Krukenberg, "Vergleichende physiologische Studien." 2d series, 5th division, 1st part. (7.M.)

E. J. Karow, Dorpat.—R. Kordes, "Vergleichung der wichtigsten narkotischen Extrakte der russischen Pharmakopöe mit den anderer Pharmakopöen unter besonderer Berücksichtigung des Alkaloidgehaltes." (1.M. 20.) —— A. Kroeger, "Beiträge zur Pathologie des Rückenmarkes." (1.M.) —— A. Friedrichson, "Untersuchungen über bestimmte Veränderungen der Netzhautcirculation bei Allgemeinleiden mit besonderer Berücksichtigung der Blutbeschaffenheit bei Anämie und Chlorose." (2.M.) —— C. Johansen, "Die Gastrotomie bei carcinomatöser Striktur des Oesophagus." (3.M.) —— R. von Oettingen, "Ueber Enterostomie und Laparotomie bei akuter innerer Darmocclusion, bedingt durch Volvulus, Strangulation und Inflexion." (1.M. 20.) —— D. Scherenziss, "Untersuchungen über das fötale Blut im Momente der Geburt." (1.M.) —— W. Demitsch, "Litterärische Studien über die wichtigsten russischen Volksheilmittel aus dem Pflanzenreiche." (1.M. 20.)

C. Ricker, St. Petersburg.—E. Masing, "Die Luft in ihrem Einfluss auf unsere Gesundheit." (1.M.)

## BOOKS AND PAMPHLETS RECEIVED.

Therapeutics: Its Principles and Practice. By H. C. Wood, M. D., LL. D., Professor of Materia Medica and Therapeutics, and Clinical Professor of Diseases of the Nervous System, in the University of Pennsylvania. A Work on Medical Agencies, Drugs, and Poisons, with Especial Reference to the Relations between Physiology and Clinical Medicine. The Seventh Edition of a Treatise on Therapeutics, rearranged, rewritten, and enlarged. Philadelphia: J. B. Lippincott Company, 1888. Pp. 16–17 to 908. [Price, $6.]

Manual of Chemistry. A Guide to Lectures and Laboratory Work for Beginners in Chemistry. A Text-book specially adapted for Students of Pharmacy and Medicine. By W. Simon, Ph. D., M. D., Professor of Chemistry and Toxicology in the College of Physicians and Surgeons, etc., Baltimore, Md. Second Edition, thoroughly revised and greatly enlarged. With Forty-four Illustrations and Seven Colored Plates, representing Fifty-six Chemical Reactions. Philadelphia: Lea Brothers & Co., 1888. Pp. xiii–17 to 479. [Price, $3.25.]

Annual Announcement of Trinity Medical College, Toronto. Session of 1888–'89.

Electricity *versus* Tait, or the Use of Electricity in Inflammation as found in Gynæcology. By George F. Hulbert, M. D., St. Louis. [Reprinted from the "St. Louis Courier of Medicine."]

Transactions of the Medical Society of the State of Pennsylvania at its Thirty-ninth Annual Session, held at Philadelphia, June, 1888. Volume XX. Published by the Society. Pp. 355.

Transactions of the Medical Association of the State of Missouri at its Thirty-first Annual Session, held at Kansas City, Mo., April 17, 1888. Pp. xvi–462.

A Case of Extra-uterine Pregnancy; Embryo destroyed by a Twenty-milliampère Current without Interruptions, together with Remarks on the Best Manner of using Electricity for this Purpose. By A. H. Buckmaster, M. D., Brooklyn. [Reprinted from the "Medical News."]

# Miscellany.

**The Resection of Great Venous Trunks in the Extirpation of Malignant Tumors.**—Madelung has been trying the effect of resecting the great venous trunks near malignant tumors when the cancerous disease did not appear to have become generalized, on the ground that the veins with the lymphatics form the road by which cancer extends. Schevan, in his inaugural thesis ("Ctrlbl. f. Chir.") reports fifteen cases. In eleven the jugular was resected, once on both sides. Twice there was resection of the common carotid and of the jugular at the same time, eight times for glandular metastatic carcinoma, and three times for lympho-sarcoma. In four other cases the femoral vein was resected, once with resection of the artery, twice for cancerous glands following primary disease of the genitals, once for a tumor of the vagina, and once for primary cancer of the glands. Three patients died as a result of the operation; one of gangrene of the lower extremity and septicæmia following resection of the femoral vein, another as a result of resection of the common carotid and jugular, a third without the cause of death being positively established. Three died of local return, two of exhaustion, and two more of the primary disease, which could not be removed. Two were still alive, though suffering from a fatal return of the disease, and one was cured, though the observation dated only one month after the operation. Two patients were considered as cured; in one, death followed two years after the operation without any return, and the other had lived three years without a return.

**Ruptures of the Bladder and their Treatment.**—In connection with a successful case of suture of a laceration of the bladder, M. Blum ("Arch. gén. de méd.") gives some instructive statistics. The cases are naturally divided into intraperitoneal and extraperitoneal. Quoting the statistics of Bartels, out of 75 cases of the second class 46 were fatal, while of 94 cases of the first class 93 ended in death. When the rupture is joined with fracture of the pubic bone the prognosis is still worse —130 deaths in 139 cases. The seat of the lesion is variable, being in the intraperitoneal cases almost always posterior, and in extraperitoneal cases generally anterior. In general there is but a single laceration, and this seldom exceeds five centimetres in length, though rarely a double rupture has been seen. The principal symptoms are violent pain in the hypogastrium at the moment of the accident and great desire to urinate, without any result. Catheterism generally results in a few drops of bloody urine only, though in a few cases after several trials escape is afforded to a considerable quantity of urine, either clear or slightly tinged with blood. In these cases the catheter passes through the laceration and into the peritoneal cavity or into the extraperitoneal collection of urine. In extraperitoneal rupture spontaneous recovery is possible, especially if there is an external wound, and if the patient is not carried off by urinary infiltration and inflammatory complications. In intraperitoneal ruptures left to their own course death is the unvarying result, usually ensuing within twenty-four hours and always within the first week. The diagnosis as to the seat of the laceration is often difficult, more especially if there is no external wound. If to the signs al-

ready mentioned there are joined pain all over the abdomen and marked tympanites, the chances are greatly in favor of intraperitoneal rupture. If, on the other hand, there is no tympanites, but if there are marks of urinary infiltration of the abdominal wall, or if a fluctuating tumor above the prostate is made out by rectal touch, the rupture is probably extraperitoneal. In the latter case perineal section and permanent catheterism are absolutely indicated and have given good results. In intraperitoneal rupture all the danger comes from communication between the bladder and the peritonæum, and the treatment is very different. Laparotomy is indicated, and should be done with as little delay as possible, to reveal the size and situation of the rupture, and it should be closed completely by the method of Lembert (the sero-muscular suture not involving the mucous membrane). The toilet of the peritonæum should be made with care. In twelve cases treated in this way there have been five successes, and Blum's makes one more. He was called in a case of this nature forty hours after the accident, and when the signs of commencing peritonitis were unequivocal. Nevertheless, the recovery of his patient supports the bold line of treatment which should be adopted, in which alone there is any hope of success.

**Laparotomy for Gunshot Wounds of the Abdominal Viscera.**—In the "Transactions of the Medical Association of the State of Missouri" for 1888 Dr. H. C. Dalton, of St. Louis, contributes a case of successful suture of a gunshot wound of the liver. Both the stomach and the liver were injured, the laceration in the latter being through the lower margin of the left lobe at a point an inch and a quarter from the fissure, leaving a V-shaped wound half an inch deep. The two wounds in the stomach were closed by Lembert's sutures, and the one in the liver was closed by a single catgut suture entering and passing out at least an inch from the edges of the laceration on each side. The man, a negro aged twenty-two, made a good recovery. The operation was done immediately after the injury, and lasted two hours. The peritonæum was carefully washed with sterilized water. The patient nearly lost his life by hiccough, which, however, was controlled by hypodermic injections of hyoscyamine, $\frac{1}{120}$ of a grain. The author gives a very detailed and valuable table of all the cases of laparotomy for gunshot wounds of the abdomen that he has been able to collect. It contains MacCormac's cases in full, with the exception of two which he was unable to find; and he has added others which have occurred since. He points out two errors in MacCormac's table, which he has corrected—the cases of Dr. Mudd and Dr. Carson being entered as recoveries, whereas both patients died. The table includes 69 cases with 27 recoveries and 41 deaths, and 1 result not given. Under the old "do-nothing" treatment less than 8 per cent. recovered, and it is probable that in some of the recoveries neither the cavity nor the viscera were penetrated.

**A New Method of Mixed Anæsthesia.**—Obasmski (Wien. klin. Woch.") advises the following method for producing mixed general and local anæsthesia for surgical operations: The patient is first put under the influence of chloroform for five or ten minutes, and three to five centigrammes of cocaine are then injected into the part to be operated upon. Used in twenty-four cases, this method has been found preferable to either general anæsthesia by chloroform or local anæsthesia by cocaine, because of the smaller quantity of each employed, the rarity of vomiting, and the lessened risk of convulsive excitement in certain neurotic individuals.

**The Clinical Society of the New York Post-graduate Medical School and Hospital.**—At the opening meeting of the season, to be held this evening in the old amphitheatre of the school, Dr. R. W. Wilcox will read a paper on "Circumscribed Cutaneous Œdema." Thereafter the society's meetings will be held regularly on the first and third Saturdays of each month. Members of the profession are invited to attend.

**Mr. Reginald Harrison and Mr. Arthur Durham at Bellevue Hospital.**—On Wednesday of last week, at the invitation of Dr. Lewis A. Sayre, Mr. Harrison, of Liverpool, and Mr. Durham, of London, were present in the amphitheatre of Bellevue Hospital, on the occasion of the opening clinic of Dr. Sayre's course for the season.

The hospital staff and the students of the Bellevue Hospital Medical College were fully represented. Dr. Sayre showed his method of diagnosticating and treating a case of incipient hip-joint disease in a male child of seven or eight years. He spoke with his wonted energy and plain-dealing, entertaining manner. Standing the boy upon the table, he called attention to the gluteo-femoral crease being lower and less distinct on the affected right side than on the left, to the eversion or outward rotation of the right foot, and to the impossibility of making inward rotation of the limb. These conditions, he said, marked the first stage of the disease.

Furthermore, the right limb was poorly developed, and its muscles were wasted and flabby. He showed how attempts at flexion of the limb at the hip were fruitless and caused pain and involuntary shrinking. He then put the patient's body into proper position for measurements and examination by laying the boy out flat on the table without pillows, getting the tip of the ensiform cartilage and the symphysis pubis into exact line with the long axis of the table, and the anterior superior spinous processes into a line just at right angles to the first. The feet were kept elevated and were lowered gently without disturbing the position of the trunk till the popliteal regions were in contact with the bed. He showed again that the leg could not be flexed at the hip nor rotated inward without lifting or turning the whole pelvis. Dr. Sayre then proceeded to apply his extension and fixation splint and apparatus, with minute explanations, by which he hoped to elucidate the details of the process. They had never been fully understood in England, and consequently success had not always attended the attempts of English surgeons to use his method. Particular attention was called to the permanent flannel bandage with which the limb was wrapped to above the knee. Upon this the plaster-of-Paris bandage was rolled tightly. The extension apparatus was then applied and fastened, the use and proper position of perineal bands being explained. Adjustment having been completed, Dr. Sayre showed that, while the limb was movable, the hip joint was free from pressure on its articular surfaces and could go on to heal in its own time without the presence of irritation or any forces tending to bring about contracture and distortion. He spoke emphatically of the gain in results which must attend the orthopædic surgeon's being his own instrument-maker and fitter; and to the practice of sending patients off to instrument-makers, which prevailed among surgeons in England, he ascribed in part their non-success in the use of his methods. He would almost as soon have an operation done on his eye by an instrument-maker as on his hip joint.

Mr. Harrison was then introduced. He paid a tribute to Dr. Sayre's high abilities as a scientific worker and to his success in teaching, to which, both in America and in England, the profession were deeply indebted. Having been asked to give some item of interest from his own experience as a surgeon, he would offer some account of his success in dealing with prostatic disease or enlargement, so common in men approaching sixty years or so of age. He did not refer to cases where a moderate degree of enlargement merely made the use of a catheter necessary to empty the bladder, but to a class where the catheter must be used from twenty to thirty times a day, and where the bladder was becoming diseased, the urine thick and putrid, and the whole condition intolerable. Here operative surgery could do a great deal toward securing relief, and in many cases recovery. What that was he wished to tell. Four years ago he had brought before the International Congress at Copenhagen a new operation in this department of surgery, designed to meet two requirements in such cases: 1. The making of a free outlet for the urine. 2. The thorough drainage and washing daily of the diseased mucous membrane. His plan had been to cut directly through the perinæum, so as to split the prostate in two and open the bladder at its most dependent part. To cut through the prostate by merely thrusting a knife inward upon it never more than shaved off a corner of it. He put a grooved staff into the urethra, and then, thrusting a bistoury in through the perinæum till it reached the groove in the staff at the outlet of the bladder, he cut the prostate completely through from behind forward. The after-treatment was important. He used very large gum-elastic drainage-tubes, several times as thick as the largest used by the surgical staff of Bellevue, so that by their bulk they distended the sides of the opening. He changed them very often and washed out the bladder with proper solutions, keeping this up for seven or eight weeks, or till the urine came away clear and

of distinctly acid reaction. After that the wound usually closed up completely. As for final results, in the majority of cases relief was complete and permanent. The prostate underwent a slow atrophy and the urine came away by the natural passage. Where full recovery was not attained, a certain number of patients still had to use the catheter, though relieved of the rest of their bad symptoms. In a few cases the urethra could not be restored to patency, and the patient continued to pass his urine through the rent in the perinæum. He concluded with an invitation to any who might have listened to him to visit him and his hospital in Liverpool.

Mr. Durham, whose recent address before the Congress of American Physicians and Surgeons at Washington called out so much good feeling, then came forward. He spoke with much eloquence, in a striking manner, at once winning and energetic, not unlike that of the Rev. Dr. Talmage, to whom, except for the English accent, he has some resemblance in appearance and voice also, it is said. He remarked that it was just eleven years since Dr. Sayre had opened his (Mr. Durham's) clinic in Guy's Hospital, where he had shown his method of making a plaster-of-Paris jacket for the cure of spinal curvature. It had been in use in Guy's Hospital from that day to this. The rules for using it were printed and pasted upon the walls under the title "Sayre's Rules." In a city like London, containing so many thousands of the poorest working people, he could not sufficiently estimate the aid which the plaster jacket had given surgeons. With the poor classes that they largely had to deal with, it was folly to tell them they must have the child lie quietly for six months on a bed, or that they must buy a costly and troublesome apparatus, to cure a spinal curvature. Now it was done cheaply and most efficiently, thanks to Dr. Sayre, and the patient could go about freely meanwhile.

He spoke of the Johns Hopkins Hospital, which he had lately visited in Baltimore, of its magnificent equipments, of the engineering and sanitary skill embodied in its plans and construction, and of the life of its founder, who, like the founder of Guy's Hospital, had risen by his own labor and shrewdness from an humble walk in life to be the benefactor of thousands. He would offer from his own surgical experience some account of an operation which he wanted to make a familiar one to the whole profession. It was for the extraction of sharp foreign bodies that had been swallowed and become immovably lodged in the pharynx or upper œsophagus. Notwithstanding the immense array of instruments—probangs and forceps and what not—now made for the use of surgeons in these emergencies, they were constantly meeting with cases where either they could not get hold of the foreign body with these instruments, or, if they did, could not remove it without severe and perhaps dangerous lacerations. He had relieved a number of persons who had met with this accident by opening the pharynx from the outside, just behind the angle of the jaw. He showed the curved handle of a crockery pitcher or jug, as large as the middle finger, which he had thus removed from an imbedded position from which no instruments passed down the throat could have removed it without fatal injuries to surrounding blood-vessels and nerves. He related another case where the autopsy had shown a similar state of things. While the patient had been alive he had persistently refused to allow the operation, which might have saved his life, after ordinary measures had failed, saying that "any one could cut his throat."

**The North Dakota Hospital for the Insane.**—Dr. D. S. Moore has been appointed assistant physician to the hospital.

**The Nervine Establishment at Burlington, Vermont.**—During the past summer Dr. A. J. Willard, of Burlington, has erected a new building for his Nervine Establishment, and expects to have it ready for patients about the middle of October.

**The New York Academy of Medicine.**—At the next meeting of the Section in Surgery, on Monday evening, the 8th inst., Dr. John Ridlon will read a paper on "The Early Diagnosis and Rational Treatment of Lateral Curvature of the Spine," to be followed by "Demonstrations of Exercises and Prescriptions adapted to the Varying Conditions," by Claes Enebuski, Ph. D., M. G.

At the next meeting of the Section in Neurology, on Friday evening, the 12th inst., Dr. C. A. Herter will, by invitation, read a paper entitled "The Therapeutic Usage [*sic*] of Hypnotism"; Dr. W. R. Birdsall will report "A Case of Tremor treated by Hypnotic Suggestion"; a discussion will follow on "The Therapeutic Value of Hypnotism"; and Dr. Osgood Mason will report "Six Cases of Treatment with Animal Magnetism."

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 15th inst., Dr. J. E. Weeks will read a paper entitled "A Case of Epibulbar Echinococcus," and a paper (on a subject to be announced) will be read by Dr. H. Knapp.

At the next meeting of the Section in Theory and Practice of Medicine, on Tuesday evening, the 16th inst., Dr. Landon Carter Gray will read a paper on "Neurasthenia: its Differentiation and Treatment."

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality" for the month of August, the whole number of deaths was 478, including 1 from cerebro-spinal meningitis, 13 from cholera infantum, 1 from cholera morbus, 19 from croup and diphtheria, 3 from dysentery, 6 from diarrhœa, 3 from erysipelas, 10 from typhoid fever, 2 from malarial fever, 2 from pyæmia, 3 from whooping-cough, and 1 from septicæmia.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending September 28th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending September 8th corresponded to an annual rate of 17·8 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 12·7, and the highest in Norwich, viz., 25·1 in a thousand. Diphtheria caused 2 deaths in Manchester, 2 in Brighton, and 3 in Newcastle-upon-Tyne.

*London.*—One thousand three hundred and sixteen deaths were registered during the week, including measles, 26; scarlet fever, 19; diphtheria, 18; whooping-cough, 32; enteric fever, 11; diarrhœa and dysentery, 131; simple cholera and choleraic diarrhœa, 3. Diseases of the respiratory organs caused 148 deaths; different forms of violence, 32; and 3 suicides were registered. The deaths from all causes corresponded to an annual rate of 16 in a thousand. In greater London 1,630 deaths were registered, corresponding to an annual rate of 15·4 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 33; whooping-cough, 5; scarlet fever, 6; and measles, 7.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending September 8th in the sixteen principal town districts of Ireland was 19·5 in a thousand of the population. The lowest rate was recorded in Londonderry, viz., 12·5, and the highest in Armagh, viz., 41·3 in a thousand. In Dublin 147 deaths were registered, including measles, 1; enteric fever, 2; scarlet fever, 2; diarrhœa, 11; whooping-cough, 2; diphtheria, 1; and dysentery, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending September 8th corresponded to an annual rate of 16 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 7·4, and the highest in Paisley, viz., 21·9 in a thousand. The aggregate number of deaths registered from all causes was 405, including measles, 8; scarlet fever, 6; diphtheria, 7; whooping-cough, 6; fever, 2; and diarrhœa, 22.

*Cardenas, Cuba.*—September 14th: "Good health in town and harbor."

*Nassau, N. P.*—September 15th: "Weather hot and rainy. City healthy."

*Santiago de Cuba.*—The United States consul, in his dispatch dated August 31st, denies the recent newspaper reports that the steamer City of Baltimore lost her chief officer, George Carr, by yellow fever when six hours out of Santiago de Cuba bound for Philadelphia, and thereupon returned to Santiago de Cuba and reported the death as from apoplexy. He states that both the health officer of the port and the sanitary inspector pronounce the cause of death to be apoplexy. "Outside the city limits, at the military hospital, there are about twenty cases and deaths from yellow fever. These cases are lately landed recruits,

and, as they are completely isolated from the city, do not affect the health of Santiago de Cuba, nor of its port."

September 26th: The consul telegraphed as follows: "Absolutely deny statements published Santiago, 'yellow fever reigns supreme.' Not one case in port and town. Usual number cases as all the year in military hospital, outside town limits."

*Port au Prince, Hayti.*—The United States consul, in his dispatch dated September 8th, relative to fever at that place, stated that "of the cases of fever it is said that three or four were yellow fever imported here. They were isolated; but a form of intermittent fever has been contracted on a couple of vessels. On the American brig Water Witch two cases, one of which is well and the other convalescent. There is no spread of the disease, and with these measures of precaution it is deemed that the city will continue in its normal state of healthfulness."

*Gonaïves, Hayti.*—One death occurred on the brig Fairfield at this place. The vessel sailed September 8th for New York. The health officer at New York has been notified.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever | Diphtheria. | Measles. | Whooping-cough. |
| Paris | Sept. 8. | 2,260,945 | 872 | .. | .... | 2 | .... | 17 | 1 | 22 | 17 | 3 |
| Glasgow | Sept. 8. | 545,678 | 187 | .. | .... | .. | .... | 2 | .. | 6 | .. | .... |
| Warsaw | Sept. 1. | 444,814 | 241 | .. | .... | 6 | .... | .. | 8 | 4 | .. | .... |
| Rome | Sept. 8. | 391,188 | 180 | .. | .... | .. | .... | 1 | .. | 3 | .. | .... |
| Amsterdam | August 18. | 389,916 | 130 | .. | .... | .. | .... | 2 | 1 | 3 | .. | .... |
| Munich | August 25. | 275,000 | 186 | .. | .... | .. | .... | .... | 6 | 1 | .. | ... |
| Edinburgh | August 18. | 262,733 | 77 | .. | .... | .. | 1 | .... | .. | 1 | .. | .... |
| Edinburgh | August 25. | 262,733 | 73 | .. | .... | .. | 1 | 2 | 1 | 1 | .. | .... |
| Belfast | Sept. 8. | 227,022 | 72 | .. | .... | .. | .... | 2 | .. | .. | .. | .... |
| Genoa | Sept. 8. | 179,772 | 80 | .. | .... | .. | 1 | .... | .. | .. | 2 | .. |
| Trinidad | August 25. | 178,270 | 37 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Trinidad | Sept. 2. | 178,270 | 27 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Trieste | Sept. 1. | 154,500 | 72 | .. | .... | 6 | .... | .... | .. | 2 | .. | .... |
| Toronto | Sept. 15. | 130,000 | 25 | .. | .... | .. | .... | 2 | .. | 1 | .. | .... |
| Stuttgart | Sept. 8. | 125,510 | 38 | .. | .... | .. | .... | .... | .. | 1 | .. | .... |
| Bremen | Sept. 6. | 122,000 | 43 | .. | .... | .. | .... | 1 | 1 | .. | .. | .... |
| Barmen | Sept. 8. | 109,000 | 43 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Leith | August 18. | 74,320 | 20 | .. | .... | .. | 1 | .... | 1 | .. | .. | .... |
| Leith | August 25. | 74,320 | 26 | .. | .. | .. | .... | .... | 1 | .. | .. | .... |
| Mayence | August 25. | 65,802 | 35 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Mayence | Sept. 1. | 65,802 | 28 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Cadiz | Sept. 8. | 65,028 | 41 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Bermuda | Sept. 18. | 15,262 | ..... | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Cartagena, Col'a | Sept. 1. | 13,000 | 7 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Matamoras | Sept. 8. | 12,000 | 8 | .. | ... | .. | .... | .... | .. | .. | .. | .... |

UNITED STATES.

*Buffalo, N. Y.*—Passed Assistant Surgeon W. A. Wheeler, U. S. M.-H. S., has been authorized to vaccinate employees of the post office, to prevent the spread of small-pox, as requested by the postmaster.

*Presque Isle County, Michigan.*—Dr. James B. Patterson, in a communication to Surgeon W. H. Long, at Detroit, dated September 15th, states that "I have treated 231 cases of dysentery (epidemic), and there have been 10 fatalities. The only death that occurred when the patients were seen in the earlier stages died from pneumonia. . . . All the deaths but 1 occurred in children—none over four years. It certainly was very contagious, running through whole families, and jumping miles of territory to where some member would go; so that in every nstance it was traceable. . . . The treatment most successful: Pepsin, subnitrate of bismuth, Dover's powder, sterilized milk diet. Afterward, tr. ferri chlor., tr. opii, and dry heat to abdomen."

*Cape Charles Quarantine Station.*—September 25th: Passed Assistant Surgeon L. L. Williams reports, with reference to the crew of the British steamer Buda Pesth: "Have examined crew; found 9 men sick with malarial fever. The cases are not suspicious."

*Burgaw, N. C.*—Passed Assistant Surgeon Brooks, M.-H. S., in his report dated September 20th, relative to the newspaper statement of the existence of a case of yellow fever at Burgaw, states that "the inspector sent by the State board of health has declared the case to be without doubt hæmorrhagic malarial fever."

*San Rafael, Ariz.*—Collector Magoffin, at El Paso, Tex., in reply to an inquiry for further information as to the small-pox at San Rafael, states that "quarantine established by county officers. No action necessary."

*Tampa, Fla.*—Dr. J. P. Wall, in his report dated September 16, 1888, states that "the situation here has, from the two first weeks after the appearance of yellow fever on the 7th and 8th of August, gradually improved, the cases becoming milder and less frequent, until it has about ceased entirely. During the past week I have seen nothing in the way of fever that I would positively declare to be yellow fever, nor have any cases been reported by other physicians. . . . No sickness at Plant City."

September 21st: "I am informed that 1 case of well-developed yellow fever and 5 cases of milder fever have occurred at Mango, a railroad station with few residents, 9 miles east of Tampa, and the Southern Florida Railroad. No deaths. People of adjacent country warned to keep away."

*Gainesville, Fla.*—Yellow fever was introduced into Gainesville by a militia company returning from duty at Fernandina.

September 16th: Three cases of yellow fever officially announced.

September 18th: The secretary of the Board of Health telegraphed: "Have isolated all cases, and am fumigating and disinfecting all premises within 100 yards of all cases. T. A. Evans, of the fever cases, died yesterday evening. No news to-day."

September 19th: "No new cases. Weather clear, prospect bright."

September 23d: "No new cases. All the sick doing well. Weather clear."

September 27th: "One death last night; no new cases. All sick convalescent and being sent out of city to Camp Perry, with all nurses and kindred.

"Not one case to-day; no deaths. Major Gruelle is the new case, and is supposed to have contracted fever by reason of being the officer who acted as fumigating officer and was in the house of the sick."

*Decatur, Ala.*—Mr. A. D. Spencer, the first case of yellow fever at Decatur, was taken sick September 4th and died September 11th.

In reply to an inquiry, Dr. Jerome Cochran, State health officer, telegraphed September 23d: "Need no aid at present. Very few left in city except negroes. The problem will be to feed them."

September 28th: "I want to say, and assure you in the most positive way, that the appeals made to you by the two mayors of the two Decaturs are not sanctioned by the relief committee, composed of the best people here, and will not be sanctioned by the Governor of the State."

*Fernandina, Fla.*—September 24th Acting Assistant Surgeon Starbuck, Marine-Hospital Service, telegraphed: "An autopsy to-day demonstrates that yellow fever exists here. Several other cases with clinical symptoms of yellow fever."

September 24th: "Twelve new cases reported."

September 25th: "The president of the Board of Health reports two deaths from yellow fever to-day."

*Jackson, Miss.*—In reply to an inquiry, Dr. Wirt Johnson, secretary Board of Health, telegraphed September 22d: "Thanks. We do not need assistance. There have been 10 cases of yellow fever here and 2 deaths to date."

September 25th: "Total number of cases to date, 14; deaths, 4. No new cases reported for the twenty-four hours ending 6 P. M. yesterday. Have the city surrounded by a cordon, and are doing all we can to prevent the spread of the disease. Tents have arrived to-day, and a refugee camp will be established as soon as possible."

September 26th: No new cases or deaths for twelve hours ending 6 P. M. Will have a camp of refugees established to-morrow."

September 27th: "One suspicious case reported and 1 death for twenty-four hours ending 6 P. M. Total cases to date, 14; deaths, 5.

September 28th: "No new cases or deaths for twenty-four hours ending 6 P. M.

*Atlanta, Ga.*—The following resolution of the Atlanta Board of Health has been received from Dr. James B. Baird, secretary, September 19th: "*Resolved*, That no excursion train bearing refugees from any place infected by yellow fever shall come into the city of Atlanta."

*Wilmington, N. C.*—Dr. Thomas F. Wood, secretary North Carolina Board of Health, states that the Board of Health have given their opinion to Governor Scales that no more refugees from yellow-fever districts will be received into the State of North Carolina unless they are placed in sanitary camps under competent guard.

*Jacksonville, Fla.*—September 24th Dr. J. Y. Porter telegraphed: "Took charge of yellow fever hospital yesterday; 113 cases and 5 deaths here to-day."

September 28th: "Total number of cases to date, 2,453; total number of deaths to date, 242."

*La Villa Junction, Fla.*—September 25th Dr. Julius Wise telegraphed: "Fumigating station established at La Villa Junction; will be working to-day."

*Camp Perry, Fla.*—September 27th: "Morning report: Present—officers, 6; guards, 11; employees, including carpenters, 55. Refugees arrived, 5; discharged, 9; remaining, 171; fever camp, 4."

September 27th: "Dr. Posey fully recovered; wishes to go to Fernandina for duty."

September 28th: "Morning report: Present—officers, 6; guards, 11; employees, including carpenters, 56. Refugees arrived, 16; discharged, 26; remaining, 161. Several good people reported discharged, but can not leave for want of means."

*Medical Officers of the Navy.*—All the acclimated medical officers of the Marine-Hospital Service being otherwise engaged, the Surgeon-General of the Navy was asked for medical officers who had had yellow fever. Surgeon J. W. Ross and Assistant Surgeon William Martin volunteered their services, and have been assigned to duty at Fernandina, Fla., and New Orleans, La., respectively; the former to have charge of the Government relief measures at Fernandina, and the latter to await orders at New Orleans for the present.

Mortality Table, Cities of the United States.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Philadelphia, Pa... | Sept. 15. | 1,016,758 | 320 | .. | .. | 1 | .. | .. | 29 | 3 | 5 | 1 | .... |
| Philadelphia, Pa... | Sept. 22. | 1,016,758 | 329 | .. | .. | .. | .. | .. | 23 | 1 | 5 | .. | 6 |
| Chicago, Ill..... | Sept. 22. | 800,000 | 273 | .. | .. | .. | .. | .. | 8 | 4 | 14 | 2 | 2 |
| Brooklyn, N. Y..... | Sept. 22. | 793,960 | 376 | .. | .. | .. | .. | .. | 7 | 4 | 12 | 1 | 10 |
| Baltimore, Md..... | Sept. 22. | 431,879 | 147 | .. | .. | .. | .. | .. | 4 | .. | 2 | .. | 2 |
| Boston, Mass..... | Sept. 22. | 390,597 | 205 | .. | .. | .. | .. | 1 | 6 | .. | 7 | .. | ... |
| San Francisco, Cal. | Sept. 14. | 330,000 | 117 | .. | .. | .. | .. | .. | 8 | .. | 1 | .. | .... |
| Cincinnati, Ohio... | Sept. 22. | 255,139 | 106 | .. | .. | .. | .. | .. | 3 | .. | 2 | 1 | .... |
| New Orleans, La... | Sept. 18. | 248,000 | 120 | .. | .. | .. | .. | .. | 3 | .. | 13 | .. | 3 |
| Cleveland, Ohio.... | Sept. 1. | 227,861 | 107 | .. | .. | .. | .. | .. | 2 | .. | 3 | .. | ... |
| Cleveland, Ohio.... | Sept. 8. | 227,861 | 101 | .. | .. | .. | .. | .. | 3 | .. | 3 | .. | 1 |
| Washington, D.C.. | Sept. 22. | 225,000 | 103 | .. | .. | .. | .. | .. | 4 | .. | 2 | .. | 6 |
| Louisville, Ky..... | Sept. 22. | 200,000 | 61 | .. | 1 | .. | .. | .. | 10 | .. | 2 | .. | 1 |
| Milwaukee, Wis ... | Sept. 22. | 195,000 | 78 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Kansas City, Mo.... | Sept. 22. | 180,000 | 35 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | 1 |
| Minneapolis, Minn. | Sept. 22. | 180,000 | 73 | .. | .. | .. | .. | .. | 5 | .. | 4 | .. | .... |
| St. Paul, Minn..... | Sept. 15. | 175,000 | 51 | .. | .. | .. | .. | .. | 6 | .. | 2 | .. | ... |
| Detroit, Mich..... | Sept. 22. | 116,340 | 73 | .. | .. | .. | .. | .. | 4 | .. | 7 | .. | 2 |
| Richmond, Va..... | Sept. 24. | 100,000 | 39 | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | ... |
| Denver, Col..... | Sept. 21. | 96,000 | 39 | .. | .. | .. | .. | .. | 8 | .. | 1 | .. | .... |
| Columbus, Ohio ... | Sept. 22. | 93,000 | 30 | .. | .. | .. | .. | .. | 3 | .. | .. | .. | 1 |
| New Haven, Conn. | Sept. 22. | 82,000 | 26 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | . |
| Toledo, Ohio ..... | Sept. 22. | 80,000 | 21 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .... |
| Nashville, Tenn.... | Sept. 22. | 65,153 | 19 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .... |
| Fall River, Mass... | Sept. 22. | 65,000 | 30 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |
| Charleston, S. C.... | Sept. 22. | 60,145 | 41 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Reading, Pa ..... | Sept. 25. | 60,000 | 19 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Evansville, Ind .... | Sept. 22. | 53,000 | 19 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .... |
| Savannah, Ga..... | Sept. 21. | 52,827 | 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Lynn, Mass..... | Sept. 24. | 50,000 | 13 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Manchester, N. H.. | Sept. 15. | 41,000 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Mobile, Ala..... | Sept. 22. | 40,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Portland, Me..... | Sept. 15. | 40,000 | 17 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | ... |
| Portland, Me ..... | Sept. 22. | 40,000 | 20 | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .... |
| E. Saginaw, Mich.. | Sept. 22. | 33,000 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Burlington, Ia..... | Sept. 19. | 30,166 | 6 | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | 1 |
| Davenport, Ia..... | Sept. 15. | 30,084 | 7 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .... |
| Davenport, Ia..... | Sept. 22. | 30,084 | 4 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | ... |
| New Albany, Ind.. | Sept. 22. | 30,000 | 6 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | ... |
| Altoona, Pa..... | Sept. 15. | 29,546 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Yonkers, N. Y..... | Sept. 14. | 28,000 | 10 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Yonkers, N. Y. ... | Sept. 21. | 28,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Auburn, N. Y..... | Sept. 22. | 26,000 | 9 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .... |
| Haverhill, Mass.... | Sept. 22. | 25,000 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Jackson, Mich..... | Sept. 23. | 22,500 | 8 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .... |
| Poughkeepsie, N.Y. | Sept. 21. | 22,000 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newton, Mass..... | Sept. 22. | 21,105 | 7 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Newport, R. I..... | Sept. 13. | 20,466 | 7 | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Newport, R. I..... | Sept. 20. | 20,466 | 9 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |

**The "Dual System" in Insane Asylums.**—At the last meeting of the Medical Society of New Jersey, the following preambles and resolution, introduced by Dr. P. C. Barker, of Morristown, were adopted:

*Whereas*, The Morris Plains Asylum for the Insane has for the last three years been managed upon what is generally termed the "dual system"; and

*Whereas*, That experiment has drifted into a condition of things that has resulted in a legislative investigation of alleged mismanagement; and

*Whereas*, The proper treatment of insane persons can only be carried out fully when the medical staff has entire control over everything that pertains to the bodies, as well as the minds, of the unfortunate persons committed to their care; therefore be it

*Resolved*, That the Medical Society of New Jersey hereby expresses its unqualified disapproval of any system of management that takes the food, the clothing, or any other physical want of the patients from the care and control of the medical staff, where it properly belongs, and places it in any other hands.

## ANSWERS TO CORRESPONDENTS.

*No. 226.*—It consists of translations from various French and German authors. The original matter is excellent, and the American editor's additions are very valuable.

*No. 227.*—It does not seem to have borne out the expectations that were raised by early experiments, and has apparently fallen into disuse.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# A GENERAL CONSIDERATION OF TUMORS FROM A SURGICAL POINT OF VIEW.

REMARKS INTRODUCTORY TO A DISCUSSION ON TUMORS BEFORE THE NEW YORK STATE MEDICAL ASSOCIATION,

*October 10, 1888.*

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For many years past the importance of periodically examining the question of tumor formation in the human body has been fully recognized by physicians and surgeons, as shown by the reports of discussions, by special articles, and by treatises on tumors that appear at home and abroad. In such examinations it is sought to render available the advances made from year to year in pathogeny, to incorporate into the nomenclature all proper changes of terms, and to rearrange, in some cases, the species and varieties. The outcome of these periodical revisions is the enlargement of the field of view respecting tumors, together with the adoption of improved methods of treatment by which substantial benefits are conferred upon sufferers. The subject is not likely to be exhausted for many generations; it is always before the profession and often before the people, especially when some eminent personage is affected with malignant disease. The laity then ask—What is a tumor? Is it the same as a cancer? Has a cancer spreading roots like the claws of a crab, from which it is said to derive its name? —while many individuals gravely assert that X is suffering from a cancer and not a tumor, or from a tumor and not a cancer. It is not easy to convince certain non-medical persons that a tumor means nothing more than a swelling, and that this swelling may be benign and never return after it is cut, or may be cancerous, malignant; that, besides cancers, there are other tumors which are malignant; that there are tumors which, though benign in structure, may imperil life by their liability to bleed excessively, or by their interference with vital functions; and that there are tumors which may be infectious, glandular, or cystic.

The term tumor is here used to signify a swelling in any part of the body, exclusive of tumefactions arising from inflammatory action, contusions, wounds, fractures, luxations, aneurysms, etc. In accordance with this view, the tumors may be arranged into four classes, as follows: Class I, neoplasmata; Class II, adenomata; Class III, blastomata; Class IV, cystomata.

For the present the first class only will be considered.

The term neoplasma, meaning literally a new formation, was long ago used, for the sake of greater precision, by Burdach, and adopted by other pathologists, as the name of the class of new formations in the human body arising from simple division or from endogenous multiplication of pre-existing cells. It is applicable to certain benign as well as to malignant tumors, but not to adenomata, granulation growths, or cysts.

The reason for regarding these tumors as new formations is that they are developed independently of the matrix tissue by which they are surrounded, and that they act as independent bodies, and bear no relative increase or decrease of size with, though they derive their sustenance from, the organism. They differ in their development from the matrix tissue, and their histogenesis is very unlike the formative processes originating in inflammation. Many of the neoplasmata occur at all ages; they begin in apparently normal tissues, and are due to the persistence of embryonic germinal tissues in the otherwise mature organism, taking their rise in what may be called belated rudiments—foci of embryonic tissue which have not been utilized in elaborating normal tissues, and so have lingered on unchanged. In other words, such growths are atypical new formations, starting in latent embryonic rudiments. The germs of the growths may be very small and elude observation, being embryonic cells, or may be quite recognizable among the normal elements. These germs may long remain inactive; but when external conditions, supply of nutriment, and relation with surrounding tissues are favorable, they begin to multiply, start into new life, and form neoplasmata. The blood-vessels of neoplasmata deviate markedly from blood-vessels of normal tissues. Their parietes are very thin in tumors of low organization, and of nearly natural thickness in tumors of high organization. Lymph-vessels abound in tumors, and have been found to communicate with cancer alveoli. Such, in brief, are the views of Hasse, Cohnheim, Lancereaux, and other pathologists.

Clinical observation, supplemented by microscopical examination, has established the fact that neoplasmata of high organization are benign, while those of low organization are malignant, and that the lower the organization, the greater the malignancy. For instance, among the epithelial neoplasmata the medullary carcinomata are the most malignant, being of the lowest organization; and among the endothelial neoplasmata the round-celled sarcomata are the most malignant, being of the lowest organization.

Several modern authors classify neoplasmata clinically, or rather prognostically, that is to say, into benign and malignant tumors. Classification on such a basis is confusing and unsatisfactory, partly because varieties of certain species of benign neoplasmata, being often malignant, become so widely separated from their species that they can not be advantageously studied. Other authors endeavor to classify them on the basis of Müller's law, and also on the blastodermic theory, but with little consistency. The authors who adopt the view of His in regard to the blastodermic theory arrange certain neoplasmata into those of archiblastic and those of parablastic origin, the archiblastic being the epithelial and the parablastic the endothelial (connective-tissue) neoplasmata. The law of Müller and the blastodermic theory are both of very great service in the study of neoplasmata, but neither affords sufficient amplitude to stand as a basis for nomenclature and classification. It is only anatomy—not merely as anthropotomy, but in its wider sense of anthroposophy—that has the requisite breadth for this foundation, since, in the sense in which it is here used, it comprises embryology, physiology, his-

tology, and all that is essential to the knowledge of man in a state of health, without which it is not possible to have a correct conception of any departure from this state of health. The advantages of this broad basis are such that it deserves to be more closely and consistently adhered to than it has been by most of the investigators and teachers.

A fair knowledge of the anatomy, physiology, histology, and pathology of vegetables, as well as of the lower animals, can not fail to be of great value as a preliminary to the right understanding of the diseases of man, and very particularly of tumors, which are known to occur so frequently in the vegetable kingdom and among the lower animals.

In case of a rigid adherence to the anatomical basis of nomenclature, the following simple rules may serve to guide the nomenclator:

1. The ordinal names of neoplasmata should accord with the names of the types of tissues to which their substance belongs—*e. g.*, epithelial neoplasmata, endothelial (connective-tissue) neoplasmata, muscle-tissue neoplasmata, nerve-tissue neoplasmata, vessel-tissue neoplasmata.

2. The generic names of neoplasmata should accord with the name of the particular tissue of which, respectively, they are chiefly composed—*e. g.*, myxoma, inoma, chondroma, osteoma, etc.

3. The specific names of neoplasmata should be the same as the generic names with the affixion of the special character of the tissue entering into their composition—*e. g.*, round-celled sarcoma, spindle-celled sarcoma, giant-celled sarcoma.

Some of the generic and specific names of neoplasmata are objectionable by reason of their failing to convey a correct notion of the histogenic characters of the growths which they are intended to designate. Among the most inaccurate are carcinoma and sarcoma. The first name has nothing in common with a polymorpho-cellular epithelioma, and the second was given by Abernethy to a genus with eight species of tumors having a "fleshy feel," in contradistinction from cartilaginous and osseous tumors. This term was afterward adopted by Virchow and Cornil and Ranvier for a genus of the connective-tissue neoplasmata. Strictly, sarcoma can never have any other meaning than that of a fleshy tumor; therefore, in keeping with the anatomical nomenclature, a more significant name should be given to this genus. Granting that epithelioma is of epithelial origin, and that sarcoma is of endothelial origin, why, then, in accordance with its origin, should not endothelioma be used instead of sarcoma to designate the genus of lowest grade of the connective-tissue neoplasmata, placing as a species of this genus the growth now known by the name of endothelioma? But, unfortunately, the terms epithelium and endothelium are not of the best. These questions are submitted to the patho-histologists for consideration in the hope that they will soon critically examine the terms carcinoma, sarcoma, and other equally inappropriate names.

4. The varieties should bear the names of their species with the affixion of the name of the substance which is superadded—*e. g.*, globo-cellular *myxo*-sarcoma, fuso-cellular *ino*-sarcoma, giganto-cellular *osteo*-sarcoma, and so on with *chondro-*, *lipo-*, *neuroglio-*, *lympho-*, etc.

5. The subvarieties should bear the names of the varieties with the affixion of characters which are common to the varieties of different species—*e. g.*, *telangiectatic* globo-cellular myxo-sarcoma, telangiectasis occurring in many varieties of tumors.

Nomenclature and classification provisionally constructed on such a plan must necessarily be helpful in a high degree to the right understanding of the nature of the different neoplasmata, besides rendering their study less laborious than heretofore, and constantly suggesting improvements.

But the subject is too large to be disposed of in a limited essay, and it would not be wise, on an occasion like this, to undertake more than its general consideration. The special investigation of its divisions and subdivisions should be reserved for future debates, and only the most salient points of theoretical and practical value should be introduced in order to elicit in brief the views of the fellows and the judgment of the association.

To this end the following questions are propounded:

*Question 1.*—What are neoplasmata, and what are the characters which differentiate them from blastomata, and these from inflammatory processes?

*Question 2.*—What are the advantages of naming and arranging the neoplasmata in accordance with their histogenesis?

*Question 3.*—What is the value of the anatomical basis to the clinician when the question of malignity arises?

*Question 4.*—What are the objections to the grouping of neoplasmata in accordance with benignity and malignity?

*Question 5.*—What constitutes malignity histologically and clinically?

*Question 6.*—What is the mechanism of the necrotic process which so often occurs in certain neoplasmata?

*Question 7.*—What is the rationale of the recurrence of excised neoplasmata in distant parts or in the viscera?

*Question 8.*—What is the explanation of the tendency in certain neoplasmata to involve secondarily neighboring lymphatic ganglia?

*Question 9.*—What therapeutic deductions are to be drawn from the analysis of the genesis and history of a given neoplasma?

*Question 10.*—What are the indications and contra-indications of the excision of neoplasmata?

*Question 11.*—What is the average duration of life from the time of the appearance of malignant neoplasmata which have not been treated?

*Question 12.*—To what extent does the excision of malignant neoplasmata prolong life?

*Question 13.*—Are malignant neoplasmata ever cured?

*Question 14.*—What is the rate of mortality from malignant neoplasmata as compared with other diseases?

In this introduction to the discussion it is not proposed to examine all the preceding questions, but to request each debater to answer one or several questions, and all the debaters to answer the thirteenth question, and finally to ask

their opinions, particularly on the questions relating to bedside diagnosis, to malignity and its degrees, to prognosis as affected by the seat of the disease, to surgical and medicinal treatment, to recurrence after ablation, and to curability of malignant neoplasmata.

As pertinent to the question of malignity of some of the neoplasmata, the following point will be briefly considered: Until the latter part of the last century it was believed that all tumors were at first benign, and that some of them degenerated into malignant disease through the intervention of a humor. Though it was then shown that this ancient theory of degeneration would not bear close examination, as it was discovered that many tumors were malignant from their beginning, and that others were benign and remained so, still the belief in humoral degeneration continued until the dawn of patho-anatomy; and, notwithstanding the advances made by Abernethy and Laennec, and subsequently by those who developed the cell doctrine, there has long lingered in the minds of many physicians a vague notion of some mysterious kind of degeneration of benign into malignant tumors.

The modern doctrine of metaplasia has since given its aid toward the solution of the question, Is there such a condition as the metamorphosis of benign into malignant tumors?

Retrogressive metaplasia in tumors indicates malignity, progressive metaplasia toward higher organization being a movement in the direction of benignity.

By the aid of this doctrine certain changes in the structure of neoplasmata, ill understood before, can now be accounted for, but metaplasia is most probably one of the ways, and not the only way, to explain these changes. However, there are patho-histologists who declare that benign are transformed into malignant tumors *always* by reversion of their cells to lower forms of cells. It is clear that only a certain proportion and not all of the cellular element of a benign growth which has become malignant is characteristic of malignity, otherwise there would be no mixed growths, such as sarco-inoma, sarco-lipoma, etc. Is it not likely, also, that, after some local disturbance, benign growths become malignant by an accession of newly proliferated embryonic cells, and therefore, in this case, without the intervention of retrogressive metaplasia of their highly organized cells? In the varieties of these growths there is sometimes only a small proportion of the malignant element, the benign element remaining intact. In accordance with this view of the metamorphosis of new-growths it may be said that benign are not liable to be wholly metamorphosed into malignant growths. One element or another may at some time enter into the composition of a growth, and may become preponderant without entirely destroying the primary element. In this way, then, and not always by retrogressive metaplasia, benign growths may become malignant. New-growths are developed by the proliferation of embryonic cells which exist in the interstices of normal tissues and not ordinarily by retrogressive metaplasia of these tissues. The degree of malignancy is proportionate to the state of organization of the cells; the lower the organization of these cells, the greater the malignancy, the most highly organized being those of benign growths. Whatever substance may be superadded to a tumor, even if the intruder should in time exceed it in bulk, the original element is traceable in the general mass of disease. If this were not the case, a cancer, by progressive metaplasia, would become benign, and how fortunate would be such a circumstance! But a cancer remains a cancer, a sarcoma is always a sarcoma, though it contain bone, cartilage, fibrous tissue, etc. A lipoma is always a lipoma, though a malignant element be superadded. Thus, an inoma may become malignant by the superaddition of the sarcomatous element; it is then a sarco-inoma, an ino-sarcoma being a sarcoma some of whose cells may have undergone progressive metaplasia; and a lipoma may have received an accession of the sarcomatous element and so become malignant; it is then a sarco-lipoma, a lipo-sarcoma being a sarcoma some of whose cells have been transformed into fat cells.

From warty excrescences that have existed many years upon the faces of elderly persons epitheliomata have been known to develop. This may, however, take place by retrogressive metaplasia, but not necessarily in every case.

A sufferer may be affected with benign and malignant neoplasmata at the same time, and some of the benign growths may become infected with the malignant element either by retrogressive metaplasia or by an accession of newly proliferated embryonic cells. The infected growths are worsted by the retrogression or the superaddition, but the whole of their structure is not necessarily transformed.

A new-growth may have had all the clinical characters of benignity for a long time—five, ten, fifteen, or twenty years—and then, possibly after the infliction of a slight injury to the part, or even without injury, rapidly increase in size and progress as a most malignant affection, and this is as likely to be owing to an accession of newly proliferated cells of low organization as to retrogressive metaplasia. Sarcomata and carcinomata sometimes take this course. Therefore, during their period of inaction, they should be excised.

The general histogenic characters of malignity of tumors having been stated, a few words may now be said in reference to some of the clinical characters of malignity. A tumor is said to be malignant when its growth is rapid; when it exhibits a strong tendency to ulcerate; when the disease invades surrounding tissues; when it propagates itself through the lymphatics to distant parts and to the viscera; when it generalizes itself, infects the whole organism, and finally destroys the patient; or when, after complete excision, it recurs. These are the principal clinical characteristics of malignant tumors. Benign tumors sometimes recur after excision, but in malignant tumors the tendency to recurrence is constant. Some of the benign tumors are prone to necrosis, but all the malignant tumors have this tendency in a most marked degree.

A statement of the gross anatomical characters would here be out of place.

In the case of an incomplete excision of a malignant tumor, even if the smallest particle of the disease be left behind, the cells continue to multiply and, in a short time, the growth attains its former dimensions. This can not well

be regarded as a recurrence of the tumor, but as its continuation.

When newly formed tumors occur in the lymphatic ganglia, distant parts, or viscera, a few months after the excision of the original growth, it is fair, as a general rule, to look upon them as metastatic, the metastasis having occurred, perhaps, only shortly before the operation. However, the recurrence of malignant tumors may take place in these several parts without metastasis in a few months or many years after the operation.

The only true recurrence, then, is in the case of the sprouting of an entirely new formation, in the site of a completely excised tumor or elsewhere, a few months or many years after the operation.

Much preliminary study will be required before any attempt can be made to give a satisfactory answer to Question 11, *What is the average duration of life from the time of the appearance of malignant neoplasmata which have not been treated?* In endeavoring to obtain the information necessary to the accomplishment of this desired end, nothing less than the analysis of many thousands of well-recorded cases should be undertaken. The opinions of different authors on this question though, in several instances, based upon the study of hundreds of cases, would doubtless be greatly modified by the examination of thousands instead of hundreds of cases. The subject needs to be reopened and investigated with the purpose of ascertaining the average duration of malignant neoplasmata of different orders separately.

A contribution toward the answer of Questions 12 and 13 is now offered.

Though, in the majority of instances, the recurrence of malignant neoplasmata after excision is speedy—the disease soon generalizing itself, invading vital parts, and leading to a fatal issue in less than three years—it sometimes happens that they do not recur for many years after excision. It is believed by surgeons of much experience that long periods of immunity are more common than they are ordinarily supposed to be. It is therefore important that this question be freely discussed and that an endeavor be made to determine if it can be answered with a measurable degree of accuracy. Prolonged immunity is doubtless often owing to early and thorough eradication of the growth before certain well-known symptoms have manifested themselves, but this immunity has occasionally been observed even in cases where the neighboring lymphatic ganglia had already participated in the disease.

The following cases are cited in illustration of immunity for periods varying from seven to forty years after the excision of different species of neoplasmata known to be malignant. In the statement of these cases the old nomenclature is employed in most instances:

Case I. *Epithelioma of the Right Wing of the Nose; Excision and Cauterization with the Thermo-cautery; no Recurrence in Seven Years.*—H. H., sixty years of age, who had for two years been inconvenienced by an epithelioma, one centimetre in diameter, above the right wing of the nose, applied for treatment in the month of August, 1881. An operation was advised and forthwith performed. The integument was incised at a point two millimetres beyond the limit of induration, encircling the growth, which was dissected from its bed. The whole denuded surface, together with two millimetres of peripheral sound skin, was then cauterized with the thermo-cautery of Paquelin, and a layer of dry cotton was applied as the only dressing. The diagnosis was confirmed by a microscopical examination of the excised growth. Cicatrization was complete in three weeks without deformity. Seven years and two months have elapsed since the operation, and there is no sign of recurrence of the disease.

Case II. *Epithelioma of the Lip; Excision; Recurrence in Eight Years.*—P. J., about fifty years of age, presented himself at the college clinic suffering from an epithelioma of the lower lip which had developed itself only a few months before, and already involved the greater part of the left cheek and the neighboring lymphatic ganglia. Operative interference was deemed inadvisable, and the patient never returned. Eight years prior to the appearance of the growth which destroyed him an epithelioma had been successfully removed from his lip, and he had enjoyed good health during the intervening period.

Case III. *Epithelioma of the Lip; Recurrence Sixteen Years after its Excision.*—On the same day and during the same hour M. H., almost the counterpart of Case II, presented himself at the clinic, but, instead of eight years, he had been operated upon sixteen years anteriorly for a labial epithelioma, and was five years older than P. J. The disease had recurred, as in the case of P. J., a few months before, and was so far advanced as to forbid an operation. How long he lived after this was not learned.

Case IV. *Scirrhous Cancer of the Breast; Excision; No Recurrence in Thirteen Years.*—The following is an extract of a letter lately received from Dr. Alfred L. Carroll respecting a case of mammary cancer operated upon by him: "As regards the case which I mentioned to you . . . it occurred, in 1857 or 1858, in the person of a lady, aged about forty-five, from whom I removed a scirrhous cancer of the mamma. You examined a part of the specimen after removal, and agreed with me as to the unquestionable character of the neoplasm. The adjacent lymphatic glands were not involved. I heard of, and occasionally saw, the patient for nearly thirteen years afterward, during which time there had been no sign of recurrence or secondary infection. After that time she passed from my observation."

Case V. *Scirrhous Cancer of the Breast; Excision; Recurrence in Twenty Years, when a Second Operation was performed, and followed by Cauterization of the Wound; no Recurrence in Three Years and Eight Months.*—A single lady, fifty-two years of age, came to seek advice on account of two livid, hard, and painful growths, an inch and a half in mean diameter, respectively, which had sprung from a scar resulting from the excision of her left mamma for a scirrhous cancer twenty years before. Extirpation of these new-growths was advised and executed on the 29th of January, 1885, and the whole wound, whose dimensions were four by six inches, together with half an inch of the surrounding integument, was cauterized with the thermo-cautery and a dressing of dry cotton was applied.

The microscopical examination of both growths showed them to be cancerous. The fibrous stroma was very abundant, and cells of different forms were contained in characteristic alveoli.

The wound was healed in four weeks, and the disease has, so far, shown no tendency to recur.

Case VI. *Scirrhous Cancer of the Breast; Excision; no Recurrence in Twenty-four Years.*—A cancerous female breast, excised by Dr. John J. Crane, was sent for examination on the day of the operation. The diseased mass exhibited the gross as well as the microscopical characters of what is ordinarily called scirrhous cancer. The wound soon healed, leaving no trace of

the original disease, the adjacent lymphatic ganglia not being involved. Twenty-four years after the operation Dr. Crane reported the patient as enjoying excellent health and free from any sign of malignant disease.

Case VII. *Cancerous Tumor; Excision; Recurrence in Thirty Years.*—Dr. Verneuil, of Paris, mentions "the case of a lady from whom he had removed a tumor, which was examined after the operation and pronounced to be cancerous. Thirty years afterward the disease recurred in the scar, and was again extirpated. The microscopic examination completely confirmed the former diagnosis." ("British Medical Journal," April 7, 1888.)

Case VIII. *Scirrhous Cancer of the Breast; Recurrence Twenty-five Years after Excision, when a Second Operation was performed, the Patient Dying in Five Years without Sign of Recurrence.*—Mrs. McB., at the age of fifty, was suffering from a scirrhous cancer of the left breast, which was excised by Dr. Bushe. She remained free from cancer for twenty-five years, when the disease recurred in the scar. Dr. Alexander B. Mott, who relates the case, then took charge of her and excised the new-growth, which was of the size of a "hen's egg." She died, aged eighty, five years after the second operation, without having shown any further sign of cancerous disease. A daughter of this lady is said to have died of cancer of the breast.

Case IX. *Scirrhous Cancer of the Breast; Recurrence Twenty Years after Excision, then Two Years after a Second Operation, and again Twelve Years after a Third Operation; no Recurrence Three Years after a Fourth Operation.*—In the year 1850 Dr. Valentine Mott excised the cancerous mamma of a woman aged forty years. The wound healed rapidly, and there was no recurrence of the disease until 1870, when a small growth appeared in the scar, and was removed by Dr. A. B. Mott. Again, in 1872, the doctor excised from the scar a growth similar to the first. There then followed a period of immunity of twelve years. In 1884 a third small growth was excised by Dr. Mott. The patient was last seen in 1887, and, though seventy-seven years of age, was in good health and free from any sign of malignant disease.

Case X. *Scirrhous Cancer of Both Breasts; Excision; Recurrence in the Lungs Forty Years after the Operation.*—In the year 1858 a surgeon of large experience related the case of a woman, both of whose mammary glands had been excised for scirrhous cancer, who remained in good health until forty years after the operation, when she died of cancer of the lungs, as verified by an autopsy.

Case XI. *Giant-celled Sarcoma of the Right Mamma of Eleven Years' Standing; Excision; Recurrence in Eight Years; a Second Operation; no Recurrence in Six Years.*—Mrs. J. W., fifty-five years of age, was first seen on the 4th of May, 1874, in consultation with Dr. E. F. Preston, of Suffolk County, New York. She received in 1862 a slight blow upon the right breast. One year after this she noticed in this breast a hard but painless tumor, half an inch in diameter, which in eight years increased to three inches in diameter, and became painful. Thenceforth it grew slowly until 1871; afterward its increase was more rapid, particularly in 1873, and when she called with Dr. Preston the tumor measured twenty-seven inches in its greatest circumference. The superficial veins were considerably enlarged. She was in apparently good health, though she suffered pain in the diseased breast, partly owing to its weight.

The operation of excision of the breast was performed on the 9th of May, 1874. An elastic bandage was snugly applied, and an India-rubber cord then tightly drawn around the base of the tumor to control hæmorrhage, according to Esmarch's method, and the entire mamma quickly removed. The wound was then covered with a folded towel and compressed by the two hands of an assistant, who exposed for ligature only two or three bleeding vessels at a time, until thirty were tied. By this precaution the loss of blood was not in excess of eight ounces during the whole operation. The lips of the wound were stitched, and adhesive strips applied, together with other necessary dressings.

The tumor, almost entirely deprived of its blood by the elastic compression, weighed nine pounds, and proved, on microscopical examination, to be a giant-celled sarcoma. The sutures were removed on the fourth day, half of the wound having healed primarily. On the eighth day all but two of the ligatures came out. The remainder of the wound cicatrized rapidly, and the patient made a good recovery.

Fourteen years have elapsed since the operation.

Desiring to know the present condition of the patient, a letter of inquiry was addressed, on the 21st of April, 1888, to Dr. Preston, who replied as follows:

"Mrs. J. W. recovered nicely from your operation, and improved very much in her general health afterward. On the 8th of June, 1882, I removed another tumor, about the size of a goose-egg, similar to the previous one, situated in the upper portion of the chest, on the right side, not in the old cicatrix, nor very near it; indeed, the upper border of the tumor was only an inch or two below the clavicle . . . quite near the sternum. From this operation she recovered rapidly and satisfactorily. No further recurrence has taken place. . . . She is now very well, . . . sixty-nine years of age, . . . and engages every day in her usual duties. . . ."

The period of immunity after excision in the above-cited eleven cases of malignant growths averages a fraction over nineteen years.

In three cases there was no recurrence.

In seven cases the disease recurred once in each, as follows: In eight, eight, sixteen, twenty, twenty-five, thirty, and forty years.

In one case the disease recurred three times. The first recurrence was twenty years after the operation; the second, two years after the second operation, when there followed a period of immunity of twelve years; a small growth then appeared which rendered the fourth operation necessary. The patient was living and well three years after the fourth and thirty-seven years after the original operation.

Three cases are still under observation.

In one of these cases there was no recurrence seven years and three months after the operation.

In one case the disease recurred in twenty years, when a second operation was performed. There was no further recurrence in three years and eight months.

In one case the disease recurred in eight years, when a second operation was performed. Six years and three months afterward there was no sign of further recurrence.

Those surgeons who have not lost sight of all their cases after operation can doubtless give similar accounts of long periods of immunity after the excision of malignant neoplasmata, although the reverse of long periods of immunity seems to be the rule. The exceptions are, however, more numerous than ordinarily believed.

According to Gross, the ablation of breast cancer is followed by "permanent recovery" in 9·05 per cent. of all cases. The period assigned by him as characterizing such recovery is "over three years."

It will be seen below that Cazin's estimate is 12·6 per cent. "permanent cures," and that he assigns over seven years as the period characterized by him as "permanent cure."

In an analysis of 519 cases of ablation of breast cancers, Gross states that 43 of these 519 cases "were still living, and 4 had died. Of these 47 cases, recurrent growths were removed in six, and there was freedom from disease after the last operation" in 32 cases for between three years and two months to six years; in 7 cases, for between seven years to nine years and six months; and in 8 cases, for between ten years and one month to fifteen years and seven months. In these cases, he says, "the average time of cure was five years and nine months, and the disease had existed before the operation, on an average, for eighteen months and four tenths."

The following, abstracted from the "British Medical Journal," April 7, 1888, shows results of much interest and the analysis of a great number of cases of tumors, serving as an additional illustration of the question of immunity after operation:

At the late meeting of the French Surgical Congress the question of recurrence of malignant growths after extirpation was discussed by Dr. Cazin, Dr. Verneuil, Dr. Labbé, Dr. Mollière, and others. Dr. Cazin, in introducing the subject, gave a summary of 564 excisions of tumors performed by himself during a period of twenty-four years. Among these tumors were myxomata, chondromata, and sarcomata, besides true cancerous growths. In 102 cases of scirrhous cancer of the breast there was secondary glandular affection in 60; of these, 7 were permanently cured, in 48 recurrence took place, 3 died, and in 2 the result was unknown. Among the remaining 42 cases in which the glands were unaffected, there were 8 cures, 28 recurrences, 2 deaths, and 5 that were lost sight of. In 120 cases of encephaloid cancer the glands were involved in 80; of these, 5 were cured, in 67 the disease returned, 4 died, and 4 could not be traced. Of the remaining 40 cases, in which there was no glandular affection, 8 were cured. Thus, in a total of 222 cases, there were 28, or 12·6 per cent., permanent cures. The cases of scirrhous cancer, viewed separately, give a total of 15 cures, or 14·7 per cent.; but, of those in which the glands were affected, only 7 out of 60, or 11·66 per cent., were cured, while of the others, in which the disease was limited to the breast, permanent cure was obtained in 8 out of 42, or a fraction over 19 per cent. Among the 120 cases of encephaloid cancer, 13, or 10·8 per cent., were cured; but of the 80 in which the glands were involved the proportion of cures was only 5, or 6·25 per cent., while of the 40 in which there was no glandular enlargement, no fewer than 8, or 20 per cent., were cured. In the cases in which recurrence took place the disease returned in from three months to seven years after the operation. . . . Dr. Cazin attributes his success to the freedom with which he removes apparently healthy tissues surrounding the growth, and to the care with which he seeks for and removes, not only diseased glands, but the lymphatics between them and the tumor. He is not content with exploring the axilla, but makes minute search in the subclavicular region, behind the clavicle, and in the supra-clavicular fossa.

Dr. Verneuil strongly favors medicinal treatment after the excision of malignant growths, while the morbid process is in abeyance, and advises a prolonged course of alkaline medication, such as may be obtained by the use of Vichy water, magnesia, etc., together with arsenic, with a view of neutralizing the gouty diathesis, which he believes to be the predisposing cause of cancer.

Dr. Mollière, of Lyons, thinks that the great point to attend to in estimating the probability of recurrence is the patient's age. If he be young, the disease is so certain to return that he doubts if it is worth while to operate; after fifty there is a fair chance that recurrence may not take place; after seventy it is almost certain that the patient will remain free from the disease.

According to Dr. Cazin's summary, the period of recurrence of malignant neoplasmata after excision ranges from the minimum of three months to the maximum of seven years, for he says of his cases "in which recurrence took place" that "the disease returned in from three months to seven years." Therefore, his twenty-eight cases were declared cured presumably only after seven years.

In view of the fact that malignant growths have been known to recur twenty, thirty, and even forty years after excision, it is scarcely safe to speak of permanent cures. The proportion of "permanent cures," or strictly of long periods of immunity, in Dr. Cazin's cases—12·6 per cent.—will strike most surgeons as an excellent exhibit when they take into consideration that in twelve of the twenty-eight "cures" there was glandular involvement, and that thirteen of these twenty-eight cases were of encephaloid cancer. In the summary of Dr. Cazin's cases, published in the "British Medical Journal," it is not stated how long he kept watch upon his "cured" cases. The question of cure is not so easily disposed of as it might seem at first sight. It does not appear that Dr. Cazin uses the term cure to signify immunity from the disease for many years, since in certain places he qualifies the term by the adjective permanent. The word cure is ordinarily employed to signify restoration of health, and therefore may be admitted in the case of a long period of immunity from a disease, but the qualifying word permanent has the distinct signification "to remain to the end." This qualification could then surely be made in any case of ablation of a malignant growth where the patient has died of some other disease two or three years thereafter; so that even the qualification permanent fails to express the intended idea. The term absolute cure is also employed to convey the notion of a cure free from limitation. But can it be truly said that malignant neoplasmata are permanently or are absolutely cured? The uncertainty of the time at which excised malignant neoplasmata may recur, as shown by Cases II, III, VII, VIII, IX, X, and XI, should make surgeons cautious in their prognosis.

The following case is cited to show that, even though there was no recurrence of the disease when the patient died, it could not properly be regarded as a permanent or an absolute cure:

Case XII. *Spindle-celled Sarcoma; Excision and Cauterization with the Thermo-cautery; no Recurrence in Two Years; Death from Pneumonia.*—Mr. M., sixty-two years of age, came to solicit surgical aid, saying that, two years before, he had noticed a small, hard, flat, circular, circumscribed, movable, and painless subcutaneous growth in the left temporo-malar region. This tumor increased in area until it attained an inch and a half in diameter at the time the patient presented himself for treatment.

Immediate excision, followed by cauterization, was advised and performed. An incision was made through the apparently healthy skin a quarter of an inch from the margin of the growth, which was carefully dissected out. The whole surface of the wound, together with an eighth of an inch of the surrounding integument, was thoroughly cauterized with the thermo-cautery, and a layer of dry cotton applied to the cauterized region. Cicatrization was complete in three weeks, and no deformity ensued.

The microscopical examination proved the growth to be a spindle-celled sarcoma.

In two years there was no sign of recurrence of the disease. Shortly after this the patient died of acute lobar pneumonia.

It would assuredly not be fair to assume that, had this patient lived another year, the disease would not have recurred. Even if the case had been styled a permanent cure—*i. e.*, a cure lasting to the end of the patient's life—it could not properly have been called an absolute cure, for the reason that the patient died within the period of a possible recurrence of the disease. It is, therefore, very questionable if the terms permanent cure and absolute cure should be applied in the case of malignant neoplasmata. The simple word cure, in the sense of restoration of health, seems sufficient, in view of the fact that the period of immunity from the disease after its extirpation is so uncertain.

The question, *Are malignant neoplasmata ever cured?* may then be answered (1) from a strictly scientific and (2) from a clinical point of view. In the first case the answer will be negative, while in the second case it may be affirmative with qualifications. From a scientific point of view, it can not be said that malignant neoplasmata are cured, since it is known that their tendency to recur is strong, and that the period of their recurrence is indefinite—if the term cure be used in the sense of restoration of health without limitation, so far as the particular disease is concerned. But if, from a clinical point of view, the term cure be used in the sense of temporary restoration of health, so far as the particular disease is concerned, it may then be said that malignant neoplasmata are practically cured, especially when the period of immunity is extended to eight, ten, fifteen, twenty, thirty, or forty years after excision. A reasonable doubt as to accuracy of diagnosis naturally arises when a neoplasma, said to be malignant, is declared cured many years after its ablation, unless its relation come from an experienced clinician and include the statement of a searching microscopical examination of the excised growth by a competent patho-histologist, or unless it be known to have recurred in after-years, as in some of the cases herein reported.

The allusion to diagnosis in the preceding paragraph suggested the following note:

About thirty years ago a delicately constructed instrument, much employed by Duchenne and other Frenchmen, and also by Americans, afterward variously modified under the name of harpoon, was contrived for the exploration of deep-seated diseased tissues and the removal from their substance of a small segment for microscopical examination. This explorer, though still much used by physicians, seems to be little employed by surgeons. It should occupy its proper place among instruments of precision for the diagnosis and prognosis of neoplasmata, and should be resorted to in most cases, where there is a doubt as to the nature of growths, before deciding upon the character of the operation to be performed. But the exploration should be followed by the operation as soon as the microscopical examination can be made, within an hour if possible, in order to guard against metastasis. A case lately occurred at Bellevue Hospital in which there was reason to believe that metastasis to the internal organs was the consequence of two such explorations, the first seven, the second three days before the operation of orchidectomy for a medullary carcinoma. The patient died in six weeks after the operation, from medullary carcinoma of the mesenteric glands, liver, pancreas, and kidneys. Before the operation and for two weeks thereafter he had had no symptoms of internal disease.

When the opinion of a patho-histologist is solicited in regard to the nature of an excised tumor, he should be allowed to make a gross anatomical inspection of the entire tumor, and to indicate the removal from it of such portions as he may require for microscopical examination. When only particles of a tumor are removed for diagnosis before the operation of excision, it is not to be expected that he will be able to discover the nature of the tumor from the examination of these small parts unless they be removed from the body and not from the surface of such tumor. It is generally very difficult to form a decided opinion as to the nature of a tumor by the study of a very small portion of the growth, for small fragments may contain nothing characteristic of a particular neoplasma, and he who makes the microscopical examination in such a case can only report that he has found nothing to indicate the exact nature of the tumor.

Before dismissing the question of cure, it was thought proper to formulate briefly certain principles and procedures that may be advantageously applied in connection with the extirpation of neoplasmata and their medicinal after-treatment.

1. A suspicious neoplasma, susceptible of excision, can not too soon be removed. The earlier the operation the greater the chances of prolonged immunity.

2. In the excision of malignant neoplasmata, as much of the neighboring apparently healthy tissues should be sacrificed as is compatible with sound judgment.

3. Immediately after the excision of malignant neoplasmata careful search should be made for diseased neighboring lymphatic ganglia, all of which should be removed.

4. Excision of multiple malignant neoplasmata is contra-indicated, particularly when they invade many lymphatic ganglia, or when they are disseminated in hundreds upon the surface of the body. If, however, there be among them a very large growth, seriously interfering with a vital function, the excision of this growth is warranted on account of the temporary benefit that may thus be conferred upon the sufferer.

5. When a malignant growth is in a state of ulceration, and this necrotic process and consequent putrescent discharges become a source of exhaustion to the patient, the growth, if accessible, should be forthwith removed. By this means suffering is mitigated and the life of the patient is rendered more tolerable, and may even be prolonged many months.

6. When hæmorrhage from a malignant growth threatens life, the diseased mass, if within reach, should be extirpated without delay, to prevent sudden death from a great

loss of blood, though the general infection be such as to give the surgeon little hope that the patient will live more than a few weeks.

7. When an ulcerated malignant growth involves a large cutaneous surface, a cutting operation being contra indicated, applications of sundry kinds, such as cataplasms, soothing lotions, deodorizers, etc., should be made, and opiates should be administered in sufficient quantity to mitigate pain and insure sleep.

8. Whenever its locality and other circumstances are favorable, the whole wound resulting from the excision of a malignant neoplasma should be cauterized as freely as the nature of the case will permit.

Cases I, V, XII, and the following case (XIII), illustrate, among other points of interest, the extent of surface to which the cautery may be safely applied, particularly Cases V and XIII.

Case XIII. *Cutaneous Epithelioma in the Hypogastric Region; Excision and Cauterization with the Thermo-cautery.*—N. R., fifty years of age, was admitted to Bellevue Hospital on the 6th of November, 1886, suffering from a somewhat painful ulcer in the hypogastric region, measuring two inches and a half by three inches and a half and having the gross characters of an epithelioma, which had made its appearance five months prior to his admission to the hospital. Excision, followed by cauterization, was advised and performed on the 13th of November, 1886. The circumscribing incision was made a quarter of an inch beyond the indurated margin of the growth, which was dissected from its bed. The whole denuded surface, together with a quarter of an inch of the surrounding integument, was freely cauterized with the thermo-cautery and a light dressing applied.

The microscopical examination of the growth was made by Dr. H. M. Biggs, whose report was confirmatory of the diagnosis epithelioma.

On the 18th of November the dressing was removed, with a part of the slough, exposing a granulating surface of three inches and a half by five inches and a half, which, on the 10th of January, 1887, was entirely healed.

The patient was seen in May, 1888. The cicatrix was sound and firm, and there was no sign of recurrence.

For some years past the thermo-cautery has been used to a considerable extent in the surgical treatment of malignant neoplasmata, one of the ways in which it has been applied being to make, with the cautery-knife, a deep incision around the growth, which is left in its place to slough if it will. But, in accordance with the principles of sound surgery, it would seem much preferable to excise the entire growth and immediately afterward to cauterize the whole denuded surface and the edges of the wound, as described in Cases I, V, XII, and XIII, than to allow the diseased mass to slough out and perhaps leave behind the germ of another growth.

The anhydrous sulphate of zinc, the chloride of zinc, chromic acid, and other potential cauteries have been used with good effect immediately after the excision of malignant neoplasmata, but the actual cautery is quicker and more certain in its effect. On these accounts it is preferable to the potential cauteries.

It is not proposed to discuss the entire question of potential cauteries, but mention should be made of Maisonneuve's caustic arrows which have been employed in some cases where ablation with the knife could not be practiced; but they, as well as the other potential cauteries, have been used also in ordinary cases.

The application of any irritant, or a slight cauterization with nitrate of silver, in the case of epithelial growths that have been inactive for several years, has been known to cause their rapid extension and to lead to a fatal issue in the course of a few months, whereas a radical operation with the knife would have given a fair chance of immunity from the disease, possibly for a long period.

Charlatans, still preying upon the credulity of the people, are exploiting their "specifics" and arsenical and other pastes and plasters, which they appear to use without the least discrimination, their "cures" being effected only in the case of benign tumors, to which they almost invariably give the name of cancer. These pastes and plasters, which cause the most excruciating pain for several hours, almost always fail to remove the entire tumor in the case of true cancer. The portion thus left behind, however small it be, grows with great vigor in its newly tilled soil, for the ensuing irritation favors very active cell-proliferation, and in a few months the disease invades the surrounding tissues and lymphatics to the extent of sometimes contra-indicating excision, or has so infected the organism as soon to prove fatal.

The persistent local application of ice as a mode of treatment of some malignant neoplasmata was employed in 1848 by Bennett, in 1850 by Arnott, in 1852 by Simon, and afterward by Follin and Velpeau; but this agent was found only to retard the development of, and not to cure, these growths. Simon reports a case of breast cancer of the "size of an orange" which, he says, nearly disappeared in thirty-four days from the beginning of the application of pounded ice, but the disease soon after greatly increased, and the patient died in about eleven months.

For the eradication of malignant neoplasmata, compression, electricity in several of its different forms, ligature of the principal nutrient arteries of the growths, and many other more or less harsh methods, have been tried in vain. Early extirpation by means of the much-dreaded knife, particularly when it could be supplemented by the actual cautery, seems to have given the best results.

9. The medicinal treatment of malignant growths has been too generally discarded of late years. This treatment fell into disrepute because of the inconsiderate and extravagant claims made for many so-called specifics, and because it was used as a distinct means of "cure" and not as an adjuvant of surgical treatment. Very much mischief has been the outcome of attempts made to cure malignant tumors exclusively by means of internal medication which is so delusive as to lead both physician and patient to temporize until it is too late for operative interference. No kind of medicinal agent so administered has ever cured malignant tumors. Nothing short of their extirpation, principally with the aid of the knife, has ever been of any avail, and this mode of treatment often requires to be supplemented by the cautery and to be employed in an early stage of the disease. Then, and only then, are the longest periods of

immunity likely to follow, and only as a help to this end is constitutional treatment of any use.

In conclusion, and as a topic of general interest, a few of the medicinal substances used from time to time in the treatment of malignant tumors will be briefly noticed.

Innumerable "cancer specifics," some of them most loathsome, have been taken by the people in times long past, through ignorance and superstition. Even at present not a few persons advocate the employment of the most hurtful nostrums.

In the last century Stoerk proposed the use of hemlock in the treatment of cancer, and this therapeutic agent continued to be largely used by many physicians until very late years, and even now a few medical practisers persist in its employment.

Among the more modern remedies may be mentioned the red-clover tea and the tinctures of thuya and of hydrastis, the latter in doses of fifteen drops, repeated three times each day for several months.

Chian turpentine, so much in vogue twenty years ago in the treatment of cancer, has, in the last few years, been reintroduced into practice by Professor Clay, of Birmingham, England. He gives it in emulsion, and asserts that it is very efficient in carcinomata and epitheliomata, even when in an advanced stage.

The proposition of Auzias Turenne to syphilize patients recently operated upon for cancer should not be omitted from catalogues of curiosities of the literature of cancer therapeusis.

Those who reject medicinal after-treatment in cases of cancer ablation go to the other extreme of error. Many surgeons of large experience and excellent judgment favor a vigorous course of medicinal and hygienic treatment, and believe that iron, arsenic, and other reconstituents greatly aid in prolonging the period of immunity from malignant neoplasmata after their excision.

## APPENDIX.

The following schema, from an essay on the classification of tumors now in course of preparation, is appended to illustrate the method of nomenclature and classification suggested at the beginning of this discussion, the order epithelial neoplasmata, its genus, species, varieties, and subvarieties having been selected for the purpose.

The anatomical basis is closely adhered to in this nomenclature and classification—that is to say, all the departments of anatomy are made subservient to its purposes. Any single department would not suffice to constitute the basis, while all jointly give a stable and solid foundation. Thus, descriptive anatomy, physiology, embryology, histology, etc., and the law of Müller, the blastodermic theory, morphism, and even ætism, are all laid under contribution as occasion requires.

### CLASS I. NEOPLASMATA.

#### ORDER I. EPITHELIAL NEOPLASMATA.

##### GENUS I. EPITHELIOMA.

*Species 1.* Polymorpho-cellular epithelioma (*cancer*).
*Variety 1.* Polymorpho-cellular ino-epithelioma (*medullary cancer*).
*Variety 2.* Polymorpho-cellular hyperino-epithelioma (*scirrhous cancer*).
*Subvariety 1.* Telangiectatic polymorpho-cellular ino-epithelioma (*fungus hæmatodes*).

*Species 2.* Cylindro-cellular epithelioma.
*Variety 1.* Cylindro-cellular ino-epithelioma.
*Subvariety 1.* Papillary cylindro-cellular ino-epithelioma.
*Subvariety 2.* Telangiectatic cylindro-cellular ino-epithelioma.

*Species 3.* Squamo-cellular epithelioma (*epithelioma*).
*Variety 1.* Myxoid squamo-cellular epithelioma.
*Variety 2.* Keratoid squamo-cellular epithelioma.
*Subvariety 1.* Papillary squamo-cellular epithelioma.

Of the order epithelial neoplasmata, epithelioma is the only genus, and this genus has three species.

The names given to the order and genus indicate that they comprise all epithelial new-growths.

The name given to *Species 1* indicates that the tumor is chiefly composed of cells of many forms, constituting one of the essential characteristics of what is commonly called cancer.

*Variety 1, of Species 1,* bears the name of the species with the affixion of ino to indicate that it contains fibrous tissue; the fibrous tissue forming alveoli, with thin walls, in which the cells are inclosed. This is one of the essential characteristics of what is known as medullary cancer.

*Variety 2, of Species 1,* bears the name of the species with the affixion of hyperino to indicate that it has an excess of fibrous tissue; the excess of fibrous tissue forming thick-walled alveoli in which the cells are enclosed. This is the essential characteristic of what is known as scirrhous cancer.

*Subvariety 1, of Variety 1,* bears the name of the variety with the affixion of telangiectatic to indicate that the tumor contains dilated blood-vessels. This is the main characteristic of what has been called fungus hæmatodes.

The polymorphism of the cells of this species of epithelioma, and the presence of fibrous tissue in its varieties, show it to be derived from the elements of the epiblast, hypoblast, and mesoblast.

*Species 2* is named to indicate that the tumor is chiefly composed of cylindrical epithelial cells.

*Variety 1, of Species 2,* bears the name of the species with the affixion of ino to indicate that it contains fibrous tissue.

*Subvariety 1, of Variety 1,* bears the name of the variety with the affixion of papillary to indicate that its surface is covered with papillary projections.

*Subvariety 2, of Variety 1,* bears the name of the variety with the affixion of telangiectatic to indicate that it contains dilated blood-vessels.

The form of the cells of this species of epithelioma shows that it is derived from the elements of the hypoblast.

*Species 3* is named to indicate that the tumor is chiefly composed of squamous epithelial cells. This is the essential characteristic of what is commonly called epithelioma.

*Variety 1, of Species 3,* bears the name of the species with the affixion of myxoid to indicate that its cells are like those of the mucous layer of the epidermis.

*Variety 2, of Species 3,* bears the name of the species

with the affixion of keratoid to indicate that its cells are like those of the external layer of the epidermis, and show a tendency to horny formation.

*Subvariety 1* is named to indicate the existence of papillary projections from the surface of the growth.

The form of the cells of this third species of epithelioma shows that it is derived from the elements of the epiblast.

Colloid and melanotic are not included among the subvarieties any more than other degenerations and infiltrations, on account of the fact that not only the tumors but other diseased tissues of the body are liable to colloid and fatty degeneration, and to pigmentary and calcareous infiltration.

The tumor called atrophying (shriveling) scirrhous cancer is also excluded from this classification for the reason that the condition in question is not essential to any species, variety, or subvariety. It is simply an incidental retrograde metamorphosis, a sclerous degeneration of the fibrous tissue of a polymorpho-cellular hyperino-epithelioma.

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## THE TREATMENT OF ACUTE ABSCESSES,

### BASED UPON THEIR ÆTIOLOGY AND PATHOLOGY.*

By LE ROY W. HUBBARD, A. M., M. D.

On first thought it might perhaps seem advisable for me to offer an apology for presenting to the society so simple and trite a subject as the one I have selected, but I think that further consideration will demonstrate that the topic is one worthy the attention of all who are interested in the scientific treatment of disease.

It is true that an acute abscess, unless of large size, deeply seated, and near an important cavity or vessel, rarely endangers the life of a patient; yet it often causes intense suffering, and the surgeon who can skillfully avert the suppurative process, or, when the abscess has formed, can quickly remove it, leaving little or no trace behind, will not only win the gratitude of the sufferer, but also add greatly to his own reputation.

During my reading upon this subject in the standard English and American text-books of surgery I have been struck with the slight advancement made in regard to the ætiology and pathology of suppuration, also the treatment of abscesses, as compared with that in some of the other branches of surgery.

The student is still confused by the elaborate and conflicting descriptions of inflammation; the advocates of Cohnheim's theory of the migration of the white corpuscles, or of Virchow's theory of changed connective-tissue cells, are still waging war, and the experiments of many scientific investigators of the present day in regard to the ætiology of suppuration are not even mentioned.

No explanation is attempted as to why an inflammation at one time results in suppuration and at another disappears, leaving no trace behind; or, on the other hand, why a suppurative process in one case goes on rapidly progressing through the tissues, carrying destruction in its train, while in another the process is limited and its products circumscribed.

The treatment of abscesses, also, is practically the same as has been advocated for many years—viz., free incision, poultices, or other warm open dressings; a slow healing, accomplished by gradually diminishing suppuration and filling up of the cavity by granulations.

Gross says in regard to treatment: "It is better that the opening should be too large than too small." "A seton or tube should be introduced to carry off the discharge and a wet dressing applied."

Bryant, after advocating a very free incision, adds: "When opened, it (*i. e.*, the abscess) should be left to discharge by itself, a simple poultice or warm-water dressing being applied. He also strongly condemns squeezing of an abscess to evacuate the pus.

According to Coote, in Holmes's "System of Surgery," a soft flax-seed poultice should be applied and the remainder of the cure left to nature.

Agnew advises a large opening, the application of a light poultice for two or three days, and then a piece of linen wet with laudanum.

Erichsen, in the last edition of his work, does give, among other causes for acute suppuration, septic irritation produced by micro-organisms; and also describes Lister's plan of antiseptic treatment with the spray, irrigation with 1-to-20 or 1-to-40 carbolic-acid solutions, and complicated dressings. But he adds that this plan frequently fails to cure the abscess without further suppuration, a result which has been verified by others, including the writer. The cause for this failure will be explained subsequently.

Wyeth, in his recent work, advocates irrigation of abscess cavities with a solution of bichloride of mercury (1 to 3,000), and in some cases aspiration and subsequent injection of the same solution, but gives no reason for the treatment.

The results obtained by the plan of treatment advocated by the majority of writers whom I have quoted is known to you all. A period of healing, lasting in favorable cases from five days to two weeks, and causing great annoyance and inconvenience to the patient; the possibility of a sinus requiring long after-treatment; and in the majority of cases, finally, an ugly and disfiguring scar, which remains a lasting monument to the memory of poor surgery—is the common history of abscesses treated according to the popular methods.

As early as 1872 Hueter and Klebs taught that inflammation and suppuration could be produced by introduction into the tissues of organized infective material. A little later Lister demonstrated that suppuration, in wounds at least, could be prevented * by the exclusion or destruction of the organisms found in the atmosphere.

Koch,† in 1878, showed that by injecting decomposed blood into the connective tissue of an animal he could always produce an abscess.

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* Read before the Society of the Alumni of Bellevue Hospital, May 5, 1887.

* "Beiträge zur Path.-Anatomie der Schusswunden," Leipsic, 1872.

† "Zur Aetiol. der ak. Entzündungen," Berlin, 1878. "Verhandl. der deutsch. Gesellsch. f. Chirurg.," vii. Congress.

In the same year Pasteur* discovered a micro-organism in the hydrant water of his laboratory which he cultivated upon suitable media, and produced abscesses in rabbits by injecting a drop of the culture into the connective tissue. He also found this same organism present in the pus taken from five cases of furuncle and one of osteomyelitis.

Ogston,† by a series of careful experiments in 1880, demonstrated that in the pus of acute abscesses there exist microbes which can be cultivated upon appropriate media, and present characteristic growth and development.

By a series of tube and plate cultures, such as have been described to the society by Dr. Biggs, pure cultures of these micro-organisms were obtained, and when a portion of such a culture was injected into the tissue of an animal characteristic abscesses resulted.

These experiments were afterward verified and the results confirmed by von Rosenbach,‡ Passet,# and others, until it is now established beyond doubt that the pus of an acute abscess contains one or more forms of micro-organisms. These are either staphylococci, of which there are three varieties—albus, aureus, and citreus—or streptococci. Both of these belong to the order of cocci, and individually are indistinguishable under the microscope, but differ materially in their manner of grouping.

The staphylococci arrange themselves in masses like bunches of grapes, while the streptococci form chains. Sometimes one form alone is found, more often both. When the suppurative process is active, and accompanied by more or less severe constitutional symptoms, with the formation of thick, creamy pus, or where the tendency is toward rapid extension and destruction of tissue, the staphylococci are present alone, or in greater abundance. When, on the other hand, the process is less active and the tendency is toward limitation, the streptococci prevail.

Ogston believes that the action of these microbes is not mechanical, but due to the formation of ptomaines, which are the active agents of destruction. They gain entrance to the tissue, not only through abrasions of the surface, but also, as has been demonstrated, through the glandular openings in the skin. In this way is readily explained the spread of furuncles when treated according to the old method by free incision and poulticing.

The pus from the original furuncle, laden with germs, is distributed over the surface of the poultice, and these organisms, under the favoring conditions of heat and moisture, are easily absorbed, and become the active agents for the formation of new furuncles. While the fact of the spread of furuncles under this treatment has been recognized clinically, and the method is generally condemned, no explanation of the fact has been attempted so far as I know.

Passet found that when culture-tubes or plates of these organisms were kept at a temperature of 41° F., the growth of the microbes was arrested, but they were not destroyed, for, even at the end of two weeks, when placed in a suitable temperature (about 98° F.), they developed rapidly.

This experiment affords an explanation of the action of cold in sometimes aborting or preventing a threatened inflammation or abscess. By the lowering of the local temperature, the microbes are placed in a dormant state, and the vitality of the tissue is then sufficient to either destroy or remove them.

This same investigator also performed some very interesting experiments with regard to the action of various antiseptic solutions upon the growth of the organisms.

The solutions employed were salicylic acid, 1 to 300; carbolic acid, 2·5 per cent. and 5 per cent.; and bichloride of mercury, 0·1 per cent. Ten cubic centimetres of gelatin were used in each experiment. One hundred drops of the salicylic-acid solution were required to prevent the development of either the staphylococcus or streptococcus; thirty-five drops of the 2·5-per-cent. carbolic-acid solution, or twenty-five drops of the 5-per-cent. solution, were necessary to arrest the growth of the staphylococcus, and twenty drops of either solution for the streptococcus. On the other hand, six drops of the 0·1-per-cent. (1 to 1,000) solution of bichloride of mercury completely stopped the development of either variety.

These experiments readily explain some of the failures of treatment by the Lister plan.

Two facts seem to be quite well established—viz., the constant presence of recognized micro-organisms in the pus of acute abscesses, and, secondly, the almost absolute certainty that the injection of a pure culture of these organisms into the tissues will produce an abscess.

The question may now be properly asked, Does acute suppuration depend upon the presence of these organisms, or may it be excited by mechanical or chemical agents alone?

That traumatism alone, even though it may be severe, does not cause suppuration, provided the instrument with which the injury is inflicted is aseptic, and the subsequent treatment prevents the entrance of septic organisms, is a principle which forms the basis of our modern surgery. Repeated experiments have also shown that foreign bodies, if aseptic, may be introduced into the tissue without producing suppuration. While it is almost universally believed that traumatism of itself will not produce suppuration, the opinions of some of the best observers in regard to the action of chemical agents differ greatly. The experiments of Rosenbach, Uskoff, Orthman, and Councilman, which consisted of the direct injection of sterilized croton-oil, turpentine, etc., into the tissues, or the introduction of the same substances under the skin by means of sterilized glass tubes, which were broken after the superficial wounds had healed, would seem to establish the ground that these agents might cause suppuration. In almost every instance an abscess, or what had every appearance of one, followed the introduction into the tissues.

But, on the other hand, Straus, Schuerlin, Klemperer,

* "La théorie des germes et ses applications à la médecine." "Bulletin de l'acad. de méd.," séance du 30 Avril, 1878.

† A. Ogston, "Ueber Abscesse," Langenbeck's "Archiv f. klin. Chirurgie," 1878.

‡ "Mikro-organismen bei den Wundinfectionskrankheiten des Menschen," Wiesbaden, 1884.

# "Untersuchungen über die Aetiologie der eiterigen Phlegmone des Menschen," Berlin, 1885.

and Ruys, who repeated more recently the same experiments, but with greater antiseptic precautions, found that suppuration was the exception, and could always be traced to some imperfection in the method. Still later, the experiments by Dr. Hermann Knapp, of this city, upon the eyes of rabbits, reported in a paper published in the "Medical Record" for December 25, 1886, go far to prove that micro-organisms are the sole cause of acute suppuration.

The product which Councilman obtained from his experiments with chemical agents resembled pus macroscopically, but contained no bacteria, and cultures made from it remained sterile.

While this point may still be regarded as unproved, yet there is sufficient evidence to show that, directly or indirectly, the majority of abscesses are the result of infection by septic organisms, and to lead us to a rational plan of treatment.*

Setting aside the question of the prevention of a threatening suppuration, which is too great a subject for present consideration, what is the best plan of treatment after the abscess has formed?

The three principles which lie at the foundation seem to me to be—

1. The immediate removal, as far as possible, of the pus already formed.

2. The destruction of any microbes which may remain in the abscess cavity.

3. The prevention of the entrance of new germs from the outside.

As we have seen that bichloride of mercury is the most effectual agent for the destruction of the organisms of suppuration, a solution of this substance should be our chief reliance for the accomplishment of the first two ends. The third is secured by a suitable antiseptic dressing.

The plan which I have adopted was suggested to me by Dr. Biggs, and is as follows:

The skin over the abscess and for some distance around is first thoroughly cleansed. To accomplish this, the hair, if abundant, should be removed, and the surface washed with soap and water, and subsequently with a solution of bichloride of mercury (1 to 2,000). This may be followed by an alcohol bath, which of course is not necessary unless cultures are to be made, but still does no harm and is an additional precaution. The incision should be made with a sterilized knife, and ought to be only large enough to give moderately free exit to the pus and permit the easy entrance of the small nozzle of a syringe.

The pus should be slowly evacuated by moderately firm pressure over the surface until it ceases to flow. Then the cavity should be thoroughly irrigated with the bichloride solution (1 to 2,000 or 4,000) until it runs out perfectly clear. If, after the first washing, pressure brings a drop of pus or cheesy particle to the wound, it is my practice to wash out the cavity again. If the abscess is small and there has not been much hæmorrhage, a tube or seton is not necessary, and the antiseptic dressing may be at once applied.

It is better to remove the first dressing at the end of twenty-four hours, and if anything like pus is present in the dressing, another washing should be employed and the dressing reapplied. As a rule, under this plan, even the skin wound will be healed at the end of seventy-two hours.

The following cases illustrate the results which may be obtained by this method of treatment:

Case I.—E. W., aged twenty, broker's clerk, seen December 23, 1886. Two days previously he had received a blow on the right cheek just behind the angle of the mouth which had produced a slight abrasion of the skin. On the following day he noticed slight swelling, but has had no pain until this evening. He presented a small tumor at the point indicated about the size of half a filbert; the skin over it was reddened, tense, and hard to the touch. Fluctuation could be made out by grasping the tumor between the thumb and forefinger in the mouth. There was no evidence of pointing. The skin over and for some distance around the tumor was carefully washed with soap and water, bichloride of mercury (1 to 2,000), and alcohol. A small incision less than a quarter of an inch long was then made, and about a drachm of healthy pus evacuated by steady pressure. The cavity was then thoroughly washed out with the bichloride solution until the fluid ran out clear. The dressing consisted of iodol, wet borated gauze, and absorbent cotton. No tube or seton was introduced.

*December 24th.*—Patient seen fourteen hours after the operation. Has had no pain. A few drops of thin pus on the dressing. Cavity again washed out and dressing reapplied.

*25th* (thirty-eight hours after).—Cavity closed, no pus, and only a slight superficial wound remaining. Simple dressing was applied and the patient discharged. Was seen lately, and has scarcely a perceptible scar.

Case II.—Winifred A., aged three years, was brought to the Dispensary January 21, 1887. The child is pale, badly nourished. Has a history of several abscesses upon the neck which had been treated by free incisions, the large scars of which are plainly visible. The present abscess, the mother says, began about two months ago without any apparent cause, and she had treated it with poultices. The tumor was situated on the right side below the jaw midway between the symphysis and angle; it was of about the size of a small hen's egg, distinctly fluctuating, and the skin over it livid and apparently about to slough. The method of cleansing and incision employed in the previous case was used here, and about two ounces of pus were evacuated. After washing as before, a small seton of gauze wet with the bichloride solution was introduced on account of the size and condition of the abscess. The dressing consisted of iodoform, wet lint, and cotton.

*January 22d* (twenty-six hours after the operation).—Child has had no pain and has been more comfortable than for two months. Removed dressing and took out seton. Washed out the cavity and reapplied dressing.

*25th* (seventy-two hours after operation).—Dressing dry, no pus, tenderness and redness disappeared, and only a small superficial wound remaining. A simple dressing was applied and the mother told to report if there was any further trouble. Have not seen the case since.

* Since this article was written, Professor P. Grawitz, of Greifswald, has published a series of experiments in which he has shown conclusively that certain chemical substances, if used in sufficient concentration, may produce suppuration even when free from bacteria. He has also shown that the bacteria alone can not originate the suppurative process without the presence of the ptomaines or chemical substance produced by the growth and development of the micro-organisms. But for the practical treatment of suppuration these observations do not interfere with the conclusions arrived at.

The following I consider a test case:

Case III.—Mrs. G. C., aged forty years. The patient is a woman from whom a kidney was removed four years ago, and since that time she has had more or less symptoms of chronic uræmic poisoning, accompanied by pain, for which she has used hypodermic injections of morphine.

On December 16, 1886, I was sent for and found her suffering from intense pain caused by an abscess on the outside of the right thigh resulting from one of these injections. Not having been informed of the nature of the case, I had not provided myself with dressings, etc., and I therefore made a free incision, letting out about two ounces of pus which was distinctly fœtid, though there was no communication with the air. Poultices were ordered for twenty-four hours, and then a drainage-tube was inserted and the ordinary dressings applied. The course of healing was slow, two weeks being required to complete it.

On February 21, 1887, I was sent for again, being informed that another abscess had appeared. I found an acute abscess situated over the triceps muscle of the right arm. It was hot, tender, and very painful. I cleansed the skin thoroughly and made a small incision. The pus in this instance also was fœtid. The abscess was washed out with bichloride, and a small tube put in. Dressing: iodol, wet lint, and cotton.

*February 22d.*—Removed dressing. Swelling and tenderness gone; very slight discharge. Removed tube and washed out cavity again, and reapplied dressing.

*25th.*—Cavity closed, and only small superficial wound remaining, which healed in a day or two without any suppuration.

Case IV.—Irene M., aged seven years. This patient has been under treatment for Pott's disease of the spine and hip disease for eighteen months, the latter trouble being nearly well.

On April 9, 1887, the mother called my attention to a swelling situated in the anterior border of the right axillary space which she had discovered that morning. This swelling had made its appearance since my previous visit, two weeks before, and had not caused enough pain to make the child complain of it. The swelling was of about the size of a pigeon's egg, fluctuation was distinct, and above the clavicle was another tumor, which communicated with the first. The skin over the axillary tumor was red, and the pus was evidently approaching the surface.

*April 11, 1887.*—Opened the abscess in the manner previously described, letting out about an ounce of rather thick pus. The cavity was washed out, but not quite as thoroughly as I desired, on account of the nervousness of the child. No tube or seton was introduced. Dressing: iodol, borated gauze, and cotton.

*12th.*—Slight discharge in the dressing. Washed out and dressing reapplied.

*19th.*—Cavity closed, and only a small superficial wound remains; dressing dry. Saw this patient again May 5th, and it was difficult to find the scar.

The following case is interesting as being a partial failure:

Case V.—Anna C., aged sixteen months, brought to the Dispensary April 19, 1887. Presented an acute abscess situated in the left axilla, about the size of a small hen's egg; soft, fluctuating, and the skin over it livid. The mother said she first noticed it five days before, and she had treated it with poultices. With the usual antiseptic precautions, an incision was made and about two ounces of pus evacuated. The subsequent washing was difficult to carry out, owing to the struggles of the child. There was also considerable capillary hæmorrhage. Wishing to test the matter, a tube was not introduced and the usual antiseptic dressings were applied.

*April 20th.*—The child was brought to my office, and I found what I had feared—viz., that the edges of the wound had glued together and hæmorrhage had taken place into the cavity. After opening the cavity with a director, washing out again, and putting in a tube, the subsequent healing was rapid and without suppuration.

Judging from this case, I should advise the introduction of a tube or seton for twenty-four hours where the abscess is of large size or the hæmorrhage is rather free.

The disadvantages of this plan of treatment for small acute abscesses are—

1. The amount of time and attention to details necessary to secure success, as compared with the gravity of the affection.

2. The pain which the washing out occasions being generally more severe than that caused by the incision. Adults are usually willing to endure this for the sake of more speedy cure, and with children local or general anæsthesia can be employed.

The advantages are—

1. If thoroughly carried out, an almost certain cure in from forty-eight to seventy-two hours.

2. The certainty that no septic poisoning can arise from decomposing pus.

3. The small scar, which usually disappears after a time. This is no small consideration when the abscess occurs in an exposed part, especially if the patient be a woman or child.

It seems to me the advantages of the method far outweigh the objections, and I shall continue to employ it until some better plan is discovered.

Further experience with this method of treatment of acute abscess among both private and dispensary patients has convinced me of its utility, and, where it is possible to carry out the details thoroughly, a cure can be promised in from two to four days.

130 West Twenty-first Street, New York.

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**Optic Atrophy in Tabes Dorsalis.**—According to the "Lancet," "M. Galezowski has collated 1,029 cases of atrophy of the optic nerve, of which 870 occurred in males and 159 in females. Of this number, 717 were cases of locomotor ataxy, in which a syphilitic antecedent was noted 496 times. It is concluded that cases of tabetic optic atrophy comprise about two thirds of all cases of optic nerve atrophy; that two thirds of the cases of tabetic atrophy of the nerve are remotely related to syphilis; and, finally, that, though generally incurable, optic nerve atrophy in tabes dorsalis may be arrested when it is accompanied by certain peculiar vascular alterations."

**High Altitudes in Graves's Disease.**—According to the "Lancet," "Professor B. Stiller, of Buda Pesth, has recently had two cases of exophthalmic goître (Graves's or Basedow's disease), in which remarkable results were obtained by sending the patients to high or moderately high altitudes—that is to say, to health resorts in the Carpathians and the Tyrol, varying from 1,500 feet to 5,000 feet. The explanation of the mode of action of this method of treatment is not very evident, especially as it has been generally taught that high altitudes are contraindicated in cardiac diseases. Professor Stiller thinks it would be well to obtain further observations of the effect of altitudes not only on cases of Graves's disease, but on cases of disturbance [of heart compensation generally."

## A NOTE CONCERNING THE PROBABLE COURSE OF THE WILL-TRACT TO THE CRANIAL-NERVE NUCLEI.

By E. C. SPITZKA, M. D.

A number of observations have been published which tend to show that the fibers controlling the voluntary movements of the tongue, and possibly of the face, do not run within the compact bundle which in the oblongata is termed the pyramid, nor necessarily in the split-up fasciculi which represent the latter in the pons.*

In the marine mammalia the crossed and direct pyramid tracts are, as I have previously shown, entirely eliminated. The animals possess no digital movements and have no posterior extremities. Their cranial-nerve co-ordinations and functions are, however, very intricate; particularly is this true of the facial and laryngeal innervations, which are wonderfully associated in the blow-hole mechanism. It were to be assumed, then, that that part of the will-tract which is connected with the accessory facial, and perhaps the hypoglossal (?) and trigeminal motor nuclei, would be well developed.

While there are no descending fibers in the pons proper, there is a considerable nerve bundle on either side in the angle between the raphé and tegmento-pontile limit. It is marked 2 in the woodcut accompanying a former article of mine in this Journal.† This position is identical with the one occupied in the human brain by the so-called "bundle from the pes to the tegmentum." As pathological observation shows that lesion of the transverse and descending fibers of the pons is not necessarily followed by tongue or face paralysis, and an animal with an absent extremity tract has this aberrant bundle of the pes well developed, there is good reason for searching in the latter for the fibers governing the muscles of the tongue and face. The disappearance of its compact and distinct mass in the upper part of the oblongata is in favor of this view.

The bundle in question is termed by Wernicke "detached bundle from the pes." ‡

**Auricular Epilepsy.**—"That irritation of sensory nerves may provoke an attack of convulsions, or loss of consciousness, or indeed almost any other morbid nervous phenomenon," says the "Lancet," "must be admitted sometimes even without the qualification that the central nervous ganglia are in a particularly irritable condition. There seems plenty of ground for believing that nervous attacks, not necessarily of typical character, but resembling Ménière's disease, may proceed from auricular irritation. Boucheron has attributed some of these attacks to excitation of the acoustic nerve resulting from labyrinthine compression (otopoesis) secondary to absorption of air from the cavity of the tympanum, often due to obstruction of the Eustachian tube. Insufflation of the tympanic cavity has relieved this pressure, and led to the disappearance of the epileptic phenomena. Boucheron thinks such cases are of common occurrence, and that they coexist with slight or gross lesions of the auditory nerves."

* Raymond et Artaud, "Archives de neurologie," vii, p. 300.

† The intra-axial course of the auditory tract, "N. Y. Medical Journal," September 18, 1886.

‡ "Abgeschnürtes Bündel des Fusses," "Lehrbuch der Gehirnkrankheiten," i, pp. 108–121, Figs. 51 to 54, inclusive.

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## PLASTERED WINES.

As is well known, what is termed *plâtrage* is practiced by many of the wine-growers of France, probably by most of them. It consists in the addition of a certain amount of plaster of Paris, for the purpose mainly of clarifying and preserving the wine. Double decomposition takes place between the plaster added and the cream of tartar (potassium bitartrate) naturally contained in the wine, and the result is the formation of a certain amount of potassium sulphate, which remains in solution. The practice has always been considered as a sophistication, but it was long thought to be innocuous, although it was recognized that it gave the wine laxative properties and sometimes made it decidedly purgative. The French sanitary authorities long ago specified the extent to which the plastering of wines might be carried without detriment to the health of consumers, fixing thirty grains of potassium sulphate to the litre (2·113 pints) as the maximum proportion allowable. For a time the courts sought to enforce this rule, but the wine-growers were loud in their protests against it, and it soon came to be looked upon as a dead letter. Consequently, as is remarked by a writer in the "Archives de pharmacie," the question of the plastering of wines, looked at from an hygienic, a commercial, and an agricultural point of view, has never been definitively settled.

The Bordeaux Society of Pharmacy recently appointed a committee to investigate the subject, and the committee's report, which was adopted, embodied conclusions substantially as follows: 1. In the present state of viticulture in the south of France and in Algeria, the plastering of wines in the mash is almost always necessary, in order to give the wines the marketable qualities sought after by consumers. 2. Facts are wanting to show that plastered wines are injurious to health. 3. The experience of numerous populations that drink only plastered wine, the experience of the many strangers who are continually traveling through the south of France and Algeria, drinking hardly anything else than plastered wine, and methodical experiments by learned bodies show that potassium sulphate in the proportion of sixty grains to the litre of wine produces no appreciable effect on the various functions of the economy. 4. The plastering of wines in the mash to the extent of producing this proportion of potassium sulphate may be authorized until facts rigorously deduced from extensive scientific experiments show the dangers or inconveniences of this amount as regards the public health.

On the other hand, a report made to the Academy of Medicine by M. Marty, representing a commission appointed to investigate the matter, concludes as follows: 1. The docu-

ments pertaining to the inquiry made by the Montpellier National School of Agriculture do not seem to be of a nature to invalidate the results of the general investigation ordered by the Minister of Commerce in 1884. 2. The testimony and the facts analyzed in the present report demonstrate that excessive plastering exerts an injurious influence on the public health. 3. From the exclusive point of view of hygiene, the commission can not approve of the principle of the plastering of wines. 4. Nevertheless, in view of the producers' and dealers' necessities, and especially taking the consumers' interest into account, it thinks that it would be imprudent to exclude from the market during certain years, by too absolute a measure, wines which thus far nothing but moderate plastering has proved capable of preserving. 5. Considering that, if potassium sulphate is a natural constituent of pure wines, it ever exists in them in a proportion above sixty centigrammes to the litre, as analysis shows; that it has not been directly proved that potassium sulphate, even in the proportion of two grammes to the litre of wine, has any noxious influence on health; but that it is necessary to fix the maximum of potassium sulphate which may, without appreciable danger, be produced in wine by plastering—the commission is of the opinion that the presence of potassium sulphate in the wines of commerce, whatever may be its origin, ought not to be tolerated beyond the maximum limit of two grammes to the litre. The commission urges that the regulation formerly in force should be carried out strictly.

While, then, the pharmacists of Bordeaux content themselves with the Scotch verdict of "not proven," the Academy's commission positively affirms the injuriousness of plastered wine, and consents to moderate plastering only out of deference to interests that are constantly found in conflict with the requirements of sanitary science. It is to be feared that the plastering of French wines will go on practically unchecked, and it is reasonably certain that it will continue to be allowed to an extent not above the suspicion of noxiousness. The prospect seems to us a further inducement to the American people to restrict themselves to wines of home production.

## THE RELATIVE STATUS OF EXPECTANCY AND RADICAL TREATMENT.

Although it can hardly be maintained at the present day that figures represent the whole or any preponderating part of the truth as concerned with ordinary investigations, it must be confessed that the relative quantities of specified drugs consumed by a given community from year to year furnish a fair index to the degree of confidence with which their action is invoked. Such a test has been applied in the case of a number of classes of medicaments by Dr. Bourgoin, the director of the *Pharmacie centrale* of the Paris hospitals, and Dr. Beurmann, a physician to the hospitals. Drawing their data from the amounts of various drugs issued to the hospitals of Paris in different years, these gentlemen have published in the "Bulletin général de thérapeutique" a very interesting assemblage of facts, interspersed with highly suggestive commentaries.

So far as these observations go to settle the point, it seems that the use of anodynes and soothing remedies in general has grown very decidedly of late years. For example, in 1872, three years after its introduction into the Paris hospitals, only 100 kilogrammes of chloral were used, but in the course of ten years the annual amount had risen progressively to 840 kilogrammes. The consumption of the bromides also has increased prodigiously since the year 1855, notwithstanding the general impression that their administration in epilepsy and hysterical affections, for which they seem to be chiefly employed, is productive of only temporary benefit. The authors infer that calmative medication in general has grown in favor, but they hesitate whether to impute the fact to the greater importance attached now than formerly to the mere alleviation of pain and other unpleasant manifestations of disease, or to explain it by assuming that physicians, having become more modest in their pretensions, are gradually coming to look upon the palliation of suffering as more within their powers than the actual cure of disease. It would be somewhat humiliating to entertain the latter alternative, and, indeed, it does not appear to be a fair inference from the facts, for increased attention to the alleviation of pain and other discomfort by no means precludes a simultaneous earnest contest with the essentials of morbid action. We anæsthetize more and more, but that is no sign that we do not cut as much as ever. It will hardly do to say that radical treatment is neglected because certain specified measures—such, for example, as bloodletting and the use of blisters, issues, purgatives, and emetics—have in great measure gone out of vogue. The objects formerly sought to be attained by them have not been abandoned as impossible of accomplishment; the simple truth is that other expedients, less objectionable or supposed to be more efficacious, have taken their places. That the wisdom of expectancy is now more widely recognized than was once the case may certainly be maintained, but it is the expectancy of a more skillful generation of men, ready to act promptly and vigorously at the proper moment, and courageous enough not to hide a do-nothing policy under the garb of fussiness in medication. On the whole, we can not admit that the medical practice of the present day has receded from any past ideal.

## THE UNDUE MULTIPLICATION OF SPECIALTIES.

The profession in England is threatened with a "Dictionary of Specialists," to be prepared by a non-medical person. In the circulars that this person has sent to his intended beneficiaries (or victims, as the case may be), he asks that the following particulars be supplied: "Name; address; qualifications; educated at ——; specialist in ——; appointments held; time of attendance; appointments formerly held; author of ——; minor literary contributions; inventor of ——; at home for consultation ——." The simple statement of a man's specialty in an ordinary medical register or directory might prove useful and unobjectionable, and perhaps a list of his public appointments would be an addition quite tolerable; but the scheme

here outlined can but nauseate the judicious, however it may accord with the inclinations of those who think nothing is incumbent upon them but to push themselves into a special practice. It is almost as bad as the proposal lately made in this country that medical men should go about wearing a badge indicative of their calling. We are fully of the "Lancet's" opinion that the publication of such a book would be an indignity put upon the profession.

Our contemporary frankly admits, however, that "there is a specialization of work in the medical profession, and that different men do different parts of medical duty with different degrees of skill," although it contends that it is now impossible for a man to have his name admitted into the "Medical Register" without giving proofs that he is fully qualified to pursue all branches of practice. Such impossibility must be of quite recent establishment, unless our contemporary uses the word "qualified" in a very technical sense. Which one of us, having a cataract, for example, would think of submitting himself for operation to a man about whom he knew nothing but that his name was in the "Medical Register"? The "Lancet" leads up to the sober [part] of its article with a little *badinage* concerning the American Association of Genito-urinary Surgeons, intimating that the association's name is unsavory, and expressing its fear that, "if the system of specialization is to go on unchecked, there will not be many more September congresses at Washington before the Association of 'Genito-urinary Surgeons' will be broken into a hundred fragments." It is desirable, of course, and even imperative, to guard against the undue multiplication of specialties, but why an organization that has done such excellent work as the American Association of Genito-urinary Surgeons, that drew to its recent meeting so many distinguished men from abroad, and that has shown no tendency to split up into subtler constituents, should be held up to view as fostering the growth of hair-splitting specialization we are unable to see.

## *MINOR PARAGRAPHS.*

### THE ADMINISTRATION OF THE IODIDES.

Dr. Sée, says our Paris correspondent, finds that most patients prefer the iodides given simply in water. What is it, he asks, that is removed here? Evidently not the microbes or their products, which can not well be destroyed. It is the newly formed tissues themselves, or the fatty elements that go to make them up, that are reduced in amount. Cure by the iodides, then, does not depend on a specific action, but on a general modification of nutrition either for good or for evil. The patient either gets better and fatter, or worse and thinner. As to the idea that the potassium salts are muscular poisons, he shows that the sodium salts injure the excitability of muscle as rapidly as the potassium salts. Next, as to the allegation that potash has a poisonous action on the heart, he says that it also is false. Bernard and Traube *injected* potassium salts to prove that it was well founded; but this has no relation to iodide of potassium taken by the stomach. As much as from one to four drachms are often given without producing any bad effect. As to potash itself, Dr. Sée shows that Bunge had calculated that there were 96 grains of potash in 3 ounces of potatoes; so that the poor Irishman who eats 32 to 48 ounces of potatoes a day swallows from 2⅔ to 2½ ounces of potash! What is this compared to the 30 grains that we give a day? This fear of potash is not founded on fact. Finally, the iodide of sodium has been said not to cause iodism, but, in truth, patients taking it have just the same symptoms of eye, nose, and other mucous troubles as with the potassium salt. The elimination of the iodide by the saliva is the same; the same metallic taste and repugnance for food follow, and, moreover, more of the sodium salt must be given to produce an effect. Professor Sée concludes that there is nothing to be gained by giving the sodium salt, while potassium iodide possesses certain advantages on account of which it should retain the favor in which it has always been held.

### UNUSUAL AFTER-EFFECTS OF MORPHINE.

The "Centralblatt für klinische Medicin" gives an abstract of an account of a case, by Dr. S. H. Scheiber, published in the "Pester medicinisch-chirurgische Presse," in which acute hallucinatory paranoia, lasting about six weeks, followed acute morphine poisoning in an hysterical woman, fifty-four years old. The woman took about three quarters of a grain of morphine, and was unconscious for two days, after which she had alexia and agraphia. On the sixth day an incipient bed-sore was found over the sacrum, which was four months in healing. During the continuance of the psychical disturbance, characterized by hallucinations and visions, the patient's memory was very much impaired and she was unable to recognize the members of her family. Recovery took place without any special treatment.

### THE RETENTION OF MERCURY IN THE SYSTEM.

There is, of course, little ground for the popular belief that mercury taken into the system is got rid of, if at all, only after many years; and none at all for the apprehension entertained by a few persons that even a single dose of a mercurial lingers in the economy. Nevertheless, as Dr. F. Balzer and Miss A. Klumpke have shown in a recent issue of the "Revue de médecine," when the drug is administered continuously, it is well to discontinue its use for a time when the maximum amount capable of elimination by the kidneys, the chief channel of its egress, has been nearly reached. A slow elimination then goes on for a long period of time, the metal having been found in the liver after the lapse of a year. It invades all the tissues, but principally the liver and the kidneys. The amount eliminated by the urine, in cases of continuous mercurial medication, usually becomes constant in about a month, and the inference is that it is then well to stop the administration for a time.

### THE "UNIVERSITY MEDICAL MAGAZINE."

We have received the first number of this new monthly journal, dated October, 1888, a handsome octavo of sixty-eight pages of reading matter. It is edited, under the auspices of the alumni and faculty of medicine of the University of Pennsylvania, by an editorial staff consisting of an advisory committee (Dr. William Pepper, Dr. D. Hayes Agnew, Dr. William Goodell, Dr. James Tyson, Dr. William Osler, Dr. J. William White, Dr. Samuel D. Risley, Dr. R. S. Huidekoper, and Dr. Horace Jayne) and an editorial committee (Dr. George de Schweinitz and Dr. Hobart A. Hare), and published by Dr. A. L. Hummel, of Philadelphia. The contents of the first number are classed under the heads of "Original Articles," "Memoranda" (medical, surgical, obstetrical, pathological, and anatomical), "Laboratory Notes" (pathological, chemical, and therapeutical), "De-

partment Notes" (biological and dental), "Editorial," "Society Proceedings," "Book Notices," and "Miscellaneous." Nearly everything is contributed by gentlemen connected with the medical teaching corps of the university, and necessarily the publication appeals particularly to the students and graduates of that institution, but there certainly seems to be an opportunity for a new monthly journal, especially for one that gives promise of such excellence, to secure wide patronage from the profession at large. We have no doubt that the "University Medical Magazine" will meet with such favor.

### THE POLYCLINIC HOSPITAL.

This new department of the New York Polyclinic occupies the upper floors of the Polyclinic Building, which have been divided into six wards for the reception of all sorts of patients except those suffering from infectious disease, and for furnishing additional facilities for clinical instruction. In conjunction with the out-patient department, long ago established, it will give the Polyclinic an ample range in clinical teaching.

### THE "SATELLITE OF THE 'ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES.'"

Our readers have been made acquainted with the scope and excellence of the great annual compendium of current medical literature prepared under the direction of Dr. Charles E. Sajous, of Philadelphia. The title given above is that of a supplementary journal, one that may be said to bear about the same relation to the "Annual" that the "Index Medicus" bears to the "Index-Catalogue of the Library of the Surgeon-General's Office." It seems to us in every way a commendable publication, one that will prove specially advantageous to subscribers to the "Annual" and of value to physicians in general.

### THE "BULLETIN OF THE AGRICULTURAL EXPERIMENT STATION OF NEBRASKA."

This is a serial publication issued by the University of Nebraska, published at Lincoln. The latest issue that has reached us comprises three numbers of the second volume, consolidated in the shape of a book of 414 pages of text, together with a number of inserted engravings, some of which are colored. The contents consist entirely of an essay on "Swine-Plague, its Causes, Nature, and Prevention," by Dr. Frank S. Billings, the director of the patho-biological laboratory of the university. The article gives evidence of laborious and painstaking research by a capable observer, but it also shows what we must consider a tendency to throw undeserved discredit upon the work of some other men. Many of the pictorial illustrations are well executed and instructive, but the introduction of a view of the interior of a most ordinary-looking laboratory as a frontispiece seems to us a display of bad taste. The young University of Nebraska is to be praised for its liberality in issuing the publication in quite an attractive form.

### THE NEW VOLUME OF THE "INDEX-CATALOGUE."

We have received the ninth volume of the "Index-Catalogue of the Library of the Surgeon-General's Office, United States Army," a volume similar to its predecessors in size and appearance. The vocabulary runs from "Medicine (Popular)" to "Nywelt." The rapidity with which the successive volumes of a work representing so much careful labor are issued is almost as wonderful as the accuracy that characterizes the catalogue throughout. As every new volume makes the work more largely available for reference, this promptness of issue is a matter of great importance. It is to be hoped that nothing will occur to interrupt the regular succession of issues until the catalogue is completed—within a few years now, we may fairly expect.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 9, 1888:

| DISEASES. | Week ending Oct. 2 | | Week ending Oct. 9. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 95 | 20 | 43 | 10 |
| Scarlet fever | 77 | 10 | 72 | 10 |
| Cerebro-spinal meningitis | 4 | 4 | 1 | 1 |
| Measles | 60 | 4 | 60 | 9 |
| Diphtheria | 80 | 16 | 67 | 17 |
| Small-pox | 0 | 0 | 0 | 1 |

**The Health of New York City.**—During the four weeks ending Tuesday, October 9th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 246 cases and 60 deaths; scarlet fever, 285 cases and 48 deaths; cerebro-spinal meningitis, 6 cases and 6 deaths; measles, 265 cases and 32 deaths; diphtheria, 245 cases and 61 deaths; small-pox, 3 cases and 1 death; yellow fever, 1 case and 1 death.

**The Health of Kansas City, Mo.**—According to the "Weekly Return of Births and Deaths" to the Health Department for the two weeks ending Saturday, October 6th, there were 89 deaths, including 4 from cholera infantum, 3 from diarrhœa, 3 from diphtheria, 8 from malarial fever, 4 from scarlet fever, 12 from typhoid fever, and 2 from typho-malarial fever.

**Dr. Sayre's Treatment of Incipient Hip-joint Disease.**—In an article that appeared in last week's Journal, entitled "Mr. Reginald Harrison and Mr. Arthur Durham at Bellevue Hospital" (see page 389), it was erroneously stated that Dr. Sayre applied plaster of Paris to a boy with incipient hip-joint disease. Dr. Sayre writes to us as follows:

"I stated to the class that I put the strips of *adhesive plaster* on either side of the leg, from near the ankle to a few inches above the knee, and secured them by *first* applying a flannel bandage *very tightly*, then pressing the limb firmly for a few minutes with my warm hand, until the plaster had well adhered, when I immediately removed this *tight* bandage, and applied another *just sufficiently tight* to retain the strips of adhesive plaster in position. I said that by doing it in this way it would remain an indefinite period—often four, six, or even eight months. But I made no reference whatever to the use of plaster of Paris in the treatment of hip disease.

"The reporter also says, when describing my method of examination in order to make a diagnosis: 'The feet were kept elevated and were lowered gently without disturbing the position of the trunk till the popliteal regions were in contact with the bed.' That was true so far as the sound limb was concerned; but, when the limb on the diseased side was brought down till the popliteal space touched the table, the pelvis immediately tilted up, by the contraction of the psoas and iliacus internus muscles; and this was the important point in the examination."

**Hippophagy.**—Dr. R. S. Huidekoper, of the Veterinary Department of the University of Pennsylvania, is said to have

recently entertained a party of friends to whom was served, as a fillet, a choice portion of his famous mare Pandora. It is added that the diners enjoyed the unusual dish, the nature of which, however, was not revealed to them until it had been eaten.

**A Generous Act.**—Dr. William Pepper, of Philadelphia, has recently displayed a degree of magnanimity quite uncommon. On being asked for the bill for his services in connection with the case of the late General Sheridan, he replied that he desired that his services should be "regarded only as an expression of that deep and lasting obligation" which he, in common with all others, owed the deceased.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 6, 1888:*

Hudson, Adrian, Medical Inspector. Ordered to the Naval Hospital, Mare Island, Cal.

Gibbon, A. L., Medical Director. Detached from the Naval Hospital, Mare Island, Cal., and to proceed home.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from September 30 to October 6, 1888:*

Williams, John W., Major and Surgeon, on duty with battalion of Second Artillery, now at Fort Wadsworth, New York Harbor, is granted leave of absence for one month, with permission to apply to the proper authority for an extension of one month. Par. 1, S. O. 209, Headquarters Division of the Pacific, Governor's Island, New York city, October 4, 1888.

Cronkhite, Henry M., Major and Surgeon, on being relieved by Captain Corbusier, will report for duty to the commanding officer, Little Rock Barracks, Arkansas, reporting by letter to the commanding general, Division of the Atlantic. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Adair, George W., Captain and Assistant Surgeon, is relieved from duty at Fort Brady, Michigan, and will report for duty to the commanding officer, Fort Robinson, Nebraska, reporting by letter to the commanding general, Department of the Platte. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Corbusier, William H., Captain and Assistant Surgeon, on being relieved by Captain Taylor, will report in person to the commanding officer, Fort Hays, Kansas, for duty at that post, relieving Major Henry M. Cronkhite, surgeon, and reporting by letter to the commanding general, Department of Arizona. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

By direction of the acting Secretary of War, the following-named officers of the Medical Department will report in person, on the dates set opposite their respective names, to the president of the Army Medical Examining Board, Army Building, New York city, for examination for promotion: Merrill, James C., Captain and Assistant Surgeon, October 16, 1888. McCreery, George, Captain and Assistant Surgeon, October 16, 1888. Johnson, Richard W., Captain and Assistant Surgeon, October 9, 1888. Upon completion of their examination, the officers named will rejoin their proper stations. Par. 5, S. O. 231, A. G. O., October 4, 1888.

Taylor, Arthur W., Captain and Assistant Surgeon, is relieved from duty at Fort Robinson, Nebraska, and will report in person, without delay, to the commanding officer, Fort Grant, Arizona Territory, for duty at that post, relieving Captain William H. Corbusier, Assistant Surgeon, and reporting by letter to the commanding general, Department of Arizona. Par. 10, S. O. 227, A. G. O., Washington, September 29, 1888.

Rafferty, Ogden, Lieutenant and Assistant Surgeon, will stand relieved from duty in connection with the Division rifle competition, the 7th inst., and under Par 6, S. O. No. 2, c. s., Headquarters Division of the Missouri, will return to his proper station, Fort Clark, Texas. Par. 5, S. O. 95, Headquarters Department of Texas.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the four weeks ending October 6, 1888:*

Purviance, George, Surgeon. To proceed to Washington, D. C., for special duty. October 3, 1888.

Stoner, G. W., Surgeon. Detailed as chairman of board to select site for Marine Hospital at Evansville, Ind. October 5, 1888.

Goldsboro, C. B., Surgeon. Leave of absence extended fifteen days on account of sickness. September 28, 1888.

Norman, Seaton, Assistant Surgeon. Detailed as recorder of board to select site for Marine Hospital at Evansville, Ind. October 5, 1888.

Fattic, J. B., Assistant Surgeon. To rejoin station at St. Louis, Mo. October 5, 1888.

Magruder, G. M., Assistant Surgeon. To proceed to Way Cross, Ga., for special duty. September 15, 1888.

Geddings, H. D., Assistant Surgeon. To proceed to Camp Perry, Fla., for special duty. September 15, 1888.

**Society Meetings for the Coming Week:**

Monday, *October 15th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *October 16th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings, St. Lawrence (semi-annual), and Westchester (White Plains), N. Y.; Ogdensburg, N. Y., Medical Association; Hunterdon, N. J., County Medical Society (Flemingon); Baltimore Academy of Medicine.

Wednesday, *October 17th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark); Philadelphia County Medical Society.

Thursday, *October 18th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *October 19th:* Chicago Gynæcological Society (annual); Baltimore Clinical Society.

Saturday, *October 20th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

## OBITUARY NOTES.

**William M. Thallon, M. D.**, of Brooklyn, died on Monday, October 1st, in the thirtieth year of his age. The deceased was a graduate of the College of Physicians and Surgeons, of the class of 1880. He was a practitioner of much promise, and will be remembered as having contributed several meritorious articles to various medical journals.

**Frederick R. Campbell, M. D.**, of Buffalo, a member of the editorial staff of the "Buffalo Medical and Surgical Journal,"

died at Rochester, on the 14th of September, at the age of twenty-eight years. The cause of his death was typhoid fever. He was a graduate of the Buffalo Medical College, and held the chair of Materia Medica and Therapeutics in the Medical Department of Niagara University. The deceased was a man of unusual literary attainments, and only a few months ago he published a work, entitled "The Language of Medicine," which has been received with much favor by the profession.

**Early W. Walton, M. D.,** house surgeon to the Manhattan Eye and Ear Hospital, died at the hospital on Friday, September 28th, at the age of thirty-two years. The deceased was graduated in medicine from the University of Virginia in 1879 and from Bellevue Hospital Medical College in 1880. He practiced for five years in Georgetown, Texas, and then, after having taken special courses in ophthalmology and otology at the Postgraduate Medical School and the Polyclinic, was appointed on the house staff of the Manhattan Eye and Ear Hospital. He was able, faithful, and conscientious in discharging the duties of his hospital service, and had endeared himself to all his associates in the institution by his genial and manly nature, his unselfish devotion to the welfare of the patients, and the absolute honesty of his character.

# Proceedings of Societies.

## ASSOCIATION OF AMERICAN PHYSICIANS.

*Third Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, Dr. W. H. DRAPER, of New York, in the Chair.

**Some Reflections upon the Relations which Scientific and Practical Medicine bear to each other** was the subject of the opening address by the PRESIDENT. He stated, in the course of his introductory remarks, that the purpose of the meeting was largely to make a better union between the scientific and the practical or artistic sides of medicine; they always tended to grow apart, and yet were dependent on each other. We might differentiate the science from the art of medicine, but we could not practically dissociate them.

Scientific medicine, to be sure, was not always practical, but it was ever striving to become so; and practical medicine, though not always in a strict sense scientific, was constantly tending to that end. And yet the distinction between science and art in medicine was important to maintain, for the secure progress of both, as it was in any other department of human activity. Moreover, the progress of science in medicine was largely dependent for its inspiration on the demands which the art was constantly making upon it for the solution of its problems, while the art constantly thrived by testing and correcting the theorems furnished by science. In spite, however, of the distinctness and importance of this mutual relation, the worker in the science and the worker in the art occupied essentially distinct positions, and the aims and methods peculiar to each must be kept constantly in view, especially where combined, as they often were to a degree, in the same individual, when engaged in the instruction of others. The scientist was properly engaged in searching out the ways of nature in disease; the other in using the knowledge thus attained in doing something for its detection, its prevention, or its cure. The pathologist was concerned chiefly with the causes and effects of disease, the practitioner was absorbed in its dynamics. It was here especially that the practical man became, necessarily, in a high degree a scientist, for it was here that he occupied a field of observation that was peculiarly his own. The pedigree of disease, the variations in its type due to race and personal idiosyncrasies, the varieties and correlations of the structural and functional derangements which flow from a single vice, the protean reaction to food and medicine, and the relation of all these peculiarities to heredity, to age, to sex, to habits, occupations, and environment—these constituted the special province of the scientific work of the practical physician, and required essentially the scientific spirit. Indeed, the intelligent practitioner would always be at a certain advantage as compared with the merely scientific man. The number of laboratories and the progress in technical schools of physiology, chemistry, and pathology were constantly increasing. On the other hand, the enlargement and systematic development of the opportunities for clinical observation and experience in hospitals were progressing, not perhaps with equal steps, but it was evident that there was a growing sense of their essential and independent importance. It was well to remember that in one sense practical was always in advance of scientific medicine, and that in another it was always in its train. It was always in advance because it was ever referring new problems to science to solve. Thus the observation of the physician had not only suggested to the scientist some of the most interesting problems in biology, but some of the most important factors in their solution. It was in its train because it had continually to test and digest the material which, like unproved theorems or raw food, science suggested for its use. Science necessarily sometimes drew premature conclusions from its premises. Without the practitioner to test, adapt, transform, and assimilate the discoveries of science, and make them contribute to more exact diagnosis and more rational therapeutics, the scientific worker of to-day would be of about as much aid as the doctor in the time of Montaigne, whom the latter compared "to him who paints the sea, rocks, and heavens, and draws the model of a ship, as he sits safe at his table; but send him to sea, and he knows not how or where to steer," and added, "so doctors often make such a description of our maladies as a town-crier does of a lost dog or donkey—of such a color and height, such ears, etc.; but bring the very animal before him, and he knows it not for all that."

There was no better illustration of this relation between scientific and practical medicine than was afforded by the history of parasitism, the latest and most portentous contribution which science has made to the theory and practice of the healing art. The germ theory of disease might be said to have reformed surgery, but it was not safe to say that it might not be forging new errors in diagnosis, and beguiling us into dangerous paths in therapeutics. We might well believe that we were on the eve of momentous changes in the healing art resulting from discoveries in bacteriology, but these changes must come mainly from the independent and judicious application of these new ideas to the study and treatment of disease by the practical physician at the bedside. Already the relations of bacteria to the pathology and treatment of fever furnished an illustration of the way in which clinical observation enlarged and complicated the problem which the pathologist had to solve. Until we knew how fever was produced, and whether it was a salutary or a dangerous process, to be antagonized or let alone, we were really in no better position to treat fever rationally than we had been before the ætiological relation of bacteria to fever was suspected.

**The Geographical Distribution of Typhoid Fever.**—Dr. W. W. JOHNSTON, of Washington, read a long and carefully prepared paper on this subject. He first divided all the continued fevers into two series: those in which a typhoid element was

recognizable, and those in which none was present. In getting an estimate of the number of cases of typhoid fever which occurred in different parts of the United States, the reports of the census, the army, and the navy were only partially available, because they took account of fatal cases only. He had desired to get the numbers of the recovering and mild cases. They were the most difficult to get records of, opinions as to their true nature varied greatly, and their number in a given locality did not necessarily hold any proportion to the fatal cases. Accordingly, lists of questions had been sent out to physicians in all parts of the country, asking, in regard to typhoid fever in their localities, to what extent it prevailed; whether the number of cases was increasing; whether the type most met with was severe or light; what the ordinary duration was, and the frequency of relapses; what was the immediate cause of death in the fatal cases most often; and finally to what extent malaria seemed to be conjoined with typhoid, and to either cause or modify its course. Three hundred and fifty answers had been received from all quarters of the country. His plan had been to study separately those regions where typhoid commonly came in its typical form without modifications, those regions where typhoid and malaria occurred together, and those where a malarial element was clearly in the ascendency. The author exhibited two colored maps of the United States showing areas very much scattered, in which the percentages of the deaths that were due to typhoid and malarial fevers, respectively, were indicated by deeper and lighter colorings. His inquiries had elicited that in those sections where the deaths from typhoid fever were fewest there were, nevertheless, a great many fevers of an undetermined sort to which the utmost variety of names were given, such as bilious fever, autumnal fever, simple continued fever, and gastric fever. All of these were of shorter duration and without the abdominal symptoms of a typical typhoid fever. However, his inquiries had developed a constant variety as to what symptoms were necessary to entitle a fever to the name typhoid. Some even regarded as a modified typhoid a certain mountain fever, so called, which presented only fever. There were other regions which he termed submalarial. Typhoid was here more fatal. In cities much continued fever was found, sometimes in epidemics, yet often without the leading characteristics of typhoid—rose spots or abdominal symptoms. His inquiries had elicited the fact that in some of the Southern States where malaria was predominant, typhoid fever also had its worst types, but was less often of the unmixed variety than in Northern cities. Here also were every variety of autumnal fevers, going by many names, that seemed only the result of disturbances caused by the changing season, or temporary conditions in special localities.

All his correspondents had arrived at their data from a comparison of symptoms largely observed in recovering cases, not from autopsies. A typical typhoid had been blended by many gradations with continued fever. There had been no agreement whatever as to whether malarial infection either caused or made worse the typhoid element; and many added they did not know what typhoid fever was.

Our present knowledge, then, was a chaos, on account of the immense number of mild recovering cases which were either atypical or, apparently, due in part to particular localities. True typhoid and intermittent fevers were found; but also very many intermediate forms with various symptoms, some aided and some not aided by quinine. Even initial or recurring chills and sweating proved nothing definite either way. The prevailing typhoid was without its typical signs.

Dr. G. M. Sternberg, of the army, agreed with Dr. Johnston that the term typho-malarial should be abandoned. His observations had led him to think that a majority of such cases as had received that term were mild forms of typhoid. In reviewing the army statistics collected during the war he had found that "typho-malarial" fever had had a very low mortality. This went strangely with the prevailing idea that it was a typhoid fever with a malarial complication, and with the fact that simple typhoid was more fatal than typho-malarial fever.

Dr. W. Osler, of Philadelphia, very emphatically called attention to the fact that the researches of Labaraque had established the existence of certain characteristic changes in the blood in malaria, by which it could be distinguished from typhoid or any other fever, as had been done in all parts of Europe and America, in Algiers, and recently in India. Tuberculosis of the lungs, by an examination of the sputa, was not so clearly determined as was malaria by a study of these blood changes.

Dr. F. P. Porcher, of Charleston, thought it remarkable that no mention had been made of irritative fever as among the continued fevers. Dr. Wood had devoted a whole chapter to its consideration. He also thought that gastric remittent fever was a distinct disease. Irritative fever was met with on a mountain plateau, resulting from exposures; or in cities, resulting from confined air. It was certainly neither typhoid nor malaria. It often resulted from a change of climate, even if apparently for the better, and from mental strains. Recent works contained nothing about it.

Dr. J. C. Wilson, of Philadelphia, said that the views of Dr. Johnston conformed to those of the physicians of Washington who had studied typhoid. In newly settled countries malaria prevailed; subsequently, as human habitations multiplied, typhoid and malaria existed side by side. With the clearance and cultivation of the land, and the increase of large towns, typhoid somehow got in and remained. But he appreciated how a case of enteric fever occurring in a city, in a region where malarial diseases prevailed, might put the physician in much doubt as to the name he should give it. Fevers more or less peculiar to limited areas of country needed careful study. Especially there should be a lookout to determine whether the typical typhoid of our text-books also occurred there. If so, might not the local fever be a light or modified form of typhoid itself? He believed the desire to force an identity between symptoms actually found and those given in some text-books as typical of such and such a fever led to great and unnecessary obscurity, and retarded our knowledge of the fevers of this country.

Dr. J. E. Reeves, of Wheeling, had made observations through a period of twenty-five years, and had gone through both very mild and very fatal epidemics. Beyond a doubt, typhoid was an infectious disease, and depended on communication from man to man in order to spread. In northwest Virginia he had traced the first entrance of typhoid into that wild expanse of country, and had followed it back to a single case brought in from Ohio in 1832. He noticed that in the lower river lands typhoid had more often the malarial type, but that up on the hills more of the typical typhoid might be found. He had failed to discover guiding symptoms by which to fully distinguish between the malarial and typhoidal elements, with respect to treatment. Still, whenever he had found a broad, flabby, creamy tongue, quinine had been very beneficial. Very noticeable features to him were the great variation in different years as to the mortality of typhoid, and its selective tendency with regard to age, children, young and middle-aged persons suffering most often.

Dr. Johnston replied to Dr. Osler that he had not in his paper attempted to study the disease or its diagnosis, but had only collected views as they existed in different parts of the country. He agreed that microscopical study would give us the beginning so much needed for a new basis in making a diagnosis of typhoid.

**The Management of the Stage of Convalescence in Typhoid Fever.**—Dr. James H. Hutchinson, of Philadelphia, in a paper on this subject, remarked that the convalescence of typhoid was necessarily a long, slow, and dangerous process. The first sign of its having begun was usually the fall of temperature and pulse-rate, but the favorable significance of this change was often overestimated. The fact was, the patient was in a state where a very little thing would run his temperature up or down. This state was one of great languor, with marked pallor, cyanosis in the extremities, and general emaciation. The fact that authorities differed so greatly in respect to the dietetic management of this stage should, in his opinion, put us on our guard to meet indications not always the same. Some writers advised a very light fluid diet for the first week or ten days; others allowed meat as early as the second day, and a generous diet. His own experience was against an early return to solid food—an idea which he usually had to insist upon against the earnest wishes of the patient's friends. He confined his patients to milk for quite a period, then added broth, then a little milk-toast, and, after perhaps two weeks, he gradually returned to butcher's meat and other nutritious food. Constipation and dislike were the only objections to milk diet which might arise in some patients. He had had too many cases where premature giving of solid food by a patient's friends, or the experimental ingestion of an egg or some farinaceous food, had brought back the fever. Yet, in other cases where milk was persistently vomited, solid food had been retained. Whisky was not invariably to be given, yet often might now for the first time be needed—a thing which should be determined by the same well-known signs which indicated its use while the fever was present. Tonics, iron, pepsin, and hydrochloric acid were also sometimes of use.

Complete rest was often needed in severe cases for the first week of convalescence, and return to active exertion and open air, though to be encouraged, must be very gradual and proportioned to the return of strength. Change of rooms for fresher air and variety in surroundings was advised. These patients were peculiarly weak and excitable as regarded their emotions. He urged that no exciting interviews or knowledge of unpleasant news should be allowed. The temperature was thus easily sent up, and perhaps a relapse brought on. Visiting days at the Pennsylvania Hospital were commonly succeeded by a recrudescence in the typhoid patients.

Ale, camphor, and opium sometimes helped wakefulness; urethane deserved a trial. Diarrhœa had various causes; where from ulcers still unhealed, nitrate of silver might hasten healing; if from irritation of undigested food, appropriate soothing remedies were indicated. Constipation and fæcal accumulations were to be combated by enemata, and by mild laxatives, if necessary, such as fruits. Care was needed, as after any long-lasting disease, about exposure to cold. Some authorities thought a predisposition to phthisis was left in a patient after recovery. The two were not unlike.

Relapses were caused by pain, excitement, overexertion, improper diet; and though sometimes they occurred without a known cause, they were mostly due to abuses of well-known rules. Some believed the spontaneous relapses where conditions were good were due to a fresh infection of healthy Peyer's patches by the discharge of unhealed ulcers higher up. Others considered that a fresh infection had been received from without, an explanation which would not hold for cases that had been removed to a pure locality. Some thought constipation a cause. Others believed part of the original poison might have remained over in the system.

Dr. Reeves had hoped, from the title of the paper, that it would deal with some of the accidents that frequently occurred during convalescence. Without the least cause, he had often seen patients in the fourth week suddenly seized with abdominal pain as if a perforation had occurred, and yet they had recovered. He had seen mitral disturbance arise in like manner in the heart; or hallucinations or temporary mental derangement.

Dr. G. L. Peabody, of New York, speaking of the question as to giving a typhoid convalescent solid food, thought for many it would be injudicious at an early period, especially if they had suffered severely from the disease and were badly depressed and anæmic, without desire for more than light milk diet, or perhaps quite without appetite. These cases made quite a class. But where the appetite returned early or even before the fall of temperature, he began early by trying the effects of a small allowance of finely divided meat; and where recrudescences had occurred, he had not thought them caused by the meat; at least he had not met with bad results from its use; on the contrary, improvement had often been at once obtained. He thought an egg no softer than finely divided meat and no less likely to do harm if undigested. In regard to ulcers as a cause of diarrhœa, he was compelled to differ with Dr. Hutchinson. He had too often, in cases he had followed to the autopsy-room, found large ulcers, and yet when there had been marked constipation. He believed diarrhœa was due to a general catarrhal affection of the inner coat of the intestine. In the absence of this condition, and of any marked state of depression, he believed in giving solid food soon after defervescence.

Dr. Ord, of London, agreed with Dr. Hutchinson in the main as to diet and solid food. His experience in a number of cases led him to an agreement with Dr. Peabody also, under the conditions just laid down by that gentleman. Recent experience had warned him that one must to some extent be guided by the desire of the patient. He related a case where with convalescence a large daily range of temperature had set in, which had mounted from three or four to seven or eight degrees, accompanied by delirium, in which the patient, a lady, menaced her physicians, followed by increasing disorder of mind and craving for food. This patient had been on a diet of beef-tea two thirds and milk one third, and for two days previous to the delirious attack had been given two eggs daily in addition. It was hardly a delirium from starvation. As an experiment a piece of delicate boiled fish (sole) had been allowed her. This was followed within twenty-four hours by a return to normal temperature, the delirium ceased, and convalescence continued to recovery without interruption. He believed that the patient was primarily in need of close study, and his fever after that. As to diarrhœa, he thought Sir William Jenner's explanation reasonable—that severe diarrhœa was commonly associated with considerable ulceration in the large intestine, the latter accompanied usually by extensive catarrh. The presence of diarrhœa largely depended on the epidemic in question. It had been common in London for some years back. It had a bearing also on the occurrence of relapses. It had been found in England that epidemics in which constipation was a noticeable feature had many relapses of the whole course of the diseases, not recrudescences merely. English physicians had learned to give castor-oil in these cases, convinced that long constipation allowed time for the germs to produce a second infection from within. He asked if periostitis, deep ulceration of the larynx, and phlebitis often followed protracted cases here in America as they did in England. Phlebitis had always puzzled him.

Dr. F. P. Kinnicut, of New York, believed relapses were due to reinfection, not to errors in diet, but that many severe recrudescences, and sometimes deaths, did result from premature return to solid food. While cases occurred where solid food early in convalescence was of benefit, he thought that if too

much space were given to this fact in our minds abuses would easily result. He believed the old rule given by Dr. Hutchinson to be the best general one obtainable, applying to the vast majority of cases—namely, very light diet for the first ten days after defervescence.

Dr. F. C. Shattuck, of Boston, spoke of having noticed in some cases during convalescence a persistent elevation of temperature, which had only been relieved by getting the patient out of bed. He was satisfied it was not uncommon, and that it was simply a sort of bed fever. He thought it should be recognized, because its significance was slight. The more he saw of febrile movements, the more convinced he was that their ways were past finding out.

Dr. Hutchinson remarked that Dr. Da Costa had some years ago called attention to the form of bed-fever cured by ordering the patient out of bed. On the other hand, recrudescence would certainly be caused by the patient's leaving the bed too early. It was also frequently due to masturbation. Among the sequelæ he had found endarteritis and orchitis common. Time had prevented him from reading that part of his paper giving the sequelæ. A pamphlet had been published by Dr. Keen, of Philadelphia, giving a full description of all of them.

**On Some Forms of Paralysis after Typhoid Fever.**—Dr. George Ross, of Montreal, read a paper, beginning with a quotation from Dr. Baly that "a book on the diseases of convalescence might be one of the most valuable that any physician could write." It was an interesting question how far such affections as paralysis might be sequelæ special to some of the acute diseases. Without doubt they were unique and peculiar to certain diseases, and often by a direct nervous disturbance in the nutrition of certain parts of the body. In the case of typhoid, the strain on the nervous system was long and severe; and that it should begin to give way in its weaker parts was natural and to be expected. The signs of exhaustion were usually marked in proportion to the severity of the fever. But, besides this general result of the high temperature and the typhoidal poison, there were symptoms pointing to peculiar lesions in the cerebral cortex and in the spinal centers and nerves, affecting both sensory and motor functions.

According to Nothnagel, the order of frequency with which different sorts of disturbances arose was as follows: 1. In parts supplied by one nerve, such as the ulnar, peroneal, or circumflex. 2. In parts supplied by several nerves, giving paraplegia, especially of the lower extremities. 3. Less frequently paraplegia in one extremity, upper or lower, or in two extremities in crossed order. 4. Sometimes paraplegia in combination with anæsthesia more or less complete. The lesions in the nervous system might be either a true interstitial neuritis or a parenchymatous degeneration. Where the lower limbs simply remained weak it was probably by reason of the general exhaustion. But other cases showed lesions which were peculiarly located and of special causation. They were in the nerve trunks, though in time they were recovered from. Neuritis might exist in a few or in many fibers of a nerve, and so give rise to mild or acute symptoms. As for the cause, it was beyond doubt the typhoid poison, and not the condition of anæmia, for this latter alone would not tend to give certain forms of disturbance in the nervous system now recognized as characteristic of typhoid. Whatever it was that did the mischief, it took on an immense variety of forms and degrees of severity, but mainly gave rise to pains, areas of increased cutaneous sensibility, and paralysis. Proliferation of the interstitial nervous connective tissue, followed later by contraction of the same, was the cause of many if not of most of the lesions.

Dr. Ord, of London, remarked that peripheral neuritis and paraplegia were uncommon in England after typhoid. More commonly met with were cerebral weakness, imbecility, or a protracted silence; also a monotony or inarticulateness in speech, loss of word memory (in one case completely), and very slow speech. Only children presented these cases. Recovery was slow. He believed these changes in faculty due to exhaustion, or degeneration in the great nervous centers, the latter caused by the typhoid poison, the former by the fever. In dealing with the complications and sequelæ of typhoid, he found it convenient to classify them into those inherent to that particular kind of fever, into those resulting simply from the continuance of high temperature, and into those which resulted from latent irregularities of constitution which the exhaustion of the disease had brought to the surface, such as a phthisical tendency, a rheumatic diathesis with its lesions in heart, brain, long bones, and joints, or the hidden results of alcoholism.

Dr. F. Minot, of Boston, suggested the possibility of these different sequelæ being caused by the entrance of a single germ into the system, which, nevertheless, had several capacities for mischief, as well as by germs of a new sort. Pneumonia and cerebro-spinal meningitis had apparently the same microbe as their cause. Again, the germ from healthy human saliva would produce pneumonia in an animal, with true pneumonic germs in its tissues after death. So, perhaps, the same germ which caused the typhoid, entering later and finding an altered set of conditions, might cause the sequelæ. Dumbness might be explained by either of the above theories. Or it might be entirely nervous in its origin. He had seen several hours of dumbness succeeding an attack of chorea.

*(To be continued.)*

## Book Notices.

*The Nervous System and the Mind.* A Treatise on the Dynamics of the Human Organism. By Charles Mercier, M. B. London and New York: Macmillan & Co., 1888. Pp. xi–374. [Price, $4.]

Not a little of the matter contained in this book is to be found in the writings of Mr. Herbert Spencer; indeed, the author states as much. Dr. Hughlings Jackson's special theories also have been largely drawn on. Yet, it must be admitted that the author has displayed considerable skill in the arrangement of facts, decided analytical power, and no little acuity of reasoning—faculties most valuable in the elaboration of any argument, and absolutely indispensable where, as in psychology, so much is left to deduction. The book must, therefore, prove of great value to the student of mental science, albeit he will look into it in vain for new data.

*Die Rolle der Suggestion* bei gewissen Erscheinungen der Hysterie und des Hypnotismus, kritisches und experimentelles. Von Dr. Armand Hückel, früher 1. Assistenzarzt an der medicinischen Klinik zu Tübingen. Jena: Gustav Fischer, 1888. Pp. 72.

The main object of this work is to show not only that it is possible to induce the phenomena of hypnotism in hysterical persons by means of suggestion, but that most of those phenomena are in fact so produced. As the author clearly shows, paralysis, anæsthesia, and "transference" of the latter may all be made to appear in hypnotized hysterical subjects without invoking other agencies than suggestion. The entire mono-

graph is written in a highly philosophical spirit, and can not fail to interest all who find matter for thoughtful speculation in hypnotism and cognate subjects.

### BOOKS AND PAMPHLETS RECEIVED.

A Manual of General Pathology, designed as an Introduction to the Practice of Medicine. By Joseph Frank Payne, M. D. Oxon., F. R. C. P., Physician and Joint Lecturer on Pathological Anatomy at St. Thomas's Hospital, etc. With One Hundred and Fifty-three Illustrations. Philadelphia: Lea Brothers & Co., 1888. Pp. xiv–17 to 528. [Price, $3.50.]

Contributo allo Studio della Spermatogenesi nei Vertebrati. Nota del Dott. C. Bergonzini. Modena: G. T. Vincenzi e Nipoti. 1888.

The Theory and Practice of the Ophthalmoscope. A Hand-book for Students. By John Herbert Claiborne, Jr., M. D., Instructor in Ophthalmology in the New York Polyclinic, etc. Detroit: George S. Davis, 1888. Pp. xi–77. [The Physicians' Leisure Library.]

Remarks on Pelvic Inflammations and the Management of their Residues. By William Warren Potter, M. D., etc., Buffalo, N. Y. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Index-Catalogue of the Library of the Surgeon-General's Office. United States Army. Authors and Subjects. Vol. IX. Medicine (Popular)–Nywelt. Washington: Government Printing-Office, 1888. Pp. 13–1054.

The Ear and its Diseases. Being a Practical Contribution to the Study of Otology. By Samuel Sexton, M. D., Aural Surgeon to the New York Eye and Ear Infirmary, etc. Edited by Christopher J. Colles, M. D., Assistant Aural Surgeon to the New York Eye and Ear Infirmary. With Numerous Illustrations. New York: William Wood & Company, 1888. Pp. xii–461.

## Reports on the Progress of Medicine.

### ANATOMY.

By MATTHIAS L. FOSTER, M. D.

**The Epiglottis.**—Mr. Mayo Collier is dissatisfied with the descriptions given in the text-books of the larynx in general and of the epiglottis in particular. Hence he furnishes a description which differs from them in some respects, in the "Journal of Laryngology and Rhinology" for June, 1888. The epiglottis may be looked upon as a partition moored by various bands between the oral and pharyngo-oral cavities. It is attached by its lower pointed extremity to the angle between the two alæ of the thyreoid cartilage, and rests on this pointed extremity. It is formed of fibro-elastic cartilage, with thick, sharply cut edges, which curve backward slightly and are embraced by the mucous membrane on the inner and outer aspects of the arytæno-epiglottidean folds. The mucous membrane on the inner aspect of the arytæno-epiglottidean fold passes to the posterior surface of the epiglottis over its free border; on the outer side the mucous membrane does not come in contact with the anterior edge of the free border, but passes upward and outward at some distance on to the hyo-epiglottic membrane, a thin membrane, very strong, composed of elastic tissue, attached to the whole length of the hyoid bone. It is co-extensive with the epiglottis in the middle and passes off on each side to a little above the great cornu of the hyoid bone, forming the two folds known as the lateral glosso-epiglottic ligaments. This name the writer stigmatizes as most incorrect, because these folds have no connection, except from the continuity of the mucous membrane, with any portion of the tongue. The unattached portion of the membrane passes upward and forward to line the fossa for the tonsil. The anterior aspect is covered with mucous membrane continuous with that of the tongue, the posterior with mucous membrane continuous with that on the outer aspect of the arytæno-epiglottidean fold. Below, the posterior aspect of the hyo-epiglottic membrane forms the anterior boundary of a pyramidal space, through which the superior laryngeal artery and nerve pass. The thyreo-hyoid membrane, which is usually described as forming the base of this space, he maintains does not exist. The lateral thyreo-hyoid ligament, extending from the tip of the great cornu of the hyoid bone to the tip of the upper cornu of the thyreoid cartilage, is a well-marked and important structure.

**The Minute Structure of the Corpora Striata and Optic Thalami.**—Dr. Marchi, after extensive study, has arrived at the following conclusions, given in an essay which obtained the prize given by the Royal Institute of Lombardy ("Dub. Jour. of Med. Sci.," June, 1888):

1. The nerve cells met with in the corpora striata are of two sorts—great and medium. They are furnished with numerous prolongations, among which one only is distinguished by special characters, and this one is the nerve prolongation; all the others correspond to the so-called protoplasmic prolongations.

2. The nerve prolongations behave in two ways; some of them, at a short distance from their origin, lose their proper individuality, subdividing in totality, and giving place to a very fine nervous network (cells of the second type); the others go directly to constitute the axis-cylinder of a fiber, but not without giving forth some slender branches, which are lost in the nervous network before mentioned (cells of the first type).

3. In the two nuclei of the corpus striatum both types of cells are observed, with prevalence of those of the second type; this predominance is, however, less pronounced in the lenticular nucleus.

4. In the optic thalami we do not find isolated groups of cells; they are scattered irregularly in the whole mass of the gray substance; they are prevalently large, and many are very similar to those of the anterior cornua of the spinal cord; they present, as in the corpora striata, the unique nervous prolongations and many protoplasmic prolongations.

5. Cells of the first type predominate in the optic thalami, which thus differ from the corpora striata.

6. In correspondence with the twofold behavior of the nervous prolongation, the fibers join with the cells of the corpora striata and optic thalami, either by directly coalescing with the nervous prolongation of the cells of the first type, or indirectly losing themselves in the thick netting formed by the nervous prolongations of cells of the second type, together with the lateral branches, emanating from the prolongation of the cells of the first type.

7. The internal capsule contains fibers which unite the cerebral peduncles directly to the corona radiata; others, departing from the peduncle, halt in the ganglia of the base; others go from these to the corona radiata; finally, some spring from the cells contained in the thickness of the capsule itself, and take an ascending or descending course.

8. The protoplasmic prolongations are in relation by their fine ramifications with the vessels and with the cells of the neuroglia.

9. The neuroglia is essentially represented by cells having numerous long, fine prolongations, ramifying many times; they proceed by means of various expansions to be inserted on the walls of the vessels.

10. The ependyma which covers the corpora striata and the internal faces of the thalami is constituted by cylindrical cells, the slenderest part of which is continuous with a prolongation which gives place to very many ramifications, most of which are inserted into the vessels.

From these anatomical facts Marchi is inclined to believe that the corpora striata are mainly sensory and the optic thalami motor, though the functions of both are probably mixed.

**Cyclopia.**—This is the subject of an essay by Professor Hannover, of Copenhagen, abstracted at considerable length by Mr. Knott ("Dub. Jour. of the Med. Sci.," May, 1888). Included under this term are not only single eyes, as the name implies, but cases in which two eyeballs were completely formed, each in its own orbit, but with the intermediate septum absent. The monstrosity does not affect the eye alone, but the ethmoidal and part of the sphenoidal segments of the primordial cartilage of the skull, as well as the bones formed in these cartilaginous portions, the upper part of the pharynx, and portions of the brain, including alterations in the optic and olfactory tracts. The malformations of the eye and of the primordial cartilage he considers to be due to an arrest of formation, the others to arrest of development. As the

formation of the eye is double from the beginning, the occurrence of cyclopia can not be due to an arrest of development, but must arise from a lack of formative material in the parts of the eyes naturally placed in juxtaposition. In the primordial cartilage the prechordal portion—the portion not traversed by the notochord—is absent or incomplete from the absence originally of formation material. Dependent on this is a deficiency of formative material in the part between the two orbital regions, which is made up of bones formed in membrane without preceding cartilage. The pharynx ends above in a dome like *cul-de-sac*, the orifices of the nasal fossæ are wanting both anteriorly and posteriorly. An osseous plate extends in these fœtuses vertically or a little obliquely from the horizontal part of the palate bone, and ends on the lower surface of the body of the sphenoid, seeming to close the posterior orifice of the nasal fossæ. Traces of the canal of Rathke—a fœtal communication between the brain and the buccal cavity—are rarely found in normal fœtuses at birth, but the author finds in nearly all the cyclopic fœtuses which have been examined a round cæcal opening having the appearance of a large nutritive canal at the bottom of the sella turcica. In the brain are to be found indications of an arrest of development not dependent on the fusion of the eyes. The cavities of the great brain are represented originally only by the third ventricle, and it is this condition which is preserved in the brains of those fœtuses when mature, for we find a deficiency, more or less considerable, of the normal separation between the lateral ventricles of the two sides. The great longitudinal fissure and the falx cerebri may be wanting, the anterior part of the forebrain forming a single lobe, with the convolutions effaced. The olfactory bulbs, corpus callosum, and fornix are absent, as may also be the corpora striata.

When the eyes remain distinct the nose preserves its usual place between them, with some changes of form and aspect, but when there is a single eye the nose is placed like a proboscis immediately above the upper lid. Most of the bones in the cyclopic cranium present peculiarities, the most marked of which are the very obtuse angle of junction between the vertical and horizontal portions of the frontal bone, the forward displacement of the temporal bones, the absence of the antrum of Highmore and of the intermaxillary bones, the altered form of the superior maxillary bones, the position of the lacrymal, the absence of the nasal, the osseous growth from the palate described above, and very considerable changes in the sphenoid and ethmoid bones.

Hannover gives these results from the examination of eighteen cyclopic fœtuses. Half of these monsters arrived at full term, the rest at six or eight months. They die in a few hours if born alive, but are usually not viable. The cause of this must be sought in the defective formation of the brain or in the circumstance that they can respire only by the mouth. The malformation often co-exists with hydrocephalus, but rarely with anencephaly. He mentions as monstrosities which sometimes accompany cyclopia, malformations of one or both ears, increase in the number of fingers or toes, inverted distortion of the hands or feet, shortening or fusion of the limbs (sympodia), incomplete development of the genital organs, occlusion of the anus, and hare-lip.

**Fixation of the Scapula.**—Lane ("Brit. Med. Jour.," May 19, 1888) calls attention to the circumstance that in complete flexion of the shoulder joint the scapula is rendered fixed by the coracoid process impinging upon the lower surface of the clavicle, and that while the shoulder joint is completely flexed the humerus may be rotated, completely adducted, and very extensively abducted without having the scapula accompany it in its movements.

**The Anconæus and its Nerve.**—Dr. Brooks ("Brit. Med. Jour.," April 14, 1888) makes the point from analogies drawn from the comparative anatomy of reptiles, and also from the condition actually found in two out of four human subjects, that the anconæus should be regarded rather as a part of the extensor carpi ulnaris than of the triceps, and that the "nerve to the anconæus" originally took a large share in the innervation of the muscles on the extensor aspect of the forearm.

**The Medio-tarsal Joint.**—Mr. Bishop ("Brit. Med. Jour.," May 26, 1888) upholds the view that this joint is of the ball-and socket variety, the ball being the head of the astragalus, the socket being formed by the scaphoid, the os calcis, and the ligaments connecting them, the calcaneo-cuboid articulation being entirely excluded. This view is opposed to that held by certain orthopædic surgeons that the joint is a transverse articulation passing straight across the foot at the level of the astragalo-scaphoid junction and including the calcaneo-cuboid joint. The arguments he brings forward are the conformation of the bones themselves, the mode in which the various bones are united by ligaments, the method of insertion of muscles into the various bones of the foot and the absence of any muscular attachment to the astragalus, the movements of the various segments of the foot upon one another, and the position of the various bones in certain deformities.

**The Homology and Innervation of the Axillary Arch and the Pectoralis Quartus.**—Birmingham seeks to establish these points (*ibid.*): The pectoralis quartus is a segmented portion of the pectoralis major and is supplied by the internal anterior thoracic nerve. The *Achselbogen* (axillary muscular arches) are supplied by the internal thoracic. The lateral cutaneous nerve of the thorax is the nerve of Wrisberg associated with more or less of the internal thoracic.

**A Pulmonary Artery with Two Valves.**—Dr. Foot ("Dub. Jour. of Med. Sci.," August, 1888) reports a case of this rare anomaly. The patient had suffered for a long time from disease of the aortic valves, but the absence of the third pulmonary valve did not seem to be the result of disease. It was rather a congenital formation, as was shown by the equality in the size of the valves, the mesial position of the corpora Arantii, and the absence of any ridge on the arterial side of the valve or of any rudimentary frenum at the bottom of the valve-pocket. The absence of the third valve had not given rise to regurgitation, as the right ventricle was not hypertrophied. It was associated with no other malformation of the heart.

**The Anatomy of the Eye.**—The following summary of the results obtained by Berger regarding the normal anatomy of the posterior chamber and the suspensory apparatus of the lens is given in the August number of the "Dublin Journal of Medical Sciences":

1. The posterior chamber is divided into a space free from fibers of the zonula (prezonular), a second containing them (zonular), and a third lying behind the zonula (postzonular).

2. The prezonular is from 0·2 to 0·4 mm. deeper in the ciliary depressions than in the ciliary elevations.

3. From the zonular portion blind offsets extend into the depressions between the ciliary processes, and reach 1 to 1·5 mm. further back.

4. Most of the fibers of the zonula end in the anterior or posterior capsule of the lens; some, however, in the equatorial portion of the latter. The most anterior and the most posterior fibers of this lenticular band are most numerous, so that the latter can be filled with a viscid mass (albumin), (Hannover's canal). Injected air, or a solution of aniline, passes through the lenticular band into the anterior chamber.

5. The postzonular portion of the posterior chamber is of a capillary nature. Its anterior boundary lies 1 mm. inward from the equator of the lens, its posterior one 2 mm. from the ora serrata. Its anterior wall is formed by the fibers of the zonula or the posterior ones of the lenticular band, respectively; its posterior wall partly by thickened vitreous tissue, partly by fibers of connective tissue (ligamentum hyaloideæ capsulare). Very delicate, reticulated fibers pass through the postzonular portion; it rarely contains rigid fibers of the zonula.

6. A postzonular (Petit's) canal is formed by detachment of the vitreous produced by an exudation (cyclitis, staphyloma bulbi, glaucoma), or it results from changes after death, or it can be produced by injection. Numerous "rigid" zonular fibers are visible in Petit's canal only in eyes in which putrefaction has begun, or they are the result of an imperfect injection.

7. The posterior portion can be injected with a viscid mass like albumin, or with air, but not with a solution of aniline. When albumin is used, however, it also enters the lenticular bands. The belief is wrong that by injection of the zonular portion of the chamber a "canal godronné" can be produced, the anterior wall of which is formed by the lamina vitrea of the pars ciliaris retinæ.

8. The outer layer of the vitreous is united in the form of a circle, with the posterior capsule of the lens forming a postlenticular capillary space.

**Movements of the Ankle Joint.**—Lane ("Jour. of Anat. and Physiol.," April, 1888) attempts to demonstrate that the descriptions of the anatomy and of the movements of the ankle joint, as taught at present

by the best authorities, are erroneous. The best authorities are represented in his article by quotations from the last edition of Quain's "Anatomy." Firstly, he describes a ligament not noted in the work mentioned, which he has named the superior internal calcaneo-scaphoid ligament. "It is attached to the inner aspect of the sustentaculum tali behind, and in front to the inner surface of the tuberosity of the scaphoid, and to the whole of the posterior margin of the upper surface of that bone. One portion of this ligament lies internal to the head of the astragalus, and another portion above its head. Its posterior margin receives the insertion of the deltoid and superior astragalo-scaphoid ligaments, these being attached but indirectly to the scaphoid." The fibers in the vertical portion are directed upward and forward; those above the head of the astragalus run outward and forward. The part of the ligament which is in relation with the inner surface of the head of the astragalus is frequently a quarter of an inch thick, cartilaginous, and gritty on section. The tendon of the tibialis posticus lies on the inner surface of this ligament. The inferior calcaneo-scaphoid ligament is a much less important structure. Its fibers are directed inward and forward, the inner margin being parallel to and in contact with the lower margin of the ligament just described, with which it is often continuous. The os calcis is connected with the scaphoid by a capsule complete everywhere except above and externally, the superior astragalo-scaphoid ligament filling in the interval between the superior internal and the external calcaneo-scaphoid ligaments. The fibers of this capsule are arranged very obliquely to the antero-posterior axis of the head of the astragalus, so that if the scaphoid is rotated by raising its tuberosity, the longitudinal extent of the ligaments connecting it with the os calcis is diminished, while, if the scaphoid is rotated in a reverse direction, their antero-posterior measurement is increased.

When the tibialis posticus contracts, the astragalus is displaced a little upward and backward, and at the same time the os calcis is drawn inward and upward with the scaphoid. This traction is transmitted to the adjoining bones and occasions a slight separation of the cuboid and os calcis, which causes, by means of the long plantar ligament, an increase in the convexity of the outer arch. It also produces an increased convexity of the inner arch and a movement of the arches inward around an axis passing forward, inward, and downward through the astragalus. This movement he terms "adduction of the longitudinal arches, or of the foot, upon the astragalus."

Lane maintains that the description given by Quain of the upper and outer articular surfaces of the astragalus is incorrect, and that the deductions drawn from it are equally erroneous. "To describe the articular surface of the astragalus more accurately, one should describe a triangular area as being cut off from the posterior and outer part of its upper surface. This portion looks obliquely backward, outward, and slightly upward. The apex of the triangle is directed forward and corresponds to a point considerably in front of the center of the outer margin of the upper surface of the bone, its inner margin passes obliquely backward and inward to the posterior limit of the articular surface, while its outer boundary is formed by the prolongation directly backward of the outer margin of the tibial facet." This triangular facet is produced by the habitual pressure of the ligaments upon the bone in flexion of the ankle joint.

As the ankle joint passes from flexion to extension the astragalus does not move in an oblique, but in a vertical plane, because in extension the astragalus is separated by an interval from the inner malleolus. The astragalus is not fixed immovably as regards the possibility of rotating it in a horizontal plane solely by the strain exerted by the ligaments connecting the tibia and fibula, but this fixation depends on the great strain sustained by the back part of the deltoid ligament and by the posterior fasciculus of the external lateral ligament.

Another point which he alleges has escaped the notice of other anatomists is a prominence on the posterior aspect of the astragalus which presents a concavity that comes in contact and articulates with a corresponding surface on the tibia in complete extension of the ankle joint. In fact, he says, if the ankle joint is carefully examined while it is in a position of very complete extension, neither the tibial facet on the upper surface of the astragalus nor the facet on its inner surface is in contact with the corresponding tibial facet, but the astragalus articulates with the tibia solely by the concave facet on the upper surface of the prominence on its posterior surface. The interval between the opposing surfaces of the tibia and astragalus while in this position is occupied by a synovial fold which contains fat and projects from the posterior surface of the anterior ligament of the ankle joint.

In a lesser degree of extension portions of the upper and inner facets on the astragalus come into contact with their corresponding surfaces on the tibia.

He thus describes the fixation of the bones of the joint: The head of the astragalus can not be displaced inward, owing to the strain exerted upon it in an outward and backward direction by the anterior fasciculus of the external lateral ligament. It can not be displaced outward, on account of the strain exerted upon it by the anterior portion of the deltoid ligament in a backward and inward direction. The fibula is fixed immovably upon the astragalus by the strain exerted in an inward, downward, and forward direction by the anterior fasciculus of the external lateral ligament, and in an inward, backward, and upward direction by the posterior fasciculus of the same ligament. The fibula is fixed upon the tibia directly by the ligaments which connect them, all of which are rendered tense by the tractions exerted upon the outer malleolus by the two fasciculi of the external lateral ligament, and indirectly by means of the fixation of the astragalus upon the tibia. The flexor muscles and the peroneus longus and brevis assist in fixing the fibula upon the tibia when the body is retained erect upon the fully extended foot.

**The Depth of the Cortex of the Kidney.**—Little ("Jour. of Anat. and Physiol.," July, 1888) gives, as the result of examinations of twelve kidneys selected from subjects who died from accident or from diseases other than renal, the cortex of the kidney as having an average depth of four lines, or one third of an inch. In no case was the measurement so low as two lines, and in none so high as six. In the great majority it was very close to four lines.

## Miscellany.

**Messrs. Mariani & Co.** announce that they have moved to No. 52 West Fifteenth Street, where they will be happy to receive members of the medical profession.

**The Health of Michigan.**—The secretary of the State Board of Health announces that during the four weeks ending September 29th diphtheria was reported from twenty places, scarlet fever from twenty-four, typhoid fever from thirty-five, and measles from seven.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending October 5th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending September 15th corresponded to an annual rate of 17·7 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Wolverhampton, viz., 13·4, and the highest in Norwich, viz., 26·2 in a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 3 deaths in Manchester, 2 in Brighton, 2 in Portsmouth, 2 in Salford, and 2 in Sheffield.

*London.*—One thousand three hundred and thirty-one deaths were registered during the week, including measles, 27; scarlet fever, 24; diphtheria, 18; whooping-cough, 31; enteric fever, 12; diarrhœa and dysentery, 122; choleraic diarrhœa, 1. Diseases of the respiratory organs caused 184 deaths; different forms of violence, 61; and 15 suicides were registered. The deaths from all causes corresponded to an annual rate of 16·2 in a thousand. In greater London 1,671 deaths were registered, corresponding to an annual rate of 15·8 in a thousand of the population. In the "outer ring" the deaths included diarrhœa 34; diphtheria, 7; fever, 5.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending September 15th in the sixteen principal town districts of Ireland was 18 in a thousand of the population. The lowest rate was recorded in Armagh, viz., 5·2, and the highest in Waterford, viz., 25·5 in a thousand. In Dublin 131 deaths were registered, including measles, 1; enteric fever, 1; scarlet fever, 3; diarrhœa, 8; whooping-cough, 3; dysentery, 2; varicella, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending September 15th corresponded to an annual rate of 16 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Greenock, viz., 10·1, and the highest in Paisley, viz., 26·1 in a thousand. The aggregate number of deaths registered from all causes was 105, including measles, 4; scarlet fever, 4; diphtheria, 3; whooping-cough, 7; fever, 8; and diarrhœa, 29.

*Buenos Ayres.*—One thousand one hundred and eighty-eight deaths were registered during the month of June, including confluent small-pox, 70; diphtheria, 108; and enteric fever, 22.

*Santander, Spain.*—Seventy three deaths were registered during the ten days ending September 30, 1888, including "typhoid diseases," 3; quinsy and diphtheriite diseases, 3; and dysentery, 1.

*Trapani, Italy.*—One hundred and twenty-four deaths from small-pox (all children) are reported for the month of August, 1888.

*Palermo, Italy.*—The United States consul, in transmitting abstract of bills of health for the month of August, 1888, states that "deaths from small-pox have not been reported, but nevertheless deaths have occurred therefrom in Palermo during the month."

*Batavia, Java* (August 11th).—The United States consul writes as follows: "I have the honor to inform you of the presence of cholera and small-pox in this city and the port of Soerabaya, and in the interior. Sporadic cases, such as those under consideration, are of yearly occurrence, and therefore little fear is entertained by the medical authorities that the disease will become epidemic, though great stress is now laid by them upon the importance of vaccination and upon the use of water from the artesian wells of the city water-works in preference to that from any other source. It is impossible to state the number of cases, as there are no boards of health, and the information obtained from the city physicians and overseers of the quarters for Asiatics and natives is unreliable. It may be mentioned in this connection, however, that about a dozen patients have of late received treatment at the hospital here, some of the cases resulting fatally, while nearly two dozen huts among the native dwellings in the European quarter, to which the diseases are at present confined, have been marked with the red flag. Such precautions as the means at their command, and the indifference, carelessness, and fatalism of the natives permit, are being taken by the authorities to prevent the spread of the diseases; and no cases have as yet been reported among the densely crowded populations about the port. Advices from other ports are still more uncertain, and consequently little attention is paid to the matter on the part of the community."

*Martinique.*—The United States consul, in his dispatch dated September 10th, states that "in the two weeks preceding the 4th of September there were in the island only 47 cases of small-pox and 7 deaths therefrom. Four sporadic cases of yellow fever have made their appearance here during the past two weeks, 3 from imprudent exposure to sun on the part of Dutch sailors, and 1 by contact with said sailors in the hospital here, the latter being an English sailor suffering from another malady. One of the Dutch sailors has since died, the others being now pronounced out of danger."

*Port au Prince, Hayti.*—The United States consul, in his letter dated September 17th, states that "four men on the French sailing-vessel Providencia, that is said to have brought yellow fever here, died. Three men died belonging to a German vessel. The British brig Evviria left here for Gonaïves, and two of her crew died there. These cases are said to have been yellow fever. I received a note the 14th inst, from an officer of the United States steamer Galena, dated Kingston, Jamaica, the 7th inst., stating that her Majesty's steamer Ready had arrived at Kingston that morning with two cases of fever on board (I presume it meant yellow fever), and that the Atlas steamer Alvena, from the coast of Hayti and direct from this city, where she remained a few hours only, had been quarantined there. I have delivered a clean bill of health to-day to the Dutch steamship Prins Orange, Nassau, from Amsterdam, via Curaçon and other ports, arrived here yesterday and bound directly to New York city, because, if there be any cases of yellow fever here, they are two or three isolated ones only, and at the French hospital. Otherwise the city and surroundings are healthy at present, and there appears no suspicion of contagious diseases whatever."

*Havana, Cuba.*—Twelve deaths from yellow fever are reported for the week ending September 14th.

*Cardenas Cuba* (September 21st).—Good health prevails in town and harbor.

*Santiago de Cuba.*—The United States consul in his dispatch dated September 22, 1888, states that "the health of the town is good, and there is not one single case of yellow fever within its limits. The port, notwithstanding a number of Spanish gunboats remaining here at anchor for indefinite periods, has not recorded one single case of contagious disease this whole summer. The military hospital, outside of city limits, contains a number of cases of yellow fever. Mere boys are brought here from Spain as recruits. Very often they are hired out to do hard work in sun and rain, and when they get intermittent fever are put in yellow-fever wards in the military hospital, and necessarily succumb to the disease. Seventeen cases are recorded there this week—one case an American, who has died at Juragua Mines, 22 kilometres from this city. These mines export ore to the States—Philadelphia and Baltimore."

*Colon.*—The United States consul, under date of August 31st, states that "it is almost impossible to obtain particular data. The official report of burials during the month is 60. In July it was 59. This is maximum this year, and indicates a mortality of about 3·5 per cent. during the year. The sanitary condition of Colon improves yearly and very much. The prevailing diseases are pernicious or malignant, remittent, and intermittent fevers. Two cases of yellow fever, not original in this consular district, but brought here from the line of the canal. One case fatal, the other not."

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever | Diphtheria. | Measles. | Whooping-cough. |
| Paris | Sept. 15. | 2,260,945 | 855 | .. | .... | 1 | .... | 16 | 1 | 18 | 13 | 4 |
| Glasgow | Sept. 15. | 545,678 | 169 | .. | .... | .. | .... | .... | 3 | 2 | .. | .... |
| Warsaw | Sept. 8. | 444,814 | 310 | .. | .... | 4 | .... | .. | 14 | 10 | .. | .... |
| Calcutta | August 11. | 433,219 | 163 | 7 | .... | 1 | .... | .... | .. | .. | .. | .... |
| Calcutta | August 18. | 433,219 | 183 | 5 | .... | 1 | .... | .... | .. | .. | .. | .... |
| Rome | August 4. | 391,188 | 203 | .. | .... | .. | .... | 1 | .. | 1 | .. | .... |
| Amsterdam | Sept. 15. | 389,916 | 147 | .. | .... | .. | .... | 1 | .. | 2 | .. | .... |
| Munich | Sept. 1. | 278,000 | 173 | .. | .... | .. | .... | .. | 1 | 5 | .. | .... |
| Munich | Sept. 8. | 278,000 | 162 | .. | .... | .. | .... | .... | 4 | 5 | .. | .... |
| Palermo | Sept. 8. | 250,000 | 69 | .. | .... | .. | .... | .... | 2 | 1 | .. | .... |
| Belfast | Sept. 15. | 227,022 | 77 | .. | .... | .. | .... | .... | 2 | 2 | .. | .... |
| Bristol | Sept. 1. | 226,510 | 50 | .. | .. | .. | .... | .... | 2 | .. | .. | .... |
| Genoa | Sept. 15. | 179,787 | 87 | .. | .... | 3 | 2 | .... | .. | 1 | .. | .... |
| Trieste | Sept. 8. | 154,500 | 77 | .. | .... | 4 | .... | .... | .. | 1 | .. | .... |
| Toronto | Sept. 22. | 130,000 | 18 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Stuttgart | Sept. 15. | 125,510 | 32 | .. | .... | .. | .... | .... | 1 | .. | .. | .... |
| Bremen | Sept. 8. | 122,000 | 40 | .. | .... | .. | .... | .... | 1 | .. | .. | .... |
| Havre | Sept. 8. | 112,074 | 76 | .. | .... | .. | .... | 8 | .. | .. | .. | .... |
| Pernambuco | August 28. | 110,000 | 61 | .. | .... | .. | .... | 1 | 1 | .. | .. | .... |
| Leghorn | Sept. 16. | 101,854 | 26 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Mayence | Sept. 8. | 65,802 | 34 | .. | .... | .. | .... | .... | 1 | .. | .. | .... |
| Maracaibo | August 18. | 40,000 | 16 | .. | 1 | .. | .... | 1 | .. | .. | .. | .... |
| Maracaibo | August 25. | 40,000 | 15 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Maracaibo | Sept. 1. | 40,000 | 13 | .. | 1 | .. | .... | 1 | .. | .. | .. | .... |
| Callao | August 25. | 34,000 | .... | .... | .... | .... | .... | .... | .... | .... | .... | .... |
| Curaçoa | Sept. 15. | 25,000 | 5 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Vera Cruz | Sept. 13. | 23,800 | 14 | .. | .... | 1 | .... | .... | .. | .. | .. | .... |
| Vera Cruz | Sept. 20. | 23,800 | 26 | .. | 1 | .. | .... | .... | .. | 1 | .. | .... |
| Gibraltar | Sept. 9. | 23,631 | 5 | .. | .... | .. | .... | .... | .. | 1 | .. | .... |
| Kingston, Can | Sept. 21. | 16,216 | 3 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Cape Haytien | Sept. 15. | 15,000 | 9 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Turk's Islands | Sept. 19. | 5,000 | 5 | .. | .... | .. | .... | .... | .. | .. | .. | .... |

UNITED STATES.

*Buffalo, N. Y.*—Passed Assistant Surgeon Wheeler reported, under date of October 3d, as follows:

At the present time there are 22 cases of small-pox in the city pest-house under treatment. Total number of cases to date is 69, and the number of deaths 17. The city authorities are making a house-to-house inspection in the infected district, and the people are being generally vaccinated.

*Ship Island Quarantine Station.*—The following report has been received from Passed Assistant Surgeon H. R. Carter (September 30, 1888):

I have the honor to report the arrival last evening of the Spanish bark Maria, of Bilboa, at this station with 3 cases of yellow fever aboard. Said vessel left Havana on the 17th instant for Mobile, Ala., and was not allowed to enter that port, as she had sickness aboard.

The men were taken to hospital this morning, it being inadvisable to move them during the storm of last night. One of the cases is convalescent, and was doubtless mild. It is but fair to state that Acting Assistant Surgeon Lehman does not coincide with me in the above diagnosis, holding them "suspicious cases."

*Jackson, Miss.*—Dr. Wirt Johnson, Secretary State Board of Health, telegraphed:

September 29th: "No new cases for six days; no deaths for fifty-eight hours ending this 6 P. M. Total cases to date, 14; deaths, 5."

September 30th: "No new cases for seven days; no deaths for three days."

October 3d: "Situation unchanged. Total cases to date, 14; deaths, 5. Light frosts are reported by several parties this A. M."

*Tampa, Fla.*—Dr. J. P. Wall, President of the Board of Health, in his report dated September 26th, states that "for the week ending to-day I have seen 7 cases of yellow fever. One death in Tampa on the 24th instant, making 4 deaths in all since the first indigenous case appeared, on the 7th of August."

*Palmetto, Fla.*—Dr. Wells reported 20 cases at Palmetto, and 3 deaths during Friday and Saturday. The remaining sick doing well.

*Gainesville, Fla.*—Dr. J. A. Carlisle, Secretary Board of Health, telegraphed:

September 29th: "Major Gruelle died to-day. One new case, a niece of Major Gruelle, died to-day. We shall need aid in a few days. We want nurses now, but can not get them."

September 30th: "One other new case yesterday; no deaths. Fever is not yet epidemic, although 3 cases have occurred other than members of the Gainesville guards. They are traceable to direct infection. Our expense for guards in isolating cases is large, and we shall require some aid to pay the same. Instruct how to obtain the money."

*Way Cross, Ga.*—Assistant Surgeon Magruder telegraphed, September 30th: "Reliable report of one case yellow fever at Callahan. Will stop all baggage unless otherwise ordered."

Dr. Posey has been ordered to proceed to Callahan.

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton reported as follows: September 29th: "Morning report: Present—officers, 6; guards, 11; employees, including carpenters, 56. Refugees arrived, 11; discharged, 26; remaining, 146. Fever camp, 6. Can accommodate 250 extra now."

September 30th: "Present—officers, 6; guards, 11; employees, 56. Refugees arrived, 8; discharged, 19; remaining, 135. Fever camp, 7—4 sick, 3 convalescent. The weather in the past 24 hours has been too cold for comfort. The arrivals during the past week have been fewer than the discharges. The capacity of the camp has been nearly doubled in every way, in anticipation of refugees from Gainesville and Fernandina. None have come, owing, we understand, to refusal of Callahan to allow them to pass that point. In spite of her shot-gun quarantine, Callahan now has the fever, and asked last night if we could take 15 refugees to-day. Wired them we could, *if they would allow our train to stop for them to-day.* Have completed a depot 25 by 30 at switch, for storage of baggage—fumigated by Dr. Wise. Of the 550 people arrived so far, we have had 13 cases of fever only, and 1 death—a remarkable result, highly creditable to the officers in charge of the fever hospital."

October 3d: "Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 20; discharged, 18; remaining, 138. Unable to leave, but discharged, 65. Fever camp 5, all convalescent."

October 4th: "Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 32; discharged, 2; remaining, 168. Remaining unable to leave, 65. Total, 293. Fever camp, 5, all convalescent."

*Jacksonville, Fla.*—Dr. J. Y. Porter, in charge of Government relief measures, telegraphed October 3d: "New cases to-day, 72; deaths, 6—total cases reported, 2,895; deaths, 270. Patients: St. Luke's Hospital, 22; Sand Hills Hospital, 25. Took charge of fumigating of houses, date from 1st."

*Fernandina, Fla.*—Surgeon J. W. Ross, United States Navy, telegraphed October 3d: "For 24 hours ending 6 P. M., 1 death; no new cases. One new case at Callahan."

The wires being down, no telegrams were received from Fernandina during the week preceding October 3d.

October 5th: "Much more sickness here, principally among negroes, than is thought or reported. Howard Association has no more means than necessary for care of sick and needy; number of latter large and increasing."

The following circular has been issued concerning certain articles of freight not requiring fumigation:

TREASURY DEPARTMENT,
*Office Supervising Surgeon-General, M.-H. S.,*
WASHINGTON, D. C., *October 1, 1888.*

*To medical officers and sanitary inspectors,*
*United States Marine-Hospital Service:*

Oranges, lemons, and limes, unless packed in towns known to be infected by yellow fever, will be passed without fumigation.

Cigars and leaf-tobacco will also be passed without fumigation.

JOHN B. HAMILTON,
*Supervising Surgeon-General, M.-H. S.*

Approved:
HUGH S. THOMPSON,
*Acting Secretary of the Treasury.*

MORTALITY TABLE, CITIES OF THE UNITED STATES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Varioloid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
| New York, N. Y. | Sept. 29. | 1,537,292 | ..... | .. | .. | .. | .. | .. | .. | 23 | 10 | 16 | 7 | 21 |
| Philadelphia, Pa. | Sept. 29. | 1,016,758 | 329 | .. | .. | .. | .. | .. | .. | 21 | 1 | 5 | .. | 5 |
| Boston, Mass. | Sept. 29. | 415,000 | 187 | .. | .. | .. | .. | .. | .. | 6 | .. | 11 | .. | .... |
| San Francisco, Cal. | Sept. 21. | 330,000 | 97 | .. | .. | .. | .. | .. | .. | 3 | 1 | 1 | .. | .... |
| Cincinnati, Ohio. | Sept. 29. | 255,139 | 113 | .. | .. | .. | .. | .. | .. | 5 | .. | 2 | .. | .... |
| New Orleans, La. | Sept. 27. | 248,000 | 108 | .. | .. | .. | .. | .. | .. | .. | .. | 18 | .. | .... |
| Pittsburgh, Pa. | Sept. 22. | 230,000 | 77 | .. | .. | .. | .. | .. | .. | 8 | 3 | 6 | .. | 1 |
| Pittsburgh, Pa. | Sept. 29. | 230,000 | 76 | .. | .. | .. | .. | .. | .. | 8 | 3 | 2 | .. | 1 |
| Louisville, Ky. | Sept. 29. | 200,000 | 45 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Milwaukee, Wis. | Sept. 29. | 195,000 | 51 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Minneapolis, Minn. | Sept. 29. | 180,000 | 44 | .. | .. | .. | .. | .. | .. | 5 | 1 | 4 | .. | .... |
| St. Paul, Minn. | Sept. 22. | 175,000 | 56 | .. | .. | .. | .. | .. | .. | 3 | .. | 1 | .. | .... |
| St. Paul, Minn. | Sept. 28. | 175,000 | 42 | .. | .. | .. | .. | .. | .. | 3 | .. | 3 | .. | .... |
| Rochester, N. Y. | Sept. 29. | 120,000 | 33 | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | .... |
| Detroit, Mich. | Sept. 29. | 116,340 | ..... | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | 1 |
| Richmond, Va. | Sept. 29. | 100,000 | 56 | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .... |
| Denver, Col. | Sept. 28. | 96,000 | ..... | .. | .. | .. | .. | .. | .. | 4 | .. | .. | 1 | .... |
| Columbus, Ohio. | Sept. 29. | 93,000 | 36 | .. | .. | .. | .. | .. | .. | 5 | .. | .. | .. | 1 |
| New Haven, Conn. | Sept. 29. | 82,000 | 23 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Toledo, Ohio | Sept. 28. | 80,000 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Nashville, Tenn. | Sept. 29. | 65,153 | 19 | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .. | 1 |
| Fall River, Mass. | Sept. 29. | 65,000 | 29 | .. | .. | .. | .. | .. | .. | 3 | 3 | .. | .. | .... |
| Charleston, S. C. | Sept. 29. | 60,145 | 37 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |
| Evansville, Ind. | Sept. 29. | 53,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Savannah, Ga. | Sept. 28. | 52,827 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Lynn, Mass. | Sept. 29. | 50,000 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Council Bluffs, Ia. | Sept. 22. | 45,000 | 7 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| Portland, Me | Sept. 29. | 40,000 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Galveston, Texas. | Sept. 14. | 40,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Galveston, Texas. | Sept. 21. | 40,000 | 15 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Wheeling, W. Va. | Sept. 29. | 35,000 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| E. Saginaw, Mich. | Sept. 29. | 33,000 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Davenport, Ia. | Sept. 29. | 30,084 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .... |
| New Albany, Ind. | Sept. 29. | 30,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Binghamton, N. Y. | Sept. 30. | 30,000 | 12 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| Altoona, Pa. | Sept. 22. | 29,546 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| New Bedford, Mass. | Sept. 22. | 26,845 | 23 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| New Bedford, Mass. | Sept. 29. | 26,845 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Auburn, N. Y. | Sept. 27. | 26,000 | 10 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .... |
| Haverhill, Mass. | Sept. 29. | 25,000 | 9 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Petersburg, Va. | Sept. 26. | 25,000 | 31 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Jackson, Mich. | Sept. 29. | 22,500 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .... |
| Poughkeepsie, N. Y. | Sept. 28. | 22,000 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newton, Mass. | Sept. 29. | 21,105 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newport, R. I. | Sept. 27. | 20,466 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Pensacola, Fla. | Sept. 22. | 15,000 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Pensacola, Fla. | Sept. 29. | 15,000 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |

**Cigarette-smoking and Malignant Disease of the Throat.**—The note of alarm which has been sounded in the lay press as to the supposed baneful effects of cigarette-smoking on the throat would hardly, we imagine, have found any echo except in the "silly season." The only new feature in the question as now raised is the suggestion that

certain foreign cigarettes contain a poisonous material which is apt to cause malignant disease in the tissues to which it is applied. There is no doubt whatever that much of the tobacco sold in this country, especially of the more expensive kinds, is "doctored" to a degree which is dangerous to health, but the evil wrought thereby shows itself more in functional disorder (indigestion, palpitation of the heart, giddiness, etc.) than in organic disease. Such local mischief as is caused by smoking depends on the irritation which the heat and the more or less acrid fumes of the tobacco exert on the delicate parts with which they are brought in contact. If cigarettes are more hurtful in this way than cigars or pipes, we are disposed to think that the cause is to be found, not in any "unclassified alkaloid" which they may contain, but in the greater number of them which can be smoked, and in the free manner in which the smoke is inhaled. It is not so much the strength of the irritant as its continuous application which is likely to produce chronic changes in the lips, tongue, or throat, which may eventually become cancerous. Moreover, the really artistic performer with the cigarette is not satisfied unless he brings the smoke habitually into contact with parts—such as the larynx, trachea, and the upper part of the pharynx—which the grosser fumes of the pipe or cigar are very seldom allowed to reach, and then, as a rule, by accident. Again, cigarettes are largely indulged in by many who are intolerant of tobacco in any other form, and who are therefore, it may be presumed, more liable to any ill effect which the "herb nicotian" can produce. Much more convincing evidence than is forthcoming seems to be required to justify the condemnation of Egyptian or Turkish cigarettes as causes of cancer. On the whole, the hygienic alarmist is, perhaps, "too much with us," and the cry of "Wolf!" if too often raised about doubtful or trifling evils, is likely to lead to disregard of the warnings of science on matters of graver import.—*Brit. Med. Jour.*

## THERAPEUTICAL NOTES.

**Salicylate of Bismuth.**—According to Ehring ("Arch. f. Kinderheilkunde"; "Gaz. hebd. de méd. et de chir."), this salt is indicated in the gastro-intestinal catarrh of infants, by reason of its astringent and antiseptic properties. On account of its slight solubility, it should be given mixed with glycerin or some mucilaginous vehicle. Ehring has used it in two hundred cases of infantile diarrhœa, with very diverse results. The cases were those of dyspepsia, acute or chronic gastric catarrh, intestinal catarrh, and dysentery. Under the influence of the remedy the evacuations lose their pathological character, and the urine shows the salicylic reaction. Constipation following diarrhœa does not contra-indicate the use of the drug.

**Parthenicine.**—According to the "British Medical Journal," this name has been given to an alkaloid obtained by Dr. Ulrici, of Cuba, from the leaves and flowers of *Parthenium hysterophorus* (*artemisilla*, *escoba amarga*). It is a crystalline substance, intensely bitter, and poisonous to animals, and seems to have antipyretic, antiperiodic, and analgesic effects on man. It has been given to the amount of fifteen grains daily.

**A Remedy for Thirst in Diabetics.**—To allay the thirst suffered by diabetic patients, Duchesse ("Med. Obs."; "Memorabil.") recommends from two to three teaspoonfuls daily of a solution of 4 parts of phosphate of potassium in 150 of water.

**A Surgical Soap.**—Dr. A. Reverdin, of Geneva ("Rev. méd. de la Suisse Romande"; "Progr. méd."), is impressed with the importance of an antiseptic soap for surgical purposes. He uses a soap made according to the following formula, which is his modification of one employed by Professor Bottini, of Milan:

| | |
|---|---|
| Oil of sweet almonds | 72 parts; |
| Soda lye | 24 " |
| Potash lye | 12 " |
| Sulphocarbolate of zinc | 2 " |
| Essence of roses | 9½ " |

This soap is said to be very agreeable and to have excellent cleansing and disinfectant properties.

**Plaster-of-Paris Dressing for the Navel.**—Having made many comparative trials of various ways of treating the navel of new-born infants, Dr. F. Fagonsky ("St. Petersb. med. Woch."; "Internat. klin. Rundschau") concludes that the use of plaster of Paris is to be preferred, both as preventing putrefaction and as hastening the separation of the stump of the funis. Antiseptic precautions are taken in dividing the cord, the parts are washed, the umbilical ring is powdered with gypsum, and the stump of the funis is wrapped in cotton containing a small quantity of gypsum.

**An Ointment for Scabies.**—"Lyon médical" attributes the following formula to Kaposi:

| | |
|---|---|
| Beta-naphthol | 15 parts; |
| Lard | 100 " |
| Green soap | 50 " |
| White chalk | 10 " |

To be rubbed upon the affected parts twice a day.

## ANSWERS TO CORRESPONDENTS.

*No. 228.*—There are no characteristic visceral lesions.

*No. 229.*—Six months in each grade.

*No. 230.*—An apparatus which will probably answer the purpose is made by the Cambridge Scientific Instrument Company, St. Tibbs Row, Cambridge, England.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# NEURASTHENIA:
## ITS DIFFERENTIATION AND TREATMENT.*

BY LANDON CARTER GRAY, M. D.,
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FUNCTIONAL diseases of the nervous system have been largely held in contempt unless they were fortunately accompanied by such startling phenomena as the loss of consciousness and convulsions of epilepsy, the pain of neuralgia, or the undeniable and often violent muscular contractions of chorea. The medical world has no heredity of training in nervous disease. For centuries medical writers and teachers have called attention to the phenomena that could be studied in the pulse, in the heart, in the tongue, in the fæces, in the temperature of the body; and within a few generations these and kindred details have been made the language of a more precise diagnosis of thoracic and abdominal diseases. But nervous diseases constitute a modern study. We may date them back really to the fifties, when the great French school began its career; and it is only within a very few years that the medical schools of the United States have even thought of having a chair specially devoted to this branch of medicine. So it is that, while tens of thousands will be prompt in detecting the first signs of deviation from the normal in the pulse-beat, in the respiration, in the tongue, in the facies, in the urine and fæces, there are scarcely tens—and these only with some special education—who will recognize the primary symptoms of organic or functional nervous disease. And hysteria, that handy limbo of the unexplained, like the zealot's ready hell of Byron, is always so near, and its portals so widely and invitingly open! Yet all attentive observers of disease, more especially those engaged in neurological study, could not help observing many phenomena that could not be classified; and this, I think, is the explanation of the enormous success that the writings of Dr. George M. Beard upon neurasthenia have had in Germany—indeed, it may be affirmed that he has started a literature in that country, the contributors to which are such well-known writers as Arndt, Krafft-Ebing, Erb, Westphal, Moebius, Seeligmüller, Strümpell, and Langstein. As far back as 1828, C. Brown, of Glasgow, had described what he called spinal irritation, and in 1860 Bouchut had written fully upon what he described as "l'état nerveux"; each of these writers had had his followers to some extent; but Beard, it may be said, was the first one to boldly formulate the proposition that there was a wide-spread condition of functional nervous disease for which he proposed the name of neurasthenia,† and for whose maintenance and prevalence and varied phenomena he battled with the most alluring and picturesque of pens. It is curious, nevertheless, that the Germans themselves do not seem to admit that it is frequent among them, but always fall back upon Beard's assertion that America is the home of the malady. The general feeling, in this country at least, is, I think, that the term neurasthenia, as defined by the writers upon the subject, embraces entirely too much. I share in that feeling myself. The fact seems to have been forgotten that there are already a number of well-studied functional nervous diseases, as well as that each one of these has symptoms correlated with it, and that no scientific advance is made by jumbling together the symptoms of these various and differently acting diseases under one vague name. Then, too, it should not be forgotten that the nervous tissue stands pre-eminently alone among tissues of the body in the highly important fact that its wide-spread ramifications carry its influences into every tissue, and in turn carry back to it the influences of every tissue, so that, much more than is the case with any other organ, the nervous system is peculiarly at the mercy of reflex disturbances. Excluding, then, vicious habits, reflexes from non-nervous organs, and well-recognized functional disease, the question arises: Is there such a thing as nervous weakness, or neurasthenia? I believe there is. But I also believe that it is much more limited in its prevalence than is maintained by the eager followers of Beard.

There may be said to be, in my opinion, three forms of neurasthenia:

1. Reflex neurasthenia.
2. So-called lithæmic neurasthenia.
3. Simple neurasthenia.

1. The neurasthenia that results by reflex from non-nervous organs and vicious habits is, in my experience, the second most frequent form, and can often only be recognized by a very careful examination of the different organs of the body. The very essence of a reflex disturbance is its caprice, so that no one set of symptoms can be relied upon, as a rule, to be indicative of a pure reflex. There are, to be sure, some seeming exceptions to this statement, as in the occipital pain of nephritis, the uneasiness at the vertex in uterine disease, etc., but clinical experience has taught me that these vaunted localizations of pain are of very little practical value. I know of no shorter way of determining this important question than by an examination of the different organs, especially the kidneys, the eyes, the nasal organs, the heart, the liver, the stomach, the genitalia, and also the habits.

2. *Lithæmic Neurasthenia.*—This form—the most frequent of all, I think—was first described by Dr. Murchison in his Croonian lectures in 1874, and had been somewhat vaguely outlined some six years previously by Dr. Austin Flint under the name uricæmia, and quite a literature has grown out of the subject. Three years ago I wrote at some length upon this particular type, and my subsequent experience has served to confirm the views which I then maintained. The salient characteristics are the vertigo, the *tinnitus aurium*, the subjective feelings of numbness, furriness, tingling, and occasional slight anæsthesia, together with nervousness, vaso-motor disturbances, insomnia, and sense of distress in the head. The vertigo is both subjective and objective, although it is generally of the latter

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† From *νεῦρον*, a nerve, and *ἀσθένεια*, weakness.

kind. Patients reel suddenly when walking, or, when sitting in a chair, they may feel a sudden vertiginous sensation, the latter often so pronounced as to simulate the vertigo of Meniere's disease. There is no accompanying loss of consciousness, but there is often a sudden, sharp, and marked impairment of it. The vertigo is of short duration. It may come without the slightest apparent reason, or it may have many exciting causes, such as fatigue, mental or physical; special articles of food; sometimes a few glasses of hock or a single glass of Burgundy or champagne; tobacco, especially cigarettes; or slight strain to the ocular mechanism of accommodation. Purgatives and salines, perhaps relieving the other lithæmic phenomena, may increase the vertigo, although this increase is usually temporary unless the purgation is extreme, or the laxative is continued so long as to depress the general nervous system. This vertigo may continue for months. Its severity and obstinacy are at times remarkable, and such as to try the nerves of the most resolute. Usually there is no true headache; simply a sense of distension and fullness about the head. Nervousness, next to the vertigo, is the most frequent of the symptoms, and may be accompanied by irritability of temper. This nervousness and irritability of temper will often be beyond the control of those who have usually a strong will; and this is much more apt to be the case in those whose volitional power is normally feeble, so that in these latter the effect is too often taken for the cause, and hysteria is diagnosticated. The tinnitus aurium may be due to the underlying nervous condition, or it may be caused by pharyngitis obstructing the orifice of the Eustachian tube, and Sir James Paget has described a peculiar reddish and glazed appearance of the fauces in the gouty, as if they were smeared over with glycerin. Flushings and pallor of the face, sensations of heat and cold, are very common. With these symptoms, too, may be associated various forms of neuralgia and pseudo-neuralgia, as I prefer to call certain vague aching pains. Other nervous disturbances may be present, but those which I have enumerated are the characteristic ones.

3. *Simple Neurasthenia.*—By this I mean a set of symptoms which, to my mind, constitute the symptom-group of a true neurasthenia. In a general way, it may be said that the functions of the nervous system are below par. The patient complains of weakness, either mental or physical, or both; and any exertion is apt to be attended by symptoms of irritability of the nervous system. An overworked business man will come complaining of incapacity for his work, and that when he attempts to force himself to perform his professional duties he will have a sense of cerebral fullness, or sharp pain at the vertex, or a sense of confusion, or an inability to exert those finer mental qualities which he has possessed in the past. The celebrated author, Washington Irving, who wrote one of his later works against time, used to complain that his head felt like a sponge squeezed dry at the end of a particularly hard day's work. Or a woman may come to you, exhausted by household cares, parturition, the anxieties of a family, and complain of a continual weariness, so that she is obliged to spend most of her time reclining upon a couch. Some of these patients may seem robust, well nourished, healthy in appearance to those who look upon the cutaneous surface as the sole criterion of the health of the tissues of the body. Others may be pale, wan, emaciated, taking little nourishment, perhaps unable even to retain nourishment. These are more or less prominent conditions of true nervous exhaustion, of which we see temporary analogues in convalescence from various diseases. The cerebral form of exhaustion is perhaps least familiar to general practitioners, but those who deal with mental disorders are perfectly acquainted with it, for the constant difficulty after recovery from the curable insanities is that patients are apt to become so much discouraged for a long time with their inability to perform any sustained mental labor. Of course, any person whose nervous strength is impaired, from any cause whatsoever, is liable to erratic nervous manifestations, simply because of the weakness. Every physician is familiar with this fact, and has seen it exemplified in the hysterical weeping of strong men in hospital wards, in the nervous tremblings, in the flushings of the face, and in a thousand and one different ways. So that one would expect to find symptoms of nervous irritability even in these cases of pure neurasthenia; and we do find them, but not nearly so often as one would expect, or as in the reflex and lithæmic neurasthenias. We should, however, bear in mind that the hysterical, hypochondriacal, or neurotic individual may become the subject of a genuine neurasthenia, and then it may become a very nice question to determine the relative proportion causatively of the predisposing neurosis and the true neurasthenia. Nevertheless, I wish to lay great stress upon the fact that most cases of the true neurasthenia which I am attempting to describe are not complicated with true hysteria or hypochondria, although there may be occasional emotional disturbance and considerable anxiety about the condition of health, as is very natural.

The cause of the reflex neurasthenia is to be sought, of course, in the reflecting organ or the vicious habits. The ætiology of the lithæmic form is very obscure, but the more I see of it the more convinced do I become that it bears some relationship to a condition of malexcretion, because a large proportion of the cases occur in individuals whose urine will be found to contain large quantities of the amorphous urates and uric acid, and whose stools are defective in quantity and proper bilious coloring; because many of these individuals are of rheumatic diathesis, and the English writers state that abroad these patients are generally of gouty predisposition; because the treatment can never be successfully conducted, as I shall endeavor to show later on, unless careful attention is paid to remedying this defect of malexcretion; because some simple cases will end in perfect recovery with no other treatment than this; and because the cases often follow an attack of malaria, or occur in malarious individuals at malarious seasons of the year. But the nervous symptoms are often in utter disproportion to the defective excretion, in others the nervous symptoms are greatly aggravated by purgation, and in most severe cases the nervous symptoms persist long after the malexcre

tion has seemingly been overcome. It is impossible, therefore, to determine, in the present condition of our knowledge, whether the nervous symptoms of this lithæmic form are due to the malexcretion, or whether the malexcretion is due to the nervous symptoms, or whether both are effects of some underlying cause. Almost all the simple forms of neurasthenia that I have seen have had as a cause overwork, mental or physical, or great anxiety, or great emotion.

In making a diagnosis of these three forms of neurasthenia —the reflex, the lithæmic, and the simple—we should first ascertain as to whether there is any lesion in a non-nervous organ sufficient to set up the nervous symptoms presented to us. I should far transcend the proper limits of a paper like this if I were to go into the details of this examination for reflex causes, although I hope to do so at some time in the near future. Suffice it to say that we should always regard with suspicion marked errors of refraction, tangible evidence of nephritis, nasal obstructions sufficient to interfere with the proper passage of air through the nasal cavities, distinct ovarian or uterine disease, or cardiac lesions.

We should be especially careful not to be deceived by any of the vicious habits, such as morphinism, alcoholism, chloralism, possibly cocainism, sexual excesses, masturbation, sodomy, etc.

Having carefully excluded these reflex causes, we can proceed to the diagnosis between the lithæmic and simple varieties.

The diagnosis of the lithæmic form can usually be made by the peculiar vertigo, tinnitus aurium, nervousness, sense of fullness about the head instead of headache, and the various aberrant sensations—such as tingling, numbness, furriness, etc.—as well as by the frequent association with these symptoms of a furred and coated tongue, defective stools, and urine containing large amounts of uric acid. Having in turn excluded the reflex causes and the lithæmic form, the diagnosis of the simple form can readily be made, although it is often possible to do this by the very simplicity, so to speak, of the symptoms of nervous exhaustion.

All these forms of neurasthenia should be scrupulously differentiated from the early symptoms of certain nervous diseases—as certain non-insane delusional conditions, generally associated with hysterical tendencies, such as *folie de doute* (fear of contamination), and other morbid fears; melancholia; general paresis of the insane; certain mild chronic insanities; hysteria, migraine, and angina pectoris, and neuralgic symptoms associated with these maladies; the early stage of locomotor ataxia; Bennett's muscular hypertonicity; progressive muscular atrophy, especially of the neurotic form; or the nervous symptoms of plaintiffs in damage suits.

The non-insane delusional conditions which are illustrated by the various morbid fears can not properly be classified with neurasthenia, because they belong to the insanities, and very few of the individuals subject to them can be regarded as of perfectly sound mind by any one who has much experience with them, and they are very often associated with downright mental aberration. We can scarcely regard as perfectly sane a woman who washes her hands every ten minutes through the day for years, as one of my patients did because of her fear of some mysterious contamination, or a man who can not cross a bridge, or one who has certain fixed and morbid fears entirely without any real basis—indeed, in many of these patients the delusions are as fixed as in the well-marked types of insanity. We should, I believe, term these cases functional insanities.

It is by no means so rare as one would expect to find cases of general paresis diagnosticated as neurasthenia. The early symptoms of that gradual, insidious, remittent, generalized interstitial encephalitis that we call general paresis of the insane are often so fugitive and changeable that it is scarcely to be wondered at when their true significance is occasionally overlooked. The characteristic early symptoms, let me remind you, consist of unequal pupils, fibrillary tremors of the tongue and facial muscles, slight difficulty of articulation of certain letters (as of *d*, *t*, and *r*), slight changes in mentality, often partaking of the nature of some expansive delusion, and of occasional, often widely separated, paroxysms of tremor, flushing of the face, thickness of speech, and slight defects in walking. It is very common to find both physicians and friends overlooking or palliating the significance of these symptoms. Indeed, it may sometimes become necessary to have the patient under observation for some time before the diagnosis can be made, as the above enumerated symptoms are often fugitive and remittent in character.

Many cases of simple melancholia are unaccompanied by illusions, delusions, or hallucinations, and simply manifest, especially in the early stage, the melancholic tendencies, which are usually distinguished from hypochondria with ease, because in hypochondria the patient is querulous, seeking new remedies and new physicians, the disease lasting usually many years, whereas melancholia comes on in a few weeks, the simpler forms have an average duration of about a year, the patient is utterly indifferent about himself, and has a peculiar facies of mingled suspicion and woe, to which may be added, in the course of the disease, an expression of bewilderment. The organic suicidal impulse, liable to develop in even the mildest cases of melancholia, makes the differential diagnosis from neurasthenia one of immense practical importance. I have known of several instances in which this was not done until the patient committed suicide.

In some forms of insanity running a very mild and chronic course it is possible to confound the symptoms with those of neurasthenia, especially when the hallucinations or delusions are concealed. I am always very suspicious of any patient coming to my office alone, and complaining of symptoms of cerebral exhaustion.

There are certain families in which migraine or sick headache is found in several successive generations, especially in the female members. Not infrequently in these individuals losses of consciousness will take the place of the migraine, so that the two functional affections may be interconvertible, as I pointed out a number of years ago; in others, associated with the migraine there may be symptoms simulating mild angina pectoris; others still may occasionally have marked hysterical symptoms. In some few very neurotic individuals of this class, indeed, the nervous symp-

toms may run the gamut of these and other various forms of functional disturbance. All the individuals of this group are usually possessed of great nervous energy, and some of the finest mental work of the world is done by them. It is a great mistake to confound these symptoms with those of neurasthenia, although persons of this class may have neurasthenia. I have never been able to satisfy myself, however, that they are any more subject to this latter malady than less nervous people.

The early stage of locomotor ataxia is sometimes confounded with neurasthenia. Physicians are not generally aware that the early symptoms of this disease are usually of a purely sensory nature, and that ataxia belongs to a later stage. The lightning and stabbing pains, severe, sudden, seldom fixed in any one part of the body; the peculiar pupil described by Argyll-Robertson, contracted, irresponsive to light, only feebly responsive to movements of accommodation; loss of patellar tendon reflex; the gradual atrophy of the optic nerve—these early symptoms of locomotor ataxia have been overlooked and the vague discomfort of the patient mistaken for neurasthenia.

About a year ago Dr. Hughes Bennett described to the Neurological Society of London an interesting species of disease for which he suggested the name of muscular hypertonicity, and which might very readily be confounded with neurasthenia, as I have no doubt that it has been. The symptoms consist of a very gradual onset of weakness, usually in one or both lower extremities, occasionally also affecting the upper extremities, and which may go on increasing for many months or years. Associated with this weakness is excessive contraction of the muscles when they or their tendons are percussed. Dr. Buzzard, in the discussion upon Dr. Bennett's paper, stated that these patients usually had no plantar reflex or a very weak one, and that in some few of them he had observed a partial optic atrophy of simple character, accompanied by some amblyopia.

It is by no means unusual, in my experience, to see cases of progressive muscular atrophy confounded with neurasthenia. Modern observation, more particularly in the last ten years, has done away with the old doctrine that progressive muscular atrophies commenced in the thenar and hypothenar eminences. As a matter of fact, most of them begin in the muscles of the limbs, the shoulder girdles or the trunk, and it is sometimes a very difficult matter to determine as to whether there is an actual atrophy. Thus, when the patient complains of a vague loss of strength and vague aching pains, such as are apt to occur in the neurotic forms of muscular atrophy, it might be very easy to overlook the real malady unless the patient were stripped and the different muscles keenly observed.

The nervous symptoms often manifested by plaintiffs in damage suits are a peculiar mixture of hysteria, hypochondria, and nervousness, usually consisting of general nervous irritability, exaggerated reflexes, marked vaso-motor phenomena, emotional disturbances, depression of spirits, mental irritability, slight losses of memory, and other slight functional symptoms. Leaving aside altogether the question of malingering, and carefully excluding any possible organic disease, we may positively affirm that these cases will quickly recover when the source of their anxiety has been removed and they are enabled to obtain some mental rest.

The prognosis is variable in each of these forms of neurasthenia. The purely reflex form will end in recovery, as a rule, when the reflected cause is removed. The lithæmic form will vary in prognosis according to the severity of the nervous symptoms and the time of the year when the first symptoms show themselves. If the nervous symptoms are slight, the recovery is usually speedy. If the nervous symptoms are severe, and especially if the vertigo is marked, the duration of the disease may be prolonged through a year, even with treatment, and the vertigo may last several years. Relapses are not infrequent. Warm weather has a markedly unfavorable influence upon the nervous symptoms—so much so that I have never known severe nervous symptoms, beginning in the spring or early summer, to disappear until cold weather made its appearance. The simple form of neurasthenia has usually an excellent prognosis if radical treatment is adopted; otherwise recovery is a matter of chance, and I have known cases that I believed to be of this form pass into a gradual and fatal exhaustion. Dr. Webber states that marked disturbance of the arterial tension is of evil prognosis, and *vice versa;* but I have not as yet been able to test this point myself.

The treatment of the reflex form is simply to remove the reflecting cause, if that be possible. The therapeutic measures to be adopted in the lithæmic variety are more complicated. If the nervous symptoms be slight, a laxative, a mineral acid, and some slight regulation of the diet will be quite sufficient. The purgative which I like best is the cascara sagrada, of which I use the fluid extract, and which I like because the dose can be increased and decreased according to the needs of the case, without any griping or unpleasant effects to the patient. I usually instruct my patients to commence with a drachm three times a day, and increase or diminish this dose until they are having one or two easy liquid stools in the twenty-four hours. Violent purgation is absolutely hurtful in this form, and will usually increase the nervous symptoms, as I have already mentioned. Calomel, so much vaunted by some of the earlier writers upon this subject, is a very uncertain remedy except in the slight relapses which are apt to occur after the first symptoms have been brought under control. The best mineral acid, I think, is the dilute nitro-hydrochloric, twenty drops, three times a day before meals in a wine-glass of water. The regulation of the diet may be either by cutting off meat entirely for a few days, or by cutting off all starchy foods for the same time. Singular to say, some patients will be benefited by one of these dietetic extremes, whilst others will be improved by the other, and it is largely a matter of experimentation as to which to employ, although the habits and the season of the year may be some guides; for instance, a person who is accustomed to a highly nitrogenous diet may not stand well the change to a starchy one, and usually the warmer the weather is, the better the patient will bear a deprivation of meat. Whatever the dietetic regulation is, however, it should not be extreme except for a short period of time. As a rule, it is advisable to diminish per-

manently by at least one half the amount of starchy food these patients may be taking. If the nervous symptoms are severe, and especially if the vertigo is marked, laxatives, mineral acids, and dietetics will be of minor importance in the therapeutics. For the vertigo itself I know of no remedy except time, which always cures it, although it may do so very gradually. If there be considerable weakness associated with other symptoms, the remedy of remedies is rest, which should be absolutely in bed if necessary, or proportioned to the needs of the case. There is far more danger in too little rest than in too much. I am perfectly aware that in this view I am greatly at variance with most of the writers upon the subject, but some little experience in these matters has caused me to stand where I do. It is my custom, in severe cases of this type, to put the patients absolutely to bed for a week or two, and then gradually to put them upon their feet in the course of another week or two, and then to permit them to attend to their business by going to and from their place of business in a carriage, passing from the carriage to bed. In the less severe forms it may only be necessary to greatly restrict the individuals' expenditure of energy by forbidding them to walk, and having them rest on a sofa or in bed through the evenings. When the nervous symptoms are slight, or when the patient has largely convalesced, a radical change of air is often of great benefit, but in obtaining it fatigue should be avoided, as in long walks or drives or journeys. The largest number of the cases which I have seen have been in dwellers in seaboard cities, and these patients are usually not benefited by the sea-shore, but must be sent inland, preferably to a moderate elevation. Whether the dwellers of the inland would be benefited by a trip to the sea-shore is a matter in which I have had only a limited experience. Sometimes a sea voyage or a European trip will be of benefit, although this is usually the case only in the stage of convalescence or when the nervous symptoms are slight. What I have ventured to term the simple form of neurasthenia is benefited most by the treatment advocated by Dr. Weir Mitchell of rest, massage, and forced feeding. These patients should be put to bed, first placed upon a milk diet, to which gradually increasing amounts of food should be added, massage and large doses of iron and malt extract should be given, and the muscles should be gently faradized. Rest of this kind continued for a period of eight to twelve weeks will usually add ten to forty pounds to the patient's weight, and any anæmia will be overcome. But the delicate point of the treatment is to maintain this improvement, as in some cases the patients will soon relapse into their former condition. To avoid this, great care should be exercised in putting them on their feet again, as well as in impressing upon them the necessity of great moderation in exertion for months after the treatment has been completed. Patients who have been thus treated are very apt to be greatly disappointed when, having gained so much weight and color, they find themselves incapable of much exertion on first getting out of bed, and it is difficult to convince them that muscular strength will gradually return. In all these forms of neurasthenia, and particularly in the convalescent or slighter forms of the lithæmic and simple types, I have found spinal galvanism of considerable value as a general tonic. It should be applied by means of large electrodes, 5 × 6 inches, one in the nape of the neck, the other in the lower dorsal spine. The current should be measured by a measuring instrument—the milliampèremeter—and should at first be about 5 milliampères in strength, and should then, as the patient becomes accustomed to it, be gradually increased to 10, 15, or even 20 milliampères. The sittings should be about five minutes in duration, every second day, for a period of six to eight weeks, when it will be best to intermit the electrical treatment, even if it is resumed afterward. I have very little faith in massage in the lithæmic or simple neurasthenia, unless a patient with the latter form is put to bed and subjected to forced feeding, when it is an invaluable adjunct in the treatment. Usually, however, it weakens and irritates the patient.

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# CLINICAL OBSERVATIONS OF DISEASES OF THE TESTICLE.*

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The following cases which have come under my care seem to me worthy of being reported, because they have some clinical and diagnostic features which are interesting and which may perhaps be suggestive of discussion. It is possible, also, that one or more of them will help to make still clearer the question of ætiology of affections of the testicle. For, while admitting the possibility of cases being caused by "reflex irritation," I believe that, under the light of modern pathological teaching, the theory of "metastasis" is no longer tenable, and that by far the greater number of cases of inflammation of the testicle are due either to direct injury or to the extension of inflammation from the prostatic urethra through the vas deferens. For several years it has been my custom to examine by the rectum the prostate and vesiculæ seminales of those afflicted with disease of the testicle, as well as to examine the seminal cord wherever and as far as it was within reach—*i. e.*, from the testicle to and within the inguinal canal. My experience has been to rarely find the seminal vesicles involved, excepting in tubercular disease, but usually to find more or less tenderness (definite complaint being elicited from the patient) of the corresponding side of the prostate gland, and often a slighter density, if not a distinct swelling, of that side. It was this experience which led me to object to castration in one of the cases reported in this paper, and, tentative treatment being adopted, the diagnosis was cleared up and the patient relieved by the passage of a calculus.

Not long since a married man, aged forty-seven, was sent into St. Luke's Hospital as a case of "strangulated hernia," and came under my care. On admission, his history and condition, as condensed from the records made by the house surgeon, were as follows: He was an unintelligent laboring man, and stated that for about nine months he had had obscure and dull pains in the right groin which he attributed to "rheumatism."

About two months before entering the hospital a "lump" appeared in this region. At first it did not disturb him or attract his attention very much, but, as it gradually increased in size and became painful, he sought medical advice. Under some form of treatment the tumor disappeared, but reappeared after a week. For three months past he has been unable to work, the tumor has been continually present, and the pain, which had of late greatly increased in severity, had been distinctly located in it.

In the right groin and projecting somewhat below it was a small tumor of about the size of an egg. It was tender on palpation and flat on percussion, gave an impulse on coughing, and was non-reducible. The scrotum on that side was empty, and the patient said that he never had had a testicle there, but just at the lower extremity of the above-described swelling was apparently a testicle which seemed to form a portion of the tumor. The tumor and the adjacent parts were so sensitive that a positive differential examination could not be made. Inasmuch as there were no evidences of strangulation and as the patient's general condition was fairly good, it was deemed best to treat him expectantly. Rest in bed and an ice-bag to the tumor were accordingly prescribed. A week later, the inflammatory conditions having subsided, the tumor was still non-reducible and almost indefinable, but it was evidently composed of more than one part, one portion being an inguinal hernia and the other probably an undescended testicle. The patient being etherized, an incision was made directly over the tumor and the tissues were carefully divided until an irregular mass was found lying in the inguinal canal. The tissues and the tumor were so amalgamated by old and recent inflammatory deposits that the tumor was separated with great difficulty, but its lower extremity was found to be a cyst, which, being laid open, was demonstrated to be a true hydrocele of the tunica vaginalis. Further careful dissection made clear the component parts of the tumor. On the inner side of the inguinal canal was found a small omental hernia, its sac being formed by a prolongation of the peritonæum covering the cord. The larger mass of the tumor was a pulpy and degenerated testicle, in a state of resolving inflammation. The cord proceeding from its upper and posterior part was of double its normal size and indurated, and, as far as it could be followed into the abdomen, was found to be in this condition. The omental hernia was reduced, and the cord, having first been seized high up in the inguinal canal by hæmostatic forceps, was divided and the testicle removed. As the vas deferens was cut, a little spurt of pus-like fluid was seen to take place from its canal. Unfortunately, this escaping material was lost, being washed away by the irrigation, which was very thorough, but it was so manifest that the bystanders saw it easily and commented upon the probable future condition of the wound. The stump of the cord was ligated with silk and stitched into the upper part of the inguinal canal by catgut sutures. On the following day, while inspecting his dressings, I found that the patient had a distinct purulent discharge from his urethra. The discharge was greenish in color, could be expressed from the whole length of his urethra, and was so abundant as to soil to a very noticeable extent the exterior of the dressings. The patient denied that he had had any disease, and would not even admit exposure. No evidence of any urethral disease had been seen by myself or the house surgeon at the repeated examinations to which the patient had been subjected prior to the operation. The urethra was ordered to be irrigated regularly twice daily with a solution of 1 to 40,000 of the bichloride of mercury. Suffice it to say that the patient did well, and a month later was discharged from the hospital entirely healed.

The interesting features of this case naturally present themselves. In the first place, the question of diagnosis was not a simple one. The symptoms, objective and subjective, were those of an inflamed, incarcerated hernia. But absence of the testicle from the right side of the scrotum, together with the statement of the patient that he had never had a testicle on that side, would lead to the supposition that it formed a portion of the tumor in the groin, and still it might yet be in the cavity of the abdomen. The diagnosis was not made positive until the operation, because the acute inflammatory process had so united the tissues that the separate parts of the tumor could not be distinguished without dissection.

The second interesting feature to which I ask your attention is the condition of the cord and the escape from its canal of fluid looking like pus. This fluid had the appearance of pus both as to color and consistence. It escaped from a tube which at the time was swollen and

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting, September 19, 1888.

hardened by inflammatory action, as was proved by the fact that after the operation the portion of the cord left in the upper part of the inguinal canal gradually softened and disappeared. In my own cases of castration and in those which I have witnessed I have never seen such an escape of fluid, nor can I find record of any. In view of these facts and of the further one that on the following day the patient had a distinctly purulent discharge from the urethra, I shall assume that the fluid was pus. Upon this point, and also upon the relation of the urethritis to the other conditions, I should like the experience of the association. Did the orchitis precede the urethritis? Or, was the urethritis the primary disease, which abated, as is well known it usually does on the appearance of the complication, only to reappear after the subsidence of the latter? My own opinion, based upon the stage of the inflammation of the cord as contrasted with that of the testicle and upon the fact that the urethritis was distinctly purulent without any intermediate stage (both together implying an affection of some duration), is that the man had had a urethritis which, with characteristic tergiversation, he had denied. An examination of the urethral pus for gonococci might have thrown some light upon this part of the question, and it was ordered to be made, but I find none recorded in the history. An interesting if not valuable scientific observation, therefore, seems to have been lost.

The following case is presented as a type of chronic inflammation due to prolonged irritation of the prostatic urethra, complicated by hydrocele of traumatic origin:

This patient was a young and healthy mechanic, aged nineteen, whose family and personal history was very good and who was entirely free from venereal disease of any kind. Between four and five years ago, while lifting a heavy weight, he "strained" himself, and immediately felt a sharp pain in the right testicle, which at once began to swell. The pain was intense, compelling him to take to his bed, and it lasted acutely for several days. The swelling, more persistent, slowly diminished, and disappeared entirely at the end of four months. He was then perfectly well, and remained so until about three months prior to his coming under my care, when a heavy weight fell upon him across the upper part of both thighs and striking his scrotum. A few minutes later he experienced pain in both testicles, and they began to swell. The pain disappeared in three days, while the swelling slowly increased, that of the left being greater than the right and extending up into the groin. About a month before the taking of this history a small "pimple," as he described it, appeared on the base of the scrotum, opened spontaneously, and has continued to discharge up to the present time. As long as he can remember he has had attacks of frequent urination whenever he has "taken cold," being obliged to urinate as often as every hour. At such times he has a burning sensation in the urethra, and when the bladder is full a slight burning pain over the pubes. A day or so after coming under observation he had a sharp, stinging pain in the glans penis. On examination, he had double hydrocele, that of the left side being the greater, but the fluid was not enough to interfere with the examination of the testicles. The right testicle was normal, while the left testicle was double its proper size and tender. Its epididymis was indurated, irregular, and somewhat knotty, and the whole testicle gave the impression of an irregularly indurated organ with intervening soft spots. The left cord up to and within the inguinal canal was moderately enlarged and indurated. At the lower portion of the left side of the scrotum, somewhat anteriorly, was the red and everted opening of a sinus from which exuded a thin pus. The fluid in the tunica vaginalis was moderate in quantity, and the patient's sufferings were due entirely to the condition of the left testicle, in which he complained of great pain. *Per rectum*, the prostate was sensitive, particularly in the median line and upon the left lobe. The latter was somewhat thicker than normal, and light, gentle pressure upon it from the tip of the finger caused the patient to wince. In order not to weary you with detail, it may be briefly stated that, in spite of being kept in bed and of all treatment, his condition did not change much, but followed a very chronic and relapsing course. Rest in bed, applications of ice, etc., did relieve the acuteness of his pain and seemed to reduce the swelling somewhat, but both would increase again, especially if, under the impression that he was getting well, he moved about any.

He then passed under the care of another surgeon, who, in view of the sufferings of the patient, the character of the enlargement of the testicle, the sinus, and the chronicity, felt warranted in making a diagnosis of tuberculosis, and proposed castration. I dissented from this opinion. It seemed to me that there were two elements in this case which, if considered separately, would oppose such a diagnosis, and therefore not justify so heroic a measure as castration. One was the chronic hydrocele due to a traumatism, which may or may not have been also the exciting cause of the orchitis. On the latter point the patient's history was not clear. The other was the relapsing and chronic condition of the left testicle. Admitting, for the sake of argument, that the traumatism *was* the cause of the onset of the inflammation, why should the latter persist, and at times with intensely acute exacerbations? It was true that many of the objective symptoms pointed to tuberculosis, and, as is well known, the latter may even excite acute inflammation in the organ in which the deposit is taking place. But against the tubercular hypothesis were (1) the definite enlargement of the cord thus early in the history of the patient's disease (and, moreover, it was not nodular); (2) the frequent exacerbations and the *acuteness* of the pain as contradistinguished from that of tuberculosis; (3) the symptoms detected by examining the rectum were those only of inflammation of the left side of the prostate and prostatic urethra, and there was none of the knotty induration of the seminal vesicle which is frequent in tubercular disease; and (4) the long history of occasional attacks of frequent and painful urination prior to the injury, together with pain in the glans penis. In view of these facts, I expressed the opinion that the cause of the state of the testicle would be found in the prostatic urethra, and advised further tentative procedures, and a more careful exploration for stricture, or for any other of the known causes of irritation of the deep urethra. It was evident that this irritation had been of sufficient grade and long enough continued to excite a localized pus formation in the testicle, with subsequent discharge of the pus through the above-mentioned sinus.

A few days after, the patient passed through the urethra, with great straining and pain, a mulberry (?) calculus half an inch long by a quarter of an inch wide. This produced another acute attack of pain, etc., in the testicle, which subsided in three

days. After this the patient steadily improved, and when I saw him, two months later, there was some fluid in the tunica vaginalis, which I aspirated. The testicle was nearly normal as to size. The sinus had closed spontaneously, leaving a line of induration in the tissues of the scrotum leading to a corresponding nodule in the testicle, and there was still a slight amount of thickening of the epididymis.

It is possible that some surgeons would be inclined to classify the foregoing case among the so-called "pseudo-tubercular." * but I think that the discovery of the cause—*i. e.*, the *calculus*—proves it to be a simple chronic orchitis. By way of emphasis, permit me to narrate briefly one other case similar in some of its details, but strongly contrasting in its final outcome:

This patient was also a young mechanic, aged twenty-seven, and free from any cardiac, pulmonary, renal, or specific history. He had been married for five years and had one healthy child. In the early part of 1885, while at work, he was struck on the right testicle by an iron clamp. He says that the testicle "swelled" to double its natural size. It was not painful (excepting for the first few moments after the blow), nor did it interfere with his working, but it was somewhat in his way, incommoding him slightly in locomotion. It remained in this condition till the middle of 1886 (over a year), when it became slightly painful, and increased slowly in size till he came under my observation in February, 1887. After carefully eliminating, as far as possible, all other disease, the diagnosis of chronic hydrocele was made, and several ounces (eight) of fluid were aspirated. The body of the testicle was slightly enlarged, denser than the left, and tender. The epididymis was in a similar state, and the cord up to and within the inguinal canal was of about double its normal size. There were no nodules and there were no rectal symptoms. A second aspiration was done three weeks later. After this he was free from pain, the testicle apparently became softer and smaller, and, with the exception of the hydrocele, showed no tendency to diseased action. The patient's general condition was better, he had none of the pain in the groin and down the anterior aspect of the right thigh, of which he had formerly complained, and he was able to return to his work, which was very laborious, obliging him to lift ponderous masses of iron. The fluid in the tunica vaginalis rapidly reaccumulated without any evidence of increase in the size of the testicle proper. As the scrotum again came to be of such a size as to interfere with his labor, I sent him into St. Luke's Hospital, and in May, 1887, performed upon him Volkmann's operation for the radical cure of the hydrocele. The wound healed rapidly, and in less than two weeks I permitted him to return to his heavy work. In July there was a sudden and rapid increase in the size of the right testicle, accompanied by considerable pain in it. It measured longitudinally 4 inches by 2 inches laterally, was of an unevenly indurated surface, and tender on pressure. The inguinal and femoral glands of the same side were also enlarged and hardened. The patient's general condition was beginning to deteriorate, and, it being evident that a new and acute condition was now present, he was immediately sent into the hospital again. As my tour of duty had ended, my colleague, Dr. McBurney, removed the testicle, together with the diseased glands in the groin. The wound did not heal well, and in less than a month the patient returned to his work, but not so well nor so strong as formerly. In October of the same year (two months later) his left testicle, without any injury or known cause, suddenly, and at night while he was in bed, became intensely painful. The pain radiated into the left groin and lumbar region and down the left thigh. He came to me the next morning, looking pale and haggard, evidently suffering greatly, and said that for a week previous to this attack of pain he had noticed enlargement of that side of the scrotum, with dragging pain in it, which was relieved by a suspensory bag. These symptoms had not interfered with his work or general health. I found the body of the testicle, the epididymis, and the cord swollen and tender, and a moderate amount of fluid in the tunica vaginalis. A few days' rest in hospital relieved this acute condition, and, three ounces of hydrocele fluid being aspirated, he returned to his work again. It is not necessary to detail the subsequent events in this case more than to say that the body and epididymis slowly increased in size, and became more or less hard, with intervening soft points, and tender to the touch, and there was a varying amount of fluid in the tunica vaginalis. He is still under observation. His general health is fair and he is able to work at his trade, although he has now evidences of consolidation at the apex of each lung.

It will be observed that in this case also there was a traumatism which excited a hydrocele and a mild grade of orchitis. In the preceding case the latter became subacute, relapsing acutely from time to time, while in the case under consideration the inflammation seemed to be better after the radical treatment of the hydrocele. It persisted in a mild way, nevertheless, and was without any associated bladder symptoms. The physical conditions of the two patients were strikingly alike till later, and, indeed, a prognosis based upon these alone would have been much worse in the case which ultimately proved to be simple chronic inflammation. In the second case, however, the rapid and acute changes which took place two months after the Volkmann's operation were highly suggestive of malignant disease, but the microscopical examination of the testicle and lymphatic glands rendered the diagnosis of *tuberculosis*, which had been made, no longer doubtful.

The following is the report of Dr. Frank Ferguson, pathologist to the hospital:

Incisions in the testicle reveal many cheesy areas which in size are between a pin-head and a walnut. Neither to the unaided eye nor under the microscope can the healthy structure be recognized. A few isolated tubes are indeed seen between the cheesy masses, but they are distorted and crowded out by the inflammatory elements and fibrous tissue associated with the development of tubercles. The cheesy areas present no special features. Giant cells have not been noticed. The bacilli of tuberculosis are abundant.

Another interesting clinical feature in this case seems to me to be in the rapidity of the tubercular process and in the large amount of fluid in the tunica vaginalis, in these respects varying from the ordinary slow and insidious development of this disease.

127 East Thirty-fourth Street.

* A term to which I strongly object as meaning nothing, for it is either "tubercular," or it is not, and if something else, it therefore can not be "false" tuberculosis.

**Reflex Neuropathies.**—"The eyes, the ears, the nose, and naso-pharynx constitute," says the "Lancet," "sources of reflex irritation leading to the production of various nervous diseases. According to French and German authorities, these sensory areas are very fertile in the causation of headaches, epilepsies, coughs, giddiness, gastralgia, and so forth. Ruault and others assert that a great variety of chronic morbid processes of the nose and naso-pharynx may cause such affections, which are also frequently easily cured by local treatment."

# CLINICAL NOTES ON THE USE OF ANTIPYRINE IN THE NASAL PASSAGES.*

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To the numerous reports lately made of the local use of antipyrine as a hæmostatic, an antiseptic, a stimulant to sluggish ulcers, etc., I wish to add a report of its use upon the nasal mucous membrane during the past two months.

Influenced by statements appearing in February † as to the local hæmostatic properties of antipyrine, I had used it in weak solution in several cases of trifling bleeding following operations upon the nose, with questionable success.

In May, 1888, Dr. Roswell Park, of Buffalo, then suffering from an acute coryza, found much relief to nasal occlusion and irritation from a spray of antipyrine in solution. He was led to try it from observing its action upon capillary oozing in experimental operations upon the brains of animals. At his suggestion, I began experimenting with a solution of antipyrine, and have found it of decided service in a limited class of cases. I have been unable to find any record of the use of antipyrine in the nasal chambers heretofore, and may be pardoned, in consequence, a seeming egotism in the expression of my impressions in the matter.

The discovery that antipyrine has, to a certain extent, the retractive effect upon the turbinated tissue possessed by cocaine, suggested its substitution for that drug where the object is to reduce inflammation of the mucous membrane and engorgement of the turbinates. A solution of the strength of sixteen grains of antipyrine to the ounce of water, with a few minims of glycerin, was found, after experiment, to be about as strong as can readily be borne by the nasal mucous membrane, and to be sufficient to produce the desired effect. For brevity, it is alluded to hereafter as a four-per-cent. solution, though in fact slightly weaker.

The first local effect of a spray of a solution of moderate strength is a pungent, burning sensation in the nose, at times with severe reflex pain in the eyes or temples, passing off in a few seconds. This is usually followed by retraction of the turbinated swellings somewhat more slowly than with cocaine. The mucous membrane is not blanched as with the latter, and no perceptible anæsthesia occurs. However, there appears to be a local sedative action, as is seen in certain cases of irritable sneezing, lacrymation, etc.

Antipyrine solutions, in any strength found advisable, do not seem to have the power of reducing extreme swelling of the turbinates, little by little from before backward, possessed by cocaine solutions, but need application over the greater part of the mucous membrane. Hence, in cases of complete and extreme occlusion of either nasal chamber, it has failed when sprayed into the nose. On the other hand, its retractive effect, when accomplished, is more lasting than the effect of cocaine, and no irritative reaction from it has been noticed, as is often the case with cocaine in acute rhinitis or in irritable states of the nasal mucous membrane.

The advantages antipyrine appears to possess over cocaine are an absence of the disagreeable numbing effect of the latter, and of the unpleasant cerebral stimulation produced upon many by even weak solutions of cocaine. The effects of antipyrine, on the other hand, both local and general, so far as known, are most desirable in cases of this kind. Its sedative action upon the nervous system, when taken internally, is directly indicated.

Lastly, the now recognized antiseptic properties of antipyrine render *a priori* indication for its use in the nose after operations or injuries, in addition to its hæmostatic properties. I have used it under these conditions with apparent advantage; but by how much its antiseptic properties are of service I am not able to state.

The possible advantage of some reasonably non-irritant antiseptic in the earliest stage of acute coryza has perhaps suggested itself to many, and it may be that its apparently successful abortive action in two cases on my note-book may be due to this property.

I may mention in passing that in several cases of acute follicular pharyngitis, and in two cases of amygdalitis, the local spray of antipyrine appeared to assist the internal action of the same drug in allaying inflammation and pain. I have a record of eighteen cases in which antipyrine locally applied has proved of benefit upon some of the lines indicated above, besides others in which it did not appear to be adapted to the conditions demanding relief.

My first applications were in cases of acute coryza. In some of these I have met with disappointment, in others with satisfaction. If the "cold" was of several days' standing, and the inflammatory swelling pronounced, the antipyrine alone has usually failed to give relief. If the attack was in its incipiency—the stage of tickling, sneezing, lacrymation, etc.—marked and permanent (two cases) relief followed the free application of antipyrine.

One patient, accustomed to the use of cocaine in similar attacks, at the next call after the use of antipyrine requested the same to be repeated, saying the relief was more prolonged and the subsequent recurrence less severe than after cocaine.

Where antipyrine alone was insufficient, it was found very efficacious combined with a weak solution of cocaine, the former appearing to be synergetic to the latter. Thus, a one-fourth-per-cent. to a one-half-per-cent. solution of cocaine with a four-per-cent. solution of antipyrine was found much more active and lasting in its effect than a solution of cocaine of the same strength used alone. Of course, the temporary relief to the inflammatory symptoms was not more complete than by the use of cocaine—often less so; but the immense advantage was obtained of not producing unpleasant local anæsthesia and of not overstimulating the already irritated nervous system, as is occasionally shown after cocaine by sleeplessness, occipital headache, irritability, etc. Antipyrine presents the additional advantage of not drying the mucous membrane so unpleasantly as cocaine does. However, for severe attacks of acute rhinitis, cocaine gives more

* Candidate's thesis presented before the council of the tenth annual congress of the American Laryngological Association.

† "Medical News," February 18, 1888.

decided and satisfactory results, either alone or in combination in a weak solution with antipyrine.

There is a related class of cases in which antipyrine has been found of excellent service—cases marked by more or less regularly recurring hyperæsthetic conditions, as though a coryza was in its inception, this occurring immediately after rising in the morning, passing away after an hour or more, leaving scarcely a trace behind. A four-per-cent. solution of antipyrine relieved these symptoms promptly in every case, and, used at intervals of four hours, lessened markedly the frequency and severity of the attacks.

In two cases of frequent bleeding from small abrasions about the anterior nares on the muco-cutaneous juncture of the septum, a spray of antipyrine in the hands of the patient was found of service in checking the attacks. Decided hæmostatic effects follow its use in operations upon the turbinates or upon polypus. For this purpose it is not superior to cocaine, but the antiseptic qualities of antipyrine make it a desirable agent to bathe the cut surfaces.

The most interesting cases in which antipyrine has been tried in my hands are four cases of "hay-fever" occurring within the past month. The number of cases is so small, and the time of trial so limited, that much stress can not be laid upon my conclusions; but sufficient results have been obtained to warrant a more extended trial of this method of mitigating the sufferings of these patients when for any reason radical measures are not pursued. A brief epitome of the four cases experimented upon shows well the advantages and limitations of antipyrine for this purpose:

Case I.—Mrs. B., aged thirty-five. First seen August 9, 1888. Has had periodical attacks for over twenty years, coming on between the 15th and 20th of August and lasting until October, and sometimes longer. The presence of flowers aggravates her attacks, and they cause sneezing if inhaled at any time of year. Is much relieved when she inhales steam, as in the kitchen. About nine years ago had an attack of asthma, but not since. Suffers from nasal obstruction and recurring sore throat at frequent intervals, especially in the spring. Examination of nose showed large, pallid, anterior hypertrophies of inferior turbinates and polypoid degeneration of anterior extremities of middle turbinates on both sides. Septal spur left anterior and inferior. Posterior nares fairly clear and normal. In rapidly successive operations, removed with Bosworth snare the hypertrophies and polyps. Cauterized right inferior turbinate with chromic acid. On August 15th ordered four-per-cent. antipyrine spray. August 24th, slight signs of hyperæsthesia, controlled by spray. On the night of the 27th distinct hay-fever, especially severe on the cauterized side. August 31st, ordered one-half-per-cent. cocaine with four-per-cent. antipyrine spray. This was followed by relief. During first week of September there were occasional attacks of asthmatic breathing. The spray of antipyrine alone was resumed. Since the right side has healed, the nasal symptoms are much less than in any previous year, and readily held in check.

Case II.—A. E., aged eleven years. First seen August 9, 1888. Hay-fever since four years old, every summer, beginning from 9th to 14th of August. First attack followed a severe "cold" after exposure. Is pale and delicate-looking. There is slight general hypertrophy of the inferior turbinates; pallid hypertrophy of both middle turbinates pressing against the septum, pedunculated anteriorly, presenting an appearance of small polypus. During paroxysms suffers frightfully from nasal occlusion and severe asthma and coryza. Sits propped up in a chair on pillows day and night. Loses appetite and flesh, and is much debilitated until frost comes. An attack was due on day when first seen, and patient was already weak and was said to be so much prostrated by the paroxysms that, as he lived forty miles away, radical treatment was not attempted. Ordered four-per-cent. antipyrine spray, three times daily, along with malt tonics. August 23d, he had not had cough or asthma as yet, but severe nasal symptoms and lacrymation. One week later patient was reported by a physician, a member of the family, as having a mild attack, able to be about, and improving. A very brief report received. September 9th, reported patient in "glorious health." Unfortunately, a detailed report asked for has not been received in time to embody in this report. Making all allowances for hopeful exaggeration, there has been undoubted improvement in this case, and much relief from very distressing symptoms always present heretofore.

Case III.—P. B., aged thirty-eight. First seen August 22d. Has had hay-fever seventeen years, every season with great severity, coming on about August 21st. Has all customary symptoms—lacrymation, nasal obstruction, cough, asthma, sneezing, etc.—very severely. Found polypus in left nasal chamber, apparently attached to anterior extremity of middle turbinate. Much hypertrophy of corresponding point on right side, and much congestion and secretion. Surgery not being desired, antipyrine spray was ordered. August 30th, much more comfortable than is customary until previous day. Took a long drive in wind and dust. Severe attack in night. Ordered one-fourth-per-cent. cocaine solution with antipyrine. September 8th, had resumed spray of antipyrine alone, and was fairly comfortable. After renewed exposure to dust on previous day, had severe asthma. This was relieved by sedative inhalations. At last report, though suffering at times severely, is decidedly more comfortable than in previous years.

Case IV.—Mrs. Van S., aged twenty-five. Examined August 23d. Since 1883 has suffered moderately, at times severely, from "hay-fever," beginning from August 10th to 20th. In 1885 had no attack. In succeeding year it was more severe than before. In 1887 was at sea-shore until September 1st. Was free there, but during her journey home had severe attack, lasting until October. Attack has just begun this year. Has symptoms of hypertrophic nasal catarrh at all times. There are large anterior hypertrophies on both sides. The posterior nares present a fair appearance. Is two months pregnant. Ordered antipyrine spray every four hours, or as needed to allay irritation.

*August 28th.*—There have been a few attacks controlled by antipyrine.

*31st.*—Feels almost as though free from attack.

*September 7th.*—After unusual exposure to dust and heat, has had severe attack.

*10th.*—Has been quite well, uses spray regularly, and has little more annoyance than at other times of year.

In each of these cases careful attention was given to the general health, and a careful diet enforced. Antipyrine was given internally in doses of two and a half to five grains three or four times daily, to control the reflexes and thus favorably affect the accompanying asthma. This dose was increased if asthma came on.

Bloch * is quoted as reporting a case of hay-fever relieved by large doses of antipyrine internally, but I could notice no direct influence of the antipyrine administered internally upon the nasal symptoms if the local spray was not

* "Medical News," February 4, 1888.

used. A two-per-cent. cocaine solution was instilled into the eyes to relieve itching and smarting, as was found necessary.

Of the four cases quoted, Case I can hardly be considered a fair test on account of the operations preceding the use of the antipyrine. However, in that case, antipyrine spray certainly mitigated the nasal irritation. Cases II and IV illustrate the action of antipyrine most satisfactorily. Though I have been unable to see No. II again, and the reports received are extremely meager and too general for anything like scientific accuracy, yet they were received through intelligent medical sources, and show distinct improvement, though with occasional severe relapses. Case IV, essentially mild in character and in which operative treatment was contra-indicated by pregnancy, received immediate and great relief, continuing with slight interruptions. Case III received some relief of symptoms, but cocaine had to be called in play when the paroxysms were severe, with then only slight relief sometimes. In this case the business and habits aggravated the attack at times. While on the whole the symptoms have been modified and the sufferings abated, so that the patient considers himself more comfortable than in former attacks, yet it appears that in severe and long-standing cases antipyrine will not prove sufficient as a means of relieving symptoms.

The conclusions drawn from the limited experience reported above may be summarized as follows:

1. A solution of antipyrine possesses hæmostatic properties when sprayed into the nose, though not superior to cocaine.

2. Antipyrine in about four-per-cent. solution may be used upon the nasal mucous membrane with temporary relief to occlusion from engorgement of the turbinates, and with sedative effects upon irritable states.

3. It is most effective where the element of irritation exceeds that of inflammation.

4. It presents an advantage over cocaine in not producing local numbness and dryness, and in the absence of the general stimulating properties of cocaine, causing sleeplessness, headache, etc. In cases such as hay-fever, where an agent of relief is used for long periods, antipyrine as a nasal spray is less likely than cocaine to produce constitutional disturbance or to lead to a "habit."

5. Antipyrine presents the disadvantage of causing more or less severe smarting, and of being unequal to the relief of severe inflammation or extreme occlusion of the nares.

6. Its antiseptic and stimulant properties will probably make it serviceable as an application to fresh wounds and to granulations and ulcerations in the nasal chambers.*

7. Combined with cocaine, it increases the local action of the latter, enabling it to be used in weaker solution.

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**The New York Obstetrical Society** has elected officers for the coming year as follows: President, Dr. H. T. Hanks; vice-presidents, Dr. B. McE. Emmet and Dr. H. D. Nicoll; recording secretary, Dr. E. H. Grandin; assistant recording secretary, Dr. A. M. Jacobus; corresponding secretary, Dr. H. Marion-Sims; Treasurer, Dr. J. L. Morrill; pathologist, Dr. H. C. Coe.

* "Medical News," June 23 and September 8, 1888.

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## THE CASE OF THE LATE EMPEROR OF GERMANY.

Added to the sorrow felt everywhere at the fatal issue of the Emperor Frederick's illness is the humiliating reflection that the management of his case gave rise to bickerings that the world at large must look upon as nothing short of disgraceful. So long as the quarrel was confined to fragmentary statements and counter-statements, we thought proper to allude to it only briefly and with as little mention of the personal element as possible; and when, some weeks ago, Sir Morell Mackenzie's German colleagues in the case brought out a pamphlet in which grave accusations were made against that gentleman, we refrained from all comment, for it was announced that Mackenzie was about to publish a reply, and it seemed desirable that both sides should be heard before anything like criticism upon the merits of the case was attempted. The affair has now culminated in the publication of Mackenzie's book, and we hope that the special literature to which it has given rise may not be further amplified. There are some questions of scientific interest involved in the controversy, but much of what is to be found in the German pamphlet and in Mackenzie's book serves only to express the writers' angry state of mind, and should be passed by with scant comment.

The pamphlet issued by the German surgeons is entitled "Die Krankheit Kaiser Friedrich des Dritten dargestellt nach amtlichen Quellen und den im königlichen Hausministerium niedergelegten Berichten der Aerzte." It bears the imprint of the Imperial-Royal Printing Office at Berlin, and consists of Professor Gerhardt's report; Professor von Bergmann's exposition; Dr. Landgraf's report; Professor Schrötter's report; Dr. Schmidt's report; a declaration by the physicians (Mackenzie, Schrötter, Schrader, Krause, Schmidt, and Hovell) assembled at San Remo; a narrative (of unmentioned authorship) embodying a letter from Schrader to von Bergmann, Bramann's account of the tracheotomy, Kussmaul's report, and Waldeyer's report; Bardeleben's report; Mackenzie's brief statement of his opinion of the nature of the disease immediately after Frederick's death, with Hovell's expression of concurrence; an account of the autopsy, signed by Count Stolberg-Wernigerade, Mackenzie, Hovell, von Wegner, Bardeleben, Leuthold, von Bergmann, Virchow, Waldeyer, and Bramann; and an account of the post-mortem microscopical examination, signed by Virchow and Waldeyer. The pamphlet contains 103 octavo pages.

Mackenzie's production is entitled "The Fatal Illness of Frederick the Noble." It is published in book form by Sampson Low, Marston, Searle, & Rivington, of London. The title-page bears the legend "Mark now how a plain tale shall put

you down," from Shakespeare's "Henry IV." The entire book was printed in the New York "Sun" last Sunday, including the woodcut illustrations, occupying forty two closely printed columns of that newspaper.

Although the main features of Frederick's fatal malady are well known, it seems proper to give an outline of its history, as throwing light on matters of opinion; this we shall take from Gerhardt's report, pointing out wherein and to what extent Mackenzie's account differs from it in so far as essentials are concerned. In January, 1887, the patient began to suffer from hoarseness, which did not yield to the usual remedies, and on the 6th of March a laryngoscopical examination was first made, at the request of Generalarzt von Wegner, by Professor Gerhardt. After describing the appearances which he found, Gerhardt states that his first diagnosis was that of polypoid thickening of the left vocal band. Efforts to remove this growth with the snare and the guillotine having proved unsatisfactory, recourse was had to the galvanic cautery, which was employed at first at intervals of a few days, and daily from March 29th to April 7th, inclusive. Mackenzie expresses great horror at the frequency with which Gerhardt applied the cautery, and intimates that nothing could have been better calculated to convert a benign growth into a malignant one, thereby leaving the reader to infer that the ultimate unquestioned malignancy of the laryngeal affection was brought about by Gerhardt's excessive cauterizations. This hardly accords with Mackenzie's subsequent statement that in the Emperor's case the cancer that proved fatal was a distinct growth from the original benign tumor. "The one thing," he says, "which has been added to our knowledge by this sad case is that, in cancer of the larynx, in very rare cases, *a benign growth may co-exist with a cancer.*" The Italics are Mackenzie's. Gerhardt presents a statistical argument against the probability of the conversion of benign into malignant growths. According to Felix Semon, he says, it has been reported to have occurred forty times in 8,300 cases—a proportion so small, he remarks, that the alleged instances are generally assumed to have been cases of erroneous diagnosis. He intimates that, if any such occurrence took place in Frederick's case, it may quite as well have been due to Mackenzie's forceps as to his cautery.

Gerhardt goes on to say that the rapidity with which the outgrowth sprang up anew after the destruction of portions of it with the galvanic cautery, as well as its general appearance and behavior, led him to look upon it as cancerous. Von Bergmann was now called in consultation, and, in view of the possibility that the tumor was cancerous and of the impracticability of its entire removal by the mouth, advised its radical excision by means of thyreotomy (*Spaltung des Kehlkopfes, Laryngofissur*). At this juncture Surgeon-General von Wegner, who seems to have been the patient's family physician, suggested that the opinion of another laryngologist should be obtained, and expressed a preference for Mackenzie. To this Gerhardt and von Bergmann consented, thinking, says Gerhardt, that the laryngoscopical appearances and the clinical history were so clear that no competent laryngoscopist could fail to be of their opinion. At another consultation, von Lauer, Tobold, von Wegner, Schrader, von Bergmann, and Gerhardt being present, Tobold made a laryngoscopical examination and affirmed that the growth could be nothing but cancer. The others all coincided in this opinion and in von Bergmann's recommendation of thyreotomy. Gerhardt states that this unanimous diagnosis of cancer was based on the rapid reappearance of the growth after destructive cauterization, its hardness and unevenness, the persistence of traumatism at its inner side, the impeded mobility of the vocal band, the certainty that tuberculosis and other infectious diseases could be excluded, and a group of concurrent circumstances peculiar to the case.

When Mackenzie first appeared on the scene, on the 20th of May, he told his German colleagues that the growth did not look to him like cancer, and that he could not accept that diagnosis until a portion of the tumor had been removed and reported upon by a competent pathologist. This was agreed to, and Mackenzie was intrusted with the task of removing a fragment of the growth through the mouth. In his book he shows indignation at the use of the word intrusted (*betraut*), intimating that it implies that he was to act under the German doctors' direction, whereas, as he asserts, they were all incapable of carrying out the procedure. Whatever may be the truth in regard to this insinuation, we confess that we can not accept it as probable, and, moreover, we fail to see anything offensive in the use of the word *betraut*. It was further agreed that whatever was removed should be submitted to Virchow. In pursuance of this plan, Mackenzie removed a piece of tissue. Gerhardt says that he made a laryngoscopical examination immediately afterward, and observed a little loss of substance of the mucous membrane of the upper surface of the left vocal band, near the outer margin of the tumor. The German contention is, as foreshadowed by this statement of Gerhardt's, that neither on this occasion nor on any subsequent occasion of the removal of a piece of the tumor by Mackenzie was the center (nucleus) of the growth represented in the tissue given to Virchow for examination; and that instances occur in which a tumor is cancerous at the nucleus, but shows no malignant structure in its other parts for a time. Therefore, according to the Germans, Virchow's failure to find cancerous tissue in the specimens submitted to him did not invalidate their diagnosis. This seems to us a reasonable contention, and it must be said that Mackenzie is somewhat disingenuous in his manner of meeting it. He gives prominence to the fact, which nobody appears to have doubted, that the fragment removed embraced the whole thickness of the growth, from its surface down to and including the underlying healthy tissue. That, of course, might well be the case, and yet the nucleus of the tumor not have been touched. In the fragment removed Virchow found only evidences of irritative processes and, along with proliferating epithelia, a single nest of epithelial cells in concentric layers, and pronounced the disease to be pachydermia laryngis.

Virchow's reports were made known to the world from time to time as they were rendered. At no time did he pronounce the disease malignant. Although he was careful to

specify that his deductions were drawn only from the specimens submitted to him, he occasionally added remarks of a hopeful nature, the purport of which was that there was no ground to suppose that cancerous disease was present. Mackenzie now says that, if Virchow's statements of facts had not been accompanied by such remarks, the impression they would have made on him would have been in favor of the cancerous nature of the growth. It is contended that Mackenzie ought not to have laid the whole burden of the diagnosis on Virchow. We certainly think he would have been wiser if he had attached more weight to the observations and opinions of his colleagues —men who, however flippantly he may speak of them, are known to be of a high degree of capability. Mackenzie alleges now that he never undertook to cure the patient without an external operation, but Gerhardt declares that, on being asked if he could guarantee to do so, he replied: "Ja, bestimmt," and added, after a pause, "humanly speaking."

As we have before maintained, we think Mackenzie was justified in demanding a microscopical examination and in persisting in the endolaryngeal method of operating so long as there seemed to be a reasonable prospect of thus wholly eradicating a growth which he had much cause to consider benign. However, his persistence appears to have been the unfortunate cause of the bad feeling that sprung up almost immediately between him and his colleagues, for it became bruited about that they had been willing to submit the patient to a dangerous external operation, and that he had come into the case in the very nick of time, bringing with him the sure prospect of cure by comparatively unobjectionable treatment. The German surgeons seem to have felt that this popular view of the matter was due to his machinations, and he appears equally imbued with the notion that they, or some of them, were the source from which the "reptile press" of Germany subsequently drew its inspiration.

The first notable expression of the bad feeling in question that is to be found in the German pamphlet occurs in Gerhardt's account of Mackenzie's second attempt to remove a portion of the tumor. He says that he saw Mackenzie use a strong, sharp forceps, not disinfected; that he noticed that the light from the head-mirror was directed upon the patient's cheek instead of into his mouth; that nothing was brought away in the grasp of the forceps; and that he himself made a laryngoscopical examination immediately afterward, and found both vocal bands highly reddened, the right one being bathed in blood throughout and showing a black-red swelling projecting into the glottis. In other words, he perceived that Mackenzie had attacked the healthy vocal band, instead of the diseased one. The evidence of this alleged injury to the right vocal band is said to have been observed by von Bergmann and Tobold at the next consultation, and is subsequently mentioned several times in the German pamphlet, especially in Landgraf's report. Aphonia of many weeks' duration is reported to have followed this misadventure, and the patient's recovery of a hoarse voice to have been afterward vaunted in England as a triumph of medical art. It is within the bounds of possibility that even so skillful an operator as Mackenzie may have seized the right vocal band instead of the left one, but it is almost incredible; and it is quite beyond credence—as Mackenzie himself has not been slow to point out—that he should have been able to guide the forceps into the larynx at all while the light from the mirror was thrown on to the patient's cheek.

A full consultation was held on the 25th of May, at which it was agreed that Mackenzie should be allowed to proceed with his treatment until the microscope or some other evidence, such as an increase of the growth, showed the tumor to be malignant. Gerhardt states that he found it increased in size on the 1st of June, and that when, on a subsequent occasion, the German surgeons called Mackenzie's attention to an increase, to its encroachment on the posterior wall, and to the decreasing mobility of the left vocal band, he replied: "I do not see it," but afterward reported from San Remo that this lessened mobility had been observed before in Berlin. On the 8th of June Mackenzie removed two pieces, from an examination of which Virchow pronounced the growth to be pachydermia verrucosa, adding that he could not say positively from the pieces examined that this was the nature of the entire tumor. Gerhardt remarks that pachydermia verrucosa laryngis can not be found mentioned in literature previously to Hünermann's dissertation, published in 1881, in which the description is founded on pathological anatomy alone, so that practically nothing is known of its clinical history; and he argues, from the clinical standpoint, that Frederick's disease could not be classed under that head.

The progress of the case under Mackenzie's treatment was generally supposed for a number of months to be satisfactory, notwithstanding the fact that the German surgeons adhered to their view of its malignancy and to their conviction that the tumor could not be adequately removed by way of the mouth. After a time, however, disease of the cartilaginous structure of the larynx became apparent, and tracheotomy was resorted to. At this period Mackenzie played for a short time a less prominent part in the management of the case, but he subsequently resumed the chief responsibility. At this stage of the case nothing occurred that calls for mention in this article, except on an occasion when difficulty was experienced in replacing the inner cannula. According to von Bergmann's account of this episode, he received a note from Mackenzie in which that gentleman said: "We have difficulties with the cannula, and I shall be glad if you will see the Emperor with me *as soon as possible*," the note being written in English, and the words "as soon as possible" being underscored. Mackenzie says that this meant only that he was "anxious to proceed to change the tube without delay," having just completed a lead tube which he thought would for the time being prove more satisfactory than the one then in use. Von Bergmann says that, in response to the note, he went at once with his assistant, Bramann, and found Mackenzie still engaged with a workman in trying to fashion the lead tube, whereupon he showed Mackenzie that he (von Bergmann) had with him a Hahn's sponge-cannula of suitable curve. He states that Mackenzie approved of the tube, and that they hastened together to the Emperor's

room, where they found him sitting on a chair suffering with severe dyspnœa, his cheeks and lips being blue, his inspirations stridulous, his accessory muscles of respiration called into play, and his epigastrium receding with each breath. Von Bergmann says that he hastily removed the sponge from the cannula that he had brought with him, and endeavored to insert the tube, but met with great difficulty from obstruction of the channel by exuberant granulations and from the brawny state of the parts below the wound. The outer cannula previously in use, he says, was at this time resting on the trachea, not within it, and the patient's difficulty in breathing was growing greater and greater. A further attempt to insert the new cannula, the edges of the wound being drawn apart with long blunt hooks, likewise proved unavailing, and he then inserted his finger for the purpose of further clearing the channel. Having done this, he held the wound open with the hooks, and Bramann inserted a cannula of a somewhat smaller curve, whereupon the Emperor at once breathed easily again. He says that the whole procedure was the work of a few moments only, and that but moderate bleeding followed, the sputa returning to their former color in the course of half an hour. He adds that some discharge ran down into the trachea, but was at once coughed out.

Mackenzie's version of what took place on this occasion is quite different. He says that there was no dyspnœa, that he was not in any difficulty, and that he sent for von Bergmann only out of courtesy. He asserts that von Bergmann arrived in a great state of excitement, which he adroitly pictures in such terms as to lead many readers to draw an inference that no ordinary provocation should lead one gentleman to lay another open to. He says that it had been his intention to insert the new tube himself, but that, as von Bergmann seemed to wish to do it, he made no objection. He then describes von Bergmann's forcible attempts, ending, as he asserts, in his forcing the cannula down between the trachea and the overlying parts, leading to free bleeding, fever, and the formation of abscesses Finally, says Mackenzie, von Bergmann sent for Bramann (who. according to Mackenzie, had been left waiting outside), who, readily inserted a tube while von Bergmann held the hooks. We can no more credit these statements of Mackenzie's than we can believe Gerhardt's story about Mackenzie's awkwardness with the head-mirror, and, of the two, Mackenzie's account is the more discreditable.

In so far as it merits attention, the remainder of Mackenzie's book is statistical. He gives a table of twenty-two cases of thyreotomy for cancer, only two of which resulted in cure. This is enough to show the dangerous character of the operation in the cases in which it has been undertaken, but no information is given as to the patients' condition at the time of its performance. It may well be imagined that many of them were in an advanced stage of the disease, and it would be edifying if we could be furnished with data for comparing the results of thyreotomy in the later and in the earlier stages of cancer. Mackenzie argues against the advantage of the procedure as facilitating the removal of a neoplasm from the larynx, stating that the opening by which access to the growth may safely be gained hardly exceeds the rima glottidis in dimensions, but he omits all consideration of the facts that the route is a direct one and that the operator can work without being obliged to devote part of his attention to nicety in the management of mirrors. Moreover, he speaks of partial removal of the larynx as the operation that von Bergmann "would probably have found it necessary to perform," as if it were a still more desperate resource, although he subsequently says that it "will probably be found to be much more successful than simple thyreotomy."

It is our conviction that both these publications are to be regretted. The German surgeons are not to be blamed for wishing to put themselves correctly on record, nor for the controversial element in their pamphlet so far as it deals with scientific questions, but it would have been vastly better, we think, if they had omitted all reference to their antagonist's alleged shortcomings as an observer and to his supposed lack of integrity. But Mackenzie has far exceeded them in rancor and recklessness. His book is meant for the general public, and his adroitness as a writer and as a special pleader does not seem to have been held at all in check wherever it was an object to make the worst appear the better part. His story is anything but a "plain tale"; it is a pitiful exhibition of mingled vanity and spite, adorned with a great mass of irrelevant matter. We fear that his reputation will be the worse for it, and it is to be hoped that we shall never again see a medical controversy conducted in such a fashion.

## *MINOR PARAGRAPHS.*

### MEASLES IN NEGROES.

Dr. Lachlan Tyler, of Washington, lately read an interesting paper on measles before the Washington Obstetrical and Gynæcological Society, which is published in the "American Journal of Obstetrics." He thinks that Ellis is in error in giving the average mortality of the disease as one in fifteen, and that it is really much lower. Among the negroes of the District of Columbia, who make up not more than a third of the population, the mortality, he says, is both relatively and actually greater than among the whites. This, he thinks, plainly demonstrates the potency of insanitary environment in producing death from measles, for the negroes generally live in the utmost squalor.

### THE HOAGLAND LABORATORY.

The trustees of this institution, connected with the Long Island College Hospital, in Brooklyn, announce the completion of the building and its equipment for work. Owing to the temporary absence of the director, Dr. Sternberg, the course of lectures on bacteriology announced to be given by him will be postponed until his return. The services of Dr. George T. Kemp, of the Johns Hopkins University, have been secured as associate in bacteriology and physiology, and with his assistance, under Dr. Sternberg's direction, practical instruction in bacteriology will be given during the winter and spring.

### ITEMS, ETC.

**The Health of Connecticut.**—According to the "Monthly Bulletin of the Connecticut State Board of Health," for the

month of September, in 165 towns there were 1,032 deaths, including 1 from scarlet fever, 5 from cerebro-spinal fever, 31 from diphtheria and croup, 3 from whooping-cough, 53 from typhoid fever, 12 from malarial fever, 11 from typho-malarial fever, 203 from diarrhœa, 112 from consumption, 25 from pneumonia, and 9 from bronchitis.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 16, 1888:

| DISEASES. | Week ending Oct. 9. | | Week ending Oct. 16 | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 43 | 10 | 49 | 14 |
| Scarlet fever | 72 | 10 | 84 | 19 |
| Cerebro-spinal meningitis | 1 | 1 | 2 | 2 |
| Measles | 60 | 9 | 91 | 11 |
| Diphtheria | 67 | 17 | 67 | 22 |
| Small-pox | 0 | 1 | 0 | 0 |

**Changes of Address.**—Dr. William S. McMurdy has moved to No. 367 West Forty-eighth Street. Dr. A. J. Magnin has taken up his residence in Paris, making a vacancy in the visiting staff of the French Hospital.

**An Unknown Correspondent,** whose address is given as "93 East Fourth Street," is requested to inform us in regard to what city he lives in.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 7 to October 13, 1888:*

MAUS, LOUIS M., Captain and Assistant Surgeon, by direction of the acting Secretary of War, is relieved from duty at Fort Schuyler, N. Y., and will report in person to the commanding officer at Fort Porter, N. Y., for duty at the post. Par. 10, S. O. 236, A. G. O., Washington, October 10, 1888.

SPENCER, WILLIAM G., Captain and Assistant Surgeon, by direction of the acting Secretary of War, is granted leave of absence for two months. Par. 11, S. O. 236, A. G. O., Washington, October 10, 1888.

DAVIS, WILLIAM B., Captain and Assistant Surgeon, by direction of the acting Secretary of War, is granted leave of absence for six months. Par. 12, S. O. 232, A. G. O., October 5, 1888.

BANISTER, JOHN M., Captain and Assistant Surgeon. By direction of the acting Secretary of War, the leave of absence granted in S. O. No. 210, September 10, 1888, from this office, is extended one month. Par. 2, S. O. 232, A. G. O., October 5, 1888.

*Death.*

MEACHAM, FRANK, Major and Surgeon, died at Fort Douglass, Utah, October 9, 1888, at twenty minutes past 1 P. M.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 13, 1888:*

BATES, N. L., Medical Inspector. Detached from the Pensacola, and placed on waiting orders.

FARWELL, W. G., Surgeon. Ordered to the United States Revenue-Steamer Franklin.

SCOTT, H. B., Passed Assistant Surgeon. Detached from the New York Navy-Yard, and ordered to the Naval Hospital at Mare Island, California.

MAGRUDER, A. F., Surgeon. Ordered to duty at headquarters of the Marine Corps.

**Society Meetings for the Coming Week:**

MONDAY, *October 22d:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore, Md., Medical Association.

TUESDAY, *October 23d:* Virginia State Medical Society (first day—Norfolk); New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo, N. Y., Obstetrical Society (private); Medical Society of the County of Putnam (quarterly), N. Y.

WEDNESDAY, *October 24th:* Virginia State Medical Society (second day); New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany, N. Y.; Philadelphia County Medical Society.

THURSDAY, *October 25th:* Virginia State Medical Society (third day); New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Massachusetts Medical Benevolent Society (annual); Cumberland, Me., County Medical Society, Portland.

FRIDAY, *October 26th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

SATURDAY, *October 27th:* New York Medical and Surgical Society (private).

## Proceedings of Societies.

### AMERICAN LARYNGOLOGICAL ASSOCIATION.

*Tenth Annual Congress, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, Dr. RUFUS P. LINCOLN, of New York, in the Chair.

**A Decade of Laryngology** was the subject of the address by the PRESIDENT, who said that the members of the association were to be congratulated upon the successful termination of ten years of their labors. The association presented now every evidence of healthy and vigorous growth, and gave promise of long life; it was one that patients and the medical profession at large were bound to respect. The objects of the association had been clearly formulated by the lamented Elsberg in the first annual address. They were, in brief, that this association should become the means of mutual introduction of those of kindred tastes in the practice of medicine, and of fostering friendships thereby made; that it should have annual meetings for the contribution and promulgation of original work, and for the discussion of subjects pertaining to laryngology; that its proceedings should be published in a suitable form for convenience of its members, and offered to the profession at large; that it should institute a laryngological library; that prizes should be offered for valuable contributions to the science of laryngology; that special hospitals, or wards in hospitals already established, should be devoted to throat patients; and that its members should seek recognition in the different medical colleges throughout the country by the assignment of a special chair for instruction in this department. Except the

offering of a prize, all these requirements had been realized. The organization of the association had marked the beginning of a new era in laryngology. Analyzing the original contributions read at the previous meetings of this association (omitting presidential addresses), the speaker found that there had been 194 scientific papers, which might be classified as follows: (1) Anterior nares, 18 were upon diseases of mucous membrane and submucous tissue, 5 on tumors, 10 on deformities, 9 on neuroses, and 2 on the cavity of the antrum. (2) Of the nasopharynx, 5 referred to disease of the mucous membranes and submucous tissues, 7 to tumors, and 3 to deformities. (3) Of the oro pharynx, 18 referred to diseases of mucous membrane and submucous tissue, 6 to tumors, 2 to deformities, 6 to neuroses, and one was anatomical. (4) Of the larynx, 20 papers were on mucous and submucous tissue, 18 on tumors, 6 on stricture of larynx and trachea, 4 on diseases of cartilages, 18 on diseases of the nerves, 3 on fractures and wounds, 8 on anatomy and physiology, 5 on therapeutics, 2 on syphilis, 4 on vocalization, 3 on intubation and tracheotomy, 1 on foreign bodies, 1 on laryngectomy, 4 on photography, and 5 general. There had also been exhibited more than fifty new instruments, or modifications of old ones. Many papers had been illustrated by sketches, photographs, pathological specimens, or microscopical exhibitions, or accompanied by living patients. These contributions had been published, eagerly sought after by medical journals, and had been published in the annual volume of transactions. An attempt to disparage the specialist, or rather to criticise his relation to the patient and the family physician, at present could be met by pointing to the work done by this association, and the reply could be made that "if there was a want of harmony it must be the fault of the individual rather than of the principle. The more strictly one was a specialist and the less a general practitioner 'with a preference,' the less chance there would be for discord between the expert and the family physician." The patient was no longer regarded as the private property of one physician. The principle of the subdivision of labor was permeating all classes of effort, while in the profession, in addition to these principles, the old and new code were being merged into the Golden Rule. In conclusion, the speaker referred to the growing interest in preventive medicine, and called attention to the field which this opened to the prevention of diseases of the air-passages. The question of increasing the membership of this association came before this meeting; it was advised that vacancies should be filled by representative workers in laryngology in recognition only of valuable contributions to the department. The death of Dr. Woolsey Johnson, of New York, a member of this association, was referred to in fitting terms, and a sketch of his life and work was given.

**Imaginary Laryngeal Ulceration.**—Dr. George M. Lefferts, of New York, read a paper on this subject. The condition embraced in this paper was one in which the patient came to the physician complaining of pain affecting a portion of the tongue, giving rise to the belief that he was suffering with ulcer. Although no ulceration could be detected, even on careful examination, yet the sensation was real to the sufferer. Since the cause was unknown and routine treatment unsatisfactory, the subject invited our consideration. The condition had been given its name by Verneuil. The clinical appearances were usually as follows: A patient—male or female, for the affection occurred with equal frequency in the sexes, and at from thirty-five to fifty years of age—presented himself, complaining of intense pain, usually of a lancinating or darting character, limited to one half of the tongue, usually the left, and extending from its base, just opposite and below the tonsil, forward to its tip. Or the pain might be more circumscribed, and limited to the junction of the posterior with the middle third of the organ, at or near the location of the posterior lenticular papillæ. It was more or less intermittent, rarely constant; was aggravated by movements of the tongue, although these were free; was often increased by the act of mastication, and excited by hot or irritating articles of food. The patient was in fear of cancer, became demoralized, and could not be convinced that ulceration did not exist. Such patients were not invariably hypochondriacal, as had been asserted. On the contrary, the affection was met with in those who presented no evidences of a neurotic or even nervous temperament; it was occasionally seen in individuals possessing and presenting all the signs of robust health, and the mistake had been made, and was made to-day, of ascribing alone to the imaginative fears of the patient what actually existed as an undoubted, if not always demonstrable, physical and painful fact. The tongue, on examination, presented a normal appearance, unless, through injudicious applications or from other cause, there was some irritation indicated by enlargement of the papillæ, and the tongue became more or less swollen. Verneuil and, it was believed, Labbé considered this affection as purely neuralgic. Fournier, Lollé, Hardy, Luys, and Magitot regarded the symptoms as hypochondriacal. Poyet said that the delusion might be referred to one of four causes: (1) Neuralgia of the tongue; (2) imagination, leading the patient to suspect cancer; (3) hypochondria; and (4) lingual psoriasis. Cases were certainly met with which could not be ascribed to any of these causes, and where all local irritation had been removed—such as from decayed teeth, teeth filled with amalgam, or disease of the gums. The general or local cause was unknown. Injudicious routine treatment by local applications was not only unavailing, but often aggravated the condition. Nothing was uniformly successful. Applications of cocaine or aconite sometimes succeeded, but often failed, and the same was true of the various treatments usually employed for neuralgia. Electricity was of service. Hypodermic injections of analgesic drugs had been recommended, and even the galvano-cautery. Neurotomy must be discarded, mainly because of the impossibility of proving whether the lingual or the glosso-pharyngeal nerve was at fault. The object of this paper was simply to place this rare and curious affection in its true light, and bring up the question of treatment.

Dr. F. H. Bosworth, of New York, considered the name of the disease open to criticism. Until it was better understood, he would prefer to call it simply Verneuil's disease.

Dr. E. Fletcher Ingals, of Chicago, had found that rheumatism was present in some cases, which had only yielded to the usual treatment for this condition. In other cases neuralgia seemed to be the cause. He mentioned a case where this painful condition existed in a man who had been shot through the chest, and who had not improved under treatment. In other cases it seemed to resemble the sore mouth occurring as a result of the tobacco habit, which disappeared when the habit was broken. Some patients were benefited by the use of tobacco.

The President observed that he had met with cases associated with rheumatism, but in which this had not explained the cause. He mentioned the case of a lady, who had suffered with rheumatic pain upon one side of her body and also with this condition of the tongue, in whom the general condition had been amenable to treatment, while the local pain in the tongue had not been benefited by it.

Dr. Lefferts, in conclusion, said that rheumatism was a good suggestion and applied to some cases. Many of the patients, though, were in robust health, with no suspicion of rheumatism. In regard to tobacco, many of the patients were women, who generally did not smoke. The question of treatment was

the special object of the paper. Patients clamored for relief, and the question was, What should we do for them?

Dr. EDGAR HOLDEN, of Newark, had treated six cases on the assumption that they were of rheumatic or gouty character. Three were treated successfully—two with arsenic, one with lithia water.

**A Case of Subglottic Chronic Stenosis of the Larynx treated by Dilatation.**—Dr. FRANK DONALDSON, of Baltimore, read a paper in which he gave the history of a case. The patient, a woman thirty-four years of age, presented, in October, 1887, a condition of subglottic stenosis, probably due to diphtheritic inflammation and subsequent cicatrization and contraction by membranous bands. Schroetter's long hard-rubber perforated tubes were used, commencing with No. 1 and gradually going up to No. 5, having first touched the larynx with a 15-per-cent. solution of cocaine. Subsequently there had been some difficulty of breathing after a catarrhal attack, and it was possible that there might be some return of the obstructing membrane. Otherwise the relief had been complete.

**Stenosis of the Larynx and Trachea.**—Dr. CARL SEILER, of Philadelphia, read the report of a case. The peculiar points in the case were, first, the fact that the patient, a small boy, had learned to articulate audibly without any air passing through the larynx. He produced the articulate sounds by filling the oral and pharyngeal cavities with air, and then, by a rapid contraction of the pharyngeal constrictors, he forced it forward past the natural obstructions, thus making the consonant sounds. The second point was the peculiar features of the operation undertaken for the relief of the stenosis. This consisted of an external incision through the two upper tracheal rings and the cricoid cartilage. The operator's finger was then introduced through the mouth into the larynx, and, pushing the tumor causing the stenosis downward, it was removed from below with a forceps through the external wound. The stricture of the trachea was situated lower down, just above the old tracheal wound, and was due to ulceration, which had followed the original tracheotomy performed two years prior to the laryngotomy. This stricture reduced the lumen of the trachea to about one third of an inch. The method pursued for curing this stricture was simply to take the cannula out of the old wound and introduce it into the upper wound and through the stricture. At the end of a month the tube was removed, no obstruction to breathing was experienced by the patient, and he soon learned to use his voice like other children.

**Syphilitic Stenosis of the Trachea.**—Dr. JOHN N. MACKENZIE, of Baltimore, reported the history of a case.

**Stricture of the Larynx with Extensive Cicatrization from a Case of Ulcerative Tuberculosis.**—Dr. J. SOLIS-COHEN, of Philadelphia, presented an interesting specimen showing this condition.

Dr. DELAVAN, Dr. RICE, Dr. INGALS, Dr. LEFFERTS, and Dr. COHEN discussed the preceding papers. It was asserted that O'Dwyer's tubes were valuable accessories to the treatment of laryngeal stenosis. In cases where there was extensive cicatricial constriction any treatment would be only palliative; where the constriction was narrow and membranous, dilatation or cutting might entirely relieve the patient. Where the stenosis was caused by adhesions between the arytænoids, Dr. Cohen pointed out that laryngeal dilatation would never afford permanent relief.

**An Instrument for opening the Larynx without Previous Incision of the Skin** was presented by Dr. EDGAR A. HOLDEN, which was offered as a possible substitute for tracheotomy and intubation in certain cases.

The paper was discussed by Dr. DALY, Dr. SEILER, Dr. COHEN, Dr. LANGMAID, Dr. LEFFERTS, Dr. BOSWORTH, and Dr. HOLDEN. Some minor modifications were suggested in the instrument, which otherwise was favorably received. The proposed operation was hailed as a valuable contribution to laryngology.

**Two Cases of Interest in the Clinic of Laryngology at the Lariboisiere Hospital.**—The secretary read a paper on this subject, contributed by Dr. A. GOUGUENHEIM, of Paris. The first case was one of cancer of the larynx in a workman, fifty-six years of age, upon whom tracheotomy had been performed in 1887. Owing to extension of the disease to the wound and down the trachea, it was necessary to have a longer tube, the lower portion of which should be flexible. This was accomplished by Mathieu, of Paris, by making the lower portion of the inner tube in spiral section and movable. A rubber bougie was used to introduce the outer cannula. In spite of the irregularities of the passage, the instrument was easily introduced, and answered the purpose for which it was designed. One notable feature was that the instrument always remained *in situ* when the strings which fastened it round the neck were unloosened, thus differing from ordinary cannulæ. The instrument was made of silver.

The second case was one of buccal perforation opening into the maxillary antrum in a workwoman thirty years of age. This was due to necrosis, the result of syphilis.

The SECRETARY announced the reception of a communication, also, from E. J. MONEL, M. D., of Bordeaux, France, on **Acute Œdema of the Subepiglottic Region and Lower Pharynx in a Diabetic Patient,** which was likewise read.

A paper on **Parasites Inhabiting the Human Nares,** by Dr. D. N. RANKIN, of Alleghany City, Pa., was read by Dr. C. H. Knight, of New York, in the absence of the author.

**Election of New Members.**—At the close of the morning hour an executive session was held, at which the following members were elected: Dr. S. Oakley Vander Poel, of New York; Dr. F. Whitehill Hinkel, of Buffalo; and Dr. John H. Lowman, of Cleveland, Ohio. There being still one vacancy, it was voted not to adopt the amendment increasing the limit of membership. Dr. J. Solis-Cohen gave notice that he would offer the same amendment at the next meeting.

**Residence at Certain Great Altitudes as a Means of Cure for Laryngeal Phthisis.**—The secretary read a paper with this title, contributed by Dr. CLINTON WAGNER, of New York, in which cases were reported of cure by prolonged residence in the Adirondacks and other mountain health-resorts.

Dr. W. C. GLASGOW, of St. Louis, had had much experience with this class of cases, and had observed that whenever a consumptive had a throat complication a visit or a stay in a high elevation had been injurious. When the throat complication was marked, he recommended a stay in a lesser altitude (say three thousand feet) until this had been relieved before going to the greater altitude (say five thousand to seven thousand feet). He did not regard all cases of throat complication in phthisis as being cases of laryngeal phthisis; he did not believe that true tubercular ulceration of the larynx would get well in any climate.

Dr. E. L. SHURLY, of Detroit, confirmed the last observation, and spoke of the difficulty of diagnosis. The discovery of the *Bacillus tuberculosis* had not given the assistance that was hoped, as it might be present in chronic bronchitis and might not be found in well-marked instances of phthisis pulmonalis. He had seen better results following a visit to the sea-shore in some cases than from sending them to the mountains. Each case must be studied by itself.

Dr. LEFFERTS confirmed the statement that there were two kinds of laryngeal ulceration—one due to lowered vitality, the other to tuberculosis; the latter never healed, and in such cases the patient was much better off at home than elsewhere.

**A Hitherto Undescribed Neurosis of the Aural Apparatus closely allied to Coryza Sympathetica.**—Dr. John N. Mackenzie, of Baltimore, read a paper with this title. In the course of a former article on "Respiratory Vaso-motor Neuroses" he had called attention to a condition of the aural apparatus closely akin to vaso-motor coryza. He now reported an illustrative case: A lady, forty-two years of age, married, had had a peculiar periodic affection of the ear, coming on every summer. She had been accustomed to luxury, but during later years she had been considerably reduced in circumstances, thus causing much strain upon her nervous system, though not a nervous woman, certainly not hysterical. The affection had made its appearance suddenly after a visit to the White Sulphur Springs, West Virginia. It recurred about the first day of June each year. Intolerable itching of the auditory canal and corresponding side of the throat was soon followed by swelling of the lining membrane along the auditory canal, until the meatus became completely occluded; the surface of the swollen membrane was intensely sensitive, preventing the employment of topical applications except hot water. This was followed by middle ear inflammation and occlusion of the Eustachian tube. The affection was limited to one side in each attack, although the recurrence usually involved the ear which had escaped the preceding year. The paroxysms of the disease were of almost daily appearance for four weeks, when they disappeared suddenly. During last summer, spent at a "hay-fever resort," she escaped the malady for the first time in twenty-two years.

The case was interesting because it represented a hitherto unrecognized and undescribed affection of the ear, and because it furnished additional evidence in favor of the doctrine maintained by the author concerning the rôle of the sympathetic in the so-called motor and neuro-vascular affections of the upper respiratory tract, and as a pregnant illustration of the law that "the area in which the vaso-motor reflexes occur will depend, other things being equal, on the seat of the local pathological process, or the localization of the area of peripheral excitability." In this case the process was in the neighborhood controlled by the otic ganglion, while, in the ordinary form of conjunctival and nasal affection, the vaso motor supply was obtained through the ophthalmic. If these affections were closely studied we might gain some light upon the pathology of the sympathetic nerves.

Dr. Shurly, Dr. Sajous, Dr. Allen, and Dr. Mackenzie discussed this communication.

**Further Investigations as to the Existence of a Cortical Motor Center for the Human Larynx.**—Dr. D. Bryson Delavan, of New York, read a paper with this title, and presented a specimen consisting of the arteries at the base of the brain, together with the vertebral artery of the left side, which presented an enlargement just at the point where it would come in contact with the pneumogastric nerve. Possibly this might have caused the interference with the functions of the larynx that were observed during life.

**Internal Œsophagotomy, with Report of Successful Cases.**—Dr. John O. Roe, of Rochester, N. Y., read a paper on this subject. In case of cicatricial constriction of the œsophagus, the author considered it safer to make several linear incisions two millimetres in depth in the constriction before attempting dilatation than to attempt dilatation without it. When the cicatrix was horseshoe-shaped and did not include the entire circumference of the œsophagus, attempts to force a probang through the constriction might produce rupture of the healthy portion. The preferable plan was to make incisions on each side and at the back before attempting dilatation.

Dr. Rice, Dr. Ingals, Dr. Langmaid, Dr. Sajous, and Dr. Delavan participated in the discussion, in which reference was made to spasm of the œsophagus and the diagnosis of stricture.

**Dyspepsia as Reflected in the Mucous Membrane of the Upper Air-passages.**—Dr. Beverley Robinson, of New York, by appointment, opened the discussion upon this subject, and in the course of his remarks cited a number of cases in which digestive disturbances were accompanied by disorders of the upper air-passages, and others in which local affections of the naso-pharynx and larynx disappeared when the condition of the digestion or diet was corrected.

Dr. Shurly did not accept the statement that naso-pharyngeal disease caused dyspepsia, because many cases were entirely free from gastric symptoms, but he did believe that dyspepsia, plethora, and sedentary habits of life were frequent causes of naso-pharyngeal catarrh.

Dr. W. H. Daly, of Pittsburgh, had had much experience in the use of general constitutional remedies, such as strychnine and calomel, in treating nasal disorders, and indorsed the remarks of the previous speaker with reference to the necessity of correcting the patient's habits of life.

Dr. Robinson closed the discussion with the remark that it was important for every specialist to occasionally have his work criticised from the standpoint of the general practitioner, in order to prevent him from becoming too exclusively devoted to special methods of treatment.

**The Anatomy of the Nasal Chambers.**—Dr. Harrison Allen, of Philadelphia, made a communication on this subject, and illustrated his remarks by exhibiting skulls and wet specimens of the human head in section.

Dr. Frank Baker, of Washington, remarked that it was possible that the facts noted by Dr. Allen as to the occurrence of irregularities and deviations within the region anterior to a vertical plane passing through the anterior ethmoidal foramina might have a morphological significance. That region was formed by the orbito-nasal process of the embryonic cranium, and was at first a cartilaginous capsule of considerable relative size, the different sinuses—maxillary, frontal, ethmoidal—being formed by vesiculation and absorption. It was a region of peculiar physiological action in this respect. It would seem probable that, on further examination, it would not be limited by a plane as arbitrarily drawn as the one suggested by Dr. Allen.

**Notes on a Case of Nasal Caries complicated with Meningitis successfully treated by Means of the Surgical Drill.**—Dr. William C. Jarvis, of New York, read a paper with this title.

**The Treatment of Atrophic Rhinitis by the Galvanic Current.**—Dr. J. H. Hartman, of Baltimore, read a paper on this subject, and exhibited electrodes which he had found especially adapted for the purpose.

**A Photographic Study of the Laryngeal Image during the Formation of Registers in the Singing Voice.**—Dr. Thomas R. French, of Brooklyn, N. Y., read a paper with this title, using the calcium light to exhibit the photographs upon the screen. The exhibition was a very fine one, and, although in the discussion which followed the lecture there was some want of agreement as to what constituted a register and the functions of the larynx in forming it, there was only one opinion as to the value of Dr. French's work.

**Congenital Bony Occlusion of the Posterior Nares in a Child, relieved by the Surgical Drill.**—Dr. Charles H. Knight, of New York, reported an interesting case, an interesting feature consisting in the fact that the operation afforded an opportunity for the development of the latent olfactory sense.

**Antiseptic Nasal Surgery.**—Dr. Clarence C. Rice, of New York, read a paper on this subject. The author referred

to the general adoption of antiseptic methods, and urged their application to nasal surgery, as far as practicable, in order to obtain more rapid healing and to escape the dangers of septicæmia.

**The Treatment of Some Forms of Chronic Laryngitis.**—Dr. Charles E. Sajous, of Philadelphia, read a paper in which remarkable results were reported from touching the thickened vocal cords by means of a protected applicator slightly coated with chromic acid. He had found cocaine objectionable in these cases, since its prolonged use led to increase of secretions from the mucous membrane. Cases were reported of complete restoration of voice under the treatment indicated.

**The Cure of the Falsetto Voice.**—Dr. J. C. Mulhall, of St. Louis, read a communication on this subject. The paucity of literature upon the subject had led to the presentation of this paper, which contained notes of several cases in which a falsetto voice was restored to the normal by voice-training and instruction in elocution. Dr. J. Solis-Cohen, Dr. Jarvis, Dr. Glasgow, Dr. Langmaid, Dr. Delavan, Dr. Lincoln, and Dr. Knight discussed the paper, the conclusion being that whereas some cases had been encountered which were considered intractable by some, others had been successful in curing all cases by teaching the patient the proper register for his voice and by vocal drill.

**Subglottic Laryngeal Enchondroma.**—Dr. E. Fletcher Ingals, of Chicago, read a paper on this subject.

**Laryngeal Papilloma from the Body of a Child.**—Dr. S. W. Langmaid presented a specimen. It almost identically repeated the case which was shown by an illustration in the well-known work of Causit, published in 1867.

**Angeioma of the Larynx.**—Dr. W. C. Glasgow, of St. Louis, read a report of a case. Colored drawings of the appearance of the growth *in situ* and in section were presented. Attention was called to the peculiar translucent appearance of the growth, which resembled currant jelly, through which the cord could be clearly seen.

This communication was discussed by Dr. J. Solis-Cohen, who spoke of four cases that he had published.

**Primary Sarcoma of the Tonsil.**—Dr. Alexander MacCoy, of Philadelphia, reported the history of a case. The rarity of reports of this affection was noteworthy, although the last two years showed a number of cases, which was probably to be explained by an increasing number of observers and by improved methods of study. To this paper was appended an epitome of cases recorded, so far as accessible to the writer.

The patient, a mulatto woman, aged forty-five, married, no children, came under observation in May, 1886. A maternal aunt had died with a tumor of the breast, and also a sister; a niece and nephew had died with consumption of the lungs. Paternal family history unimportant. The patient had always suffered with menstrual irregularity; the menstrual flow lasted for several months, and then would not reappear for six months. When she came under observation she had complained of sore throat and painful deglutition. There was unusual redness and some swelling of right tonsil, presenting the appearance of mild tonsillitis. Three months later the swelling had increased, and there was a fissure or cleavage of the surface, in which there was a grayish pultaceous exudation with a fœtid odor, which, however, yielded to carbolic acid, iodine, and glycerin solution. The general health was good, and there was no lymphatic glandular enlargement. A few days later there was noticed infiltration of the anterior palatine fold; the process never completely destroyed the uvula, and for a long time did not appear to cross the median line. The opposite tonsil was not affected. A stage of quiescence had now intervened which continued for several weeks. Subsequently the infiltration extended into the pharynx, involving the Eustachian tube, and ulceration steadily increased. After about six months the tongue showed implication, and the gums and the cheek, and about this time the submaxillary gland became enlarged, and at eight months became indurated, together with other lymphatic glands. The patient now rapidly lost flesh, and difficult respiration and pain became prominent symptoms. The patient shortly afterward died rather suddenly during an attempt to go away from the city. No post-mortem was obtained.

In this case prompt surgical interference was not instituted, because (1) of the rarity of the case and want of a clear diagnosis; (2) the early symptoms being like simple tonsillar inflammation, preventing diagnosis, which was still more interfered with by absence of the patient from the city; (3) a tardy report from the microscopist, to whom a part of the tissue removed had been referred for examination.

Donovan's solution was administered in rather large doses (14 drops three times a day) for a number of months, without gastric derangement or constitutional injury. Galvano-cautery, lactic acid, and iodine and carbolic-acid applications were used. The latter combination (each crystallized, 1 to 4) appeared to destroy the fœtor most effectually during the stage of sloughing. The duration of this case was one year.

Dr. J. Solis-Cohen, in opening the discussion, referred to another case for which he had advised immediate operation. The patient went to New York, and the growth was very thoroughly removed by Dr. Bosworth with the forceps. Three or four years later the patient was still in good health.

Dr. Delavan favored early operation. He had seen several cases in which removal of the growth through the mouth had afforded relief, and in which an external operation would have threatened the patient's life.

Dr. MacCoy called attention to the influence of three powerful alteratives in Donovan's solution—iodine, arsenic, and mercury—given in large doses, in retarding the course of the disease.

**The Surgical Pathology, Ætiology, and Treatment of Hæmorrhage after Amygdalotomy.**—Dr. D. Bryson Delavan read a paper on this subject. (It will be published hereafter.)

Dr. Roe, Dr. Mackenzie, Dr. Daly, Dr. Sajous, and Dr. Delavan discussed the subject, the conclusion being that although there had been no fatal case reported, yet there occasionally occurred cases of hæmorrhage after amygdalotomy that gave rise to fears of a fatal result. Dr. Daly recommended compression between fingers in the mouth and the thumb externally. Dr. Sajous instructed his patient to make pressure with his own fingers.

Dr. Samuel Johnston, of Baltimore, presented a young woman showing lupus lesions of nose, pharynx, hard palate, and larynx, who was examined.

**The Effects of Varying Rates of Stimulation on the Action of the Recurrent Laryngeal Nerve** was the title of a paper by Dr. Franklin H. Hooper, of Boston. (It will be published hereafter.)

Mr. Victor Horsley, of London, being invited to open the discussion, expressed his gratification at hearing the report just presented. Dr. Hooper had been the first to show the effects of certain drugs upon the larynx, and now the first to demonstrate the different rates of stimulation upon the larynx. It especially interested the speaker to know that he had obtained a repetition of the phenomena in the cat which Mr. Horsley had previously observed in conjunction with Dr. Semon. One of the results of the experiments made with Dr. Semon was the determination of the existence and location of a cortical center for the larynx in the cat. Contrary to what usually occurred in the dog, it was found that stimulation of this cortical center produced abduction of the vocal cords, and it was consequently

very interesting to the speaker to learn that Dr. Hooper had observed the same thing by stimulating the recurrent nerve that Dr. Semon and he had obtained by stimulating the cortex. He urged Dr. Hooper to extend his investigations to the cortex, and to repeat them upon monkeys, and thus independently arrive at results which might test observations made by others.

Dr. H. P. Bowditch, of Boston, was especially interested in the reverse action of certain laryngeal muscles when the intensity of the stimulation was increased. The first explanation of this might be that the opening muscles were more irritable but less powerful than the closing muscles. Light stimulation, therefore, would affect the former and not the latter, but upon continuing the stimulation, the latter, being stronger, would close the larynx in opposition to the weaker opening muscles. But another explanation must be given of the different effect produced by altering the rate of stimulation. These experiments had been begun in order to investigate the results of Wadenski obtained by stimulating the muscles of the leg, in connection with Ritter's well-known experiments upon the sciatic nerve. They had never been able to confirm the results of Wadenski. The speaker asked Mr. Horsley if he had any theory to explain the varying action of the muscles of the larynx under different rates of stimulation.

Mr. Horsley said that he had none to offer. In his own experiments upon the recurrent laryngeal nerve he had observed in a few instances that different effects were produced when the electrodes were to the inner side of the nerve than when they were placed upon the outer side.

**Officers for the Ensuing Year.**—Dr. E. Carroll Morgan, of Washington, president; Dr. W. C. Glasgow, of St. Louis, and Dr. Charles E. Sajous, of Philadelphia, vice-presidents; Dr. D. Bryson Delavan, of New York, secretary and treasurer; and Dr. Thomas R. French, of Brooklyn, librarian. The next place of meeting is at Washington, and the time the last Tuesday of May, 1889.

## PHILADELPHIA COUNTY MEDICAL SOCIETY.

*Meeting of September 12, 1888.*

The President, Dr. J. Solis-Cohen, in the Chair.

(*Concluded from page 387.*)

*Symptomatology.*—The laryngeal symptoms of secondary syphilis are not characteristic. They are chiefly comprised in dissonant alterations of the voice, either hoarseness, dysphonia, or in some cases occasional or temporary aphonia. The hoarseness is supposed to have some peculiarity which has been termed *raucedo syphilitica*, but this is not the case. In some instances it is simply due to the catarrhal laryngitis, in others to paresis of one or more of the constrictor muscles, or possibly to paralysis of the tensors. Respiration is not affected except in those instances in which œdema occurs in such a position as to occlude the passage for air, when it will be announced by dyspnœa and stridulous respiration, the characteristic symptoms of that condition. Titillation and cough are not so frequent as in inflammations of other origin. In many instances there is no tickling, cough, pain, or dysphagia. Dysphagia is not present unless there is œdema of the parts employed or pressed upon in deglutition.

In tertiary syphilis of the larynx the symptoms are usually those of impairment of phonation, followed in severe cases by dyspnœa and stridor also, chiefly inspiratory. The stridor is worse at night, from inaction of the auxiliary muscles of respiration. Should the mechanical impediment to respiration increase, inspiratory depression of the soft parts below the sternum takes place. If relief is not obtained, artificially or otherwise, asphyxia supervenes from imperfect aeration of the blood. Suffocation may occur suddenly from impaction of detached cartilage, but is more frequently slow enough in its approaches to allow time for tracheotomy. Titillation and cough are more frequent in the earlier stages than in secondary syphilis, but they diminish after ulceration has taken place, except in so far as they are produced from time to time by morbid products detained upon diseased and adjacent surfaces. Pain is infrequent before the period of ulceration; after that it may be severe, and radiate into the ears as in other ulcerative diseases. In the early stage there is no expectoration. The earliest expectoration is of collateral catarrhal products only. As ulceration progresses it becomes muco-purulent, and then purulent and sanguineo-purulent, and mixed with detritus according to the stage and location of the lesion. If gangrene takes place the odor becomes fœtid, and the expectoration contains fragments of dead soft and cartilaginous tissue, as may be. Dysphagia ensues when the disease is in a locality to interfere with deglutition, and odynphagia when ulcerations have occurred in the same localities.

In tertiary syphilis of the trachea the symptoms affect mainly the function of respiration, the voice often remaining normal even when breathing is seriously embarrassed. Pain along the course of the trachea, if constant, is indicative of lesion at that particular point. Cases may run their entire course without any special symptom, even in the presence of stricture of the trachea and of the bronchi and of extensive disorganization as revealed at the post-mortem examination.

In hereditary syphilis the symptoms are sometimes congenital and may remain practically continuous for years. Respiration and phonation are both affected. The cry of the infant sometimes possesses a shrill metallic resonance which has been compared to that of a tin trumpet. Cough is more frequent in the child than in the adult. Deglutition is often difficult and sometimes painful. Expectoration occurs in the suppurative stages when the child is old enough to expel the products, which by infants are swallowed or retained in the air-passages. Laryngismus is a symptom of frequent occurrence in young children.

*Ætiology.*—The probable condition attracting the manifestation of constitutional syphilis to the larynx is superficial catarrhal laryngitis from hereditary or acquired proclivity, or from exposure, or from abuse of tobacco or alcohol or other indulgence, or from misuse of the voice. Such exposures cause more males to be affected than females, as there is no assignable sexual reason for preponderance. Tracheal lesions, on the other hand, have been reported more frequently in females, probably because the laryngeal lesion is attended to more promptly by the male. Syphilitic disease often extends by continuity from the oropharyngeal region to the larynx, principally along the pharyngo-epiglottic fold to the epiglottis, and thence along the arytæno-epiglottic fold, and from the two structures to the interior. Hereditary syphilis has been observed in intra-uterine life (Monti, "Med. Times," Philadelphia, April 28, 1877, p. 336). Hereditary syphilis of the most intense character has been occasionally observed at a very early age, as in the case of an infant whose symptoms began with coryza in the tenth week of life, and terminated in death by suffocation from stenosis nineteen days later. Post mortem, the examination revealed, in addition to syphilitic lesions in the liver, destructive perichondritis of the cricoid and left arytænoid cartilages, and fatty degeneration of the arytænoid and both posterior crico-arytænoid muscles and the left superior nerve (Fränkel, "Wien. med. Woch.," 1868, Nos. 69, 70, cited by von Ziemssen and by Mackenzie). Children less than a year of age often show laryngeal lesions of hereditary syphilis, and ulcerative lesions have been seen at two months of age (Parrot, "Prog. méd.," 1878, p. 635). Many cases occur in children but

a few years of age, and sometimes the manifestations are deferred to the period of puberty or even later. Indeed, in opposition to the received opinion of syphilographers, I have reason to believe that in a few instances I have seen its manifestations delayed as late as the third and even the fourth decennium. True, in such instances as the latter it is quite possible that infection may have been acquired in some method unknown, without having been followed by any secondary manifestations, or that early hereditary manifestations may have escaped recognition. The secondary manifestations occur most frequently in adolescents and young adults. They appear most frequently at periods varying from a few weeks to a few months after infection, sometimes as late as the fourteenth or seventeenth month (Morgan). Tertiary lesions are most frequent at rather maturer ages, and occur occasionally in quite advanced life. They have been reported as early as the sixteenth month (Türck), and as late in their first appearance as the thirtieth (Türck), and even the fiftieth year (Mackenzie). Tracheobronchial tertiary lesions have been reported as appearing as early as the ninth month after infection, but these lesions are usually coincident with the laryngeal lesions when not immediately consecutive to them. Most of the instances of tracheal syphilis occur in individuals whose employments expose them to irritation from dusts of various kinds (Vierling, "Deutsches Arch. f. klin. Med.," 1878, Bd. 21). Hereditary tracheo-bronchial syphilis is far less frequent than the laryngeal forms. It has been observed before the age of puberty.

*Diagnosis.*—The differential diagnosis between secondary and tertiary lesion is sometimes difficult, particularly in the transitionary period especially described by Whistler. The discriminating characteristics are less well marked in the laryngeal syphilis, perhaps, than in any other variety. It may, however, be broadly stated that secondary lesions, erythematous, papular, condylomatous, or paralytic, are superficial; and that tertiary lesions are gummatous, ulcerous, carious, necrotic, and deep-seated. Laryngitis occurring within a few months of infection is almost invariably secondary. Lesions appearing before the termination of the third year are presumptive secondary; those appearing within the third year, secondary, or transitional; and those appearing after the termination of the third year, tertiary. Nevertheless, secondary lesions may be ulcerous, and undoubted tertiary manifestations have been recognized even within nine months of infection.

The history of the case, and the previous or actual presence of manifestations of syphilis elsewhere, are the main positive factors in the diagnosis of specificity, especially in the early stages of either variety. The later lesions of tertiary syphilis are often sufficiently characteristic; sometimes not at all so. In cases of doubt, antisyphilitic treatment will almost always detect a lesion of syphilitic origin, but not invariably. Hence, in instances of strong suspicion, the various methods of antisyphilitic medication should be thoroughly tried before that test is abandoned. This suspicion is justifiable in cases of obstinate chronic laryngitis, whether ulcerative or not, in individuals in whom no other appreciable local or constitutional cause can be detected.

Laryngoscopic inspection is an invaluable aid in diagnosis; though practically indispensable, it is inadequate for fully appreciating the extent of deeply seated lesions; and its revelations are not always sufficient to establish the diagnosis in the absence of corroborative lesions elsewhere. The erythematous and catarrhal inflammations of secondary syphilis, when diffuse, are not to the ordinary eye distinguishable from similar non-specific conditions. Circumscribed erythema, though usual in syphilis, occurs in non-specific laryngitis also, consequently that condition alone is insufficient for discrimination. Patchy erythema on the vocal bands and elsewhere may be regarded as characteristic. Not so, however, the shaded pigmentations at the extremities of the vocal bands.

Symmetric bilateral localization of erythematous and other patches is highly characteristic of secondary syphilis; but a contrary condition by no means excludes the diagnosis. Isolated bilateral congestions of the supra-arytænoid structures and of the Wrisbergii have been cited as pathognomonic. Nothing can be more fallacious or misleading. Enlarged inguinal and post-cervical glands furnish excellent corroborative testimony of syphilis. Papules or condylomata upon an erythematous mucous membrane are to be considered pathognomonic. Their recognition may require an exceptionally good light on the one hand, or repeated examinations on the other. They must be carefully discriminated from minute collections of mucus or of saliva. Diffuse gummatous infiltration is to be distinguished first from inflammatory syphilitic infiltration by the coexistence of gummatous processes elsewhere, its more circumscribed contour, and its sharper definition. The differential diagnosis is much easier after it has reached the stages of liquefaction and ulceration.

Syphilitic ulceration usually proceeds from above downward, rarely in the opposite direction, and often in extension from ulceration in the pharynx. Repair usually proceeds from below upward. Apart from these guides there is nothing positively characteristic enough to determine an ulceration to be syphilitic in character by mere inspection. The absence of pain has been regarded as characteristic, but, on the one hand, carcinomatous ulceration often exists without pain, and, on the other hand, the ulcerative lesions of syphilis are sometimes attended with lancinating pains of the most severe character.

In the gummatous stage of tertiary syphilis the diagnosis is not difficult. Nodular syphilides and gummata are recognized in the forms and at the localities mentioned under pathology. They may be confounded with other neoplasms, and with abscess. In cases of doubt, antisyphilitic treatment should clear up the diagnosis. The physical distinction between gummata and condylomata may in some instances be obscure (Semon). The main reason why gummata are so infrequently seen as to have led some observers to an erroneous opinion as to their rarity is that many patients do not present themselves until after the stages of liquefaction and ulceration have become established. When this stage has not been observed, and the larynx as is more usual, is not inspected until after ulceration has considerably progressed, the appearances are not always characteristic. They may be confounded with those of lupus, carcinoma, and tuberculosis. The general diathesis, the clinical history, the existence of enlarged submaxillary and post-cervical lymphatic glands, the character of concomitant affections of the skin and mucous membrane, the aspect of the patient, assist in discrimination. Sometimes, too, tuberculous and syphilitic lesions coexist.

The typical tertiary ulcer, sharply defined, and below the surface of the mucous membrane, is more or less circular when recent, more or less crenated when reparation is taking place at one or more points of the circumference, and looking as though cut out with a punch when in œdematous tissues. Its borders are sharp, elevated, but not often undermined, and more or less rounded in their visible outline, and are surrounded by a more or less circumscribed inflammatory areola in the mucous membrane. The bottom feels hard to the probe on palpation. The bed of the ulcer is grayish or lardaceous, yellow from fatty detritus, and covered with adherent concrete pus, through which, here and there, prominent rosy granulations often project. The surrounding tumefaction is harder and more indurated than in other varieties of ulcer. Purulent accumulations are rather indicative of the syphilitic process. At a

later date denuded or necrosed cartilage may be visible in suitably located ulcers.

In cases in which neoplasms have become developed at the seat of existing ulcerations, or of cicatrized ulcerations or erosions, it is often impossible to pronounce as to their nature, even by the test of antisyphilitic treatment. Not only do such neoplasms exist independently of the syphilitic process, or as the result of irritation provoked by a syphilitic process in the vicinity, but, when undoubtedly syphilitic in origin, they rarely disappear under specific medication. Tertiary syphilis is usually recognizable in the stages of œdema of the larynx; and almost always in the reparative stages of cicatrization, or in the subsequent stages of stenosis, whether from cicatricial retraction or from organization of effused products.

*Prognosis.*—Secondary lesions, even when ulcerative, are most frequently curable without cicatrix or without any other sequel. Exulceration of the vocal bands sometimes leaves permanent defect of tissue. The prognosis is good except during temporary conditions of œdema, when it may be grave for the time being. The inflammatory congestion and turgescence are more chronic than in catarrhal inflammations, and are often recurrent. Actual hyperplasia is apt to remain permanent, even after cure of the syphilitic lesion, despite the most assiduous treatment; and when it occupies a vocal band the voice may be permanently impaired. The singing voice may remain imperfect, although the conversational voice is fully restored, the injured tissues being unequal to the nicety of adjustment requisite for cantation.

In tertiary lesions the prognosis depends mainly on two factors: First, on the impairment of the general health, and the significance of lesions elsewhere, especially in the brain and meninges, and in other important organs. Second, in the extent of ulceration and the character of deformation or stricture which may follow. Temporary gravity exists in the presence of œdema, during the period of exfoliation of necrosed cartilages, and in acute bilateral paralysis of the dilator muscle, the result of exposure to cold or other cause, or to unilateral paralyses when the opposite side is immobile from gumma, or from crico-arytænoid ankylosis (Charazac, "Rev. mens. de lar.," September, 1884), any of which conditions may demand prompt tracheotomy to prevent death by suffocation. Ulcerative lesions of the trachea may be fatal by hæmorrhage from penetration of large blood-vessels; by pneumonia from access of food through perforation of œsophagus (Berger); or by septic processes due to rupture of the mediastinum. Permanent impairment of the voice is to be expected in all cases in which the vocal bands undergo serious injury, and in many in which permanent changes are likely to take place in other structures contiguous to the glottis. Deglutition is rarely affected, even after complete destruction of the epiglottis; and in exceptional cases difficulty is mainly confined to fluids swallowed without deliberation. Stricture rapidly supervening upon hyperplasias is often amenable to active treatment, sometimes with striking rapidity (Krishaber); but the more frequent stricture of slow progression can only exceptionally be brought under control. Serious danger attends even cure of extensive ulcerative lesions in the interior of the larynx, for the resulting stricture, if severe, is likely to necessitate tracheotomy, with great probability of permanent retention of a cannula. It is rarely amenable even to excision of cicatricial tissue by external access. Subglottic stricture is much more serious than supraglottic, and tracheal far more serious than laryngeal stricture. Stricture of the trachea, when low down, is practically insusceptible of amelioration, and death by slow apnœa, or by sudden suffocation, is the usual outcome.

When the syphilitic cachexia has advanced so far as to have produced incurable lesions in important viscera or in the cerebrum, death may ensue from these causes despite sustained cure of syphilitic lesions in the larynx. In cases complicated with paralysis of the dilator muscles of the larynx from cerebral lesion, death may take place by occlusion of the glottis and suffocation, or by encephalitis and coma.

In hereditary syphilis the prognosis is very much the same as in tertiary syphilis, being much worse in infancy and childhood than in more delayed manifestations. The small size of the larynx renders stricture and intercurrent œdema far more significant; and the tendency to spasm of the larynx inherent to all laryngeal affections in childhood presents an additional element of danger. Fatal issues from these three causes are not infrequent. An element of uncertainty as to the final result remains in all varieties of syphilis of the larynx and trachea, due to the fact that permanent liability to recurrence prevails in many instances, despite the best apparent results of the most judicious treatment; and often, too, after prolonged intervals of immunity from any further manifestation of constitutional syphilis.

*Treatment.*—Fortunately, lesions even of great destructive and menacing tendency are amenable, as a rule, to treatment; often promptly. The treatment, broadly stated, is that applicable to constitutional syphilis in general: mercury in the early manifestations and iodides in the late ones. In many of the latter, if not most, the "mixed treatment," combining the two specifics, is the most serviceable. In congenital syphilis the gray powder is believed to be the most efficacious form of the drug. While willing to admit that secondary lesions often subside without traces and without much risk of subsequent tertiary manifestations, although mercury is withheld, I deem it the more prudent practice, and therefore the best practice, to employ mercury, in the belief that its specific constitutional influence affords the patient better protection as to future manifestations. As to the value of iodides in tertiary syphilis, there is no difference of opinion. Tonics are often indicated. All sources of irritation, exposures, excessive use of the voice, alcohol, and tobacco, are to be avoided. Sedative inhalations in vapor or spray are often of great topical benefit in subduing collateral inflammation; and antiseptic inhalations are indicated in gangrenous cases.

Secondary syphilis. Mercury may be administered by the stomach or by the skin. When the lesions are moderately severe or slow in progress, the corrosive chloride may be administered, in doses of from one sixteenth to one eighth of a grain, three times a day. The green iodide may be given in doses gradually increased from one sixth of a grain three times daily to the point of tolerance. The addition of extract of belladonna may cause it to be better borne by the stomach. In individuals in whom serious gastric disturbance is produced before any specific effect has been noted, and in seriously severe cases and cases of rapid progress, inunctions of a drachm of mercurial ointment daily are preferable, or pencilings with solutions of oleate of mercury in oleic acid, ten per cent. Lewin prefers hypodermatic injections of corrosive chloride. Concurrent stomatitis is to be combated by the internal administration of potassium chloride, or the use of a saturated solution of that salt, or of a weak solution of potassium permanganate as a mouth-wash. It is hardly necessary at the present day to mention that salivation is to be avoided. In my own experience topical medication is, as a rule, superfluous in non-ulcerative secondary syphilis, and often unnecessary in the presence of ulceration. When topical medication seems necessary, inhalations of sprays of corrosive chloride (Demarquay), half an ounce or more daily of a solution containing one grain to four ounces of water, are useful locally and constitutionally. In particularly obstinate conditions, especially in the presence of

hyperplasias, the topical application of solutions of iodine and potassium iodide in glycerin (Schnitzler), half a drachm and a drachm, respectively, to the ounce, made daily or at longer intervals, sometimes accelerates the cure.

In the transitional stage and in the tertiary stages the "mixed treatment" has been the most beneficial in my own practice; one sixteenth to one eighth of a grain of the corrosive chloride, five to ten grains of potassium iodide in half an ounce or more of the compound syrup of sarsaparilla, three times a day. It may sometimes be necessary to increase the dose of the iodide up to the point of tolerance. In such cases the "grain-to-drop" solution is the most convenient preparation. The danger of inducing œdema of the larynx by sudden large doses must not be forgotten. When necessary, sodium or ammonium iodide may be substituted for the potassium salt, or hydriodic acid may be employed.

In the presence of œdema, hypodermic injections of corrosive chloride (Lewin), one thirtieth of a grain, twice a day for a day or two, and, after improvement, at intervals of three days or more, have proved quite efficacious. If amelioration is not prompt, and if the patient can not be carefully watched by an attendant competent to interfere in an emergency, it is best, in my opinion, to perform prophylactic tracheotomy, instead of awaiting its urgent indication. The same rule is applicable to threatening cases of extensive hyperplasia whether from specific or from non-specific infiltrations. Nevertheless, remarkably happy results, even in urgent cases of these kinds, have frequently followed active treatment by inunction (Krishaber) and by hypodermatic injection (Lewin). Intubation of the larynx from the mouth (O'Dwyer) has been recommended as applicable in many instances of œdema and constriction heretofore treated by tracheotomy. As yet, I know of no experience with intubation in this special connection.

Ulcerations heal more promptly when the constitutional treatment is seconded by topical cauterizations with fused silver nitrate, or with mercuric nitrate, one part to from four to ten parts of water, or with cupric sulphate in crystal or saturated solution. Chromic acid, one part in from five to eight parts of water, has long been extolled (Isambert). Some prefer iodoform (Morgan). On the other hand, extensive ulceration often heals promptly under the influence of constitutional treatment alone.

Vegetations, detached flaps of mucous membrane, and semi-detached fragments of necrosed cartilage call for operative removal with cutting forceps, evulsion forceps, or snares, as may be most convenient, when these products are so located as to interfere with freedom of respiration or to threaten such interference. When these manipulations are impracticable, tracheotomy may be requisite. When tracheotomy has been performed under any of the conditions mentioned, the cannula is to be removed as soon as it has become apparent that its retention is no longer essential to the safety of the patient. Cicatricial stricture of the larynx may be treated by the introduction of the intubation-tube through the natural passages (O'Dwyer). This treatment may be applicable to stricture high up in the trachea. Stricture in the middle portion of the trachea requires low tracheotomy and the introduction of a tube long enough to reach beyond the constriction. Stricture at the bifurcation is hopeless.

Paralyses, even those of the posterior crico-arytænoids, are usually amenable to antisyphilitic treatment even when of considerable standing. This fact seems to indicate that the atrophy found in necrotic paralysis is not due to simple inaction of the muscle, but rather to trophic impairments of neurotic origin. Electrization may be employed when relief does not ensue from systemic medication.

Membranous webs, occluding the glottis from side to side, are divided by incision or by the galvano-cautery, the edges cauterized, and readherence prevented, if possible, by frequent introduction of dilating sounds. These laryngoscopic operations are often rendered futile by an insurmountable tendency to recicatrization, whereby the morbid condition is reproduced. Success in cases of this kind would seem to require exposure of the interior of the larynx by external division of the thyreoid cartilage, and excision of the whole of the cicatricial tissue (Mackenzie).*

When syphilitic laryngitis has existed for a long time, such an amount of destruction may have taken place, and such a degree of systemic poisoning, as to render recovery impossible. The constrictions produced by the cicatrices of extensive ulcers, and the adhesions between adjoining surfaces, in patients who recover, are often such as to render tracheotomy necessary, with the permanent use of the tube; for the constrictions following syphilis are not, as a rule, amenable to dilatation.

Threatened asphyxia or unconquerable dyspnœa, from gumma, loose cartilage, morbid growth, abscess, or œdema, may necessitate tracheotomy. Tracheotomy for the purpose of conquering dyspnœa due to tumefactions in the larynx is perfectly justifiable and usually successful. It is likewise justifiable for the mere purpose of securing rest to the organ—much more so, indeed, than in analogous conditions attending tuberculosis.

The treatment for local adhesions consists in relieving the tension as far as possible by laryngoscopic division of the constricting bands of tissue, with the knife or with the electric cautery, and then cauterizing and recauterizing the adjacent surfaces, to prevent fresh adhesions. These cases require careful watching and prompt attention to overcome the disposition to recurrence, which is very apt to take place in spite of all efforts. When the epiglottis is implicated, much good can be done by teaching the patient to move the organ frequently by means of his forefinger.

In a case of stenosis due to "concentric hyperchondrosis," as a result of the hyperplastic chondro-perichondritis, Heine has performed a successful resection of the anterior portion of the thyreoid cartilage, splitting that structure in the middle line, separating the perichondrium and superjacent soft tissues, to the distance of one half its surface on the two sides, with the elevator, and then removing the denuded portions by longitudinal section with a bone forceps. The patient rallied so well from the operation that an artificial vocal apparatus could be substituted for the ordinary cannula on the fifth day. He became able to resume work after a while; but the disease made new inroads, and he died, eleven months later, in an advanced stage of tuberculosis.

Despite the most judicious treatment, and the most satisfactory immediate results, recurrence or recrudescence takes place in many instances at variable intervals, requiring the resumption of specific treatment. The most satisfactory results alleged by any writer have been in cases actively treated by Lewin with hypodermatic injections. It is advisable to keep patients under observation for many months after active treatment has been discontinued. Mercuric iodide (biniodide) in small doses, one twentieth to one tenth of a grain, three times daily, may judiciously be given for prolonged periods during which apparent health exists. Potassium iodide, in diminishing doses, should be administered from time to time for a few days every month until the patient begins to show susceptibility to physiological effects from small doses; and then this susceptibility should be tested from time to time at intervals of a few months. Such

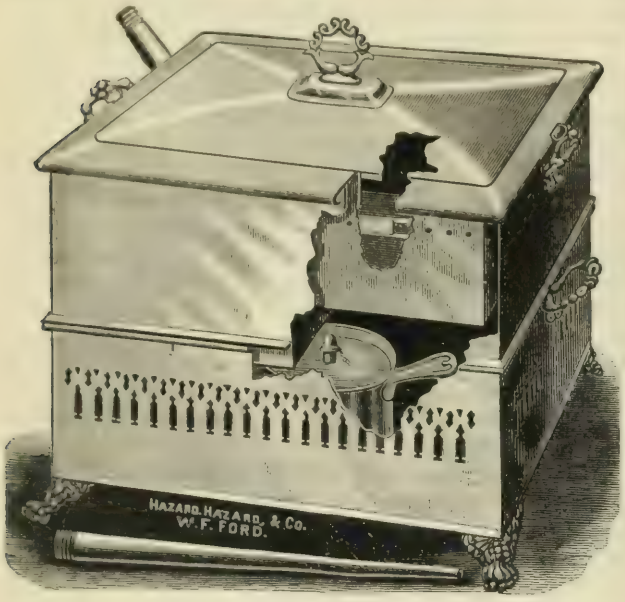
* "Med. Times and Gaz.," August 19, 1871, p. 218.

supervision for two years at least seems to present the best prospect for riddance from the diathesis. It may be mentioned in conclusion that, under intercurrent attacks of erysipelas, obstinate cases of tertiary syphilis of the larynx and trachea have undergone cure after having resisted all medicinal treatment.

## New Inventions, etc.

### A COMBINED WARMING-PAN AND CROUP-KETTLE.

The accompanying cut represents an ingenious and exceedingly useful device for the sick room. It consists of a covered pan which rests in a water receptacle, a spirit lamp, and a tube which can be lengthened, when desirable, by the addition of an additional piece. The covered pan can be used for dry or steam heat, the change being effected by closing or opening a slide on each side near the top. The




desirability of this apparatus for making or heating broth, keeping food warm, making poultices, etc., is too obvious to need more than a mere mention. The additional tube converts the apparatus into a very convenient and serviceable croup-kettle. It is known as "Aunt Kate's Poultice-Pan," and is sold by Mr. W. F. Ford, of Hazard, Hazard, & Co.

## Miscellany.

**The New York Academy of Medicine.**—At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 23d inst., Dr. Francke H. Bosworth will read a paper on "Disease of the Accessory Cavities of the Nose."

At the next meeting of the Section in Pædiatrics, on Wednesday evening, the 24th inst., a paper entitled "Recent Observations relating to Intubation" will be read by Dr. F. Huber, and one entitled "Statistical Results of Intubation" by Dr. Dillon Brown.

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 25th inst., Dr. C. C. Lee will read a paper on "The Value of Hysterorrhaphy as a Primary or Consecutive Operation in Uterine Displacement," and the discussion of the relative value of primary operation and electricity in extra-uterine pregnancy, as presented in papers by Dr. Hawley and Dr. Buckmaster, will be continued.

**The New York Post-graduate Medical School and Hospital.**—Dr. William A. Hammond, who is shortly to move to Washington, was announced to give his farewell clinic on Wednesday, the 17th inst.

**The Health of Kansas City, Mo.**—According to the "Weekly Return of Births and Deaths" to the Health Department for the week ending Saturday, October 13th, there were 42 deaths, including 1 from cholera infantum, 1 from diarrhœa, 1 from intermittent fever, 2 from typhoid fever, 2 from typho-malarial fever, 1 from marasmus, and 2 from cerebro-spinal meningitis.

**Egyptian Cigarettes.**—The "Lancet's" Cairo correspondent says: The irresponsible writer who succeeded in starting a correspondence on this subject in the leading lay journal, before he was promptly disowned by Middlesex Hospital, informed the public that this form of smoking was productive, in his opinion, of malignant throat disease. His experience is not borne out by European doctors here, who see men smoking every day their forty or fifty cigarettes without harm, and without a single recorded case of cancer occurring in the throat. Most of the succeeding letters of this correspondence call for no remark until we come to one signed by "M. D.," containing a warning that the heat from the burning cigarette paper, or possibly the quality of the paper used, may have influence in keeping up an irritable form of chronic bronchitis. Now, in this favored country we are debarred from seeing much bronchitis, but we do occasionally see cases of obstinate pharyngitis not yielding to drug treatment. In some such cases I have persuaded Englishmen to substitute cigars for their thirty or more daily cigarettes. They thus smoke a greater and stronger supply of tobacco, but they lose their pharyngitis. This looks as if the paper, or possibly the chlorine used in bleaching it, was the direct cause of the chronic inflammation. The only other evil I have ever seen from cigarette smoking during five years' hospital and private practice is a mild dyspepsia, patients complaining of perpetual furred tongue, taste in mouth, etc. These will generally be found to smoke thirty or more cigarettes a day, and their dyspepsia will vanish when they resolutely cut down their maximum to ten. The more severe symptoms of tobacco poisoning so well known in England are not seen among those devoted to the mild Turkish tobacco. By such I mean tobacco amblyopia, irregular heart and pulse, dilatation of pupil, nervousness, insomnia, etc. The last letter of the correspondence which has reached us here is signed by three initials, and gives the opinion of a medical officer who served during the last Egyptian campaign. He states that it is "undoubtedly the case that opium is largely introduced in their (native cigarettes) manufacture." He bases his belief upon the fact that he used to be asked at shops whether he wished his cigarettes to be "highly or moderately flavored." The explanation of the flavoring is very simple. Smyrna tobacco, which constitutes about 20 per cent. of a second-class cigarette, is recognized by the trade as being inferior to Yenidjé tobacco, and is called in Egypt perfumed or flavored tobacco, while Yenidjé is called natural tobacco. The question therefore is a harmless one, meaning, Do you want much or little of the Smyrna leaf in your cigarettes? The question of adulteration with opium is worth a reply. Obviously, if the tobacco is mixed with opium, it must either be done in Turkey, where the plant is grown, or in Egypt, where the leaf is made into cigarettes. Now, at Smyrna, where opium could easily be bought, its wholesale price varies from £2 to £3 per pound; and as the best tobacco only costs there 6s. per pound, it is not likely that either cultivator or buyer will go out of his way to doctor the leaves. At Yenidjé and Cavalla opium is not grown, and must therefore be dearer than at Smyrna. In Egypt opium is practically not grown now, and the quantity imported, as shown by the Customs reports, is only sufficient for dispensing chemists; moreover, its price is again prohibitory, the cheapest opium fetching nearly three times the price of the most expensive tobacco. All the sellers here indignantly deny that their cigarettes are doctored with opium or any other drug, and unanimously affirm that good Turkish tobacco is so delicate that it will not admit of the least perfume or flavor of a foreign nature without becoming at once so changed as to be unsmokable. Yesterday I visited the four largest factories without warning, and was shown every stage of the process, and satisfied myself that there is certainly no doctoring of the tobacco at any of the four establishments.

No first-class tobacco is grown in Egypt, and the Egyptian cigarettes now smoked all over the world are made from *Nicotiana tabacum, var. macrophylla* (Duval), and *Nicotiana rustica* (Linn.), of which the finest plants are grown at Yenidjé and Cavalla. The Egyptian merchants, who are all Greeks, maintain that they buy the best of the crops, and ship the produce off to Cairo to avoid the monopoly of the Tobacco Regie, the remainder being sold by the Regie. The proper time for sowing in Turkey is in December; goat's manure on the land gives the best perfume ultimately, and the delicate plants must be protected by matting from cold and snow. In April the seedlings are transplanted, and in August the leaves are ready to be gathered. The quality varies according to the part of the plant from which leaves have been taken; the lowest are rank and very inferior; the small upper leaves furnish tobacco of the best quality, and the middle leaves, mixed with a percentage of the smallest, constitute afterward the cheapest varieties of cigarettes. The gathered leaves are therefore kept in three lots, and when they have been well dried in the sun they are pressed and made up into bales of not less than one hundred pounds. Before pressing the leaves they must be slightly damped by water in Smyrna, but this is not necessary in Yenidjé and Cavalla. The two great points to strive for are color and scent, and these are dependent on careful picking, seed, and climate. The seed ought to be renewed every second year. The Cairo merchants buy the bales on the spot about March or April, carefully sort the leaves again, and then ship them to Alexandria after they are once more dried, so that they may be ready for use in Cairo the following October.

The bales are opened as required, and the various leaves mixed so that four different-priced qualities result, the best kind being that in which there is the least Smyrna tobacco and the least percentage of large leaves. If cigarettes are made exclusively of the best leaves, which are light yellow-brown in color and measure only four by two inches, the aroma is very pleasant, but the smoker gets a headache after about five of them. The middle leaves, when dry, measure about seven by four inches and a half, and the lowest leaves of all are considerably larger. Cairo air is so dry that the leaves must be damped with water here before being cut; but in Alexandria this is not necessary. English-made machines cut up the leaves, and on the following day the cigarettes are rolled by Greek, Syrian, or Jewish workmen. A clever workman can roll as many as 1,500 a day. The cigarettes are then carefully overhauled by an expert, left a week to dry, and then packed in tin boxes ready for sale. They should of course be smoked directly, instead of being kept, as is too often the case in England. So much for the tobacco; now for the paper. All large Cairo firms employ one kind of paper only, which is made by a half-English company at Fiume, near Trieste. It comes to Alexandria in foolscap sheets, and is there cut up to the required size. It is not known how it is made, or whether it is chiefly rice straw; but the merchants here all vow that it is the best they can get. If one is right in suspecting the paper instead of the tobacco, it might be well to try to get cigarettes rolled in tobacco-leaves instead of paper. The only other ingredient left to consider is the starch for joining the paper. This is used with a thin stick by the men who roll the cigarettes. I may say that each workman is allowed to smoke as many cigarettes (say forty) as he likes during his work, and is presented with ten every night to take home with him. The first establishment that I visited only came into being five years ago, but now it has three branch shops in London, and one in Bombay, Berlin, and New York. The proprietors sell only one per cent. of their cigarettes in Egypt, but export 600,000 a week to England, besides 400,000 weekly to India, Europe, China, Australia, etc. My second visit was paid to a well-known purveyor, who exports 250,000 a week to England alone, where I saw 100 men rolling cigarettes and bales full of the best tobacco-leaves. At the third house I was shown several bales of Jobeck tobacco from Yenidjé. This consists of specially selected leaves, and is the finest possible from Turkey. This proprietor sends about 125,000 every week to England. My fourth visit was to a man whom I had never heard of before, but who was keenly alive to the correspondence in the English newspapers. He sends every week more than 80,000 cigarettes to England, and a greater quantity to Germany. Although in a smaller line of business than the others, he gets his leaves and his papers from the same spots as his competitors. There are, of course, many other reputable establishments in Cairo besides these four, which, as I have shown, supply every week 1,000,000 cigarettes to England alone, and about the same number to other parts of the world. My opinion is that no opium or other drug is mixed with the tobacco, and even in hasheesh dens the devotee buys a bit of the cannabis indica extract and mixes it himself with the tobacco. In conclusion, one practical hint from a wise old Oriental who smokes seventy or eighty cigarettes a day, his wife smoking almost as great a number: Always use a cigarette-holder, and in the holder a tiny plug of cotton wool previously dipped in lemon-juice and changed every time with the cigarette.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending October 12th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending September 22d corresponded to an annual rate of 18 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Bristol, viz., 11·1, and the highest in Preston, viz., 27·8 in a thousand. Small-pox caused 1 death in Hull. Diphtheria caused 2 deaths in Manchester.

*London.*—One thousand two hundred and ninety-eight deaths were registered during the week, including measles, 32; scarlet fever, 20; diphtheria, 24; whooping-cough, 22; enteric fever, 11; diarrhœa and dysentery, 78; simple cholera and choleraic diarrhœa, 4. Diseases of the respiratory organs caused 179 deaths; different forms of violence, 69; and 9 suicides were registered. The deaths from all causes corresponded to an annual rate of 15·8 in a thousand. In greater London 1,629 deaths were registered, corresponding to an annual rate of 15·4 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 30; diphtheria, 8; whooping-cough, 7.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending September 22d in the sixteen principal town districts of Ireland was 19·2 in a thousand of the population. The lowest rate was recorded in Sligo, viz., 4·8, and the highest in Armagh, viz., 46·5 in a thousand. In Dublin 125 deaths were registered, including enteric fever, 3; scarlet fever, 1; diarrhœa, 17; whooping-cough, 1; dysentery, 1.

*Scotland.*—The deaths registered in eight principal towns during the week ending September 22d corresponded to an annual rate of 17·3 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 9·8, and the highest in Paisley, viz., 27 in a thousand. The aggregate number of deaths registered from all causes was 436, including measles, 10; scarlet fever, 6; diphtheria, 6; whooping-cough, 2; fever, 4; and diarrhœa, 29.

*Netherlands.*—The deaths registered in the principal cities of the Netherlands, having a population of 1,149,778, during the month of July, 1888, corresponded to an annual rate of 19·7 in a thousand of the population. The lowest rate was recorded in Leeuwarden, viz., 14·5, and the highest in Hertogenbosch, viz., 25·2. The total number of deaths from all causes was 1,924, including typhus and enteric fever, 12; scarlet fever, 1; measles, 14; whooping-cough, 18; diarrhœa and dysentery, 50.

*Calcutta.*—Seven hundred and twenty deaths were registered during the month of July, 1888, including cholera, 54; small-pox, 2; fevers, 181; bowel complaints, 54.

*Catania, Italy.*—Four hundred and thirty-five deaths were registered during the month of July, 1888, including small-pox, 87; typhoid fever, 13; typhus fever, 1; other contagious diseases, 43. The sanitary condition of the city (excepting a few cases of small-pox) was good.

*Hobart, Tasmania.*—Sixty-one deaths were registered during the month of July, 1888, including 1 from typhoid fever.

*Malta and Gozo.*—Two hundred and five deaths were registered during the period from the 16th to the 31st of August, 1888, including measles, 7; diphtheria, 1; continued fever, 2; and dysentery, 3.

*Cardenas, Cuba* (October 5th).—Good health is reported in town and harbor. Low barometer and rainy weather.

*Barbadoes, W. I.* (September 22d).—There is no system of registration. Health of island good.

*Vera Cruz*.—The United States consul states, under date of September 27th, that "the general health of the place is good. There are no cases of yellow fever here this week. One death from small-pox on the 27th, and no other cases reported."

*Bordeaux, France*.—Four hundred and fifty-one deaths were registered during the month of August, 1888, including enteric fever, 8; and diphtheria and croup, 8.

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever | Diphtheria. | Measles. | Whooping-cough. |
| Paris | Sept. 22 | 2,260,945 | 838 | .. | .. | 4 | .. | 13 | 1 | 12 | 7 | 6 |
| Glasgow | Sept. 22. | 545,678 | 194 | .. | .. | .. | .. | 1 | 4 | .. | .. | 1 |
| Warsaw | Sept. 15. | 444,814 | 248 | .. | .. | 7 | .. | .. | 13 | 7 | .. | .. |
| Calcutta | August 25. | 433,219 | 165 | 12 | .. | 1 | .. | .. | .. | .. | .. | .. |
| Rome | August 11. | 300,467 | 100 | .. | .. | .. | .. | 4 | .. | 3 | .. | .. |
| Edinburgh | Sept. 15. | 262,733 | 70 | .. | .. | .. | .. | 2 | .. | .. | .. | .. |
| Palermo | Sept. 15. | 250,000 | 78 | .. | .. | .. | .. | .. | 5 | 1 | .. | .. |
| Palermo | Sept. 22. | 250,000 | 83 | .. | .. | .. | .. | .. | 1 | 4 | .. | .. |
| Belfast | Sept. 22. | 227,022 | 87 | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Genoa | Sept. 22. | 179,780 | 68 | .. | .. | 3 | 1 | .. | .. | 1 | .. | .. |
| Toronto | Sept. 29. | 180,000 | 36 | .. | .. | .. | .. | 1 | .. | 2 | .. | .. |
| Stuttgart | Sept. 22. | 125,510 | 41 | .. | .. | .. | .. | .. | .. | 3 | .. | .. |
| Bremen | Sept. 20. | 122,000 | 42 | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Havre | Sept. 15. | 112,074 | 79 | .. | .. | 1 | .. | 14 | .. | 1 | .. | .. |
| Pernambuco | Sept. 4. | 110,000 | 87 | .. | .. | .. | 2 | 1 | 3 | .. | .. | .. |
| Pernambuco | Sept. 11. | 110,000 | 83 | .. | .. | .. | .. | 1 | 2 | .. | .. | .. |
| Barmen | Sept. 15. | 109,000 | 36 | .. | .. | .. | 2 | .. | .. | 1 | .. | .. |
| Barmen | Sept. 22. | 109,000 | 29 | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Leith | Sept. 15. | 74,320 | 22 | .. | .. | .. | .. | 1 | .. | .. | .. | .. |
| Cadiz | Sept. 15. | 65,028 | 42 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Guayaquil | Sept. 1. | 35,000 | 63 | .. | .. | 1 | .. | 23 | .. | .. | .. | .. |
| Guayaquil | Sept. 8. | 35,000 | 65 | .. | 2 | 9 | .. | 12 | .. | .. | .. | .. |
| Vera Cruz | Sept. 27. | 23,800 | 19 | .. | .. | 1 | .. | .. | .. | .. | .. | .. |
| Gibraltar | Sept. 16. | 23,631 | 10 | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Kingston, Can | Sept. 28. | 15,827 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Kingston, Can | October 5. | 15,827 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| St. Thomas | Sept. 21. | 15,000 | 40 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Cartagena, Col'a | Sept. 8. | 13,000 | 8 | .. | 1 | .. | .. | .. | .. | .. | .. | .. |
| Cartagena, Col'a | Sept. 15. | 13,000 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Laguayra | Sept. 8. | 7,428 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Laguayra | Sept. 15. | 7,428 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| San Juan del Norte | Sept. 10. | 500 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |

UNITED STATES.

The following circular, relative to the treatment of foul ships, has been issued:

Treasury Department,
U. S. Marine-Hospital Service,
Washington, D. C., *October 5, 1888.*

*To Medical Officers of the Marine-Hospital Service,*
*and others whom it may concern:*

In order to stimulate ship-masters to aid in securing a clean ocean-going fleet, the following regulation concerning the treatment of foul ships is hereby adopted, and will be observed at all national quarantine stations:

1. When a vessel arrives at any national quarantine station from an infected port, and requires disinfection, she will be subjected to *ordinary disinfection*, as provided in former regulations.

2. When any vessel shall arrive at a national quarantine station in such foul condition as to render her dangerous from a sanitary point of view, and is found to require cleansing and disinfection, having at any former time within one year been subjected to ordinary disinfection, such vessel will be required to undergo *extraordinary disinfection*, which, in addition to the ordinary measures, will include holy-stoning, scraping, the taking out of rotten wood, a second disinfection, and interior repainting, all of which will be required before granting a certificate of free pratique.

John B. Hamilton,
*Supervising Surgeon-General, M.-H. S.*

Approved:
Hugh S. Thompson,
*Acting Secretary.*
Grover Cleveland.

*Jacksonville, Fla.*—Dr. J. Y. Porter, in charge of Government relief measures, telegraphs as follows:

October 4th: "New cases to-day, 75; deaths, 1. Total cases reported, 2,970; deaths, 271. Patients, St. Luke's, 19; patients, Sand Hills, 26."

October 5th: "Request approval of the following: To suspend any general disinfection until epidemic ceases; have each house where cases have occurred visited as soon as possible, and mattresses, blankets, and woolen material that can in any way serve as fomites stamped with some device to distinguish them, and at close of epidemic destroyed. Parties not able to bear the expense to be reimbursed for the same on fair valuation made by board of appraisers from Citizen's Auxiliary Association. Parties financially able to bear loss to have no reimbursement. Establish a free boiling establishment for linen and cotton goods. The city and Board of Health will guarantee full authority by ordinance to enter and disinfect houses and premises."

October 5th: "New cases to-day, 52; deaths, 6. Total cases reported, 3,022; deaths, 277. Patients, St. Luke's, 26; patients, Sand Hills, 23."

October 6th: "New cases to-day, 81; deaths, 5. Total cases reported, 3,103; deaths, 282. Patients, St. Luke's, 23; patients, Sand Hills, 25. Desire to formulate rules for the disinfection of homes and destruction of property. Can not do so until I get fuller instructions. Will establishment for boiling infected material be authorized?"

October 7th: "New cases to-day, 48; deaths, 9. Total cases reported, 3,151; deaths, 291. Patients, St. Luke's, 22; patients, Sand Hills, 25."

October 8th: "New cases to-day, 50; deaths, 4. Total cases reported (corrected), 3,208; deaths, 295. Patients, St. Luke's, 21; patients, Sand Hills, 25."

October 9th: "New cases to-day, 93; deaths, 4. Total cases reported (corrected), 3,319; deaths, 299. Patients, St. Luke's, 18; patients, Sand Hills, 26."

October 10th: "New cases to-day, 63; deaths, 3. Total cases reported, 3,382; deaths, 302. Patients, St. Luke's, 18; patients, Sand Hills, 29."

October 12th: "New cases to-day, 66; deaths, 4. Total cases reported, 3,495; deaths, 308. Patients, St. Luke's, 18; patients, Sand Hills, 33."

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton reported as follows:

October 4th: "Morning report. Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 32; discharged, 2; remaining, 168; remaining, unable to leave, 65; total, 293. Fever camp, 5, all convalescent."

October 5th: "Morning report. Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 16; discharged, 11; remaining, 173. Destitute furnished transportation, 21 adults and 5 children."

October 6th: "Morning report. Present—officers, 6; guards, 11; employees, 43. Refugees arrived, 8; departed, 28; remaining, 156. Fever camp, 5; all well."

October 6th: "Received five hundred dollars from Louisville "Courier-Journal" for distribution among destitute people in camp."

October 7th: "Morning report. Present—officers, 6; guards, 11; employees, 42. Refugees arrived, 21; discharged, 4; remaining, 173. Fever camp, 3 convalescent; 2 new cases this morning."

October 8th: "Morning report. Present—officers, 6; guards, 11; employees, 42. Refugees discharged, 23; remaining, 150. Fever camp, 5."

October 8th: "Just received from Mayor Hewitt check for $1,500 on account of Brewers' Exchange."

October 9th: "Morning report. Present—officers, 6; guards, 11; employees, 42. Refugees arrived, 16; discharged, 17; remaining, 149. Fever camp, 6."

October 12th: "Morning report. Present—officers, 5; guards, 11; employees, 42. Refugees arrived, 15; discharged, 35; remaining, 140. Fever camp, 6."

October 13th: "Morning report. Present—officers, 5; guards, 11; employees, 42. Refugees arrived, 7; discharged, 21; remaining, 136. Fever camp, 6."

*Fernandina, Fla.*—Surgeon Ross, U. S. Navy, telegraphed as follows:

October 5th: "Report for twenty-four hours ending 6 P. M., new cases, 17; deaths, none; under treatment, 28."

October 5th: "Much more sickness here, principally among negroes, than is thought or reported. Howard Association has no more means than necessary for care of sick and needy. Number of latter large and increasing. Many infected houses and much infected bedding here which should be fumigated, disinfected, and some destroyed. Will you furnish means for fumigation, disinfection, and compensation for articles destroyed, thereby greatly diminishing danger of trouble in future, especially next year?"

This request was approved under certain restrictions.

October 8th: "For twenty-four hours ending at 6 P. M., new cases, 23; deaths, none."

Surgeon Ross has been authorized to have a small house built on Tiger Island, near the entrance to the harbor, for the accommodation of crews of incoming ships while such ships are being overhauled and loaded in the city.

*St. Augustine, Fla.*—Dr. J. F. Hartigan, United States Sanitary Inspector, telegraphs as follows:

October 9th: "Have been investigating here two days. Place healthy. Palatka to-morrow. Will report on so-called dengue."

*Palatka, Fla.*, October 11th.—"Am at Palatka to-day. Place healthy. Leave for Seville to-morrow."

*Green Cove Springs, Fla.*—The following telegram has been received from Assistant Surgeon William Martin, U. S. Navy:

October 11th: "During past two months twelve cases have occurred here and surrounding country, whose history warrants classification mild type yellow fever. One now under treatment convalescent. Typical case found last Sunday three miles in country, now convalescent. No deaths. Suggest employment of Dr. Merrill as sanitary inspector, six barrels of sulphur forwarded immediately, and employment of guards for isolation when necessary. Do not anticipate spread. Sanitary condition very good."

*Tampa, Fla.*—Sanitary Inspector M. B. Harrison telegraphs:

October 13th: "For week ending October 7, 1888, there were six new cases yellow fever at Palmetto. Total, 66; deaths, 1."

*Jackson, Miss.*—Dr. Wirt Johnston, Secretary State Board of Health, telegraphed:

October 4th: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths, 5."

October 5th: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths, 5."

October 6th: "Situation unchanged this 6 P. M. Total cases to date, 14; deaths, 5. Will not report again until a change, unless desired."

*New York, N. Y.*—The following letters have been received:

HEALTH DEPARTMENT OF THE CITY OF NEW YORK,
PRESIDENT'S OFFICE, NEW YORK, *October 3, 1888.*

SIR: In reply to your letter of September 27th I have pleasure in sending you the clinical history of the case of the late Professor Proctor. I do not think it would be proper for me to express an individual opinion as to whether or not the case was one of yellow fever. I can only say that I was warranted in so considering it by the concurrent opinions on which the action of this department was based. Among those acquainted with the facts and qualified judgment, I am not aware that any difference of opinion exists as to the nature of Professor Proctor's disease. As bearing upon the subject of your official inquiry I deem it proper to say that Professor Proctor stated that refugees from infected districts had arrived at Oak Lawn before he left. Mr. George Wilson, a neighbor and friend, who brought Mrs. Proctor to New York, denies the correctness of Professor Proctor's statement on this point, concerning which we have no other evidence. The Professor could not remember the names of the railroads over which he traveled from Oak Lawn to this city.

Respectfully,

(Signed) JAMES C. BAYLES,
*President.*

*Clinical History of the Case of Richard A. Proctor.*

Richard A. Proctor, aged fifty-three years, was taken sick, according to his statement, Friday, September 7, 1888, with several slight chills. On this date he was at his home in Oak Lawn, Fla. Saturday, September 8th, he started for New York city by railroad, arriving at the Westminster Hotel, Irving Place and Sixteenth Street, Monday, September 10th. From the initiatory chills until he was seen by Dr. George W. Conant, of New York, at 8 A.M. Tuesday, September 11th, he stated that he "felt mean," and was feverish continually; also that he had vomited several times on Sunday while in sleeping-car *en route* from Florida. During the evening of Monday, September 10th, he was found by one of the porters attached to the Westminster Hotel asleep on a hall floor. Thinking him intoxicated, the porter roused and accompanied him to his room, placing him on the bed in his clothes, where he remained until the following morning, when he was seen by Dr. Conant at 8 A. M.

Dr. Conant found him in a semi-conscious condition, pulse 130, temperature 100·5° in the mouth. He complained of slight headache, nausea, and uneasy feeling in back. He stated also that he had been subject to attacks of malaria, and believed from experience that he was suffering from such an attack.

At 10 A. M., same day, Dr. Conant notified the Division of Contagious Diseases of the Health Department, and at 11 A. M. Dr. Cyrus Edson, of the Health Department, saw him with Dr. Conant. He was still in semi-conscious condition, but, when roused, talked and answered questions rationally. His skin was hot and dry. Temperature, 103°; pulse, 136, and weak; respirations, 22.

He complained of nausea, and vomited food and drink given him. His eyes were injected and glistening. Conjunctivæ jaundiced, skin slightly so, facies anxious. Percussion and palpation showed small liver and normal spleen. No abdominal tenderness, and no ileo-cæcal gurgle. On being requested to do so, he passed about six ounces of dark urine, which was found to contain blood, hyaline and granular casts, and about 15 per cent. per volume of albumin.

At 3.15 P. M., same day, he was seen by Drs. A. Jacobi and Conant. His mental condition was then better; temperature, 101·5°; pulse, 104 and very weak; threatening syncope. The second sound of the heart was faintly audible over sternum, but could not be heard elsewhere over the chest walls. A specimen of urine passed at this time was examined, and found to contain hyaline casts and $\frac{8}{10}$ per cent. per volume albumin.

At 5 P. M. his temperature, taken by Dr. B. McCann, of the Health Department, who remained with him as nurse, was found to be normal.

At 9 P. M. he was again seen by Drs. Jacobi and Conant. His condition was much improved. Temperature, normal; pulse, 88, and stronger. He was very talkative; spoke of his family, etc. He complained of acidity of stomach, and said if he could only get rid of it he would feel well.

At 12.45 A. M., September 12th, he was removed by Dr. Edson with great care on cot to ambulance to Willard Parker Hospital. At time of removal his condition was still better, pulse strong. He protested against being carried, and declared that it was ridiculous to carry him, as he felt perfectly strong and well, and would walk back in the morning. He was accompanied in ambulance by Dr. Edson, and talked freely during the ride.

At the hospital he was placed in a private room, and expressed himself pleased with the change from the hotel. His pulse was then 112 and strong. He passed a comfortable night with Dr. Priest, house physician, and a nurse in attendance.

At 11 A. M., September 12th, he was seen by Drs. Jacobi, Edson, and Priest. He was comatose, and had been so since 6 A. M. Skin covered with perspiration, slightly more jaundiced than on preceding day; temperature, 103·5°; pulse, 136; respiration, 25; some pulmonary œdema; pupils dilated slightly, and responded sluggishly to light. His urine was drawn by means of catheter, and was found to contain a marked trace of albumin. His condition continued same until 7.15 P. M., when he suddenly vomited about a pint of characteristic coffee-grounds matter, and died in three minutes thereafter.

Dr. Priest reported that the last attack of vomiting was projectile, and that a tonic convulsion of the muscles of the face, neck, and upper extremities occurred at the moment of dissolution.

CYRUS EDSON, M. D.,
*Chief Inspector, Division of Contagious Diseases.*

Health Department, City of New York,
President's Office, New York, *October 9, 1888.*

Sir: In compliance with your request of October 5th, I have the honor to inclose a copy of the autopsy in the case of Professor Proctor.

The report giving full details of the examination of the organs has not yet been received.

Respectfully,
(Signed) J. C. Bayles, *President.*

*Report of Necropsy.*

New York, *September 16, 1888.*

In accordance with your request, an autopsy on the body of Professor R. A. Proctor was made by us at 2.30 P. M. to-day, at North Brother's Island, and we submit the following preliminary report:

Decomposition was so far advanced that it was impossible to arrive at a definite conclusion as to the cause of death.

The organs presented no evidence whatsoever of pernicious remittent fever, or other form of malarial disease, such as, even in the condition of decomposition presented by the body, would ordinarily be apparent.

The only positive change due to disease which could be made out was in the kidneys, which showed the appearance of old, though not advanced, disease.

The alterations produced in the body by yellow fever are usually of such character as to be nearly or completely obliterated by advanced decomposition.

We are therefore only able to say in this connection that there was no other evident cause of death, and nothing which would be incompatible with death from that disease. The final conclusion as to the cause of death must therefore, in our opinion, be largely based upon the clinical history.

(Signed) T. Mitchell Prudden, M. D.,
Hermann M. Biggs, M. D.,
*Pathologists to the Health Department of New York City.*

Hon. James C. Bayles,
*President of the Health Department, New York City.*

Mortality Table, Cities of the United States.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Varioloid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York, N. Y. | October 6. | 1,538,164 | 621 | .. | .. | 1 | .. | .. | .. | 12 | 10 | 15 | 9 | 16 |
| Philadelphia, Pa. | October 6. | 1,016,758 | 344 | .. | .. | .. | .. | .. | .. | 13 | 7 | 5 | .. | 3 |
| Brooklyn, N. Y. | October 6. | 805,855 | 307 | .. | .. | .. | .. | .. | .. | 5 | 4 | 8 | .. | 5 |
| Chicago, Ill. | October 6. | 800,000 | 286 | .. | .. | .. | .. | .. | .. | 13 | 6 | 16 | .. | 4 |
| Baltimore, Md. | October 6. | 431,879 | 158 | .. | .. | .. | .. | .. | .. | 7 | .. | 4 | .. | 5 |
| Boston, Mass. | October 6. | 415,000 | 20 | .. | .. | .. | .. | .. | .. | 10 | .. | 9 | 1 | ... |
| San Francisco, Cal. | Sept. 28. | 330,000 | 94 | .. | .. | .. | .. | .. | .. | 5 | .. | 1 | .. | .... |
| Cincinnati, Ohio. | October 6. | 255,139 | 107 | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .... |
| New Orleans, La. | Sept. 29. | 248,000 | 113 | .. | .. | .. | .. | .. | .. | .. | .. | 6 | .. | 3 |
| Pittsburgh, Pa. | October 6. | 230,000 | 82 | .. | .. | .. | .. | .. | .. | 6 | 1 | 4 | .. | 3 |
| Washington, D.C. | Sept. 29. | 225,000 | 92 | .. | .. | .. | .. | .. | .. | 7 | .. | 2 | .. | 4 |
| Washington, D. C. | October 6. | 225,000 | 96 | .. | .. | .. | .. | .. | .. | 4 | .. | 1 | .. | 5 |
| Milwaukee, Wis. | October 6. | 195,000 | 68 | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. | ... |
| Kansas City, Mo. | Sept. 29. | 180,000 | 44 | .. | .. | .. | .. | .. | .. | 4 | .. | 1 | .. | .... |
| Kansas City, Mo. | October 6. | 180,000 | 45 | .. | .. | .. | .. | .. | .. | 8 | .. | 2 | .. | .... |
| Rochester, N. Y. | October 6. | 120,000 | 39 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | ... |
| Detroit, Mich. | October 6. | 116,340 | 78 | .. | .. | .. | .. | .. | .. | 4 | 1 | 6 | .. | 1 |
| Richmond, Va. | October 6. | 100,000 | 49 | .. | .. | .. | .. | .. | .. | .. | .. | 5 | .. | 1 |
| Denver, Col. | October 5. | 96,000 | 37 | .. | .. | .. | .. | .. | .. | 5 | .. | 2 | .. | .... |
| Columbus, Ohio. | October 6. | 93,000 | 20 | .. | .. | .. | .. | .. | .. | 4 | .. | 2 | .. | .... |
| Toledo, Ohio. | October 5. | 80,000 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Evansville, Ind. | October 6. | 53,000 | 15 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Nashville, Tenn. | October 6. | 65,153 | 24 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |
| Fall River, Mass. | October 6. | 65,000 | 28 | .. | .. | .. | .. | .. | .. | 5 | 1 | 1 | .. | .... |
| Charleston, S. C. | October 6. | 60,145 | 44 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | ... |
| Lynn, Mass. | October 6. | 50,000 | 17 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| Council Bluffs, Ia. | Sept. 29. | 45,000 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Portland, Me. | October 6. | 40,000 | 14 | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .... |
| Manchester, N. H. | Sept. 29. | 41,000 | 14 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |
| Burlington, Ia. | Sept. 26. | 30,166 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Davenport, Ia. | October 6. | 30,084 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | 7 | .. | .... |
| New Albany, Ind. | October 6. | 30,000 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Altoona, Pa. | Sept. 29. | 29,546 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| New Bedford, Mass. | October 6. | 26,845 | 16 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Haverhill, Mass. | October 6. | 25,000 | 10 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Jackson, Mich. | October 6. | 22,500 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Poughkeepsie, N.Y. | October 5. | 22,000 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newton, Mass. | October 6. | 21,105 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newport, R. I. | October 4. | 20,466 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Pensacola, Fla. | October 6. | 15,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |

**Tracheotomy in Croup.**—"Dr. Valde y Aldebalde, writing in a Spanish journal devoted to the diseases of women and children," says the "Lancet," "urges upon his *confrères* the importance of overcoming their reluctance to perform tracheotomy in croup. He thinks that, if the cases in which this operation is performed in Spain, 'especially those where the result is satisfactory,' were published, medical men in small towns would feel much more disposed to undertake the operation, and the task of reconciling the parents to it would be rendered very much easier. Surely there is enough already of reporting successful cases. What should be aimed at is that a true mirror of practice should be presented to the profession, which is not the case when unsuccessful operations are omitted and successful ones are duly published. Nothing is more difficult, perhaps, than to estimate the results of tracheotomy in croup in private practice, especially under the conditions existing in the homes of the poor."

## ANSWERS TO CORRESPONDENTS.

*No. 231.*—Both currents have been used successfully.

*No. 232.*—It was published entire in the New York "Sun" for Sunday, the 14th inst.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# THE CAUSE AND TREATMENT OF URETHROCELE.*

BY THOMAS ADDIS EMMET, M. D.

THE condition which has been accepted as one due to prolapse of the urethra, and known as urethrocele, has generally been regarded as a result of the injury at the vaginal outlet misnamed laceration of the perinæum, and has been considered the direct consequence of a loss of support from below. I shall shortly present what I believe to be the true pathology of the lesion, but at once will state that we may exclude a want of support as the cause, for this condition of the urethra is never found after a first labor if the only other injury is a rupture through the sphincter ani and recto-vaginal septum. This is the condition which does constitute a true laceration of the perinæum, yet, it matters not how long since the injury, nor what length of time has elapsed since the supposed needed support was lost, no prolapse of the urethra can be detected in such a case.

Urethrocele is always found to exist, in a greater or less degree, where a serious double laceration of the cervix has been sustained, and generally those women suffer most from it who have borne a number of children. It is undoubtedly a common co-existing condition with the so-called laceration of the perinæum, but the lesions do not depend the one upon the other. The history of all these injuries will point to either a rapid or a tedious labor. In one instance the integrity of the tissues has been overstrained before nature has prepared them for the test, and in the other the tissues have been overtaxed after their vitality had become impaired. The analysis of a number of my cases of urethrocele indicates that the most common cause of the injury was rapid labors, where a few violent contractions of the uterus had been sufficient to terminate them. Next in importance were found tedious labors which had been completed by the injudicious use of ergot or unskillful instrumental delivery. Notwithstanding the fact that urethrocele is a local injury, I have never met with an instance of its existence alone, but always some damage has been sustained elsewhere in the pelvis, and from a common cause. The damage done to the urethra is always confined to the lower or vaginal part of the canal. Observation would seem to teach that the upper portion never sustains injury unless the whole circumference be lost from sloughing after an uncalled-for delay in delivery, with long-continued pressure from the child's head resting on the floor of the pelvis. It is a fortunate provision that the portion of the urethral canal lying close up under the arch of the pubes should be so well protected from pressure during labor, as the filaments from the neighboring ganglia, which dictate when the bladder should be emptied, are distributed there. The mucous membrane in this part of the canal differs in being more closely attached to the neighboring or deeper tissues. There is also less submucous or connective tissue under it, so that we seldom see this part of the urethra in a state of prolapse at the outlet, a not uncommon condition in which to find the opposite urethral wall. It is therefore at the more exposed site of the lower or vaginal section of the urethra and from the more movable character of its lining membrane that the injury termed urethrocele occurs.

[Reference was here made to the anatomy of the parts, and the author proceeded as follows:]

We are all familiar with the fact that a distended bladder retards the natural progress of labor, and if instrumental delivery is attempted while it is in this condition, serious damage from laceration, and even sloughing about the neck of the bladder or of the urethra, may result. It has become the accepted practice, that all possible space may be gained, to thoroughly empty the bladder before an instrumental delivery and to see that no accumulation takes place after the head has reached the floor of the pelvis. The rule is undoubtedly a good one, both in theory and practice, but yet, under certain circumstances, the presence of a few ounces of urine in the bladder may be a protection to the soft parts and act as a cushion, for the fluid will adapt itself and escape by the urethra if the pressure be extreme. As a matter of fact, a slight accumulation does take place generally in every labor before the head passes the perinæum, and acts as a cushion at the moment when the strain and pressure are the greatest at the neck of the bladder and along the course of the urethra.

An ample arch of the rami below the pubes undoubtedly favors the progress of labor, but it renders the woman liable to injury of the urethra from the fact that the canal is thus more exposed to pressure. After the head of a large child has passed out from the uterus of a vigorous woman and reaches the vaginal outlet through such a pelvis, and by the force of pains natural to a condition of perfect health, the tissues are always piled up, as it were, in advance of the head, and can only recede from the situation with difficulty. This effect is first shown in the dilatation of the anus and in the rolling out of the tissues from above. The common result is to split the mucous membrane more or less in the long axis of the canal, an injury which may range in degree from a slight and superficial crack to a fissure through the recto-vaginal septum, involving the destruction of the sphincter ani. As the occiput passes under the arch of the pubes, the elasticity of the surrounding tissues keeping it in close contact, that portion of the urethra in advance of the head becomes dilated from the crowding into it of the loose tissue already referred to at the neck of the empty bladder. From this cause partial or complete displacement of the whole mucous membrane and submucous tissues often takes place along the lower portion of the urethra. In addition, lacerations along the mucous membrane of the urethra and in the long axis of the canal are found like those I have described as occurring in the rectum, and these range in depth from a simple crack to a deep fissure. Sometimes the laceration is a transverse one, in front of or behind the subpubic ligament, and thus re-

* An abstract of a paper read before the American Gynæcological Society at its thirteenth annual meeting.

sembles closely the injury resulting from forcible dilatation of the urethra with the finger or other instrument. At times these lacerations extend throughout the length of the canal and involve the meatus, thus leaving the urethral outlet cleft-shaped and patulous after nature has repaired the injury within. I have seen but a single instance where the laceration extended through into the vagina, leaving a fistula. Necessarily this would be a rare result, as there exists loose connective tissue between the urethral and the vaginal passages, which is continuous with similar tissue elsewhere in the pelvis. While the urethral canal itself might be readily split through, the force would naturally be spent in the direction of the least resistance and into the connective tissue; consequently the laceration would be less liable to enter the vaginal tissues which would offer the greater resistance. Nevertheless, this rupture does sometimes occur, for I have seen several instances where a deep fissure existed through the vaginal surface and over a portion of the long axis of the urethra, while the canal itself was apparently uninjured. The only explanation must be based upon the supposition that the urethral edges of the opening, lying in close contact, gradually united, leaving the other portion of the fissure to heal partly by granulation. . . .

We should use the term urethrocele in its true sense and not designate by the same a condition where the urethra has received no injury. I refer to the apparent thickening of the urethra due to the sliding forward of vaginal tissue upon it. This condition also is a result of labor, but the tissues can be readily returned in the direction from which they were displaced. I have elsewhere described the operation for correcting this prolapse, which consists in retracting it and then uniting the fold thus formed, as a crescent, across the vagina on a line higher up in the canal; with this brief reference we need not again refer to the condition.

In a true urethrocele the canal remains sacculated and shortened, but not necessarily patulous. By the aid of a uterine probe it is easily demonstrated that the diameter of such a canal is often greater than its length, but the space is well filled by prolapsed tissue from the bladder, or by its own thickened and diseased mucous membrane, to such a degree as to frequently retard the flow of urine. When the canal becomes thus shortened, from an increase of the lateral diameter, the lesion has evidently followed cicatrization from each end of the wound, leaving, as a constant cause of irritation, a pouch in which a certain amount of urine remains after each emptying of the bladder.

I have frequently recognized this injury as a source of reflex irritation, and have successfully relieved the train of symptoms after others had attributed their own origin to the bladder, uterus, and even to the rectum, and after each organ had been treated unsuccessfully in turn.

In April last I had placed under my care, by Dr. George A. Peters, of New York, about the most complete physical wreck I have ever encountered during my professional life. She was sixty-four years of age and had not been well a day for thirty-seven years, her illness dating back to the birth of her last child. She had given birth to three children; the labors were all hard and tedious, but were terminated naturally, notwithstanding the heads of the children were very large. From one cause and another she had been unable to nurse any of her children. After a miscarriage, which took place about thirty years before I saw her, it was necessary she should receive constant treatment for uterine or supposed ovarian irritation. But from the time of the menopause, at fifty, irritability of the bladder became the most prominent symptom. She was a confirmed invalid, and for twenty years had relied upon the daily use of morphine as her only means of rendering life endurable, as she expressed it. Vesical irritation for years had been constant, necessitating the emptying of the bladder at least every half-hour, and at times every few moments. Notwithstanding the constant irritation, and that attention had been so long directed to the parts, a diseased condition of the urethra was never suspected, but the symptoms were attributed to the possibility of a stone in the bladder.

This poor woman had become essentially bedridden, her general health was gone, her nervous system unstrung, and withal she was suffering from a constant tendency to a serous diarrhœa, a condition which I have before met with in persons who have long been subjected to the use of morphine.

After the menopause the uterine and ovarian irritation became eliminated. But at my first examination I detected in a cicatricial line the evidence of a deep double laceration of the cervix which had extended to some distance out upon the vaginal walls. After the birth of her last child she had undoubtedly suffered from a septic pelvic inflammation, to the consequences of which, from adhesions, the supposed ovarian irritation was to be attributed. The everted lips of a lacerated cervix appeared, no doubt, as the "ulceration" which, during the course of many years, it had been found impossible to heal. I examined the bladder carefully, but could detect no evidence of disease, and so long as the sound was kept in its regular course there was no special irritation in the urethra. The urethra was nearly as large as a pigeon's egg but more globular; it was firm to the touch, and no special pain was excited until pressure was made upward against the arch of the pubes. The meatus was somewhat constricted and the canal did not seem overlarge until the point of the sound was turned downward, when it entered the pouch. The increased lateral diameter of the canal was not detected until the instrument was turned to either side. Pressure within the angles caused intense pain, and when repeated, while the patient was under the influence of ether, the limbs immediately straightened out, notwithstanding she was fully under the anæsthetic.

After some preparatory treatment to improve her general condition, and after the frequent application of hot water for a week, applied directly against the urethrocele from a jet of a Davidson's syringe, I operated.

The patient was placed on the left side, and after the introduction of a Sims's speculum I passed a No. 12 block-tin sound through the urethra into the bladder, and this instrument I bent so that it would not slip out, and could be easily held by my assistant. By the use of the sound I pushed back into the bladder the prolapse of tissue, and thus emptied the canal. I secured the center of the urethrocele with a tenaculum to steady it, and with a pair of scissors bent at an angle I carefully cut down upon the sound. The opening was then enlarged toward the neck of the bladder and toward the meatus, but without reaching either point, as I wished to preserve the retentive power as well as the urethral outlet. The parts were unusually vascular and the venous oozing was difficult to control. The tissue which lined the cavity was livid in color and detached to a great extent from the vaginal side of the urethra, and, without exaggeration, it seemed fully an eighth of an inch in thickness, and almost gangrenous. I seized in turn

each angle of what seemed to be a transverse laceration, drew out the excess of tissue so as to obliterate the pouch on each side, and cut this off, but left tissue enough to cover the sound which had been retained in the canal as a guide. I then put the urethra on the stretch, and, including all the tissues, drew it out to its natural length by making traction with a hook from each angle of the wound toward the neck of the bladder in one direction and toward the meatus in the other. By a number of interrupted fine silk sutures I carefully brought together, around the wound, the edges of the urethral and vaginal mucous membranes, leaving the button-hole opening extending through the middle third of the canal. The result was that I restored the urethra to its natural length by the operation and formed the canal of a uniform width in correspondence with the block-tin sound which occupied the urethral tract. It is not necessary to describe the steps of the operation at greater length, for I have illustrated the subject fully, and have presented the details in my work on "The Principles and Practice of Gynæcology."

At first there was no special improvement, but rather an increase of suffering from the irritation of the bladder; but this was to be expected until after the sutures had been removed and the swelling had subsided. The daily treatment consisted in frequently throwing through the opening in the urethra a gentle stream of warm water whenever it could come in contact with the thickened mucous membrane. Sometimes applications of tannin and glycerin, or of the extract of *Pinus canadensis*, were made, and afterward the parts were covered with a simple cerate to protect them from contact of the urine in its escape while emptying the bladder. After two weeks she began to have less pain locally, and by degrees the quantity of morphine was reduced until finally its use was discontinued entirely.

About the middle of June she returned home, not a well woman, but greatly improved. In fact, it may be said that she was already cured of her local difficulty, as she was able to retain the urine for three or four hours, and had been broken of her morphine habit. The thickened mucous membrane had nearly reached a healthy condition and will continue to improve. To bring this about it was necessary to leave the button-hole in the urethra until some future time, when it will be closed if the parts have then their normal state. It can not be expected at her age that she will fully regain her strength, or that she will be able in so short a time to overcome the habits of an invalid which she has maintained for so many years. But I am certain that she will yet be well enough to get much enjoyment out of her existence, and that for the future she will be free from all suffering in connection with the bladder and urethra.

I had the honor in 1882 of presenting for your consideration a paper on some of the lesions of the female urethra. I then maintained that we had a valuable means for exploration and for treating these diseases by means of the button-hole operation. As my experience of this operation has increased, I have become even more satisfied with the views I then advanced. The operation is not offered as a "cure-all," but, as with the one for closing a lacerated cervix, in properly selected cases it fills a place for which we have no substitute in treating many of the reflex disorders to which women are subject, and which are so closely connected with impaired nutrition and injury to erectile tissues. In these days of heroic surgery the operation has seemingly been overshadowed and has not received the attention which it deserves.

# LAPAROTOMY FOR REDUCTION OF AN INVERTED UTERUS.

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When, a number of years ago, Thomas suggested and in two instances (one successful) carried out the plan of stretching the funnel of an inverted uterus with a glove-stretcher passed through an abdominal incision, the profession could not but admire the boldness and originality of the idea, although it has as yet been slow in adopting and following it. But in those days (not so remote, either) it was considered proper to relegate laparotomy to the place of a last resort, and amputation of the inverted uterus was preferable to the dangerous experiment of attempting to dilate the constricted ring of the organ through an abdominal incision. And surely the choice of the former operation, mutilating as it was, could not be ascribed to its safety, since, out of fifty-eight cases collected by Scanzoni in 1867, eighteen were fatal.

With the comparative absence of danger now attending aseptic laparotomy, there seemed a chance for a revival of Thomas's operation in a favorable case. While I had seen, in all, six cases of inversion of the uterus, only two were complete uncomplicated inversions; one of these was in Scanzoni's clinic in 1867, and, in consequence of a doubtful diagnosis, the uterus was ligated and amputated, with a fatal result; the other was shown me by the late Dr. Dawson in his clinic at the Out-door Department of the New York Woman's Hospital some twelve years ago, and the inversion was subsequently replaced by him, by what method I do not know. The four other cases were partial inversions produced by fibroid polypi, and were easily reduced after removal of the tumor. Thus I had no opportunity to test Thomas's method in a case where a faithful and persistent trial of the usual rapid and gradual means of vaginal reposition had failed, until a few months ago.

M. W., aged twenty-seven years, married, two children, the last three months and a half old, was admitted to my service at Mount Sinai Hospital on May 29, 1888, during my absence from the city. The last confinement had been easy and natural. Particulars could not be obtained as to the placenta and puerperal state. About a month later she consulted Dr. C. Nicolai, of Harlem, for persistent hæmorrhage, who detected a complete inversion of the uterus, and, as he informed me, made four distinct attempts at reduction of an hour each, twice under chloroform, but without success. The hæmorrhage continued, and the patient was sent by Dr. Nicolai to my service. Dr. B. Scharlau, who acted as my substitute during my absence, made two very determined efforts at reduction under chloroform, and, failing, employed steady pressure with an inflated air-bag for three days, until the surface of the inverted uterus became so raw and its tissue so soft as to cause fear of sloughing. Then mild carbolized douches were substituted. On June 6th a third ineffectual attempt at reposition was made under anæsthesia.

On my return, two weeks after her admission, I found the excessively anæmic and emaciated patient clamoring for relief, no matter how. At the first examination I made a moderate attempt at reduction without anæsthesia, merely as a feeler, and easily found the reason of the failure to lie in the great mobility

of the completely inverted uterus, and the apparent impossibility to secure sufficient purchase on any part of the uterus so as to be able to press it steadily against the contracted ring. The obstruction was so easy of reach through the thin abdominal walls that it seemed to me, as it had seemed to Dr. Nicolai and Dr. Scharlau, absolutely incomprehensible that it should not be overcome, and I appointed the day for the final trial, with considerable confidence that I should be successful.

However, in case I should fail by the usual methods, I had laid down for myself the following plan of action: Abdominal section, stretching of the inverted ring with a Palmer dilator or a glove-stretcher, and then reinversion by the intravaginal hand. Should this combination fail, as I had no idea it would, then I would resort to removal of the ovaries, closure of the abdominal wound, and elastic ligation of the inverted uterus. I so confidently expected to replace the uterus by manual pressure that I had not provided myself with a glove-stretcher, not happening to find one conveniently at hand.

On June 20th, in the presence of Dr. W. H. Baker, of Boston, and a number of gentlemen attending the Polyclinic, I began the attempt at reduction, the patient being thoroughly relaxed by chloroform. For fully an hour, with alternate hands in the vagina, and applying the pressure at every available spot of the uterine surface, employing the fingers of the other hand and a wooden plug as means of counter-pressure and of dilating the ring, I labored to effect reduction until, from sheer exhaustion, I was obliged to desist. The contracted ring firmly resisted all efforts to dilate it. Further efforts seemed unadvisable, as the uterine tissue had become so soft and pulpy from manipulation and pressure, and the wall at spots appeared so thin, as to render its perforation by the fingers probable.

I could not bear to give up the reduction of the organ at that sitting, and therefore proceeded to carry out my original plan. Rapidly making a two-inch incision through the abdominal wall, I pushed the uterus from the vagina upward so as to almost bring the ring into the wound, and first with my fingers and then with a Palmer's steel dilator tried to stretch it apart. Failing in this, I sent for a glove-stretcher, and procured two of ivory from the wife of the superintendent of the hospital. These were disinfected, and first one and then both were inserted through the abdominal wound into the uterine ring down to the very bottom of the inverted uterus and gently separated to their utmost. The ring was thus completely dilated and I expected an immediate reduction. But as the glove-stretchers were slowly withdrawn to allow the *pari passu* reposition from the vagina, at the instant the stretchers slipped out of the ring, the latter closed like a vise; and, although the attempt was repeated again and again, no rapidity or concurrence of action in pressing the fundus upward succeeded in anticipating the contraction of the ring. It seems almost incredible that it should have been impossible to so dilate and keep open the ring, when it was not only easily accessible, but even visible at the abdominal incision, as to enable me to slip the fundus back through it. But such was nevertheless the case, and my spectators will, I think, give me credit for having tried faithfully to save this woman's uterus. As a last resort I followed a suggestion of Dr. Lilienthal, my house surgeon, who assisted me (before the operation, while discussing the possible necessities of the case, I had rejected this plan as ingenious, but scarcely likely to be required), and passed a Peaslee's needle from the vagina through the firmest portion of the fundus uteri and out of the ring and the abdominal wound, attached a long loop of the thickest silk to it, drew the loop out of the vagina, and tied a piece of large, doubled, vulcanized rubber drainage-tube to it, as a fulcrum upon which to exert traction. I chose the flexible tube in preference to a flat button of horn or metal, which were at hand, because I feared the latter might prove an obstacle at the contracted ring. Then dilating the ring with the glove-stretcher, I tried to draw the fundus up through it by making steady traction on the loop of silk. But the pulpy uterine tissue gave way and the drainage-tube suddenly appeared in the abdominal wound. Realizing that this uterus was beyond saving, I quickly removed the drainage-tube and silk loop, pushed the perforated fundus down into the vagina, and tied an elastic ligature tightly about the body of the uterus as near the vaginal vault as I could reach. Having thus sealed off the peritoneal cavity from below, I proceeded to remove both ovaries and tubes in the usual manner, and, after thoroughly cleansing the abdominal cavity with warm Thiersch's solution, closed the wound. The vagina was irrigated with bichloride solution (1 to 5,000) and loosely packed with iodoform gauze.

The operation had lasted an hour and forty minutes, the oophorectomy and closure of the abdominal wound occupying but ten minutes. The patient bore the severe handling better than her anæmic state would have led one to expect; there was but moderate shock, and no local inflammatory reaction whatever. After the first forty-eight hours, when the iodoform gauze was removed, the vagina was irrigated every three hours with warm Thiersch's solution, bringing away for nearly two weeks quantities of black offensive shreds. The temperature for nine days varied between 101+° and 102+° F., the pulse between 100 and 130 beats; after that both became normal. The frequency of the pulse was no doubt due to the excessive anæmia, and the slight rise of temperature to absorption of septic matter from the sloughing uterus by the abraded and torn vagina.

On the thirteenth day I made an examination with the Sims speculum and found the elastic ligature loose in the vagina, and the body of the uterus entirely absent, the stump of the cervix being almost on a level with the vaginal vault and the cervical canal apparently closed. The abdominal sutures were removed on the ninth day, and a small mural abscess was found which may have caused some of the temperature, for it immediately fell, and remained down.

From that date recovery was uninterrupted, and on the fifteenth day the patient sat up in an easy-chair.

I am thankful that in this case I followed the old rule to "let well enough alone" and did not interfere with the sloughing process of the ligated inverted uterus by cutting off the sloughing portion, as is advised by most authors, and as the fear of septic infection might have induced me to do. But more than the danger of septic infection I feared the retraction of the edges of the cervical canal and a communication with the peritoneal cavity. I had once seen this occur after immediate amputation of the inverted uterus after ligation (Scanzoni's case), and the autopsy showed the gangrenous border of the cervix turned into the peritoneal cavity, and I did not wish to risk a similar occurrence in my case, if the elastic ligature was removed too early or chanced to slip off after amputation of the sloughing uterus. Besides the practical point to be learned from the treatment of the ligated uterus, the chief lesson taught by this case seems to me to be the failure of the effort to dilate the cervical ring through an abdominal incision sufficiently to permit replacement of the fundus. My hopes had been so unbounded in the easy success of Thomas's ingenious plan that I was and still am intensely diappointed at its failure, the more so as I fancy whatever chance it had of being adopted in suitable cases in the future may be shattered thereby.

I am aware that I may be criticised for not having per-

severed still longer with gradual pressure, and I confess that, had I doubted for a moment that Thomas's method would succeed, I should have felt it my duty to subject the uterus and vagina to still further distension and taxis, which they might ill have borne.

## AN EFFECTIVE AND INEXPENSIVE METHOD FOR THE MECHANICAL TREATMENT OF POTT'S DISEASE.*

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The purpose of this paper is to describe a cheap brace for cases of spondylitis occurring in the dorsal or lumbar regions, for, in the practice of every surgeon, patients present themselves who have not the means to purchase an expensive instrument.

When the patient has been examined and the site of the disease located, the surgeon should take a lead strip, and, while the patient lies in the prone position or stands, he should bend it to conform to the shape of the back, at a point about an inch and a half on either side of the median line, and extending from the neck to the middle of the sacrum, as in Figs. 1 and 2.

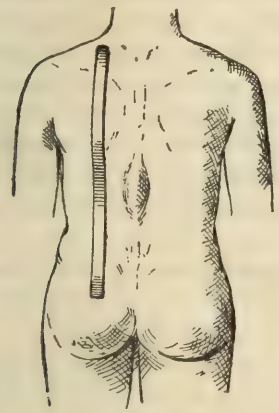


Fig. 1.



Fig. 2.

He should then procure two rigid strips of iron or other metal, and have them bent to conform to the shape of the pattern lead strips, so that they will fit the back accurately, and these he should have connected at top and bottom by transverse metal strips of the same width and thickness as in Fig. 3. This can be done by the nearest blacksmith or machinist if the lead strips bent into the proper shape are placed before him.

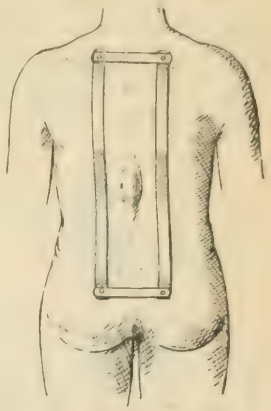


Fig. 3.

If the site of the disease is in the dorsal or upper lumbar region, as shown in Figs. 4 (and 4′) and 5 (and 5′), two thinner strips of metal of the same width should be provided, of a length corresponding to the distance from A to B. They should be thin enough to exert a spring effect, and should be riveted at an angle to the sacral extremity of the back frame already described, as shown in Fig. 6.



Fig. 6.

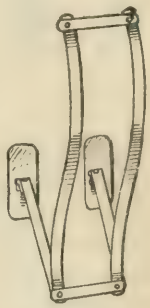


Fig. 7.

Two elliptical plates of thin metal from three to four inches in length should now be attached to the extremities of the short strips by hinge joints, as shown in Fig. 7, and the construction of the metallic portion of the brace is finished.

The surgeon should then pad these elliptical plates with wool or hair, keeping it in place by winding them with strips of moleskin adhesive plaster, and the entire metal frame-

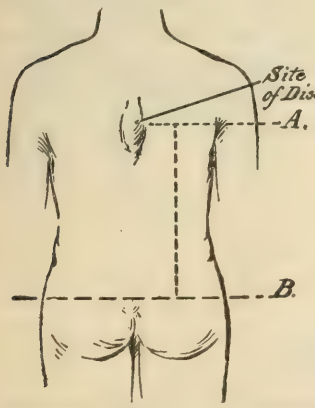



Fig. 4.

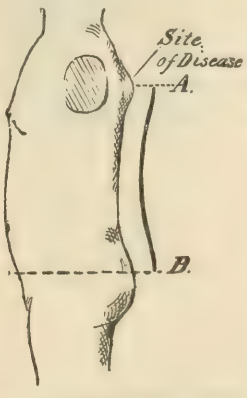



Fig. 4′.

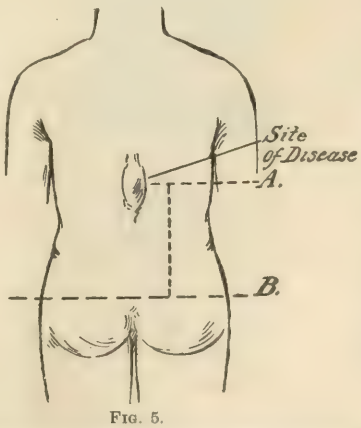



Fig. 5.

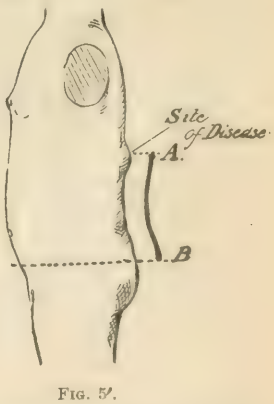



Fig. 5′.

* Read by title before the American Orthopædic Association at its annual meeting, September, 1888.

work should also be wound with adhesive plaster, as in Fig. 8, since this makes an efficient covering.

The brace is now ready for application, and it only remains to secure it to the body by means of broad strips of adhesive plaster (moleskin preferred), as shown in Figs. 8, 9, and 10. The breastplate shown in Figs. 9 and 10 is also to be of adhesive plaster.

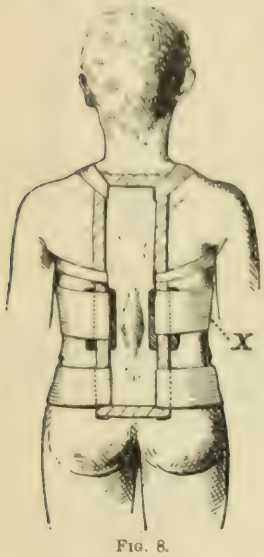



Fig. 8.

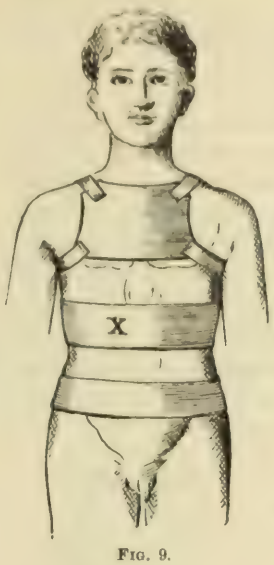



Fig. 9.

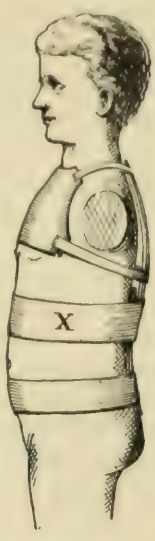



Fig. 10.

The adhesive strip X should be attached to the long rigid back-frame (not the spring strips), and should encircle the body exactly opposite the seat of disease. It will readily be seen that the more tightly the band X is drawn, the greater becomes the forward pressure from the spring strips on both sides of the kyphos, and when the brace is firmly secured against the body (as in Fig. 10), so that the back is held against the long frame, the short strips will become springs which exert an independent automatic power upon the deformity, while the long frame holds the whole trunk in an erect position. If these at of the disease is in the lumbar or sacral region, the short strips are to be reversed, and are attached to the rigid long frame at A (see Figs. 11 and 12). This will be better understood by reference to Fig. 21.

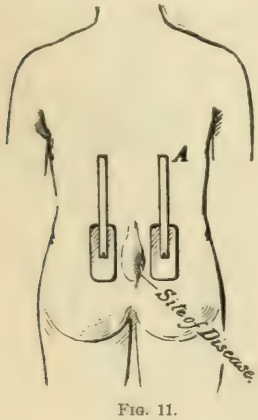



Fig. 11.




Fig. 12.

*The principle upon which this brace is constructed is a new one in orthopædic surgery, and is original with the writer, and its range of utility is not confined to caries of the spine, but extends to many other deformities.*

In studying the mechanical probleminvolved in the treatment of spondylitis, there are two requisites which must be recognized: 1. Arrest of the disease. 2. Obliteration of the deformity.

Nature points out the direction in which force should be applied to produce curative results. Who has not noticed the position assumed by a patient with the disease in the stage of invasion? The body is held rigidly erect, the head and shoulders being thrown back; and in stooping to pick an object from the floor, this position is still maintained, the patient having every muscle exercised to hold the spine perfectly fixed and bent backward, the position being similar to that of an equestrian.

Were it possible for this position to be retained continuously, progress of the disease to the stage of deformity would be almost impossible; but it is a natural tendency in unguarded moments for the patient to bend forward, and bending forward from any cause removes the superincumbent weight from the articular processes and proportionately transfers it to the bodies of the vertebræ and their intervening cartilages. The muscles are unable to continue supporting the spine in the supererect position at all times, and a natural consequence of the occasional bending forward which occurs is increased pressure upon the diseased cancellous bodies, and a hastened absorption of their structure, resulting in the formation of deformity.

Nature's indication for the treatment of Pott's disease is to put a splint on the back of the patient which will maintain this erect position, for, since the tendency of the disease is to curve the affected portion of the spine forward, the center of this curve being anteriorly, our corrective force should be applied to produce exactly an opposite curve to the diseased one, the center of such a corrective curve being posterior to the column. In other words, we must follow nature's lead and hold the spine erectly and slightly curved backward, the tendency of the disease being to curve it forward; and to thoroughly understand the principle upon which the new brace for this purpose is constructed, a patient having a well-defined knuckle is again laid on his back upon a table, the padded edges of which come to the

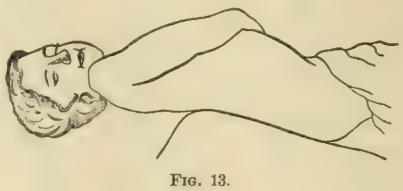


Fig. 13.

apex of the deformity, the shoulders and head being allowed to fall downward (see Fig. 13).

You will observe, as the patient's head and shoulders

descend, that a partial but physiological and true extension of the spine is effected, the traction force being all that portion of the patient above the seat of disease. There is also a tendency to obliterate the knuckle, and this is only prevented from taking place entirely by such consolidation as has taken place.

We have produced by this position the two effects we consider to be necessary for successful treatment, and have placed the spine in curves the reverse of those it held before the posture was assumed.

If this position could be maintained indefinitely without mechanical support, there would be rapid improvement in the disease; but, as it is obviously impossible, we attempt to embody the forces involved in a brace constructed in two parts. The "table" portion of the brace (and by this we mean that part which is to produce upon the patient an effect identical with the table, as shown in Fig. 13) consists of a firm pelvic band, from which strong padded strips pass up on either side of the median line to the seat of disease (see Fig. 2), and these form the short arm of the lever.

The "backward-traction" portion of the brace consists of a back-frame secured on the pelvic girth by a ratchet or clamp, which allows it to be adjusted at any outward angle, and this regulates the amount of forward pressure upon the kyphos.

The angle at which this back-frame or long arm of the lever is thrown out from the body (see Fig. 14) determines whether the brace shall act as a lever or as a simple fixation brace, and the angle between the long and short arms denotes the degree of power employed, so that when the back-frame is set outward at an angle with the short arm, and is drawn down to the body and fastened firmly (as shown in Figs. 14 and 15), the short arms terminating in the pads press forward upon the transverse processes of the diseased vertebræ with a constant elastic force.

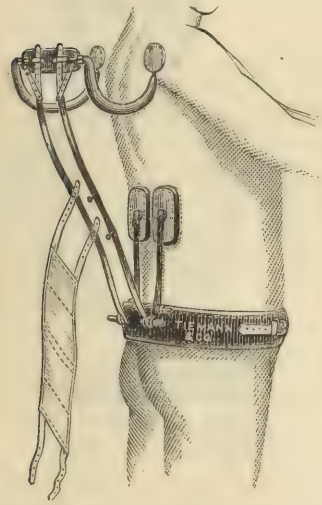


Fig. 14.—Brace for lower dorsal region partially applied.

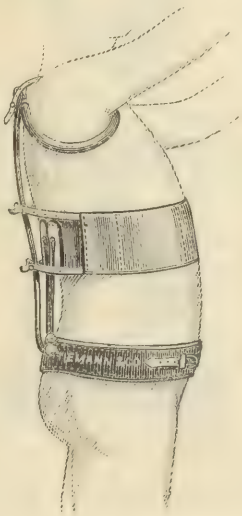


Fig. 15.—The same applied.

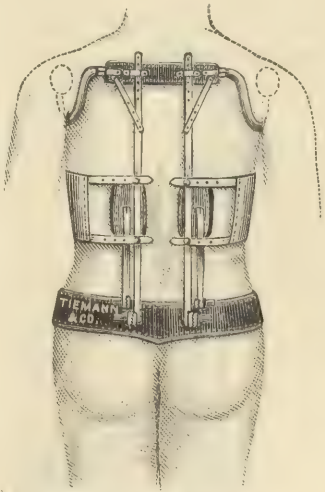



Fig. 16.—The same (rear view).

When this brace is secured to the body it forms a V-shaped lever, producing extension of the bodies of the vertebræ and tending to improve the deformity, while it maintains the spine firmly in the erect position, these being, as we have seen, the conditions for successful treatment. To illustrate this reversal of the lever, so as to obtain sufficient leverage for use in the lumbar region, a patient is laid on the back upon the padded table, and all that portion of the body *below* the seat of disease is allowed to hang over its edge, just the reverse of the position already demonstrated. In this manner also we produce extension of the spine by means of the backward traction of the lower extremities, and also produce the forward pressure upon the kyphos by the edge of the table. It is to retain these effects when the direct position is resumed that we use the lever-brace, and to adapt it to this portion of the spine we reverse its construction, as already detailed.

There are other features of this brace which deserve mention. It will be observed that, if the angle between the short and long arms of the lever is considerable when the long arm is fastened firmly to the body, the bending forward tendency of the upper part of the trunk does not cause the spine to give way at the seat of disease; for, in proportion as the patient leans forward, the short arms press forward upon the kyphos and oppose a resistance to the bending at that point, so that by the brace a curative automatic effect is produced to keep the body erect, and at the same time prevent further deformity while tending to improve that which already exists. Furthermore, the *spring* effect produced by the setting off of the traction-frame and drawing it forward against the body, which is thus held erectly when properly strapped, causes the brace to be held more tightly against the back, and insures a higher degree of fixation than any other form of apparatus in use.

In the beginning of the treatment it is well to have the traction-frame set off at such an angle as to cause considerable pressure upon the transverse processes of the kyphos, and produce thorough extension of the diseased portion; but this angle may be lessened week by week as the case improves, until finally the traction-frame lies directly upon the pads, and the brace becomes a mere fixation brace, without any leverage whatever.

To further illustrate the action of the brace, if a bent lead strip is taken, and one extremity held firmly by one hand, with the thumb pressed against the knuckle, it will be found that a force comparatively slight (when contrasted with that used in linear traction to produce not so perfect a result) with the other hand will serve to straighten the rod into its original position, knuckle and all. This is precisely what is accomplished by this brace. We grasp firmly the lower part of the spine as high as the seat of disease, and then, by force applied above, bend the spine backward sufficiently to relieve the bodies of the vertebræ from pressure, and at the same time, with the short arm of the lever,

corresponding to the action of the thumb upon the lead strip, press forward upon the deformity, and thus, by the use of a very light frame-work, we can exert sufficient leverage to retain the spine in an erect position; and, as this *backward* force is distributed along the entire dorsal and lumbar

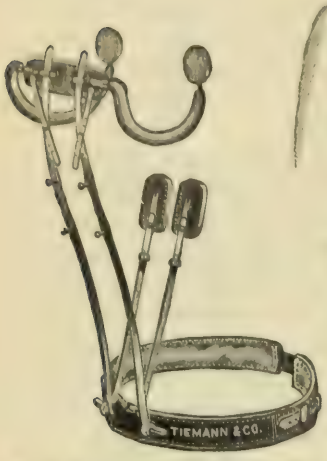



Fig. 17.—Brace for middle dorsal region.

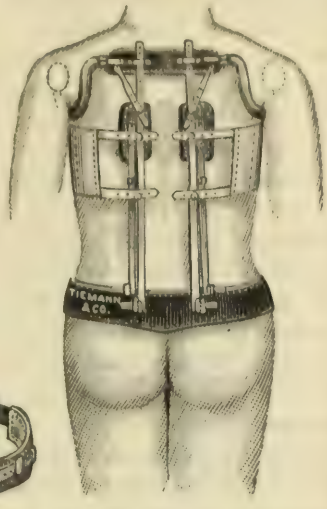



Fig. 18.—The same applied (rear view).

spine, while the *forward* pressure is exerted only along the spine from the seat of disease downward, decreasing from kyphos to the sacrum, it will be found that no injurious pressure is exerted at any one point.

For the middle dorsal region the short arms of the lever are longer than in the lower dorsal, so as to be opposite the seat of disease, as in Figs. 17 and 18.

For the upper dorsal region the short arms pass to the seat of disease, making a very light and effective brace for

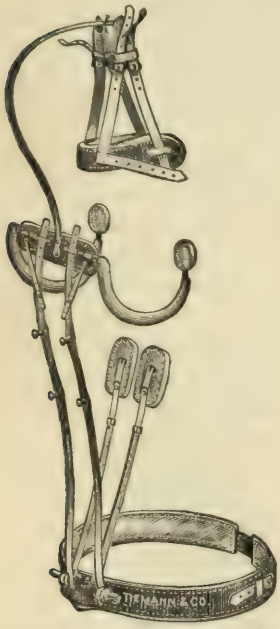



Fig. 19.—Brace for cervical region with jury-mast attached.

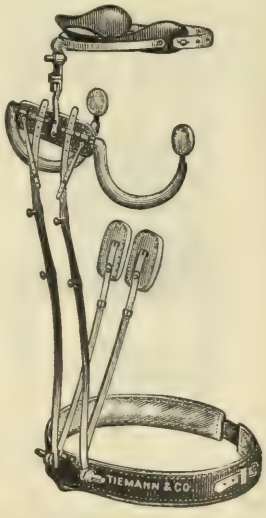



Fig. 20.—Brace for cervical region with chin-rest attached.

this region, which is generally considered to be the part of the spine least amenable to mechanical treatment.

For the cervical region, or disease of the first and second dorsal vertebræ, the brace just exhibited (Fig. 17) should have added to it a jury-mast (as in Fig. 19) or a head-piece (as in Fig. 20), which is provided with facilities for fixing the head firmly in any position, by the insertion in the neck-strip, connecting the head-piece to the rest of the brace, of three clamps which are so placed as to secure this object. The choice between the jury-mast and fixed head piece in these cervical cases is usually one which the

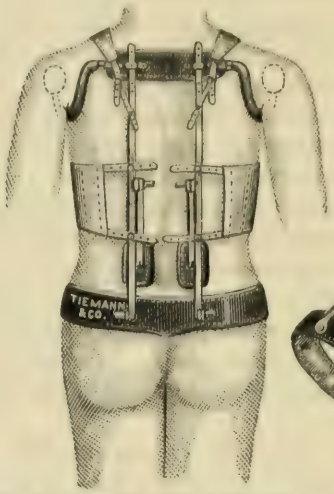



Fig. 21.—Brace for caries of the lower lumbar vertebræ.




Fig. 22.—Brace for upper lumbar region, partially applied.

surgeon is called upon to decide for himself, and is to some extent regulated by the gravity of the case, the latter being usually more effective in caries which is proceeding very rapidly in its course.

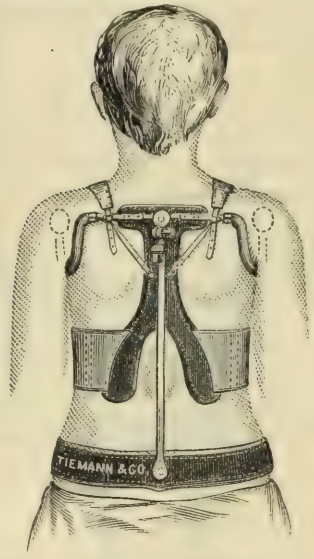



Fig. 23.—The same applied (rear view).

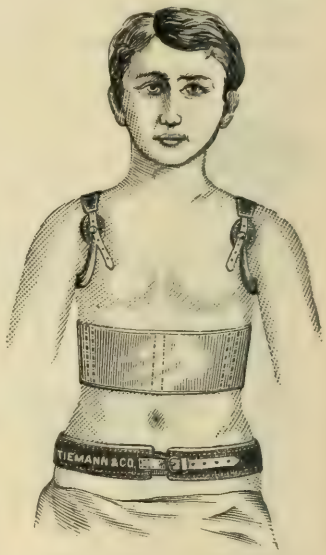



Fig. 24.—The same (front view).

When the disease is situated in the lumbar or, in some cases, in the lower dorsal region, and the short arms of the lever are too short to exert sufficient forward pressure upon the kyphos, the lever is reversed, the point of intersection of the long and short arms being placed in the dorsal region instead of over the sacrum.

From this the short-arm lever strips pass down on either side of the spine to the seat of disease, where they terminate in pads, and the long arm of the lever passes to the sacrum, there terminating in the pelvic girth, as in Figs. 21, 22, 23, and 24.

It will be observed that the brace shown in Figs. 22 and 23 is provided with a compound ratchet at the upper extremity of the long back-strip. This is for the purpose of overcoming the lateral distortion, which is so often an accompaniment of the caries in this region.

The plaster jacket may also be provided with springs, as in Figs. 25 and 26, thus converting it from an active into a passive brace, but, as it does not extend so high up the spine as the brace, it is not so effective.

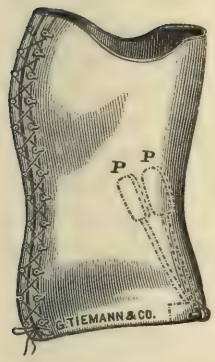



Fig. 25.

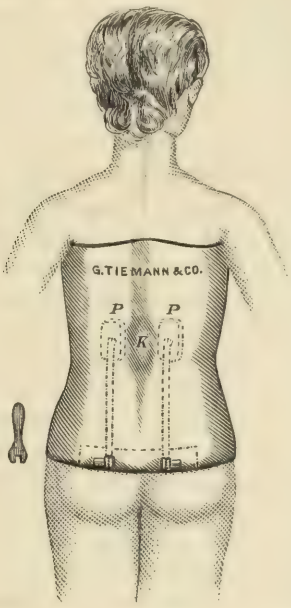



Fig. 26.—The spinal jacket provided with V-springs.

Advantages of braces constructed on the V principle:

1. They hold the spine rigidly in the erect position, and at the same time bring automatic spring pressure to bear at the seat of disease, thus producing the very best conditions for rapid and complete recovery.

2. They are removable at pleasure, and can be worn over an undershirt, so that absolute cleanliness can be secured.

3. The power is adjustable, so that changes can be made during the different stages of the disease without the necessity of purchasing other apparatus.

4. They can be worn with perfect ease and comfort.

5. Those provided with acromial pads do not in the least constrict the thorax, but rather tend to increase its capacity by holding the shoulders back.

6. By their backward traction and forward pressure combined they retain the spinal column in a condition of absolute rest and at the same time relieve the inflamed parts from the pressure of the superincumbent weight, and reduce deformity.

The Florence, 109 East Eighteenth Street.

# IMMOBILIZATION IN ARTICULAR DISEASE.*

By V. P. GIBNEY, M. D.,
SURGEON-IN-CHIEF TO THE HOSPITAL FOR THE RUPTURED AND CRIPPLED.

The foregoing title has been adopted for a discussion of the question whether fixation of a joint about which disease of the bones exists is detrimental, or contributes in the least to the permanent impairment of the functions of the joint.

This question has for many years been a most important one, and the statement has been made time and again, by both orthopædic and general surgeons, that any prolonged treatment of a joint which arrests the functions of the same is the chief factor in the production of ankylosis.

Upon this theory, splints for the protection of joints are constructed, and the American method of treating diseased joints is known as extension with motion.

The late Professor S. D. Gross, "System of Surgery," p. 1091, says:

> Protracted disuse powerfully disposes to the occurrence of stiffness of certain articulations, especially those of the fingers, wrist, and elbow. I am aware that the force of this influence has been denied, but certainly not upon just grounds, for experience has shown, and my own observation has repeatedly verified the fact, that this circumstance alone is often capable of producing ankylosis of a very obstinate and intractable character. Such an event need not surprise us if we remember that motion is the appropriate stimulus of an articulation, and that more or less of this is just as necessary to healthy action as food is to the stomach, light to the eye, or sound to the ear.
>
> When motion is suspended for any length of time the synovial membrane becomes dry and stiff, and, eventually taking on inflammation, pours out plastic matter, which effectually obliterates its cavity and so induces permanent ankylosis, on the principle that when the function of a part is destroyed, its structure is essentially changed in its character, if not completely annihilated.

This opinion from the Nestor of American surgery very fully embodies the views of the mass of surgical teachers in this country who have published any contributions to this subject. The existence of stiff joints that have long been subjected to disuse, whether by splints or by disease, I certainly shall not deny. The poetical argument that light is intended for the eye, waves of sound for the ear, etc., is all well enough in its way, but when disease invades these structures, Nature somehow seems to require rest for the tissues diseased, and she usually adopts means to prevent the action of these agents, which in health are grateful and necessary; in other words, throughout the whole animal economy the function of an organ in health is modified in proportion to the impairment of that organ. The *consensus* of opinion as expressed by the leading surgeons of New York city within the past two or three years is to the effect that the best possible results in elbow-joint injuries are obtained by perfect immobilization after the parts have been placed in normal position.

I need only refer to the discussion following the reading of a paper by Dr. Henry B. Sands, of New York, on the

* Read before the American Orthopædic Association at its annual meeting, September, 1888.

"Use and Abuse of Passive Motion," and a similar discussion before the surgical section of the New York Academy of Medicine.

It is maintained, I know, that stiffness and prolonged impairment of motion often follow the use of splints, about the elbow and the wrist, where fracture or dislocation has occurred. The laity have become fully impressed with that idea, and marked confidence is displayed when Dr. B. tells them that Dr. A. has kept his splints on too long, and the Dr. B. who thus flippantly expresses such an opinion is legion. My own experience in the management of fractures and other severe traumatisms about joints is not large, I confess, still it enables me to state with assurance that the more perfect has been my immobilization, the less stiffness even have I encountered as a sequel.

Surgeons seem to lose sight of the fact, which is indeed a fact, that in the majority of these cases the inflammatory disturbance induced by the trauma is quite extensive and not confined to the site of fracture. Surgeons, I am sure, will admit that the ordinary dressings do not secure anything like immobilization in the strict sense of the term. One surgeon advocates the generous use of cotton batting, in order that subsequent swelling may not be an unpleasant complication; another pleads for temporary dressings, and seems, like the first, to be afraid of swelling. I am sure I shall not be considered captious when I assert that a great many surgeons take hold of an arm timidly and do not know when the fragments are in correct apposition. He who knows when a deformity has been reduced has no hesitation in applying prompt and efficient dressings. In this day of snug surgical dressing the fear of swelling is not so great as it formerly was. We somehow feel that swelling can be controlled by a judicious use of bandages and by calling gravitation to our aid.

So much, then, for acute lesions about joints. Let us now consider the chronic and more insidious lesions with which we, as orthopædic surgeons, have to deal. When the pathology of the last generation was the accepted one, of course immobilizing splints were regarded with much fear. I do not believe that any one of my hearers to-day holds to the doctrine of primary joint lesion in what is ordinarily understood as Pott's disease, hip disease, white swelling, or caries of the ankle. This association, I am sure, subscribes to the osteitic origin of the above-named diseases. We profess to be able to recognize a chronic epiphysitis, for instance, long before any joint effusion or joint tenderness has occurred. Many of us have had the opportunity of studying bone symptoms, and then later on joint symptoms in the same case. The teachings of pathology in both hemispheres have established the correctness of this theory. Many of us, indeed, go a step further, and assert that the majority of these lesions are tubercular in origin. The progress of the disease, too, is toward the destruction of the bone. Inflammatory neoplasms do not occur except during the reparative stages.

In rheumatic lesions the opponents of immobilization find their strongest argument. The pathology of the disease is so different from that in the diseases we have been discussing that therapeutic agents might naturally differ. For instance, in rheumatism there is usually an increase of tissue. In that form known as arthritis deformans the increase proceeds directly from the bone. If perfect quietude to the articulation could be secured, it is argued by some, resolution would take place and one source of irritation at least, which seems to be the cause of increase of tissue, would be removed. Looking, however, upon rheumatism as a constitutional malady, it is difficult to see how the above argument holds good.

There are many good practitioners who maintain that an articular rheumatism is modified greatly by measures they secure for fixing the joint. It was not my purpose, however, to enter into à discussion of rheumatic lesions, but it was my purpose to construct an argument from the pathology and the clinical history of chronic articular diseases in favor of immobilization. Since 1884 I have applied plaster of Paris to nearly every joint in the body. When in consultations I have advocated resection of a knee in an adult patient who had suffered from childhood from white swelling, I have been urged to put the knee up in plaster of Paris and get ankylosis as soon as possible. My experience in such cases has been simply this: the better fit I secured with my plaster dressing and the longer I have kept it applied uninterruptedly, the greater was my disappointment at not finding any ankylosis; in other words, the range of motion was increased by the prolonged fixation. At my clinics I have often had the opportunity of showing the class, by actual measurement, a greater range of motion in cases that had been long subjected to plaster dressings.

I have used the long hip splint without any motion at the pelvic band, not that I believe that the splint for this reason secures immobilization. With my friend Dr. Judson I am convinced that the element of traction plays an important part in the production of fixation.

My cases that are convalescing and those where I have dispensed with a splint do not present ankylosed hips. It has been my custom also to employ the Judson thigh-clasp for securing better immobilization, and in this way the smallest degree of motion is permitted at the knee. Considering, then, the length of time the knee is kept at rest, there should be many cases of ankylosis at the joint; but I think my fellow-members of this association will agree with me that, apart from a temporary degree of stiffness, which passes off with use, there are no ankylosed knees which can be traced to the use of the long hip splint.

Reverting to the pathology for a moment, we can understand how a protective splint—one which prevents pressure about the dense laminæ of bone immediately beneath the articular cartilage cells—is the best way possible to prevent ankylosis.

Mr. Macnamara, speaking of this dense layer of bone, says:

> It is therefore constantly being renewed from the cells of the deeper layers of the articular cartilage. If such were not the case, this lamina of bone would speedily be destroyed by the pressure to which it is exposed; and, if destroyed, the soft cancellated tissue of the bone would be laid bare, as it is, in fact, in certain forms of disease. Until this lamina of bone has been removed, either by the surgeon or from the effect of dis-

ease, it is almost impossible for the extremities of the bones forming a joint to grow into one another and produce bony ankylosis. (See Macnamara, "Diseases of Bones and Joints," London, 1887, p. 23.)

Mr. Reeves ("Practical Orthopædics," Philadelphia, 1885, p. 384), in commenting upon this spurious form of ankylosis, quotes Paget and Butler, among the English writers, Menzel, Reyher, Teiscier, and Jacobsen, as drawing attention to the danger of prolonged ankylosis. At the same time he says:

It must, however, be borne in mind, as pointed out by Jacobsen, that there are certain sources of fallacy which must not be overlooked—*e.g.*, in cases where prolonged rest has been necessitated by an injury to a limb, such as fracture or dislocation, the primary injury may have set up articular mischief which was unnoticed at the time; and I would add that there need not have been original injury to the joint, but changes may have extended to it along the periosteal or medullary vessels.

Mr. Thomas, of Liverpool, has analyzed some of the reputed cases of ankylosis after immobilization, and they certainly do not stand criticism well. In place, then, of tabulating a large number of cases where immobilization has been employed without the production of ankylosis, it would seem to me that the *onus probandi* rests upon those who assert that it does produce ankylosis, and it is to such we must look for cases published in detail. In concluding this short paper let me state firmly my belief that whatever ankylosis occurs in a joint which has been subjected to immobilization, occurs by reason not of the immobilization, but of the nature and intensity of the inflammation and of the inefficiency of the apparatus employed. I do not lay any claim for plaster of Paris in this argument, but I do maintain that this agent should be employed until we can substitute a better agent therefor.

**Sarcoma of the Vagina in Children.**—Dr. Schuchardt read before the second congress of the German Gynæcological Society at Halle last May a paper on two cases of "Malignant Disease of the Vagina in Children." Both had undergone operation in Professor Volkmann's wards. Seven cases have already been recorded in medical literature by Ahlfeld, Sänger, Babès, Demmel, Soltmann, Hauser, and Heinthal. In only one case was the tumor noticed at birth; the ages of the patients, when observed by the above authorities, ranged from two to five. The growth usually appeared as an irregular prominence, like a bunch of grapes, and always proved very malignant in its clinical history. The first case occurred in a child, aged seven, who died from recurrence of the sarcoma two months after operation. The second patient was about five years of age. She had fallen ill early in 1885; her nurse then noted that a swelling, the size of a bean, protruded at the vulvar aperture when she coughed. The growth was excised, together with a piece of the vaginal wall, "the size of a ten-pfennig piece," in September, 1885. Six months and two weeks later local recurrence was detected; a tumor, about the size of a walnut, was removed, and with it was taken away the lower half of the posterior vaginal wall. The cut margin of the upper half was drawn down and sewn to the perinæum. The patient made a very good recovery, and there was no sign of recurrence in May, 1888. The new growth was in both cases papillomatous; the internal structure bore the microscopic characters of a round-celled sarcoma. Dr. Schuchardt believed that the tumor took its rise from certain papillary structures which naturally exist in the region of the vulva.—*Brit. Med. Jour.*

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NEW YORK, SATURDAY, OCTOBER 27, 1888.

## EXERCISE IN THE TREATMENT OF HEART DISEASE.

Of late the question of treating heart disease by a plan having for one of its prominent features systematic muscular exercise has been much discussed. A German physician, Dr. Oertel, who is said to have cured himself of fatty disease of the heart by this means, has made a careful study of the matter and has laid down precise rules for carrying out the treatment. Hence the practice has come to be commonly known as Oertel's method, and with some show of propriety, if any man's name must be attached to it, for he at least has succeeded in bringing it to general notice, although, as is remarked by M. Eloy, in a recent review of the subject in the "Gazette hebdomadaire de médecine et de chirurgie," Stokes, in his work on "Diseases of the Heart and Aorta," freely advised graduated muscular exercise, methodical gymnastics, and pedestrian excursions in the mountainous regions of Switzerland or on the high plateaus of Scotland and Ireland, and attributed to these muscular exercises a reduction of dropsical effusions as the direct result of the increased cutaneous transpiration and pulmonary exhalation produced by them. Indeed, before Stokes, Corrigan, as M. Eloy points out, had insisted on the importance of reducing the ingestion of liquids in cases of fatty heart—a measure that constitutes no inconsiderable feature of the method as advocated by Oertel.

An interesting discussion of the subject took place at the recent meeting of the Association of American Physicians, introduced by a paper on "Fatty Heart," by Dr. Forchheimer, of Cincinnati, a summary of which will be found elsewhere in this issue. From this discussion and from much that has lately been published on the question, there appears to be good reason to think that Stokes's and Corrigan's advice has been too much neglected in the past, or rather that physicians have stood in too much dread of following it. The error has been on the side of a supposed conservatism, somewhat on the principle of the starvation treatment of dyspepsia that held sway for so many years. Everybody knows, of course, that absolute rest for the heart is out of the question during the continuance of life, but the fear of overstraining the organ has led to a regimen of comparative rest that has apparently been carried too far—far enough, perhaps, in many instances, not only to have balked nature's power of cure, but also to have actually hastened the fatal course of the disease by favoring still further degeneration of the muscular tissue of the heart. It is maintained now that graduated exercise, together with a reduction of the amount of liquid taken into the system and the accessory features of the plan, is really capable of causing a disappearance of fatty deposits and the growth of new muscular fibers—in

other words, of curing fatty degeneration of the heart. There seems to be nothing strained in this contention; indeed, it is somewhat strange that it was not set up long ago, seeing that compensatory hypertrophy has long been a familiar phenomenon.

But the danger is now that the mountain-climbing treatment will be tried too indiscriminately, as is likely to happen in the case of any remedial measure that has only recently come into vogue. It can hardly be doubted that lives have already been shortened by its adoption, either from its having been employed in unsuitable cases or from its having been carried out without due carefulness. This fact, however, while it should serve to emphasize the great need of caution and attention to minute details, ought not to be looked upon as a bar to further trials of the system. It may be hoped that within a short time the indications that justify its employment and the rules that should be observed in its application will come to be understood so definitely that it can be adopted with the maximum of benefit and the minimum of harm.

## TESTS FOR MINUTE AMOUNTS OF ALBUMIN.

The importance of a trustworthy and convenient test for minute proportions of albumin in urine is coming to be more and more widely recognized. The subject is treated of exhaustively and very clearly in a work recently issued in Paris, entitled "Traité de l'albuminurie et du mal de Bright," by Dr. E. Lecorché, an adjunct professor of the *Faculté de médecine*, and Dr. C. Talamon, a physician to the hospitals. These authors have devoted much care to a comparison of the principal compound reagents used for the detection of minute amounts of albumin. Those that they have experimented with more particularly are: a mixture of acetic acid and potassium ferrocyanide; a mixture of acetic acid and mercury bichloride; a mixture of acetic acid and potassium and mercury iodide (Tanret's); a mixture of acetic acid, carbolic acid, and potash (Millard's); a saturated solution of sodium chloride acidulated with hydrochloric acid (Roberts's); and a mixture of sodium phosphotungstate and citric acid (Oliver's).

Tanret's test has commonly been considered equal if not superior to all other tests for small quantities of albumin, but Lecorché and Talamon give Millard's the preference. So far as the application of the various tests without the aid of heat is concerned, they say: "We have no hesitation in giving the preference incontestably to the American author." Both Tanret's and Millard's tests, they remark, show albumin in the proportion of 1 part to 200,000 and even 300,000 parts; but, while the disc produced with Tanret's is pale and diffuse, that caused by Millard's is much more distinct, although very thin. Millard's test, they repeat, is the surest and most convenient. Besides the greater distinctness of the albuminous ring produced by it, the substances that may lead to error in drawing deductions from its use are only urates, peptones, and mucin, and they are easily recognized. Urates and peptones are precipitated on gently heating the test-tube at the level of contact, and mucin, which always causes a dusty turbidity *above* the line of contact, is readily distinguished with a little practice. The authors add that, when heat is employed, Oliver's test shows some advantages over both Tanret's and Millard's.

It is satisfactory to have such definite and authoritative statements of the merits of a particular test, and it is gratifying that the preference is so distinctly accorded to a test devised by one of our own countrymen. Dr. Millard's studies of Bright's disease are well known, not only by his book on the subject, but by a number of articles on it contributed by him at various times to the medical journals. It may be well, however, to remind our readers of some facts connected with his test for albumin. The solution is composed of 2 parts, by weight, of ninety-five-per-cent. carbolic acid, 7 of glacial acetic acid, and 22 of liquor potassæ. When the quantity of albumin to be tested for is very minute, the urine should be clarified and allowed to trickle down slowly upon the solution.

## THE SURGICAL TREATMENT OF NOCTURNAL INCONTINENCE OF URINE.

There is nothing new in the idea that the nocturnal enuresis of little boys is often due to reflex irritation, nor in the adoption of surgical measures for doing away with certain recognized sources of such irritation, such as phimosis, preputial adhesions, etc.; but a German surgeon, Dr. Oberländer, has lately carried the notion further, and has attributed the trouble to abnormities of the deep urethra. An account of his views on the subject has been published in the "Berliner klinische Wochenschrift," and M. Reymond makes the article the theme of an excellent critical review in the "Province médicale."

Into the deep urethra open a number of ducts—those of the prostate, of Cowper's glands, and of the seminal vesicles. It is argued that, although the glands mentioned do not enter upon their full functional activity before puberty, they are not completely dormant even at a tender age. It is true that they are then less disposed than subsequently to organic disease, but it is not to be forgotten that chronic inflammation of Cowper's glands has been observed in early infancy; moreover, that the functional capacity of these structures, though feeble, is real, is shown by the frequent occurrence of erections in infants, and even by masturbation. It can not be denied, then, says M. Reymond, that there are reflexes which take their rise from these glands.

The treatment recommended by Oberländer is by dilatation of the urethra—to be applied, of course, only in cases that have been shown not to be amenable to medicinal treatment or to depend upon reflex irritation from more superficial situations. A dilator corresponding in size to No. 15 of Charrière's gauge, consisting of two separable blades, moderately curved, and provided with an index at the handle, is introduced with antiseptic precautions, cocainization of the urethra being employed in older children and brief general anæsthetization in infants. The extent to which the dilatation is to be carried is governed by the degree of resistance encountered. The length of time dur-

ing which the instrument is kept in the urethra does not exceed three minutes. Sometimes several sittings are necessary. It is held that the dilatation enlarges the openings of the ducts emptying into the deep urethra and flattens out any abnormal prominences that may exist in it, thus relieving the muscular structure of the bladder from causes of reflex excitation capable of interfering with the due performance of its function. According to Oberländer, who has employed the manipulation in hundreds of cases, sometimes using force, it is free from danger.

## *MINOR PARAGRAPHS.*

### THE SITUATION OF THE APEX-BEAT IN CHILDREN.

In a recent issue of the "Centralblatt für klinische Medicin" we find an abstract of an article on this subject and on percussion of the heart in children, by Dr. W. von Starck, which was published in the "Archiv für Kinderheilkunde." The author's conclusions are that during the first year of life the situation of the apex-beat can not usually be ascertained definitely; that in the majority of instances it lies without the nipple-line up to the fourth year of life, while that situation of the beat grows less and less frequent up to the thirteenth year, when it is no longer met with; that it is not uncommon to find it in the nipple-line during the first year, more common up to the seventh year, and then rarer again until the fourteenth year; that the occurrence of the beat within the nipple-line does not take place during the first two years, rarely up to the seventh year, generally from the ninth year onward, and almost invariably after the thirteenth year; that it is found in the fourth intercostal space almost always during the first year, and then with decreasing frequency; that it is seldom found in the fourth and fifth intercostal spaces during the first two years, commonly from the third to the sixth year, and then again more rarely; that it is seldom found in the fifth space during the first two years, then more commonly, in most cases after the seventh year, and almost exclusively after the thirteenth year; and that it is extremely rare for it to be found in the sixth space in children.

### THE EFFECT OF VARNISHING THE ENTIRE SKIN.

The old story of the sad fate of the gilded child is in danger of being relegated to the limbo of fables if certain experiments undertaken by a Russian physician, Dr. Tecoutjeff, and recorded in "Wratsch," are confirmed. According to an abstract published in the "Bulletin général de thérapeutique," Tectoujeff has subjected eighteen adults and five children to the test, coating six of them with an irritating ointment, eight with a gelatinous mass, and nine with a mixture of diachylon and lard. They were kept in bed from two to seven days, and five times daily the applications were made to the entire surface, except the head and in some instances the palms of the hands. In none of them were any such serious symptoms noted as are known to take place in the lower animals. The author concludes that smearing the entire skin, at least to any degree ever desirable in therapeutics, is absolutely harmless.

### STOMACH-COUGH.

A writer in the "Deutsche Medizinal-Zeitung" remarks that this is looked upon by most modern physicians as a myth, although the most diverse parts of the economy are held to be the sources of reflex cough, such as the larynx, the nose, the bronchi, the pleura, the œsophagus, the ear, the intestines, the liver, the spleen, and the female sexual organs. Why not, then, the stomach? he asks. He then gives a summary of a case recorded by a Norwegian physician, Dr. Eduard Bull, in the "Deutsches Archiv für klinische Medicin." The patient was an anæmic woman, twenty-four years old, in whom, beyond a heightened percussion resonance at the apex of the right lung, no other disease could be found than a gastric affection. Pressure on the epigastrium invariably provoked an attack of coughing, and treatment addressed to the stomach cured the cough.

### PREGNANCY AS A REMEDY FOR EXOPHTHALMIC GOÎTRE.

A contributor to the "Progrès médical" calls attention to an old observation of M. Charcot's illustrating the ameliorating influence of pregnancy on exophthalmic goître, and relates the history of a case of his own in which the same effect seemed to be produced. He concludes that this phenomenon points to an additional therapeutical resource in that disease, but admits that it is not always easy to carry out the prescription, although he mentions no other drawback than the fact that the affection is not confined exclusively to women.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending October 23, 1888:

| DISEASES. | Week ending Oct. 16. | | Week ending Oct. 23. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 49 | 14 | 40 | 10 |
| Scarlet fever | 84 | 19 | 97 | 12 |
| Cerebro-spinal meningitis | 2 | 2 | 1 | 1 |
| Measles | 91 | 11 | 100 | 3 |
| Diphtheria | 67 | 22 | 75 | 18 |
| Small-pox | 0 | 0 | 1 | 0 |

**The Medical Society of the County of New York.**—At the eighty-third annual meeting, held last Monday evening, officers for the ensuing year were chosen as follows: President, Dr. Alexander S. Hunter; vice-president, Dr. L. Bolton Bangs; secretary, Dr. Charles H. Avery; assistant secretary, Dr. William E. Bullard; treasurer, Dr. John S. Warren; censors, Dr. J. Leonard Corning, Dr. Maurice N. Miller, Dr. Daniel Lewis, Dr. Andrew F. Currier, and Dr. Laurence Johnson.

**Clinical Instruction in Diseases of the Skin.**—Dr. Bulkley's free clinical conferences at the New York Hospital began for the season on Wednesday of this week, and will be continued every Wednesday afternoon at 4 o'clock, the course to consist of about twenty conferences.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 14 to October 20, 1888:*

Page, Charles, Colonel and Assistant Surgeon-General, Medical Director of the Department, will proceed to and inspect the medical departments at Forts Ellis, Texas; Supply, Reno, Sill, and Gibson, Indian Territory; Fort Leavenworth, Kansas; and the Leavenworth Military Prison, in the order named, and, upon completion of this duty, return to these Headquarters. Par. 1, S. O. 127, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, October 15, 1888.

Comegys, Edward T., Captain and Assistant Surgeon, is relieved from duty at Madison Barracks, New York, and will report in person to commanding officer at Fort Bayard, New Mexico, for duty at that post, relieving First Lieutenant

William D. Dietz, Assistant Surgeon. Par. 18, S. O. 240, A. G. O., Washington, October 15, 1888.

Dietz, William D., First Lieutenant and Assistant Surgeon, on being relieved by Captain Comegys, will report in person to the commanding officer at Alcatraz Island, California, for duty at that post, reporting by letter to the commanding general, Department of California. Par. 18, S. O. 240, A. G. O., Washington, October 15, 1888.

By direction of the Secretary of War, the following-named officers of the Medical Department will report in person, on October 23, 1888, to the President of the Army Medical Examining Board, Army Building, New York City, for examination for promotion: Gardiner, John de B. W., Captain and Assistant Surgeon; Gorgas, William C., Captain and Assistant Surgeon; Macauley, C. N. Berkeley, Captain and Assistant Surgeon; Kneedler, W. L., First Lieutenant and Assistant Surgeon; Mearns, Edgar A., First Lieutenant and Assistant Surgeon. Upon the completion of their examination the officers named will rejoin their proper stations. Par. 1, S. O. 239, A. G. O., Washington, D. C., October 13, 1888.

Munday, Benjamin, Captain and Assistant Surgeon, is relieved from duty at Jefferson Barracks, Mo., and will report in person to the commanding officer at Fort Sisseton, Dak., for duty at that post, relieving First Lieutenant John L. Phillips, Assistant Surgeon, and reporting by letter to the commanding general, Department of Dakota. Par. 11, S. O. 242, A. G. O., Washington, October 17, 1888.

Phillips, John L., First Lieutenant and Assistant Surgeon, on being relieved by Captain Munday, will report in person to the commanding officer at Fort Lyon, Col., for duty at that post, reporting by letter to the commanding general, Department of the Missouri. Par. 11, S. O. 242, A. G. O., Washington, October 17, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending October 20, 1888:*

Magruder, A. F., Surgeon. Ordered to Marine Barracks, Washington, D. C.

Stone, E. P., Assistant Surgeon. Detached from the Richmond and ordered to the Minnesota.

Keeney, J. F., Assistant Surgeon. Detached from the Minnesota and ordered to the Richmond.

McCormick, A. M. D., Assistant Surgeon. Detached from the Bureau of Medicine and Surgery and ordered to the Vermont.

Moore, A. M., Surgeon. Detached from Naval Station, New London, Conn., and ordered to the Kearsarge.

Austin, A. A., Passed Assistant Surgeon. Ordered to Naval Station, New London, Conn.

**Society Meetings for the Coming Week:**

Tuesday, *October 30th:* Medical Societies of the Counties of Queens (semi-annual—Garden City) and Rockland (semi-annual), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *October 31st:* Auburn, N. Y., City Medical Association; Berkshire, Mass. (Pittsfield), and Middlesex, Mass., North District (Lowell) Medical Societies; Gloucester, N. J., County Medical Society (quarterly).

Thursday, *November 1st:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Medical Society of the County of Orleans (Annual—Albion), N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington).

Friday, *November 2d:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *November 3d:* Clinical Society of the New York Post graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

## Obituaries.

**Elkanah Williams, M. D.,** of Cincinnati, died at Hazelwood, Pa., October 5, 1888. Two years ago evidence of organic disease of the brain developed, which almost from the first foreshadowed a fatal termination.

Dr. Williams was born near Bedford, in Lawrence County, Indiana, December 19, 1822. He received his early education in Bedford, and his collegiate course was completed at Greencastle, Ind. He studied medicine in Louisville under the preceptorship of Dr. S. D. Gross and Dr. T. G. Richardson. After obtaining the degree of M. D. he engaged for a short time in the general practice of medicine in Bedford, and subsequently established himself in Cincinnati.

Dr. Williams went abroad in 1852 with the avowed determination to qualify himself as a specialist in general surgery or in one of its departments. Even at this early period ophthalmic surgery most attracted his attention. He first visited France, where the surgical and eye clinics afforded him ample opportunity for study. In Germany, having in the mean time mastered both the French and German languages, he became imbued with enthusiasm after he had familiarized himself with the great and growing advances in ophthalmic science. His determination to devote himself exclusively to ophthalmology was now decided upon, and for a period exceeding thirty-two years he was active as a student, teacher, and writer in that branch.

He returned to America in 1855 as the advance guard of a limited number of men who by their labors and energetic actions deserve the credit of having established the foundation of one of the most scientific and important departments of medical knowledge. Faithfully and zealously did he labor to advance the progress of ophthalmology. To him must be accorded another distinction, for he was the first exclusive specialist in this department in America, as, after his return in the spring of 1855, his attention was confined exclusively to the treatment of diseases of the eye.

Dr. Williams was one of the founders of the American Ophthalmological Society, and was active as a member of the Academy of Medicine of Cincinnati. He was a member of the Ohio State Medical Society, of the American Medical Association, and of several other American and European societies.

His aid and support were never withheld if the cause of medical learning could in any way be advanced. He was a rigid believer in professional etiquette, and most scrupulously upheld it.

Those who knew Dr. Williams can associate with the memory of the man only characteristics worthy of unqualified admiration, appreciation, and respect. He was always cheery, genial, courteous, and obliging to his professional colleagues. He was a clear and careful writer, and his subject was invariably handled in a terse and complete style. As a lecturer he excelled, and was both instructive and entertaining. The unwritten history of his life and of his active professional work, so replete with good, will again and again claim for him recogni-

tion and appreciation, and will be a far more lasting, though a silent, tribute to the memory of his name than could be conveyed by the most carefully worded expressions of eulogy.

**John William Schmidt Arnold, M. D.,** formerly of New York, died at Sewanee, Tennessee, on Saturday, the 20th inst. He was a native of Charleston, South Carolina, but had spent most of his life in New York, and for a number of years he was professor of physiology in the Medical Department of the University of the City of New York. About four years ago, being in failing health, he went to Tennessee, and soon became engaged again as a teacher of physiology. Dr. Arnold had peculiar gifts as an experimental investigator, and much of his work, particularly in micro-photography, was of a high degree of excellence. As a companion he was exceedingly interesting, and as a friend he was highly esteemed by those who had the good fortune to stand in that relation to him. Although not at any time a practitioner of medicine, he was always keenly alive to the honor and welfare of the profession. For the greater part of his life he was an invalid, and it is undoubtedly owing to that fact alone that he was not more widely known and appreciated.

## Letters to the Editor.

### THE TREATMENT OF ACUTE ABSCESSES.

NORTH RIDGEVILLE, O., *October 17, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: I have just read in the Journal the interesting paper on "The Treatment of Acute Abscesses," by Leroy W. Hubbard, M. D., and should like to ask him several questions through the Journal.

What would be his treatment from the time the inflammatory process had reached that stage at which suppuration was an inevitable result, up to the time he would deem it expedient to make an incision? It is evident that the "question of the prevention" should be dealt with before this stage has been reached, and what should be done in the interval? Do not the popular and time-honored poultices which are used so extensively before and after the incision have a destructive effect upon the tissues and a tendency to increase the area of suppuration?

Having used the antiseptic treatment in the last stage of acute abscesses, I can agree with Dr. Hubbard as to its superiority, but I should like to hear from him about the questions I have asked.

J. S. BUTLER.

### YELLOW FEVER.

63 WEST NINETY-SEVENTH STREET, NEW YORK, *October 4, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: Just at this time the Jacksonville epidemic has brought the questions in regard to yellow fever prominently before the profession, and a case which occurred under my observation may be of interest to your readers. I therefore send it to you for publication.

During July, 1885, I was the surgeon in charge of the Pacific Mail Steamship San Juan, plying between the ports of San Francisco and Panama, and during our stay in the latter port I was called to a Chilano bark anchored in the harbor. The bark had left Valparaiso eight weeks previous with a clean bill of health, that port being free from all fever. Her cargo was baled hay. She reached Panama after a seven-weeks' healthful and uninterrupted voyage. Six days after reaching port the captain's little boy, aged eight years, was taken sick, and his case was pronounced yellow fever by a physician from Panama. Three days later the mother was taken with the same symptoms and I was sent for. I found her evidently suffering from yellow fever; high pulse, injected watery eye, temperature 103·5°, urine albuminous, headache, and vomiting. The matter ejected from the stomach was even then tinged with more or less blood; moreover, on physical examination and questioning the captain, her husband, I found that she was at or very near the full term of pregnancy. This was in itself enough to make me give a very grave prognosis, but, when I took into consideration the surroundings of the patients, it made both cases almost absolutely hopeless in my mind. The stuffy little cabin of a sailing ship, eight feet wide by twelve feet long, stinking of bilge-water, and the noxious gases thrown off by decomposing water-soaked hay, were fearful surroundings for a parturient woman; but, when two cases of yellow fever were superadded, it was something awful to contemplate, not taking into consideration the inability to procure proper nursing. In both cases I used the routine treatment: evacuation of the bowels, jaborandi and stimulants, sinapisms and morphine, restricting the diet to milk and lime-water.

The following day I found the eight-year-old boy moribund, and he died at 4 P. M. from exhaustion without signs of internal hæmorrhage. With the mother there was little or no change. That night I was called over to the bark at 9.30, and found that uterine contractions had begun, the os being quite dilated. Three hours later she gave birth to a living and apparently healthy boy, after a normal but rather weak labor. Following upon this there was more or less uterine hæmorrhage, which was easily controlled by ergot. The next day the patient seemed to improve; her mind was quite clear, her temperature 100·5°, and there was no vomiting. I then began to have slight hopes for her life. At 5 P. M. I was once more suddenly sent for and found the woman in a condition of partial collapse, temperature subnormal, 97·5° F., pulse rapid and thread-like, respirations 43 to the minute, and ejecting vast quantities of coagulated blood from the stomach—in other words, black vomit, my efforts to stop which proved fruitless. Neither the subcutaneous injection of ergotine nor the external application of ice seemed to have the slightest effect on her. She died at 10.45 in a comatose condition. The strange part of this history is that the infant born during the height of yellow fever of the mother and in such fearful hygienic surroundings survived, and two months and a half later was as fine and healthy a specimen of a male baby as I have ever seen, and up to that time, when I lost sight of him, had not had a day's sickness since his birth.

This only illustrates one point, and that is, that yellow-fever patients may bring into the world children which will live and show no signs of the awful poison under which the mother succumbs, showing that, if yellow fever is dependent upon a specific germ, it does not always permeate the placental circulation.

JOSEPH N. HENRY.

## Proceedings of Societies.

### NEW YORK STATE MEDICAL ASSOCIATION.

*Fifth Annual Meeting, held at New York, Tuesday, Wednesday, and Thursday, October 9, 10, and 11, 1888.*

The President, Dr. JOHN CRONYN, of Buffalo, in the Chair.

**The President's Address.**—The PRESIDENT read an address devoted to the relations between the medical profession and the

public as they met at the bedside. He questioned the propriety of the publication in newspapers of the events of the sick-chamber where prominent men were the patients, and showed the unnecessary mischief which arose. The public could not rightly judge of either the mistakes or successes of physicians, and yet with their limited knowledge they did judge, and constant injustice was done to the reputation of physicians by both underestimation and overestimation. Especially he deplored the want of confidence in the ability of physicians and the resources of medicine thus given rise to in the public mind, which was of great detriment both to the public and to the profession. The public needed education, not in medical learning and as to the limitations of the art, but in the power to distinguish between the true and the false members of the profession, and to choose the genuine and responsible men. He advocated a still higher general standard of preliminary medical education, but insisted that the true physician was born, not made. He thought the peculiar capacity needed was an inherited one largely. He regretted that the ambition of the family, personal aspirations, etc., carried so many unqualified men into the medical profession whose genius really lay in other directions. Swift action, immediate judgment and intuition, and rapid deduction he considered the indispensable capabilities for a physician who was to be successful at the bedside. The scientific spirit had its laboratories, and allowed years in which to solve problems; the lawyer could get delays and call in aid; the clergyman had fixed lines to work to, and resources not of his own making; but the physician must think quickly and correctly. He must act on the moment. He had usually no chance to revise his decisions, do his work over better, or appeal to others for aid.

The faculty of reverence was the second great requirement for the physician, in order that he might have power to render true service in the complicated troubles, often as much moral as physical, of men and women as he found them. A high sense of responsibility in the calling and dignity in personal character were needed to command their trust and obedience in matters of which they had no knowledge. If this quality were more demanded by the public and cultivated more by physicians, the confidence of the former could be obtained on a better basis than a reputation for scientific skill could give. The respect paid to it was of too questioning a sort. Unfair estimates were constantly made which hampered both the public and the profession in coming into a useful relationship. The office of a physician in a community should become an almost sacred one.

**A Case of Anæsthesia by the Inhalation of Nitrous Oxide, supposed to be the First on Record.**—Dr. Oliver P. Hubbard, of New York, read a paper with this title. Sixty-seven years ago, in Rome, Utica County, a Dr. Stockman had been giving exhibitions in a hotel of the exhilarating effects of nitrous-oxide gas. A young man had gone secretly into the room where the gas was kept and taken his fill. He had been found in a condition of complete insensibility, from which he had emerged with marked symptoms of intoxication.

**Forced Respiration in Cases of Narcotic Poisoning, Drowning, and Shock, with Exhibition of Apparatus.**—Dr. G. E. Fell, of Buffalo, read a paper with this title, distinguishing between artificial and forced respiration, and showing the advantages of the latter in narcotic poisoning. Cases were given where, after Silvester's method of artificial respiration, atropine, and other appliances had failed to restore, by opening the trachea, putting in a tube, and keeping up respiration by a bellows for several hours, life had been brought back. In some cases, where heart-failure was imminent and the blood was nearly black, the method had succeeded, having to be kept up for many hours while the effects of continued absorption of the narcotic lasted. Sometimes fifteen hours of this were needed before respiration would go on by the patient's own power, and then at intervals it had to be supplemented by the bellows. In one case recovery had been obtained where two ounces of laudanum had been taken and severe hæmorrhage had taken place from a cut throat. Six ounces of saline solution had also been used; but forced respiration had to be given for a total of twenty-four hours. In this case the hypodermic injections of stimulants, not being absorbed, led to abscess which delayed final recovery for months. The air used was heated to 100° F. The method had not the disadvantage of exhausting the patient as artificial respiration always did, to say nothing of its using up the physician's strength also. In some cases of drowning, forced respiration could be administered by intubation instead of tracheotomy, but the latter was better for long application, as it left the mouth free for the administration of medicines and food. The value of the method in drowning was dealt with, and the opinion was expressed that it would also aid the vital forces to rally in conditions of shock. He believed artificial respiration did not supply enough air to the lungs to carry on life in prolonged cases of narcotism.

**Discussion on Nosography.**—Dr. A. L. Carroll, of New Brighton, read a paper in which he reviewed the difficulties of making a uniform classification of diseases. He believed that anatomical investigation carried to its final limits would be competent to determine the character of every disorder. In its modern application, anatomy covered structure and functional activity. Pathology was but the perversion of normal physiological processes. The author reviewed the unmeaningness and contradictions of the existing medical names based on appearances and symptoms. He spoke particularly of the naming of diseases from men who had described them as leading to obscurity, and of the confusion now existing between the terms used in different countries for the same disease. The task of making a new nomenclature was a very great one, but he thought it should at least be begun, and on a Latin or Greek basis. Classification should be founded on differences rather than on similarities, proceeding from the individual to the variety, species, genus, order, and so on successively, as these differences became wider and characteristic of larger groups. This plan was followed in botany and zoology. A sorry sort of empiricism would result from the general adoption of Moxon's dictum that the physician "must know diseases not as the zoologist knew his species and his genera and his orders, by descriptions of comparative characters, but as the hunter knew his lions and tigers." He who "went a-gunning" therapeutically with such superficial lore would be apt to waste snipe-shot on a rhinoceros or explosive bullets on a reed-bird. This lion-and-tiger kind of notation almost invariably degenerated into mere symptomatology and was responsible for the ambiguity of many death-certificates and for the shallow diagnoses which so often discredited the profession and injured the patient's chances for rational aid. It had led to regarding a prominent effect or a congeries of effects as a morbid entity, and had afforded ground for the irrational dogma of Hahnemann that "the totality of the symptoms constitutes the disease."

Of the precise position to be assigned to microbes in relation to disease it was not possible at present to speak with certainty, but their intrinsic potency for evil had probably been overestimated. A few infectious diseases were, without doubt, associated with the presence of peculiar micro-organisms; in others none were found, or else too many, and it was impossible to say which of the several cocci and bacilli should bear the pathogenetic blame. The media present in the body were apparently as important as the bacteria in determining diseases. Individuals

were unequally susceptible. The field mouse and the domestic mouse resisted each other's septicæmic schizophytes, so called. The same microbe produced different effects in animals of different genera. In laboratory experiments it had been shown that the same ferment might evolve different products, or various ferments the same product, according to their environment. Apparently several contagia might arise from an exaggeration of common putrefactive processes.

There was evidence going to show that the action of both ferments and bacteria was catalytic, and that the chemical product of fermentation—the real *materies morbi*—depended as much upon the character of the fermenting medium as upon the micro-organism whose activity gave rise to what we now called ptomaines, and even more. But, as it was believed by some of the best investigators that ptomaines might be generated by the degraded action of the tissue-cells themselves, might not the somatic development of some of these ptomaines prepare the soil for a bacterial infection?

For these and various other reasons he believed that a classification of diseases could never be made on the basis of the microbes credited with their causation. He thought, however, that words in current use, if not of too irrational origin, might be retained when their meaning was clearly defined and generally accepted; thus "chemistry," "surgery," "electricity."

Dr. Edward G. Janeway, of New York, speaking in answer to the question whether it was possible to found a new general classification based on anatomy, said that he knew it was not possible. We had not the knowledge on which to found such a system, and no one word or phrase could adequately represent that knowledge if found, on account of its complexity. Thus, in the case of typhoid, the disease would need to be described by its ætiology traced to the final anatomical effects.

Spirochætæ, even if proved to be a complete cause for relapsing fever, would never, as a name for that disease, convey to his mind so clear an idea as the present term did. On the other hand, in trichinosis the most evident result of anatomical investigation was the micro-organism, which was here the causative thing also, unless we took the inflammation in the muscle as the anatomical basis of the disease. General nervous diseases we had no anatomy of. He thought that for local affections anatomical names were more possible. As for personal names applied to disease-processes—such as Graves's disease or Basedow's disease—he did not know how anatomy could here offer a better name. These names gave the better idea; they did all which any name could, for they stood for a large group of symptoms which had behind them unknown changes in the sympathetic system and elsewhere. He concluded that anatomy, ætiology, and common usage all needed to be respected. An international agreement on terms for the same disease, he thought, would be a good thing.

Dr. F. W. Ross, of Elmira, read a paper in answer to the same question. He thought words, whatever based on, could not be carried to the same exactitude as our knowledge on a given point, nor be arranged so as to speak volumes, without the aid of the imagination. Undoubtedly, a vocabulary of technical terms was needed in every science and indispensable to its progress. However, to be satisfactory was not necessarily to be exact. Terms in many, perhaps most, instances must allow of much latitude in their applications to be satisfactory. The complex of symptoms and the total departure from health which we recognized as parts of disease related about equally to anatomy and function in its wider sense. Thus the passage of three pints of urine instead of two might be anatomical; but we must recognize in diseases a process which carried the material structures through a series of successive changes. No name could cover all the conceptions connected with this process. Names of diseases were only guide-boards to the direction of our thoughts. He believed that function affected structures quite as often as structures modified functions; but, as we knew most about anatomy, the majority should rule the minority in weighing the elements of our present knowledge against each other. The subjective symptoms often pointed to the anatomical state. Incorrect anatomical names did not convey practical error, for distinction was needed more than description, as in the names of individual men which might once have been descriptive. Numbers would do as well as names to designate diseases by, so long as a universal set of figures was recognized. Constant minute changes in terms corresponding to additions to our knowledge would not be received by most; they would, in fact, be rejected with disgust. He concluded that we should content ourselves with looking for a satisfactory classification merely.

In answer to the question, "What general principles should govern classification and nomenclature, irrespective of their particularization in medicine?" M. L. Britton, Ph. D., of New York, read a paper dealing with the questions of a new nomenclature from the point of view of a botanist. A slight attempt had been made, he said, to classify minerals by their appearance to the eye, in families, orders, etc. Botanical names had first been given on the ground of a fancied resemblance, or after a locality, or from the name of the individual who had described a given variety. The strict meaning of these terms often gave a very incomplete or an incorrect conception of the plants they were applied to. To avoid duplications where a number of writers had given different names to the same plant, a date had been arbitrarily selected names used previous to which no account had been taken of. The names then in use were taken as a standard, and subsequent namings were recognized in strict order of priority. Thus a fixed nomenclature had been attained in botany. He thought a classification of diseases possible by orders, species, families, but that much original work and skillful adaptation would be necessary.

Dr. E. M. Moore, of Rochester, thought it self-evident that our names must be based on anatomy. Their application was difficult, but the effort was one which was instructive. When we named diseases after individuals, it was commonly because hardly anything else was known about them, as when we first recognized Bright's disease. With more knowledge, better names were employed by degrees. Thus, in the profession, "nephritis" had taken the place of "Bright's disease." Dropsy had once been a recognized disease; now we looked to the cardiac anatomy for the name of the condition in which it occurred. Where bacteria or their products were the most we knew of a disease, there he would name it, provisionally, from the bacterium. Professor Gouley, he said, made anatomy embrace physiology, chemistry, embryology, and bacteriology, as well as descriptive anatomy—whatever we arrived at by *a cutting*, in its broad sense.

The question "What place in nosography should be assigned to bacteria, ptomaines, leucomaines, and 'extractives,' respectively, from a bio-chemical or from a clinical view point?" was discussed by Professor E. Waller, of New York. He gave a review of the understanding which chemists had come to have of the composition of the products of plant and animal life. Even in the case of the carbon compounds it had been found possible to replace one or more of the component atoms by chlorine, sulphur, arsenic, or bromine. We knew that alkaloids might be produced by animals as well as by plants, the ptomaines of cadavers. Leucomaines were not dissimilar. They were mostly found during life, but some were common to both living and dead bodies, and the distinction would probably

not be a lasting one. In regard to the composition of ptomaines, nitrogen, sulphur, and phosphorus were known to be present. They were volatile unstable bodies, some of which could be represented chemically as ammonia in which more or less hydrogen was replaced by the radicle $CH_3$, forming dimethylamine, trimethyldiamine, etc. Their action in the case of the poisonous members of the series when taken into the living body resembled that of the pyridic bases. Some produced a rapid dilatation of the pupil and weakening of the nervous centers, others loss of muscular contractility, others loss of cutaneous sensibility, others a slow action of the heart, others convulsions, others somnolence and torpor, and others pallor with profuse flow of the secretions. He thought that the ptomaines of cholera and typhoid had been found beyond much doubt.

All ptomaines, leucomaines, and extractives were converted albumins. Leucomaines were midway between ptomaines and extractives, without definite boundaries between them. They were divided into groups named uric and creatinic, from resemblances to urea and creatinine respectively. Sixteen were known. All represented progressive changes in albumin. All but one contained oxygen. They had been found in expired air, saliva, blood, brain, urine, pus, and the digestive tract. The progressive changes being interfered with so that retention occurred at some intermediate stage, or by-forms arising as a result of the interference, diseases might at once be produced. The neutralization of these products, even where made by bacteria, must, he thought, be more important than the destruction of the micro-organisms.

Dr. N. B. Sizer, of Brooklyn, read a paper bearing on the same question. He remarked that the ptomaines mostly arose in connection with animal and not vegetable putrefaction or decay. The majority were inert, a few were violent poisons. Their quality in this respect varied widely with variation in a large number of factors. Prominent among these were the character of the soil in which the microbes found themselves, the temperature, the amount of air supplied, the moisture of the pabulum, and the stage of the process. The same bacilli might thus produce entirely different products by being removed from warm foul water to pure or cooler water. The vinegar-fungus, which split up ethylic alcohol, had no effect on amylic alcohol and converted propylic alcohol into propionic acid. Viewed at large, they were transition products through which bodies were carried back from the animal and vegetable to the inorganic kingdom.

It had always been known that putrid foods produced sickness, but more lately we had learned that there were special poisons in them, and in stagnant water as well. It had been found that the vapor arising from putrefying animal substances produced in animals a disorder similar to typhoid fever. Panum, writing in Danish in 1856, had been the first to show the true character of the poison present in putrid flesh. He obtained from decaying dog's-flesh a non-volatile substance, insoluble in alcohol and proof against high temperatures. He found its effects comparable to those produced by the venom of serpents, or by curare and vegetable alkaloids, and without analogy to the symptoms of typhoid, cholera, pyæmia, or anthrax. Large doses injected into the veins of animals were followed by violent cramps, involuntary evacuations, labored breathing, pallor, feeble pulse, mydriasis, and proptosis, soon ending in death. Panum had also extracted by alcohol a substance which produced prolonged sleep without other disturbance. Other investigators had found at a particular stage of decomposition a ptomaine resembling atropine and hyoscyamus in effect. This had been found in typhoid cadavers, and might have a relation to the belladonna-like delirium which was seen in the later stages of typhoid. Other substances resembling coniine, nicotine, and digitaline, respectively, had been found, and another producing tetanus, great mydriasis, paralysis, and death. In 1871 Lombroso had found that moldy corn-meal, sometimes used in Italy in making *polenta*, contained a body that produced a tetanus like that of strychnine, which explained the severe outbreaks that had repeatedly followed the eating of *polenta* made of "heated" meal. The hog-cholera bacillus and the anthrax bacillus each produced a poisonous ptomaine to which the disease caused was due. Shell-fish, such as the common mussel, sometimes produced another class of ptomaines, causing in some instances acute gastro-intestinal inflammation; in others, nervous prostration, with urticaria and extreme dyspnœa; in others, an intoxication like the alcoholic. Some shell-fish were always poisonous, others only while they lived in dirty water, and of these oysters were examples. In putrid fish a poison like muscarine had been found. In Germany many cases of poisoning by sausages had occurred. These sausages were made of the flesh of sheep and goats, chopped up, and mixed with blood which had been collected and kept for days in large vats. The size of the skins in which the meat was stuffed was such that, in smoking, the center of these sausages was not cured, and was often in a semi-putrid condition. Recently, in Holland, 256 soldiers and 36 civilians had died from eating the flesh of an animal that had died of puerperal septicæmia.

Canned meats usually owed their poisonousness to the presence of ptomaines, and not to the action of the soldering fluid used. In one instance canned apricots had contained a poison due to some alteration by decay, and resembling tyrotoxicon in its effects. It had killed the child of a nursing mother in a few hours, the mother in forty-three hours, and, after an illness of six days, the father also. Other cases of poisoning were noted where ham, cheese, ice-cream, or milk had been at fault. He substantially agreed with Professor Waller and previous speakers respecting leucomaines and the place which our knowledge in these matters should have as respected nosology.

In the discussion which followed, an instance was given by Dr. C. W. Brown, of Elmira, where the blood of a horse which afterward died of tetanus, being injected in small amounts into the veins of kittens, produced tetanus in them, ending in death, with but little sign of inflammation at the site of the injection. It appeared to him that some leucomaine or ptomaine must have been present in quantity in the fluids of the horse.

**The Origin and Treatment of Uric-acid Calculi of the Kidney.**—Dr. W. D. Garlock, of Little Falls, read a paper with this title. He thought the time gone by when the so-called uric-acid diathesis was taken as a sign of genteel birth or luxurious living. We knew it occurred in the poor seamstress as well as the corpulent alderman, arising as often from fatigue and hunger as from lethargic satiety. Alimentation, metabolism, and excretion were all concerned in its production, though formerly incorrect alimentation had been credited with being the sole factor; and afterward, when uric acid was first discovered, defects of excretion had been made responsible. Uric acid seemed to be one of the final products of proteid metabolism on a different line of oxidation from that producing urea, and not so fully oxidized. Normally, eight to ten grains of uric acid, in the form of urates of the alkali metals, were excreted, the amount being increased by animal food. It was found in the blood, liver, and spleen, as well as in the urine. Its constant presence in the spleen in amount was remarkable. It was found there in the case of herbivora also, whose urine normally contained none. In pyrexia the increase of uric acid in the urine seemed to be connected with the swelling, and therefore presumably the activity, of the spleen. The sodium

urate might arise in the liver from imperfect metabolism of glycogen or by combining with the sodium of the sodium phosphate of the blood. This conversion into the soluble urate might fail to occur, in which case ordinarily it was deposited in the urine in the form of fine crystals, usually microscopic in size. But special conditions caused other forms of concretion, leading to the building up of calculi. In 1857 George Rainey, by placing saturated saline solutions in mucilage, had formed spherules as hard as pearls, having radial and concentric organs. So probably colloid substances present in the pelvis of the kidney, such as muco-pus and pus, especially if degenerated, did much to cause the building up of calculi.

The treatment of the diathesis had relation, then, to alimentation, metabolism, excretion, and whatever might be found to influence them; also to local causes influencing the production of colloid matters. There were reasons for not employing a purely vegetable diet. Some animal proteid in the diet perfected the processes of digestion and elimination, improved circulation, blood-pressure, respiration, and the growth of red blood-cells. The large amount of carbohydrates needed when meat was disallowed exhausted the oxidizing power of the tissues and the depurative function of the liver, and led to an increase of the production of uric acid. In bilious persons uric acid was commonly present in large amounts. A rich carbohydrate diet, which was so well known as favoring bilious attacks, was probably thus connected with uric-acid production. A mixed diet in great moderation was, then, the most desirable one. A milk diet, from its perfect digestibility, was very good. Free drinking of water, exercise, bathing, cheerful surroundings and occupation were advised as valuable adjuncts in this general line of treatment. Tonics, pepsin, iron, and laxatives all might have a place.

Remedies to dissolve the concretions *in situ* were mainly advocated by quacks. Mineral waters, especially those of Vals and Vichy, possibly aided in effecting this. The acetates, malates, citrates, and carbonates of lithium, sodium, and potassium had a certain value in the diathesis, especially where occurring in mineral waters and drank at the springs. They should be drank till the urine remained faintly acid or neutral. Buffalo lithia water was among those which deserved a trial. Any sparkling water, especially if it contained sodium, was of value to make the urine mild and so lessen the production of colloid matter in the pelvis of the kidney. Every effort should be made to cure a pyelitis if present. Drugs such as copaiba and corn-silk might be tried, together with rest and quiet. The object, he concluded, was to restore a uniform and well-balanced functional action in all respects.

**Hiccough, with Notes on Treatment.**—Dr. W. F. Putnam, of Binghamton, read a paper thus entitled in which he reviewed the simpler and severer forms of this affection occurring in children and adults in both health and disease, its causes, and the various remedies. For simple cases any slight shock or diversion of the mind was enough; in severer cases chloroform, nitroglycerin, Fowler's solution with belladonna, electricity, or gelsemium might in many instances give relief. Other remedies were mentioned in great number.

**Diphtheritic Paralysis; the Treatment of Diphtheria.**—Dr. J. Lewis Smith, of New York, read portions of a paper thus entitled. In giving a history of the earlier recognitions of the possibility of a diphtheritic paralysis, he showed how slowly new ideas gained acceptance. The cause of diphtheritic paralysis and its mode of operation were unknown. It occurred oftener than was commonly supposed. A slight development manifested itself by a difficulty in swallowing and a nasal tone in the voice, and might escape observation or mention if attention was not directed to its discovery. Probably from one in five to one in three of all cases developed paralysis in greater or lesser amount at some time in the attack. It came mostly during convalescence. The power of speech and that of swallowing were usually impaired first; distant parts suffered later. Cases were related where the paralysis had occurred during an epidemic without other appreciable symptoms. A fatal nephritis might in a similar way come a week or two after a mild attack supposed at the time to be merely a sore throat. It was like scarlet fever in this respect. Both motor and sensory nerves were affected, which was a point of value in diagnosis. The muscles whose nerves were affected atrophied as in other palsies. The order of frequency in which these disturbances appeared were as follows: 1. Loss of tendon reflexes, especially the patellar and plantar, and this was present from the inception of the disease, lasted longest, and occurred in from one third to one half of all cases under treatment. Some observers had noticed an increased reflex preceding its abolition. Cutaneous sensibility was often increased. 2. Paralysis of the velum palati, causing slow speech, snoring, difficult swallowing of fluids (so that the person had to throw the head back). It might extend to the epiglottis and upper larynx, so that bits of food entered. Both sensory and motor power were usually recovered. 3. Paralysis of the motor oculi or of the lower or upper limbs, but much scattered in different groups of muscles, and sometimes going suddenly from one part of the body to another. Rarely it affected the nerve supply of the bladder, rectum, abdominal muscles, or back. Even the facial nerve had been paralyzed. 4. Cardiac paralysis, which might come late when apparently the patient was safely through the disease. However, paralysis of the palate usually preceded it for several days. As to what caused this heart-paralysis, there had been much inquiry—whether the muscle substance was poisoned, or clots suddenly formed in the ventricles, or the center in the medulla oblongata was paralyzed, or the pneumogastric innervation became exhausted and suddenly ceased. He thought it could be proved that in most cases it was not due to a paralysis of the heart muscle with degeneration due to the diphtheritic virus, for in most cases it came suddenly and no changes could be found on autopsy. Clots, he believed, when found, were formed after death. For a cause acting suddenly and powerfully he looked mainly to a paralysis of the pneumogastric and a loss of cardiac innervation. For a general cause for all the paralyses of diphtheria, he thought it not unreasonable that we should suppose, as Dr. A. Jacobi had suggested, that some poisonous leucomaine was liberated more or less suddenly when a certain point was reached in convalescence. Both central and peripheral lesions were found, mostly peripheral. They often ascended and might thus involve the nerve centers. But they were not structural lesions, or how could they jump about so from point to point?

In the way of treatment he advised a mild diet, including peptonized foods, general hygiene, especially ventilation, tonics, and rest. When paralysis appeared, strychnine was valuable both as a nervine and as a general tonic; massage was useful to keep paralyzed limbs in good condition till innervation returned, and, while testimony was contradictory as to the benefit to be derived from faradaic and induced currents, galvanism had certainly helped some cases.

Dr. C. A. Leale, of New York, said that as chairman of the St. John's Guild and Sea-side Hospital he had had many cases of diphtheria under his care during the past summer. He felt bound to mention one particular in his experience with respect to treatment. He then showed a French gum-elastic catheter, No. 8, which he regularly introduced into the child's stomach by the nostril. He was then able to give it food in whatever amounts were thought best, and also its medicine, injecting either

by a syringe. This saved struggling and crying on the part of the child, made rectal feeding unnecessary, and was an available means when the child was unconscious. The results had been so exceedingly satisfactory that he felt it his duty to call the attention of the profession to this simple device in every way in his power.

The President remarked that, in view of all the disastrous results of diphtheria, fatty degenerations, paralyses of muscles and vital organs, etc., it seemed astonishing to him how any one could imagine the disease to be essentially a local one, and try to wash it away from a supposed implantation in the throat. He then very graphically described the symptoms and subjective phenomena of a severe attack of diphtheria with which he had himself suffered, and which he had contracted from infection of a slight wound in his finger. A period of great malaise and depression had been succeeded by throat symptoms of the ordinary sort, and these by most curious nervous disturbances in sensation, motor paralyses, and loss of speech and of ability to swallow solids. One remarkable thing he would like an explanation of. While still suffering from complete aphonia, he had found by chance that, by turning his head well around on to his left shoulder, the power was at once restored.

**A Case of supposed Partial Twist of the Intestines.**—Dr. G. E. McDonald, of Schenectady, read a paper with this title. Relief had been obtained by manipulation of the abdomen under chloroform several times repeated.

**Does the Menstrual Flow originate in the Tubes?**—Dr. E. J. Chapin Minard, of Brooklyn, gave in this paper a description of a case of inversion of the uterus where a dark, healthy flow, but without epithelia, had come from the tubes, which were under direct observation. The uterus had during the whole epoch been congested and bright red, but at no time moist enough to stain a piece of paper rubbed over its surface. The tubes were dilated at their openings. Judging from the anatomical make-up of the womb and from various clinical facts, she was convinced that this was the natural order of things, and that, while epithelium and *débris* of decidual origin were washed away, no blood escaped from the uterine wall. Sometimes when, in doing Battey's operation, the surgeon failed to remove the tubes close up to the uterus, menstruation had continued although no ovaries remained.

A report was read by Dr. C. A. Leale, of New York, on the examination of some gall-stones, as they had been supposed to be. Dr. R. H. Sabin had placed them before the society the previous year. They had been passed to the amount of half a teacupful altogether, at various times, by a lady who suffered from severe attacks of biliary colic, accompanied by jaundice and fever. These small and corrugated bodies had proved to be raspberry-seeds. Apparently by lodging in some diverticulum of the intestine, they had given rise to the symptoms of a biliary colic. This colic had been relieved simply by bringing on a free movement of the bowels.

**Railway Injuries.**—Dr. C. W. Brown, of Elmira, read a paper on this subject. (It will be published hereafter.)

Dr. T. H. Manley, of New York, disagreed entirely with Dr. Brown as to the latter's advocacy of immediate amputation of badly crushed parts. His own experience with "smashes" of limbs included several cases where children had been run over by horse-cars. Only hæmorrhage, to him, justified amputation, until reaction had set in. Till then it was a most dangerous procedure. Children bore amputation poorly. By waiting, the true extent of the injury would appear, and the vital forces would also rally from the effects of the general bodily jarring often incidental to the accident. He cited the case of a boy who had been run over, where, by waiting, amputation of a badly mangled and fractured arm had proved unnecessary. In other cases a little time showed that more tissue was dead than had been at first discoverable. But he would always wait till reaction had set in.

Dr. E. M. Moore, of Rochester, replied to these objections in detail. He thought we must distinguish between injuries to the limbs of boys and to those of grown men. The tissues had a greater recuperative power in the former case. Where he found the artery at the extremity of a crushed limb beating strongly, that decided him. If the vessels were intact, the limb could probably be saved. He cited an instance where an arm had been drawn in and its bones broken into fine pieces between the somewhat loosely set cogs of some machinery. The radial pulse, however, was firm, he did not amputate, and the limb recovered. But in a very great number of railway accidents there was no room for doubt; there were often no bodily injuries of account except the complete destruction which car-wheel and rail, or two buffers, had but too certainly achieved in hand, arm, or leg. Immediate amputation was then everything. He had once removed such a limb, in the days before ether was known. The patient had not seemed to be conscious of any pain connected with the operation, and his first words had been when the arm was off: "Doctor, you don't know how much better that feels."

He would say, in such cases, Give them heat, give them whisky and ether; but give them the knife. The terrible strain on the nervous system from the state of things in the injured limb, where the force had been immense, could not be too soon ended, nor the mental distress, which of itself might soon make the continuance of life impossible. And he had found the hot bichloride solution an anæsthetic as well as an antiseptic on the surface of the clean amputation wound which he substituted with all speed in such cases. Where there was uncertainty as to the extent or character of the injury, he placed the limb in hot water and waited perhaps several days.

(*To be concluded.*)

## ASSOCIATION OF AMERICAN PHYSICIANS.

(*Continued from page 414.*)

**On Some Forms of Paralysis after Typhoid Fever.**—The discussion on the subject of Dr. Ross's paper was continued as follows: Dr. M. Allen Starr, of New York, thought that, if neuritis were always due to the typhoidal poison, it ought to be much more common than it was. All the cases in his experience where general peripheral neuritis followed typhoid had been due to alcoholism, from liquor taken either during or before the disease. In regard to neuritis limited to one or two nerve trunks, might it not result from pressure of the limbs upon the bed, long continued, during a period when the patient lay in a comatose state? He had seen several such cases.

Dr. William Osler, of Philadelphia, reminded the meeting that there existed differences of opinion about the late paralysis of typhoid; some writers thought it due to a peripheral neuritis; others to a central inflammation, such as poliomyelitis. To him both clinical and experimental evidence indicated that either a myelitis or a neuritis might result from the typhoidal poison, as was the case in arsenic poisoning.

Dr. H. C. Wood, of Philadelphia, remarked that those who had followed the course of lead palsy had had to deal with this same problem, finding either central or peripheral paralyses, myelitis, or neuritis, and never being able to say why there was one or the other, in a given case.

Dr F. Delafield, of New York, thought that the lesions being discussed, though not very common, were, after all, such as might belong to the disease. The poisons of the severe infec-

tious diseases acted like mineral poisons in having a selective action on certain parts of the body, producing degenerative and sometimes inflammatory changes in limited areas. Just as arsenic and phosphorus were selective, so diphtheria was apt to affect the nerves markedly, and typhoid the spleen, and there were other such instances. He thought such a relation might now and then exist between typhoid and the nervous system.

Dr. Ross doubted that alcohol given only during the course of the disease, and in small quantities, ever caused neuritis. In the French hospitals no alcohol was given in typhoid, yet many cases of neuritis occurred. And as to the idea of neuritis being caused solely by pressure of the body on the bed, it left out of account the permanent cases of paralysis and those accompanied by atrophy which occurred in both typhoid and small-pox. Pressure might in some cases, though certainly not in all, have either caused or aided in causing a temporary paralysis.

**Causal Therapeutics in the Infectious Diseases.**—Dr. James C. Wilson, of Philadelphia, gave in this paper the history of an experimental use of small doses of mercurials in typhoid fever and phthisis. It had occurred to him that, since antiseptics given by the mouth had not as yet reached the bacteria of these diseases, it was better to try to neutralize the ptomaines which they produced, and which directly caused the fever, and so make a step in the direction of casual therapeutics. Whether he had succeeded in altering the products themselves, or in sterilizing their soil or in checking their production, he could not say. Small doses subcutaneously of mercuric bichloride and of calomel (two grains) had been given in typhoid and phthisis with the effect of causing a steady fall of temperature. In the case of phthisis the cough and sweats had also been controlled, and the course of the disease checked. In the typhoid cases, which were all of a severe type and several of which relapsed, both the fastigium and the daily range of the fever had been modified and the temperature brought slowly back to normal, with a good recovery finally attained.

Dr. G. M. Sternberg, of the army, opened the discussion of Dr. Wilson's paper by agreeing with him as to the value of efforts to find remedies for diseases directed against the material causes of disturbance present in the body. He was ready to accept as rational any therapeutical agent which seemed to accomplish this in a given case. In his own recent experience with yellow fever in Havana, observing the extreme acidity of the stomach always present at the beginning of the disease, he had been led by a similar course of reasoning to administer an alkali—the bicarbonate of sodium—together with the bichloride of mercury. Thirteen patients so treated had recovered. He felt that little was to be feared from yellow fever if this treatment could be given at the outset. Pneumonia he held in much greater awe.

In regard to enteric fever and the rise of temperature which usually attended constipation occurring in its course, he thought some observations of his threw light on the cause of this rise. He had found in the colon in healthy persons a bacterium producing a ptomaine which was, in comparatively small amounts, fever-producing. In typhoid and cholera it was probable that these bacilli spread, owing to peculiar conditions found outside their natural habitat, from the large intestine into the small intestine, and even the stomach. Constipation favored the retention of their fever-producing product.

Dr. J. T. Dana, of Portland, Me., gave as one of the theses of curative medicine the following: Infection meant bacteria, and that the production of poisons. Our hope must be to destroy these germs, if possible, without taking the patient's life. Failing in this, we should try to make the tissues resistant to the germ or the ptomaine, or to destroy or modify its soil.

Dr. G. L. Peabody, of New York, thought that hope lay in the direction indicated by Dr. Wilson; but he wanted to confess that what he had told the society the year before as to the success of an antiseptic drug needed to be added to. He had then reported the successful use of naphthaline in aborting typhoid fever in three cases. Since then he had failed to produce this result, and had met with a large mortality where he had given the drug for that purpose. The mortality had been quite too large. He now gave the drug in a form to avoid stomach absorption, in keratin-coated and salol-coated pills, but had not yet got results worth speaking of. The method of coating pills with salol was both easy and cheap.

Dr. Jacobi, of New York, speaking in regard to bichloride of mercury in diphtheria, was sure it was the best thing we had. He used it in doses just sufficient to neutralize the floating poison. He had never seen typhoid aborted, but he had seen great improvement in the stools. In phthisis it seemed to check the diarrhœa. He considered it worth while to go on trying.

Dr. W. W. Johnston, of Washington, had never seen a downward course in typhoid increased by naphthaline; and there were downward cases. He had not found, that is, that in such death occurred any sooner from its use.

Dr. Wilson closed by repeating that he had only related a clinical experiment in which he had aimed at a direct treatment better than either the symptomatic or expectant plans. We did not know the mode of action of quinine in malarial disease or of bichloride in syphilis. He had been led to use the drug in typhoid by observing the success which attended its use subcutaneously in syphilis. It had been used in this way years ago in Italy for syphilis and diphtheria, but had been abandoned on account of the abscesses which resulted. These latter we now knew how to avoid by asepsis. He had simply found that his cases, and they were very severe ones, as given in his paper, did much better than he had ever seen cases equally bad do otherwise.

**Fatty Heart.**—Dr. Frederick Forchheimer, of Cincinnati, in his paper on this subject, gave the results of the examination of 122 cases. He had concluded that the cause of fat-accumulation was the same here as in other parts of the body, and that it might occur at any time of life. Occupation had considerable bearing. A muscular man and one of active habits up to forty years of age, who then became inactive and comparatively idle, was especially liable to obesity. Men suffered more than women, because women were less likely to make such a change in their habits at that time of life. He had found that the use of alcoholic drinks, and particularly of beer, did much to cause the condition. All causes of heart-strain tended to bring it about, such as the use of tobacco, coffee, tea, violent exercises, or a condition of general neurasthenia—though whether the latter was more an effect or a cause of the change in the heart he had been unable to decide. Also prolonged troubles in business, or of an emotional sort, might lead to a sudden development of fatty heart.

It was necessary to divide the condition into the two forms in which it was met with: first, a surrounding of the heart by masses of fat, with accumulations within or upon the pericardium and between the various septa. This could sometimes be made out during life by an increased area of dullness and a less distinct sound. It was difficult to do so, owing to the amount of subcutaneous fat over the chest usually present also; and in the main we were obliged to depend on the revelations of the post-mortem for our ideas on this matter. Even then, autopsies being still the exception in private practice, a great many instances must necessarily be unknown. However, fat around the heart was not a matter of particular importance.

But in a second class of cases, when the myocardium itself was invaded by a diffused fatty infiltration of oily globules, and

its function as a muscle was checked, then the muscular fibers became atrophied and distorted, and sometimes degenerated; but that might in any such case be due to the general cause which had led to fatty deposits as well. At any rate, the myocardium became soft, flabby, and easily torn. The results of that were that sometimes hypertrophy, myocarditis, or rupture, but rarely any valvular lesions, supervened; also any of the results of an impaired circulation and venous stasis or obstruction, showing, under familiar forms, in the lungs, liver, stomach, or kidney.

The symptom in the first class of cases was shortness of breath on exertion or excitement. Such patients suffered by reason of the increased amount of blood which often preceded or accompanied fat accumulation and crowded into the right heart and pulmonary artery upon exertion. They also suffered from the actual displacement and compression of the lung by the masses of fat about the heart. This condition came on slowly.

In the second class of cases there was a history of sudden accession of a heart trouble, of dyspnœa at night and following meals, of inability to go to sleep after becoming quiet in bed, or of angina or cardiac asthma. Sometimes apoplectic symptoms appeared, due to an accompanying fatty degeneration of the blood-vessels in the brain and elsewhere. A dilated heart would give the same objective signs as a fatty heart; we had to judge from all the symptoms. Percussion was not satisfactory in a fat person. Auscultatory percussion did rather better. The rhythm and sounds were changed in character and deserved careful note. A bruit was sometimes present, though it was not dependent on a degeneration of the papillary muscles nor on a valvular lesion. It might, he thought, result from imperfect contraction, or from anæmia in certain cases, or, again, it might be of nervous origin. After all, the guiding symptoms were the disturbances of the heart-action taken along with the general obesity. If the person was not fat, no diagnosis was possible, in life, between fatty heart and several other conditions which gave the same manifestations.

The speaker concluded with remarking that he used Oertel's method of treatment. Some might think it was dangerous, but, so far as he knew, harm had never been shown to have resulted from Oertel's plan, unless there were obstructions to the circulation in the heart, lungs, or other parts of the body.

Dr. A. Jacobi, of New York, remarked that fatty heart had been spoken of in connection with general obesity only, but that account must be taken of other cases than these, and that *they* would help us to a better understanding of the condition, for they occurred without much or any obesity. Fatty degeneration of the heart substance must be taken as one of the results of malnutrition. Such malnutrition might result from the excessive ingestion of carbohydrates and fats with a consequent exhaustion of the oxidizing power; it might result from alcohol, or again be of congenital origin. He related the history of a case where a lady died at thirty-two years, apparently of pernicious anæmia. The autopsy showed an almost complete fatty degeneration of the heart without enlargement. All the arteries, from the aorta down, were congenitally small in caliber. This undeveloped condition of the arteries was not uncommon. It caused a deficient nutrition of the whole body; while, the heart's coronary supply being itself curtailed, that muscle, like any other, became feeble and finally underwent a fatty degeneration when there was a lack of blood to nourish it, though in certain cases the heart either became or remained from childhood up unnaturally small.

Dr. F. P. Kinnicut, of New York, remarked that von Esmarch had recently seen great and astonishing improvement obtained in cases of fatty heart by the Oertel plan of treatment. The rules of Oertel as to the contra-indications to this method, and especially as to conditions where a fine graduation of exercises was necessary, had been carefully observed.

Dr. F. C. Shattuck, of Boston, remarked that fatty heart was more common among Germans, both here and abroad, than among Americans. In the discussion at the Wiesbaden conference he had noticed more unfavorable opinions regarding the Oertel plan of treatment than authorities seemed to take into account; at least it was certain much damage had resulted from its use, though this, in his opinion, had been from its misapplication in improper cases, where the diagnosis had been too difficult.

Dr. J. Tyson, of Philadelphia, said that, in regard to the determination of the presence of fatty degeneration, it was his opinion that true fatty degeneration of the heart was not apt to be associated with obesity as fatty infiltration was, but was likely to follow some acute disease, or chronic endocarditis, or nephritis. He believed that cases of obesity and fatty infiltration could be safely treated by Oertel's method.

Dr. H. C. Wood, of Philadelphia, believed the use of Oertel's method needed great caution in severe cases. Sudden deaths had occurred a number of times. The theory of the method was to rejuvenate the heart muscle by increased work, as one would a biceps that was undeveloped by neglect of exercise. But the heart never rested. Its work in every instance was and had been without pause. If it was once partly changed to fat, might not climbing of mountains and long walks precipitate heart failure, if undertaken too enthusiastically? Consequently the speaker urged a very careful selection of cases with full warnings and directions to the patient, and the constant supervision of a competent physician. Even then there was danger, owing to the chance that the diagnosis of the heart condition had not been correct.

Dr. Kinnicut here explained that Oertel himself was very far from merely prescribing free mountain climbing. On the contrary, he determined and graduated the distances to be walked very carefully, even to the distance in feet. His study of the individual patient was minute. He prescribed the diet and the times of rest; in brief, he took every element of the case into account.

Dr. Wood rejoined that he knew the Oertel method also called for a withdrawal of fluids from the diet, stopping the use of alcohol and the giving of a light diet free from fats, but that the peculiar feature of the method was the exercise, and that that was apt to be overdone and carelessly employed.

Dr. Forchheimer again stated that Oertel sent no patient with a weak heart to the top of a mountain 3,000 feet high. He graduated the amount of exercise most carefully, and particularly he made it proportional to the returning strength of the patient. His published experiments were those made on himself, and it was himself he had cured of the condition in the first instance. The principal thing Oertel insisted on was to have the patient abstain from fluids, to give him a light mixed diet with an absolute reduction of the total daily amount, and to allow scarcely any fatty elements in the food. In this way the fat in the heart substance was actually made to disappear, and the muscular fibers gradually grew from increased use and took the place of the fat.

The only objection was that certain observers had reported that harm had come from the use of the method. These charges were not further specified, and we had no means of knowing that these cases had been of the class amenable to Oertel's method, or that his ideas had been accurately carried out in regard to either diet or a graduation of exercise.

**The Diagnostic Significance of the Mitral Systolic Murmur.**—Dr. Frank Donaldson, of Baltimore, presented in this paper the results of elaborate research among the records of

physiologists and diagnosticians as to the causes of this murmur, together with his own independent conclusions as to the manner of its production. He remarked that no other abnormal cardiac sign had more definite characteristics. Its development was very slow.

In the normal state the blood in the lesser circulation rushed on through the distribution of the pulmonary arteries into the elastic pulmonary veins, then directly onward through the auricle into the ventricle, continuing its flow until the ventricle as well as the auricle was nearly full, when suddenly the auricle contracted on its contents and completed the distension of the ventricle previous to the systole. Ludwig and Hess had shown that the mechanism of the closure of the left auriculo-ventricular orifice did not reside in the valve alone; the surrounding muscles of the ventricle had an active share, not merely in floating up the valve-curtains, but in reducing the size of the aperture which these valves had to close. As the systole began, the muscles surrounding the ostium contracted, and presently, instead of the round gaping orifice at the diastole, the valves had to close over the compressed papillary muscles, keeping the curtains tight during the contraction of the ventricle. The whole action of the heart was screw-like, six or seven distinct layers of muscular fibers crossing each other in a rotary arrangement. The base muscles had their share of closure; the valves promptly completed it. When the muscles of the base were enfeebled the valve-curtains were insufficient to close the orifice. During the long pause in health there was no tension of valves to cause sounds and there was no lessening of diameters; but if from any cause this should occur, then we had sonorous jets of vibration which must produce murmurs.

The mitral valves and the auriculo-ventricular orifice were especially liable to inflammation from acute or subacute rheumatism and other causes, such as scarlet fever or measles. These inflammations left behind formations of connective tissue which narrowed the orifice itself in the annular form or by diaphragmatic partitions with button-hole orifices. Or the leaflets adhered together and produced funnel-shaped constrictions. In some cases the valves completely lost their natural formation. These new conditions were most favorable to the production of murmurs which were due to the oscillation in the blood itself. The current of the blood passed through the small opening into a wider cavity and was divided up into a number of jets, forming fluid veins. The rapidity and force of the current must cause a variation in the intensity of the sound corresponding to its own variation in strength of propulsion. It was a mistake to suppose that the presystolic murmur was always the same. Instead of a prolonged cardiac bruit, it might be very short—so short, indeed, as to be with difficulty separable from the natural first sound. Occasionally it appeared like a tone or accentuation of the first sound, and the first sound thus became so sharp and clear that it might easily be mistaken for the second sound, which became inaudible at the apex, and, unless careful attention were paid to rhythm, there was danger that the combined sounds might be mistaken for a normal sound. In brief, the presystolic bruit varied much in length, loudness, and quality.

The name of post-diastolic was given very inappropriately to the murmur heard immediately following the closure of the sigmoid valves. This sound, though rough, was not blubbering and vibrating. It was generally indicative of pronounced stenosis. It should be called diastolic. These two, the presystolic and post-diastolic, might be present independently of each other, and, when found in the same patient, might run into each other, or they might be separated by an appreciable interval.

Although much had been written about the presystolic murmur, it was not infrequently overlooked even now, and often mistaken for the mitral systolic murmur. It was known now, the reader continued, that it was a frequent occurrence to find presystolic murmurs, especially among women and children. Flint had observed it in 16 out of 39 cases of mitral disease. Its great prognostic significance alone justified the attention that had been given it. He would present a brief study of the factors entering into the production of this interesting murmur when of organic origin.

There must be two factors in the production of "fluid veins," whether obstructive or regurgitant: a lesion in the heart, and a change in the propelling force, together with the other well-known influences modifying blood-pressure. For the generation of sonorous fluid veins we must have the passage of a jet of blood through a narrow constriction into a wider cavity. It was known that mitral stenosis was the lesion in a very large majority of cases where a presystolic murmur was heard; many authorities thought it was always so. However, the lesion was frequently found at post-mortems where there had been no presystolic murmurs heard during life. In other cases, where the mitral orifices were not altered in size, other obstructive and narrowing conditions were found inside the ventricle, such as shortened chordæ tendineæ or thickenings and rugosities about the leaflets of the valves or in the walls of the ventricle, accounting for the production of the characteristic prolonged blubbering, presystolic murmur.

Whenever and wherever we found physical conditions to produce fluid veins with vibratory phenomena there might be the same sound, though this was rarely met with; still, according to Dr. Guitéras, it was more frequently seen than Flint had supposed.

The speaker proposed to make an inquiry to determine from what sources the necessary force of the blood-current was derived. Dr. Gairdner taught that it was produced by the systole of the left auricle, and he accordingly named the adventitious sound the auriculo-ventricular murmur. This could not possibly apply to the sound which existed before the contraction of the auricle, which in health occupied one fifth of a second and immediately preceded the systole of the ventricle.

The feeble force of the auricle in health had been shown by Chauveau, who, by prolonged irritation, had exhausted its contractility and found that the ventricle continued to act effectively and kept up the circulation. Ludwig had confirmed this result by introducing a tube through the auricle. In fact, the auricle might be regarded as the dilated termination of the pulmonary veins acting as a reservoir to supply the ventricle and to regulate the blood-pressure in it.

In the author's opinion, we might ascribe the production of the presystolic murmur to beginning obstruction of the mitral orifice and to the force of the left ventricle. Temporary compensation was promptly established in the force of the circulation. It seemed that there was a reserve force, as in the voluntary muscles, which was called forth in the emergency. We also admitted that, as the result of obstruction at the mitral orifice impeding the influx of blood into the left ventricle during the diastole, the left auricle, having additional work to perform, became first dilated and then hypertrophied. Indeed, percussion in rare instances revealed abnormal bulging over the auricle, and frequently the pulsation of the auricle was perceptible about the fourth rib. The walls of the left auricle, which were normally about a line and a half in thickness, might be increased to as much as a quarter of an inch, with a proportionate increase of strength. It might be that the prolongation of the bruit was due to this hypertrophy, but it was almost incredible when we remembered that it was the longest as well as the most irregular and vibrating of all the cardiac murmurs. It was questionable whether the force of such an hypertrophied auricle was sufficient by itself to overcome the resistance

caused by advanced mitral constriction, and to give us the acoustic characteristics of the presystolic murmur.

He felt justified in concluding that the systole of the left auricle was a factor of greater or less force in the production of this mitral direct murmur, but that it was not the only one, and the others might produce it independently of the auricular systole. He then described a number of experiments showing that, while suction might exist in the ventricle for a brief period at the end of the systole, this did not extend to the auricle; and that the heart was of no effect as a suction-pump so far as the venous system was concerned.

When the aspiration of the thorax had been eliminated, the heart would not receive blood unless supplied to it under a decided, even if small, positive pressure. The reader then showed that such a pressure did come around from the right ventricle, through the lungs, and compensation was thus made, in the lesser degrees of mitral stenosis, by hypertrophy of the right ventricle. A relatively high pressure had been proved to exist in the pulmonary veins. The walls of the veins being thinner than those of the artery, the motion of the chest increased, by the reaction of the elastic lungs, the pressure in the veins, more than in the strong-walled arteries.

As a relief to the lungs, the right ventricle became hypertrophied as stenosis increased, in some cases to such an extent that the enormously thickened walls completely covered over the left ventricle, prevented our hearing the second sound at the apex, and nearly obscured the impulse. If this hypertrophy was very marked, might it not be the propelling force producing the long sound commencing immediately after the systole, and occupying the whole of the diastole? If the force was feeble it might only produce the post-diastolic murmur and cause the deficiency in the middle of the distance between the second and first sounds. But as muscular power left an excessively enfeebled patient it utterly disappeared. Indeed, it was very remarkable how the murmur sometimes disappeared for short times or permanently, the condition of the valve being unaltered. Or, the force being feeble, if the patient was in the recumbent posture and the heart quiet, the murmur was inaudible; but on his changing his position or rising, it might be heard again, while the exertion caused a more forcible heart action. Active exercise increased the intensity of the murmur in a marked degree.

To sum up, it appeared that the evidence of the cardiograph was in favor of the view that two totally distinct murmurs might be caused by mitral stenosis and constrictions: 1. The auricular systolic bruit, which might either run up to the first sound, or be separated from it by a short interval. 2. The diastolic bruit due to the venous flow through the narrow and roughened orifice. In rare cases it might be blowing in quality and separated from the succeeding systole by a long pause. The two might also be merged together into a compound murmur, somewhat rough at its commencement but much intensified in loudness and harshness toward its close.

To diagnosticate mitral stenosis we had other signs besides the presystolic murmur. The thrill at the apex was a sign of great importance and was perceptible when the murmur was heard. The reduplication of the second sound was present in at least one third of all cases of mitral stenosis. There was also the altered sharp first sound, which resembled the second sound. The accentuation of the pulmonary second sound was very important, as it often enabled us to diagnosticate the extent of the lesion. Percussion showed increased dullness over the right cardiac area for reasons given before. There was feebleness of apex-beat, and in advanced stages of a mitral stenosis the pulse was smaller than natural. Cardiographic tracings showed rough, irregular waves starting immediately after the second sound which might take up the whole of the diastole. They resulted from the irregular vibrations of pressure corresponding to these various factors in the production of a presystolic murmur.

*(To be concluded.)*

## Book Notices.

*A Clinical Atlas of Venereal and Skin Diseases*, including Diagnosis, Prognosis, and Treatment. By Robert W. Taylor, A. M., M. D., Surgeon to Charity Hospital, New York, and to the Department of Venereal and Skin Diseases of the New York Hospital, etc. Illustrated with One hundred and ninety-two Figures . . . on Fifty-eight beautifully colored Plates, also many large and carefully executed Engravings through the Text. Part i and Part ii—Venereal Diseases. Philadelphia: Lea Brothers & Co., 1888. Folio. Pp. 115, 117 to 136, inclusive.

Some months ago, having had the opportunity of examining impressions of many of the plates that had been prepared for this great work, we mentioned them in terms of commendation. We are glad to add now that the appearance presented by the two finished parts that have been issued amply confirms us in our opinion. The colored drawings seem admirably calculated to answer the purpose stated in the author's "Prefatory Note"—that of furnishing the practitioner with a diagnostic guide "by the delineation of successive typical stages of those diseases which imitate each other at some period of their course."

Great as the value of this atlas is as a pictorial aid in a difficult branch, it is immeasurably enhanced by the text. Prominent among Dr. Taylor's many points of excellence as a writer is his thorough recognition of the fact that, when he is writing for general practitioners, theoretical problems are to be made subordinate to practical matters. In the work now under consideration he has succeeded in presenting simple and comprehensive views of cutaneous and venereal diseases.

In that portion of the work which is devoted to gonorrhœa, the author gives all due importance to the gonococcus doctrine of the ætiology of the disease, assuming, as becomes a teacher of such eminence, a conservative attitude that will be appreciated by all judicious readers. We are particularly pleased to find that the subject of gonorrhœa in women is treated of more fully than in most works on venereal diseases, its exposition being especially full in the matter of the clinical history. Phimosis, paraphimosis, and herpes progenitalis having been given due consideration, with an ample portrayal of their ætiology and clinical history, the author passes on to the subject of chancroid. Of this affection he gives the clearest and most satisfactory exposition with which we are acquainted, particularly in his statement of the argument against its specific nature, the purport of which could not be more plainly put than in his declaration that, "while the chancroid may be—and very commonly is—derived from a previous chancroid, a chancroidal bubo, or a chancroidal lymphangeitis, it also may originate in the pus derived from irritated lesions of syphilis and from irritated simple lesions in syphilitic subjects, and in simple pus, particularly when originating in active or intensely irritated lesions."

The accounts of those local affections take up 104 pages of the text, and then comes the subject of syphilis. To say that Dr. Taylor treats of it on the basis of a long and exceedingly wide course of personal observation, associated with extensive and appreciative reading, is to say that he presents it with all the advantages that can be had by an author, and with the clear-

ness and simplicity that are to be found conspicuous in all his writings. It is to be expected that those subsequent parts of the atlas that are to treat of skin diseases will show equal merit, and we are convinced that the work as a whole will prove a most effective addition to the practical physician's resources.

## BOOKS AND PAMPHLETS RECEIVED.

A System of Gynæcology. By American Authors. Edited by Matthew D. Mann, M. D., Professor of Obstetrics and Gynæcology in the Medical Department of the University of Buffalo, N. Y. Vol. II. Illustrated with Four Colored Plates and Three Hundred and Sixty-one Engravings on Wood. Philadelphia: Lea Brothers & Co., 1888. Pp. xiii–17 to 1180.

A Compend of the Diseases of the Eye, including Refraction and Surgical Operations. By L. Webster Fox, M. D., Ophthalmic Surgeon to the Germantown Hospital, etc., and George M. Gould, M. D. Second Edition, revised and enlarged, with Seventy-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xiii–9 to 164. [Price, $1.]

The Treatment of Empyema. The Process of Repair. A Method of Subcutaneous Drainage and Irrigation. With Illustrative Cases. By G. J. Robertson, M. B., C. M., Surgeon to the Oldham Infirmary. [Reprinted from the "Medical Chronicle."]

Sixth Annual Announcement of the Northwestern Ohio Medical College, Toledo, Ohio. Session of 1888–'89.

The Treatment of Epithelioma with Mild Caustics. By Daniel Lewis, M. D., Surgeon to the New York Skin and Cancer Hospital. (Read before the New York Dermatological Society.)

Is Belief in Spiritualism ever Evidence of Insanity *per se?* By Matthew D. Field, M. D., etc. [Reprinted from the "Journal of Nervous and Mental Disease."]

Hand-book of Historical and Geographical Phthisiology. With Special Reference to the Distribution of Consumption in the United States. Compiled and arranged by George A. Evans, M. D., Member of the Medical Society of the County of Kings, New York, etc. New York: D. Appleton & Co., 1888. Pp. 8–9 to 295. [Price, $2.]

Hygiene of the Nursery. By Louis Starr, M. D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, etc. With Twenty-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–17 to 212. [Price, $1.50.]

A Review of the Surgery of the Knee Joint for the Last Fifty Years. By James S. Green, M. D. [Reprinted from the "Transactions of the Medical Society of New Jersey."]

Fifteenth Annual Report of the Secretary of the State Board of Health of the State of Michigan, for the Year ending June 30, 1887.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland at its Nineteenth Annual Session, held at Baltimore, April, 1888.

Transactions of the American Association of Obstetricians and Gynæcologists, at the First Annual Meeting, held in Washington, September 18, 19, and 20, 1888. [Reprinted from the "Buffalo Medical and Surgical Journal."]

Displacements of the Uterus, together with Formula for Official Dilute Hydrobromic Acid of the United States Pharmacopœia. By De Witt Clinton Wade, M. D., Holly, Michigan. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

# Reports on the Progress of Medicine.

## PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

**Preliminary Communication on the Coagulation of the Blood** (Presented by E. A. Schäffer).—W. D. Halliburton ("Proceed. of the Royal Soc.," No. 269, 1888) undertook his experiments to determine the nature of the ferment which, after Hammersten's theory, converts a proteid substance into fibrin, fibrinogen existing in solution in the plasma. The author adduces some of the current theories, among which is that of Alexander Schmidt, who taught that fibrin was formed by the union of two fibrinogenerators, one of which was the fibrinogen of Hammersten, and the other what he called fibrinoplastic substance, or paraglobulin, the union of both being effected under the influence of a third factor, the fibrin ferment. But Hammersten showed that paraglobulin, or serum globulin, was not necessary for the formation of fibrin. Halliburton disagrees decidedly with Wooldridge as regards his theory and methods of investigation, as well as the results obtained. Wooldridge considers the coagulation of the blood as a phenomenon essentially similar to crystallization, and thinks that in the plasma there are three constituents concerned in coagulation, *A*, *B*, and *C* fibrinogen. *A* and *B* fibrinogen are composed of lecithin and proteid, and fibrin results from the transference of the lecithin from *A* to *B*. *C* is what has been called fibrinogen. *A* fibrinogen Dr. Wooldridge defines as a substance which may be precipitated by cooling "peptone plasma," and on the removal of this substance coagulation occurs with great difficulty. The coagulation of blood-plasma when in contact with lecithin, the author states, does not point to any specific action of this agent, for blood coagulates in the presence of any foreign matter; and Nauck has shown that small quantities of glycin, uric acid, etc., as well as lecithin, hasten coagulation. He further remarks that the inconsistency of Wooldridge's supposition that the fibrinogen *A* gives up its lecithin to *B* to form fibrin is seen on following out his thesis. Another untenable point of Wooldridge's the author finds in the precipita e produced by cooling peptone plasma. After the definition of *A* fibrinogen referred to above the occurrence of this precipitate must be regarded by Wooldridge as one of the most important facts upon which his theory is founded. But the author professes to have ruined Wooldridge's theory by stating that this precipitate could not be obtained on cooling to 0° C. (32° F.) either pure plasma from the veins of horses, salted plasma, hydrocele fluid, or pericardial fluid; that, therefore, it occurs in peptone plasma alone, and that the profound difference between peptone plasma and normal blood was shown by Wooldridge himself. And the coagulation which takes place on cooling the peptone plasma Halliburton attributes, with Nauck, to the action of the broken-down leucocytes under the influence of ice crystals. The last point of disagreement is as regards the intravascular coagulation. The author holds with Krüger that in Wooldridge's case the coagulation was due necessarily to the presence of leucocytes, not to the specific fibrinogen of Wooldridge, and finally concludes that the properties ascribed by Wooldridge to the fibrinogens cause the latter to be classed in the group of proteids, which, according to the author's theory, share in the formation of fibrin. The results of the author's experiments are formulated as follows:

1. Lymph-cells yield as one of the products of their disintegration a globulin which may be called cell globulin, and has the properties ascribed to the fibrin ferment. 2. Fibrin ferment as extracted from the dried alcohol precipitate of blood serum is found on concentration to be a globulin with the properties of cell globulin. 3. The fibrin ferment as extracted by saline solutions from "washed blood-clots" is a globulin which is also identical with cell globulin. 4. Serum globulin as prepared from hydrocele fluid has no fibrinoplastic properties. It may better be termed plasma globulin. 5. Serum globulin as prepared from serum has marked fibrinoplastic properties. This is because it consists of plasma globulin and cell globulin, derived from the disintegration of the white blood-corpuscles which are in origin lymph-cells. 6. The cause of the coagulation is primarily the disintegration of the leucocytes; they liberate cell globulin, which acts as a ferment converting fibrinogen into fibrin. It does not apparently become a constituent part of the fibrin ferment.

**The Diagnostic Value of Hydrochloric Acid in the Gastric Juice.**—M. Dastre ("Revue des sci. méd.," No. 63, 1888) reports L. Bordoni's article ("Acad. dei fisiol. di Siena," 1888) as saying that the author investigated the reactions of hydrochloric and lactic acids in a number of pathological cases; all experiments were performed under analogous conditions. Faucher's sound was used. The conclusions were: The reaction of hydrochloric acid may be absent in different affections, febrile maladies, mucous dyspepsia, hysteria, chlorosis, and tuberculosis. In

case of cancer of the stomach, hydrochloric acid may present no changes at all, in the first stages at least. The hyperhydrochloric secretion of gastric ulcer may persist until the last moments of the malady. The fact of the absence of hydrochloric reaction is of value in the diagnosis between a carcinomatous tumor and a tumor produced by the cicatrix of an ulcer, in cases where at the same time grave symptoms of general inanition are observed.

**The Relation between Pancreatic Action on the Albuminoids and the Quantity of Indican in the Urine.**—M. Dastre ("Revue des sci. méd.," No. 63, 1888) reports the article of G. Pisenti ("Archivio per le scienze mediche," vol. xii, No. 5, 1887), which is formulated as follows: It is known that indican which colors the urine is formed with the introduction of indol into or with its formation in the organism, and that the putrefaction of organic materials in the intestine is also a source of indol; the latter is reabsorbed in the last portions of the digestive tract. On the other hand, indol is, according to Solkowski, in a certain relation with the pancreatic peptones, the putrefaction of which produces relatively a greater proportion than other albuminoids. The author has been led to think, from this chain of reasoning, that the physiological experiments and pathological affections which would reduce and enfeeble the pancreatic reaction should diminish at the same time the amount of indican in the urine. Such results may be expected if a pancreatic fistula is established, or when Wirsung's duct is abolished. Pisenti determines first the average quantity of indican in the urine, in correspondence to a given regimen; then he finds whether this quantity is diminished in a dog which has been submitted to a pancreatic operation. He found that a dog which weighed seven kilos furnished from eleven to nineteen milligrammes of indican, as determined by Salkowski's colorimeter. After the operation this quantity was lowered to 4·84 milligrammes. This result confirms the author's view *a priori*. It is added that the diminution is preceded by a temporary augmentation consecutive upon the operation (partial peritonitis?); the re-establishment of the pancreatic flow augments again the amount of indican in the urine.

**On a New Point in the Physiology of Respiration.**—Lucien Denian ("Union médicale," No. 79, 1888) makes a general review of the current theories on the expulsion of carbon dioxide from the lungs, which may be formulated as follows: The obscure point of the mechanism of exhalation of carbon dioxide was interpreted by Paul Bert on the hypothesis that the fact is due to a chemical phenomenon, or phenomenon of dissociation. Paul Bert's theory was accepted by Robin and Verdeil; they even invented an imaginary pneumic acid, which was supposed to replace the carbon dioxide in its hypothetical combinations in the blood serum. The pneumic-acid theory, having found no real ground, was soon abandoned. To-day the function of pneumic acid is attributed to oxyhæmoglobin. Recently Dupont advanced the theory of elective action, or of the physiological property of the pulmonary epithelial cell to select, separate, and eliminate as the object of its secretion the molecule of carbon dioxide, as other epithelial cells select, separate, and eliminate the molecule of glycogen, albumin, water, etc. The more recent theory of von Fleischl seems to the author to give the natural and direct solution of the problem. Von Fleischl attributes the expulsion of carbon dioxide, its rapid dialysis through the vasculo-alveolar epithelium, to the brisk liberation of this acid from the solution in which it is contained, caused by the stroke of the heart-beat communicated to the lungs. Von Fleischl sees in the fact the simple physical phenomenon which is identical with that observed on exposing to suction a liquid holding a gas in solution. The external suction causes a gradual liberation of the gas in solution, but a simple percussion communicated to the vase containing this solution under the same suction suffices to produce an immediate liberation of the whole dissolved gas. The quantity of gas so discharged is a hundred times greater for the same suction and the same time. The interpretation by the German physiologist of the mechanism by which carbon dioxide is set free from the blood serum, Denian further states, is of the highest importance in understanding the rapid discharge of this gas in the atmosphere of the pulmonary vessels. According to von Fleischl's theory, the rapid separation of the serum and carbon dioxide is caused by the stroke of the heart communicated at each systole to the ramifications of the pulmonary veins holding the gaseous solution. A diminished pressure results after the first stroke, and the phenomenon is completed by the alternate dilatations and contractions of the heart, and also by the play of the thoracic wall. The importance of the view advanced is evident, the author alleges, though this physiological fact may be due to a more complex mechanism. If it is accepted that the heart shares in the expulsion of the carbon dioxide, it is further said, the enfeeblement of the heart muscle must now be of double importance in the genesis of cyanosis. The author finally remarks that comparative anatomy and physiology furnish some arguments to sustain the idea.

**On the Action of some Antiseptics and of Heat on the Bacillus of Tuberculosis.**—A. Versin ("Jour. de méd., chir. et pharm.," No. 16, 1888) reports from the "Annales de l'institut Pasteur," No. 2, 1888, the results of experiments made to kill the bacillus in the sputum of tuberculous patients. It was found that the bacillus was killed after thirty minutes in a 5-per-cent. solution of phenic acid, and lived only five minutes in a 1-per-cent. solution of the same acid. Its life lasts only five minutes in absolute alcohol and iodoform 1 per cent. It is killed after ten minutes under the influence of ether, or when in a sublimate solution of 1 per cent.; it can live three hours in a 3-per-cent. solution of thymol, and six hours in a 2·5-per-cent. solution of salicylic acid; it resists for twelve hours in a 4-per-cent. solution of boric acid and in water saturated with creasote. It resists a temperature of 60° C. (140° F.), and succumbs when exposed to a temperature of 70° C. (158° F.) for ten minutes.

**On the Influence of Antipyretic Substances on the Amount of Glycogen in Muscles.**—Lépine and Porteret ("Gaz. hebdom. de méd. et de chir.," No. 34, 1888), after having explained the methods they have used and the precautions they have taken as regards the weight and conditions of the animals experimented on, conclude that animals poisoned by antipyretics have from 28 to 30 per cent. of muscular glycogen; this is an excess as compared with the normal amount of muscular glycogen. They remark that the fact must be of importance in connection with the theory of antipyretic treatment.

**On the Accidents produced by Carbon Oxide** ("Jour. de méd., de chir. et de pharm.," No. 15, 1888).—Gréhant ("Jour. de pharm. et de chir.") has measured the respiratory capacity of normal and partially poisoned blood. He found that blood began to absorb carbon oxide in an atmosphere of $\frac{1}{6000}$ of this gas; in an atmosphere containing $\frac{1}{1000}$, half of the quantity of hæmoglobin was combined with the toxic gas. He recently repeated his experiments by comparing the gases extracted from normal arterial blood with those extracted from a dog that had respired for an hour in an atmosphere containing $\frac{1}{1000}$ of carbon oxide. The following table shows the analysis of 100 c. c. of blood:

| | Normal blood. | Poisoned blood. |
|---|---|---|
| Carbon dioxide | 47 | 50 |
| Oxygen | 27 | 14·2 |
| Nitrogen | 1·5 | 1·5 |

The second specimen of blood contained 12·8 c. c. of oxygen less than the former. The poisoned blood was treated with acetic acid at a temperature of 100 C.° (212 F.°), and 14·4 c. c. of carbon oxide were extracted, which were combined with the hæmoglobin. The author made researches on the toxic dose of carbon oxide for different animals, and for birds it was found to be $\frac{1}{600}$. He makes the practical application of the latter result in apartments where an imperfect method of warming exists. The death of a bird removed recently to a room insufficiently ventilated proves the atmosphere dangerous for man.

**On the Action of Antipyretics and Antipyrine; Calorimetrical Researches.**—E. Destrée ("Jour. de méd., de chir. et de pharm.," No. 14, 1888) investigates experimentally the question as to whether the action of antipyretics is to diminish the production or increase the radiation of heat. According to Maragliano, Anserow, and Bettelheim, the action of antipyrine results in a dilatation of the cutaneous vessels, and in a consequently exaggerated loss of heat. The author used for his researches d'Arsonval's apparatus. A preliminary experiment was made on a normal rabbit, which weighed 1,900 grammes, and the aver-

age number of calories discharged during five hours was found to be 26·2. Ten centigrammes of antipyrine were then administered to the same animal, and the number of calories discharged for the same time was only 23, and, though the calories discharged decreased with the increase of the administered dose of antipyrine, a one-gramme dose reduced the number of calories to 22·35. With higher doses more demonstrative results were obtained, though, the author remarks, in some cases the animals get used to the drug, and do not give the expected results. It is difficult to answer the question, the author alleges, as to whether the diminution of production of heat is due to the diminished peripheral circulation or to the enfeebled process of elementary oxidations. Admitting Bettelheim's, Maragliano's, and Anserow's statements of the dilatation of the cutaneous vessels, the diminution of the heat production can then only be explained by the supposition of a diminished process of oxidation.

**The Physiology of Iron.**—G. Schlemmer ("L'Union méd.," No. 98, 1888) reports G. Sée's clinical lecture delivered at the Hôtel Dieu in Paris. The author of the lecture states that it is not correct to think that hæmoglobin results from the synthesis of ferruginous salts and albumin, that it is not even known whether the ferruginous preparations furnish effectively the materials necessary for the formation of hæmoglobin. Jacoby injected subcutaneously, in a day, thirty-six milligrammes of iron at different times and for a period of three days; 1·4 per cent. was eliminated by the kidneys, and the rest by the intestinal tract. According to Buchheim and Mayer, the author states, the intestinal mucous membrane of young animals into whose jugulars iron has been injected is covered with a secretion rich in ferrous oxide. The iron, M. Sée states, is eliminated mostly by the intestinal tract, as observed by many authors, and the injections of iron are extremely toxic, and produce a diminution of the blood pressure, intestinal trouble, paralytic trouble of the central nervous system, and alterations of the kidneys. The same is not the case when iron is given by the stomach, which does not directly absorb any material; the gastric juice transforms the iron into a chloride, which becomes a soluble oxide in the alkaline medium of the intestine, and in the presence of the organic substances; there it is transformed into a ferrous carbonate which is soluble in carbonic-acid gas, and in organic materials. Finally, the salts of iron are subjected to the action of the sulphur combinations and reducing agents, and then eliminated by the fæcal matters in combination with sulphur; the organic combinations of iron, such as albuminates, in the presence of hydrochloric acid, suffer the same transformations. Our diet, it is further stated, must then contain such combinations of iron as will not be decomposed in the digestive tract, which can be absorbed also, and furnish materials for hæmoglobin formation; in the yolk of the egg iron is to be found under the form of a combination of nuclein and albumin. The nuclein is regarded by the author as the predecessor of hæmoglobin in the organism. Milk is regarded equally as containing necessarily materials for the formation of hæmoglobin. The author supposes that the mineral salts of iron do not combine directly with organic matters, but are rather to protect the decomposition of the organic combinations of iron. Sée concludes finally that the imperfect understanding of the physiology of iron in the organism interferes with the establishment of a pharmaceutical rule for different kinds of medicinal preparations of iron, which should be formulated scientifically. The therapeutical indications, however, the author alleges, exclude from the ferruginous treatment all pseudo-anæmias, such as result from atmospheric and alimentary inanition; all kinds of muscular, nervous, or secretory exhaustions; intoxications, and all specific or virulent pseudo-anæmias, such as the syphilitic, tuberculous, cancerous, and rheumatismal. In true anæmias, according to the author's opinion, the ferruginous treatment is justifiable, such as anæmia of hæmorrhagic character, chlorosis, or spontaneous anæmia, not pernicious.

**The Inhibition of the Mammalian Heart.**—J. A. McWilliam ("Proceed. of the Roy. Soc.," No. 268, 1888) has experimented on a number of different animals, the cat being the animal mostly used. The results are summed up as follows: Section of the vagi produces different results according to whether they are active or inactive before section. In case of the former condition, the section is followed by an increase of the rate and strength of the heart-beats, and the change in the energy of the auricular contractions is usually more extensive than that occurring in the case of the ventricles. The stimulation of the vagi is followed by different latent periods before the heart stands still. The inhibitory influence after the vagus stimulation usually increases gradually for some time from the beginning. The effects of vagus stimulation on the auricles are: 1. It seems to influence them more readily and powerfully than the ventricles. 2. It leads to a slowing or arrest of the rhythmic beat and weakening of the contraction force. 3. The excitability of the auricular tissue is depressed to direct stimulation after the vagi stimulation. 4. The tone of the auricular muscles seems to be markedly diminished. 5. The foregoing statements are independent of the distension of the heart cavities with blood. 6. The vagi seem to exert an influence on the auricular muscle itself, and do not simply inhibit the motor nerves; the loss of response of the muscle to local stimulation after vagus stimulation points to this view. The effects of vagus stimulation on the ventricles are, besides causing slowness or cessation of action: 1. The contraction force is markedly diminished, the recommencing beats are weak, and beats excited by induction shocks during the standstill are of diminished size. The reduction in contraction force does not bear any constant relation to the degree of slowing, nor does it depend upon the overdistension of the ventricles during the slowing or standstill. 2. The inhibited ventricle presents a marked difference in the change and duration of its curves, the latter being broader near the top and of longer duration; the duration and breadth of the curves are in direct proportion to the interval preceding the curve. 3. The spontaneous rhythmic tendency is inhibited, and the ventricular standstill does not seem to be due to the general standstill of the heart. 4. Though a prolonged absence of auricular beat is usually a necessary condition for the occurrence of a protracted ventricular standstill, the ventricles usually contract in sequence to the artificial excitation of the inhibited auricles. 5. The order in which the heart begins to contract after inhibitions is, normally, ostial parts of the great veins, auricles, ventricles; but it happens that the ventricles recommence to beat before other parts. 6. It happens that the ventricles do not contract in sequence to the auricles, and this seems to be due to the break in the transmission of the contraction from the auricles. 7. The maximum vagus stimulation does not always influence equally the depression of the auricles and ventricles. 8. The effects of vagus stimulation may be counteracted by the application of induction shocks; the artificial beats so obtained are approximately of normal form and duration. The author has found a local inhibitory area on the dorsal aspect of the inter-auricular septum; he describes it as being elongated in shape, its long axis running parallel with the septum. Stimulation of this area causes ventricular inhibition and auricular acceleration; the latter is due, the author supposes, to the escape of the stimulating current to the excitable auricular tissues. The ventricular inhibitions induced by stimulating the vagi and the above-mentioned area resemble each other much in character; they differ in that the local area necessary to inhibit the ventricles requires a current of less strength than the vagus does. The local area remains effective after the administration of a dose of curare, which abolishes the response of the vagi to stimulation; also when the vagi are exhausted from less definite causes. The important structures of the inhibitory area are situated superficially, and are paralyzed either by ammonia or a 4-per-cent. solution of cocaine hydrochloride. The author remarks, finally, that stimulation of the ostial parts of the great veins in certain abnormal conditions, as in asphyxia and in the dying heart, causes an inhibition of the spontaneous rhythmic action of these parts, while in the normal state an immediate and striking acceleration results.

## Miscellany.

**Reed & Carnrick's Soluble Food.**—The "Boston Medical and Surgical Journal" of September 27th publishes the following:

"In the 'Journal' of August 2, 1888, was published an analysis of Carnrick's Soluble Food, copied from and credited to the Report of the

New Jersey Dairy Commissioner. Dr. Newton, the Commissioner, has forwarded to us a circular, recently issued, bearing upon the same subject, to which it is necessary we should, in common honesty, give equal publicity to that given the first quotation. The circular is as follows:

"'State of New Jersey,

"'Office of the Dairy Commissioner,

"'Paterson, N. J., *September 19, 1888.*

"'In the report of this department to the Legislature for the year 1887 an article by Professor A. R. Leeds, entitled "Foods for Infants and Invalids," was published. Messrs. Reed & Carnrick have, in a communication to this office, taken exception to some of the statements therein made, claiming that the amount and character of the ingredients of their food preparations were misrepresented. In order that these gentlemen might receive full justice, I offered to have the analytical work revised by a chemist of reputation, who had never had any business or professional relations with either the State or Reed & Carnrick; and it was also stated that the results of this series of analyses would be published by this office. Accordingly, Professor Elwyn Waller, professor of analytical chemistry at the School of Mines, Columbia College, New York, was requested to purchase a package of "Carnrick's Soluble Food" in the open market, analyze the contents thereof, and report the results to me. Below is a copy of his report.

"'"I examined a sample of 'Carnrick's Soluble Food' (purchased by myself from Eimer & Amend). I find that 38·26 per cent. of the albuminoids which it contains are in the soluble form. The sample also gave readily the biuret reaction for peptones. I failed to detect in the food, when moistened, any of the 'hard, unchanged particles of casein' which it has been asserted that it contains. My results lead to the conclusion that the casein in the preparation has been partially rendered soluble by the action of the digestive ferment as claimed by the manufacturers.

[Signed] "'"Elwyn Waller, Ph. D."'"

"'I append herewith a letter on this subject that I have received from Professor A. A. Breneman, S. B., formerly Professor of Chemistry at Cornell University, now analytical chemist at 97 Water Street, New York. William K. Newton, *Commissioner.*'"

"'"New York, *September 18, 1888.*

"'"Dr. W. K. Newton, *State Dairy Commissioner of New Jersey.*

"'"Dear Sir: The report of your department for the year 1887 refers to certain preparations made by Reed & Carnrick, of New York, in a way which, from my knowledge of their work, seems to do them injustice.

"'"The statements to which I especially refer are:

"'"1. That the milk solids in the preparation known as Carnrick's Soluble Food contain merely the dried casein of the original milk, neither changed nor modified by any process of digestion.

"'"2. That the analysis of this food given in the 'Report of the State Board of Health of New Jersey' for the year 1885 correctly represents it, giving as it does only 10·25 per cent. of total albuminoids.

"'"3. In the analysis of the preparation known as Liquid Peptonoids ('New Jersey State Dairy Report,' 1887) the proportions of alcohol and albuminoids there given are made the basis of comments which are extravagant in language and unnecessarily severe.

"'"On February 20, 1888, I made, at the request of Reed & Carnrick, a test of the peptonized milk received in good condition from their factory. Of the albuminoids of the original milk 46·6 per cent. were found to be rendered soluble (that is, no longer precipitable by boiling or by acids). Through the process of digestion such soluble nitrogenous matters must, under the circumstances, consist of peptones, albumoses, and caseoses, products of the modification of the original albuminoids of the milk by digestion.

"'"Having made many analyses of this food during the past three years, I have never found the proportion of albuminoids to run below 16·5 per cent. as determined by combustion with soda lime. The average of fifteen analyses, made since January 1, 1887, shows 18·96 per cent. of albuminoids. These results also agree well with the analyses of the same food made by Stutzer and other well-known chemists.

"'"As to the liquid peptonoids, the proportion of albuminoids is limited only by the quantity which can be kept unchanged in solution. Sixteen per cent. of alcohol is necessary to prevent decomposition of the albuminoids, and no quantity greater than three per cent. of these can be held in solution in this liquid. Many attempts have been made to accomplish a better result, but in all cases the excess of albuminoids was deposited after a time, or (with reduced proportion of alcohol) decomposition of the albuminoids occurred.

"'"Very respectfully,

"'"A. A. Breneman,

"'"*Analytical and Consulting Chemist.*"'"

**Medical Observations in Turkey.**—Dr. Morris H. Henry, of New York, who passed a large part of the summer in Italy, Greece, and Turkey, was given the most favorable opportunities of studying the special diseases of those countries, including leprosy. From the Sultan of Turkey Dr. Henry received the decoration of *commandeur de l'Osmanie* and a souvenir of jewels.

## ANSWERS TO CORRESPONDENTS.

*No. 233.*—At the foot of East Twenty-sixth Street.

*No. 234.*—It is known only in solution.

*No. 235.*—All that are not expressly stated to be private are open to the profession.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*



DR. R. W. TAYLOR'S CASE OF DERMATITIS TUBEROSA OF IODIC ORIGIN.

## Original Communications.

# DERMATITIS TUBEROSA OF IODIC ORIGIN:

### THE SO-CALLED ACNÉ ANTHRACOÏDE IODOPOTASSIQUE.*

BY R. W. TAYLOR, M. D.,

SURGEON TO CHARITY HOSPITAL AND TO THE VENEREAL AND SKIN DEPARTMENT OF THE NEW YORK HOSPITAL.

AMONG the many varied manifestations of the toxic action of iodine preparations upon the skin is the very rare one to which I now call attention. In searching the literature of the subject, I can find but two cases on record, one of which is accepted by inference rather than from positiveness as to the nature of its lesions.

In this essay I hope to present a clear history of a form of eruption which was first prominently brought to notice by Dr. Besnier, of Paris, in a reported case, and called by him "*Acné anthracoïde iodopotassique.*" Interesting as this case is, so rapid was its course that it offered, at best, but an unsatisfactory subject for clinical study. In its light its reporter applied to the affection the title mentioned, which will be shown to be worthy of but provisional acceptance. In addition to the study of my case and of the two others, I shall consider the relation of the eruption presented by them to other dermal affections of iodic origin, and shall, I hope, show that most of them are simply and essentially inflammations of the skin. In this line of thought I think I shall be able to trace a distinct correlation as existing between all forms of iodic eruption in the fact that dermal inflammation, or dermatitis, is really the morbid change in all cases except those rather exceptional ones of hæmorrhagic nature. This position being established, the logical deduction is that, instead of there being many varieties of iodine efflorescence, as is maintained by many, there is really but one eruption, which, however, shows itself in various forms, degrees of development, modifications, and transformations.

The essential points of Besnier's case are as follows:

The patient was a man, aged forty years, who applied for treatment for chronic and persistent desquamation of the hands, for which Besnier, in the light of a history of antecedent syphilis, prescribed the iodide of potassium in thirty-grain doses daily. At the end of a week the patient returned with his face and upper part of his thorax covered with veritable tumors, varying in size from a pea to a chick pea, of a coppery-red color, flabby, almost fungating, and presenting numerous depressions similar to those of an anthracoid furuncle or of anthrax. Pressure did not expel the contents, and only blood followed an incision into them. There was no disturbance of the health, though the man complained of a painful and burning sensation in the lesions, which increased rapidly in size.

The immediate cessation of the use of the drug and the application of glycerole of tannin caused the arrest of the course of the eruption, and the subsidence of the tumors in about two weeks. At this time the tumors were almost flat, while some, instead of being at all salient, were converted into a brownish cicatricial depression.*

Under the title "Circumscribed Phlegmonous Dermatitis due to Iodide of Potassium" Duhring† has described a case in which, after "moderate doses of the drug for some weeks, a slightly inflammatory annular patch appeared on the forehead of the patient, half an inch in diameter, consisting of a number of pin-head-sized vesico-pustular lesions, looking like an irritated patch of ringworm. This extended rapidly, and several similar lesions appeared elsewhere on the face. At the end of a fortnight the original lesion was nearly two inches in diameter, consisting of a circumscribed and defined, irregularly rounded, elevated, firm, inflammatory, violaceous patch. The center was depressed and crusted, the inflammation having subsided. Scattered over the patch, especially about the periphery, there were sebaceous pustular lesions evincing a disposition to rupture. When pinched or cut into, the yellowish points bled, but did not exude their contents."

My own case is as follows:

M. F., American, aged twenty-six, a thin and pale man, of good habits, entered the New York Hospital service of Dr. G. L. Peabody, who kindly placed it at my disposal for observation on December 23, 1887. Three years previously he had a chancre, which was followed by secondary manifestations. He followed treatment for a time, and resumed it at intervals in consequence of the appearance of superficial syphilitic lesions. He enjoyed fair average health for three years. Then, about a month before his entrance into the hospital, he began to suffer from pain in the head, not localized, but more severe in the forehead and eyes. His sufferings began toward dark and increased in severity during the evening and night. He also complained of chilly sensations, and his temperature ranged from 99° to 102° F. The spleen was much enlarged. For six days he took twenty grains of the iodide of potassium thrice daily, when the dose was increased to twenty-five grains. Under this treatment, in twelve days (January 3, 1888) he was much improved generally, his cerebral pains were much less intense, and the spleen was much diminished in size. At this time the iodide was increased to forty grains three times a day, and within fifteen hours the cutaneous effects of the drug began to manifest themselves. Notwithstanding the dermal inflammation, it was deemed necessary, on January 16th, to further increase the dose of the drug to sixty grains, and three days later to eighty grains thrice daily. In the course of a few days so marked was the improvement in the cerebral symptoms and in the general condition of the patient that the dose was reduced to thirty grains three times a day. Under this treatment the patient became so well that he left the ward and came to my clinic as an out-patient.

A description of the eruption produced by the iodide of potassium, which was observed by me during its whole course, can but be given irrespective of the chronology of the case.

In the chromo-lithograph are well shown the appearances presented by this eruption in all its phases of evolution. Upon the forehead, on the right temple, above and rather external to the right eye, upon the right cheek, and upon

* Read before the American Dermatological Association at its twelfth annual meeting.

* "Annales de dermatologie et de syphiligraphie," page 1882, 171.

† "Medical and Surgical Reporter," Dec. 13, 1879.

the neck, are a number of perfectly developed tumors, with several in the process of growth. Symmetrical lesions existed on the left side of the face and neck.

These tumors, for such they really were, were of a deep-red color, mostly of round outline, some being somewhat oval, and varied in size from that of a three-cent silver piece to that of a quarter of a dollar. They were in structure both pedunculated and sessile. The large tumor over the temporal region was so much larger upon its surface than at its base that it could readily have been strangulated with a ligature. As it increased in growth it became so much more pedunculated that it presented the shape of a mushroom. The tumor on the side of the nose was of similar structure. All the rest of the tumors had sharply defined vertical margins, and may truly be called sessile. Around all the tumors there was a red areola, so thin that it was very evident that the inflammatory process was sharply limited to the new growths. Palpation showed that in structure these tumors were soft, spongy, and non-resistant. The larger ones conveyed to the fingers a sensation of bogginess and of false fluctuation. Over the surface of the majority of these lesions there was a large number of minute cribriform, trumpet-shaped openings, from which a small quantity of pus could be made by pressure to exude. In the untreated condition this pus dried upon the surface of the tumors, and formed crusts of various sizes. Upon the large temporal tumor about a dozen minute deep-yellow crusts may be seen depicted, each of which covers one of the trumpet-shaped openings spoken of. Upon the other tumors the effused pus has produced more or less incrusted coverings, which, being removed, reveal the typical cribriform openings.

The foregoing description presents the essential features of this eruption in its untreated state. Applications of a watery or greasy nature removed the pus-incrustation, and permitted a further study of the lesions. Owing undoubtedly to the fact that from the necessities of the case the use of the toxic agent was kept up in increasing doses, the inflammatory action in the lesions persisted, and they grew apace. They increased considerably in area, and reached a height, in some instances, of nearly half an inch, and in others, and the majority, of one sixth of an inch. In general, a tumor became, as we may term it, fully developed in less than a week, after which, however, it might grow larger. During the whole of its period of development the little cribriform openings leading to minute abscess-cavities in its body gave exit to pus. When the tumor became fully developed, however, this feature ceased almost entirely, the openings disappeared, and it is fair to assume that the minute abscess-cavities closed or became collapsed. From this time forth the secretion, if any was allowed to form, came from the surface of the tumors. At this time the surface of these lesions presented a uniform warty appearance, comparable to that of simple venereal vegetations. It may be described as minutely mammillated or warty, but falling short of deserving the adjectives papillomatous, vegetating, or fungating. I can readily see, however, that, in the absence of treatment, and with the continuance of the toxic iodic action, these tumors might become exuberantly papillomatous.

Reaching, then, full development in about a week or ten days, these lesions showed a tendency to run a chronic, indolent, or aphlegmasic course. They caused no suffering, were troublesome only in their disfigurement, and seemed to have come to stay. Under the use of equal parts of blue and zinc ointments, they remained unchanged, but began to wither promptly when painted daily with a solution of perchloride of iron. Even under this treatment their subsidence was slow, and at the end of a month pigmented patches, decidedly but rather superficially atrophied, were left.

These iodic tumors begin as localized congestive swellings of the skin in the form of round or oval patches. The two red spots on the outer side of the right eyelid convey a good idea of their commencement. There may or may not be evidence of concomitant inflammation of the sebaceous follicles at first, but these structures, if present, become involved. The further growth of the tumor is in both area and height. The lesions as they appeared on the cheek looked at first like those of acne indurata, and, had they progressed no further than the papulo-pustular or tuberculo-pustular stage, could with propriety have been called those of severe iodic acne.

The local concomitant symptoms in this case were very mild, the patient simply complaining of slight pruritic heat. There was no systemic suffering, such as we so frequently see in cases of marked iodic intoxication.

With the foregoing facts before us, I think that there can be no question as to the existence of a localized, circumscribed dermatitis of iodic origin, to which the name dermatitis tuberosa applies perfectly. The inflammatory condition of the skin is evident, and its production of tuberous lesions has been, I think, clearly shown. The term *acné anthracoïde* is, in my judgment, too fanciful, and far, pathologically, from being precise. It is true that, by an effort of the imagination, a semblance between the openings in these tumors and those of anthrax or of anthracoid furuncles may be drawn, but here the likeness ends in every particular. Anthrax and its congeners are subcutaneous connective-tissue affections. The essential lesion in the morbid change in this iodic eruption is dermatitis, and the peculiar involvement of the sebaceous glands, with their cribriform openings and pus crusts, are only secondary features of the process. The further development of the tumors into sessile and mushroom forms, presenting a moderately warty surface, gives striking evidence of exudation and cell infiltration into the papillæ cutis, and is the natural outcome of the inflammatory process. Still further hypertrophy may be observed, in which case the adjectives fungating, vegetating, or papillomatous may be applied in a qualifying sense.

My studies in this case and in many other cases of the cutaneous manifestations of iodic intoxication have convinced me that iodic eruptions are most correctly and simply divided into two classes—the hæmorrhagic and the dermal inflammatory. The petechial or purpuric eruptions are undoubtedly the result of some change induced by the drug in the small vessels, and perhaps in the constitution of the blood. The essential lesion in the majority of cases of iodic eruption is dermatitis pure and simple. The sebaceous follicles may become inflamed and form minute abscess-cavities or pustules, but this prominently striking feature is

only secondary to the dermatitis of papular, tubercular, or diffuse patchy form which underlies it.

The tendency of iodic eruptions to present vegetating and fungating features has led observers, in my judgment incorrectly, to make new and separate forms of these affections, whereas they are simply evidences of the extreme development of the inflammatory process, due in some cases to a highly pronounced iodiosyncrasy, or in others to supersaturation of the system with the drug. During the past two years I have had the rather unusual experience of seeing three well-marked cases of bullous eruption of iodic origin, in which, after rupture of the lesion, surfaces varying in appearance between the slightly warty and the vegetating were left. A careful study of these cases, however, convinced me that the essential morbid process was the dermatitis, that the bullous element was, owing to tissue peculiarities, the outcome of that inflammation, and that the subsequent warty surfaces were due to its intensity and persistency. All cases of bullous iodic eruption show this condition of thickening of the skin in marked contrast to pemphigus. Those not uncommon cases in which papules, papulo-pustules, tubercles, tuberculo-pustules, diffuse inflammatory patches (particularly about the face and often of fungating appearance), and subcutaneous nodular infiltrations are found co-existing can, in my judgment, only be explained on the ground of dermatitis, all the modifying phenomena being secondary to it. In the light of these considerations, therefore, I think that I am warranted, by reason of its simplicity, in applying the term dermatitis tuberosa* to the eruption already described, and to claim for it lineal relationship to other iodic dermal lesions. As the papule grows into the tubercle, so may both grow into the tumor.

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## SURGERY OF THE BRAIN,

### BASED ON THE PRINCIPLES OF CEREBRAL LOCALIZATION.†

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The purposes of this discussion and the division of labor between the essayists of the evening have made it necessary that the following remarks should be confined, as strictly as circumstances may permit, to a consideration of the essentially surgical aspects of the general topic of cerebral localization. To this end I prefer to restrict myself in the main to the surgery of cerebral abscess and to that of intracranial tumor. These are mainly chronic lesions, whose symptoms and signs are to be recognized by the principles already so ably rehearsed by Professor Mills. Indeed, I wish to be excused from considering, except in a casual way, operations for relief of recent hæmorrhage, a surgical field in which numerous brilliant results have been of late obtained, as well as those for epilepsy of traumatic origin, except so far as they are caused by abscesses or tumor, and those in which operation is indicated by a study of the subjective rather than of the objective features; furthermore, I must also omit all immediate operations for gunshot or penetrating wounds of the cranium, unless they, too, come under the proper category.

Operations are undertaken upon the skull, as they are upon the abdomen, either for exploratory purposes or for relief of a recognized lesion. There is a rapidly growing tendency in favor of exploratory operations in each locality, and, as our technique improves, our confidence in their efficiency and safety becomes strengthened. There was a time when laparotomy for diagnosis was considered quite unjustifiable; now it is often our duty to perform it. There was a time when the operation of trephining had a mortality rate considerably over 40 per cent.; now in proper hands it has fallen below 3 per cent. Surely many others can say, as can the writer, that they have never lost a patient as the result of this operation. This means really a great deal. Indeed, it is easily susceptible of demonstration that exploratory trephining is the safer of the two. Patients have died immediately after the puncture of the liver or the lung by the aspirating needle, but after similar puncture of the brain perhaps never.* These and other considerations induce one, then, by precept as by practice, to encourage in every legitimate way the early resort to exploratory trephining.

In the preparation of that which follows, the writer has not hesitated to avail himself of the labors and studies of others, and freely acknowledges his indebtedness to the work of Dr. Ferrier, as well as to the writings of those masters of cerebral surgery, Professors Bergmann, Macewen, and Horsley, and indeed to every essay upon the subject which he could utilize.

### *Cerebral Topographical Anatomy.*

Here, as elsewhere, our surgical procedures must be guided by accurate anatomical data, and consequently, following the natural order, we must first consider so much of the regional and surgical anatomy of the cranium as concerns present purposes. In other words, we may properly look to the neurologist to make the diagnosis, but with equal propriety he may expect from us the ability to find the lesion. Not much less astonishing than the discovery of the planet Neptune at the spot determined by the computations of Le Verrier was the first discovery of a cerebral lesion at exactly the point indicated by a careful study of somatic disturbances; both were wonderful examples of inductive reasoning.

The areas which most concern the surgeon in this kind of work are those which cluster along the fissure of Rolando, and the proper determination of the locality of this fissure is to the surgeon what the long base-line is to the geodetic surveyor. Various rules have been laid down by which the location of this fissure may be determined.

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* My friend Dr. Hyde has paid me the compliment of adopting this name as the heading of an interesting article on iodic eruptions.

† Read before the Congress of American Physicians and Surgeons at its first triennial meeting, Washington, September 19, 1888.

* Since this was written the writer has seen Weir's recently published statement ("Am. Jour. of the Med. Sci.," September, 1888, p. 229) that he has twice seen death follow the introduction of needles into the brain, though to what depth he does not state, nor does he give the size of the needles. (*Vide* below.)

Without considering all of them, there are two or three of which it is worth while briefly to speak. First, it is necessary to accurately mark out two or three prominences about the skull as points of departure: the root of the nose, known in this sense as the *glabella;* the external occipital protuberance, known also as the *inion;* the point at the vertex of the skull, half way between these two prominences, the *bregma;* the external angle of the orbit, the tip of the mastoid process, the lower border of the alveolar process of the upper jaw—these are all landmarks of importance in one or the other of the methods referred to. Before endeavoring to make out any of the deeper fissures, by external aids, the scalp should have been shaved. The fissure of Rolando has its upper end about five centimetres back of the bregma, but it does not run quite up to the middle line; its lower end lies about half a centimetre behind the auriculo-bregmatic line and a little above an imaginary horizontal line, parallel to the alveolar-condyloid line, projected backward from the superciliary ridge; thus the lower end of the Rolandic fissure will be found about six centimetres above and a little behind the external auditory canal—in other words, its lower end is about an inch behind the bifurcation of the fissure of Sylvius.

Mr. Hare, of Edinburgh, has shown in the "Lancet" (March 3, 1888, page 408) that the distance of the upper end of the fissure of Rolando is fifty-five and seven-tenths per cent. of the total distance from the glabella to the inion; also that the angle formed by the fissure with the middle line of the skull is sixty-seven degrees. The fissure itself extends about three inches and three fourths along this line, running from above downward and forward.

At the suggestion of Professor Chiene, Dr. Wilson constructed a scale of measurements for localizing fissures according to these data, and which is known as Wilson's *cyrtometer;* a home-made instrument of this kind I show you here. One strip passes coronally around the forehead, being fitted over the glabella and external angular process; another strip, at right angles, passes backward from the glabella to the inion. This strip is marked with two scales of letters, and these are located at points accurately marked out, according to the proportion of fifty-five and seven tenths to one hundred. Should the distance of the inion from the glabella be found to be at a point marked with a capital *C*, the sliding scale on the instrument is put at a corresponding point marked with a small *c;* from this a projecting arm, fixed at an angle of sixty-seven degrees, will be easily bent down, directly over the Rolandic fissure, and with an aniline pencil this may be traced on the surface of the scalp. Accurately speaking, the fissure of Rolando is not a perfectly straight line, inasmuch as it forms a slight curvature opposite the lower end of the intraparietal sulcus, its lower half being directed a little more vertically; nevertheless, the line thus marked out will be sufficiently accurate for surgical purposes.

The bifurcation of the fissure of Sylvius corresponds to a point an inch and a quarter behind and a quarter of an inch above the level of the external angular process of the frontal bone.

The fissure of Sylvius divides into a short anterior and long posterior branch; it commences an inch back of the external angular process, along a line drawn from this process to the occipital protuberance; from this point a straight line to the center of the parietal eminence marks with considerable accuracy the course of the posterior limb of this fissure.

The H-shaped junction of the parietal, the great wing of the sphenoid, the frontal, and the squamous bones was termed the *pterion* by Broca. The point of division of the fissure of Sylvius is just underneath the pterion. The line of the posterior branch has just been indicated; the anterior branch runs upward and forward almost underneath the line of the sphenoido-squamous suture. This anterior branch is important; it is the anterior boundary of the so-called motor region, while the posterior branch bounds the same area inferiorly. The precentral or vertical sulcus, which is not a fissure, is of importance, because it divides two convolutions of very different function, and because on each side of it are ranged convolutions in which exist the most extensive variety of motor functions. It runs parallel with and just behind the coronal suture, passing upward and slightly backward, reaching about to the center of the fissure of Rolando, and there bending forward. The inferior frontal sulcus is about opposite the temporal ridge, where it crosses the coronal suture at the point termed by Broca the *stephanion;* or, to be a little more accurate, this point may be termed the lower stephanion, while the upper is at the point where the superior temporal ridge crosses this same coronal suture.

Behind the fissure of Rolando we meet with the intraparietal sulcus which is the posterior boundary of the motor area; its commencement is opposite the slight knee-like bend alluded to in the fissure of Rolando; it passes upward and away from this fissure, and thus forms the ascending parietal convolution; it runs directly backward, and finally nearly parallel to the longitudinal fissure, passing around the outer end of the parieto-occipital fissure which is at the apex of the motor region.

As Amidon has shown ("Medical News," June 21, 1884), the first or superior frontal convolution commences about two centimetres and a half behind the bregma and passes forward nearer the median line toward the orbit; the second frontal occupies a similar but more anterior and lateral position; while the third frontal lies wholly in front of the auriculo-bregmatic line, on a plane five centimetres above the external auditory meatus; its folded part is about two centimetres and a half in front of this line, or about two centimetres behind the external angular process of the frontal bone. The ascending frontal convolution is in front of the fissure of Rolando, the ascending parietal back of it, while the fissure of Sylvius and its posterior division separate the ascending parietal above from the first temporo-sphenoidal convolution beneath. The more exact localization of motor areas can be seen at a glance from the accompanying diagrams, while, for a more accurate description of their exact location, I would refer to the paper of Mr. Horsley in the "Americal Journal of the Medical Sciences" for April, 1887, page 342; Dr. Roberts's excellent monograph on the "Operative Surgery of the Brain" (Philadelphia, 1885); to a paper by Mr. Hare in the "Lancet" for March

3, 1888, page 407, and to the various monographs and treatises on diseases of the brain which need not be mentioned in detail.

In this connection it might be stated that lesions of the dura over these motor areas are by no means always to be distinguished from the lesions of the cortex beneath; and it is a well-established fact in surgical pathology that various disturbances of the dura can call forth symptoms of profound severity. The researches of Duret "On the Rôle of the Dura Mater and its Nerves in Cerebral Irritation" have shed a great deal of light on the functions of this membrane. In this respect Duret shows that the dura mater contains an abundance of sensory nerves which are extremely excitable, these nervous filaments being supplied from the fifth pair. It is known that irritation of the branches of the fifth often produces reflex spasms which may radiate down the cord, mainly, but not always, on the same side; or which may produce contractures of the muscles of organic life, pain, hyperæsthesia, neuralgias, and many other reflex sensory or motor phenomena.

These symptoms tend to diffuse and invade neighboring groups of muscles. They have never the localization, the measured and purposed character, of contractions which belong to lesions of the cortex. They frequently become transformed into permanent contractures. The reflex vasomotor disturbances due to irritation of the nerves of the dura mater consist in spasms, or congestive paralyses of the cerebral and ocular vessels, either on the same or the opposite side. These facts are important to pathologists, as they show the great influence of irritation of the nerves of the dura mater on cerebral vascular conditions and on the organs of sense, and shed light on the causation of secondary effects in cerebral traumatism—that is, on the congestions and inflammations of the cerebral membranes. Destructive lesions cause local anæsthesia of the dura mater.

I have taken this statement *in extenso* from Duret because of its importance. These observations on lesions of the dura, coupled with those confined to the brain proper, lead me to simply make this remark in addition to what has already been said: It is enough for the surgeon that a lesion of some kind can be located with reasonable accuracy. It matters not whether this is an old irritative lesion of the dura, an acute suppurative process anywhere between the bone and the brain, or an abscess or a tumor in the brain itself. The indication for exploration is just as strong, and it is the surgeon's bounden duty to penetrate the bony roof of the brain and be prepared to do anything which may appear to be indicated, just as in abdominal surgery one begins an operation as an exploration, being prepared to meet the indication upon anything which may be discovered within.

While the cerebellum is, in the future, to be by no means exempt from surgical invasion, we are, nevertheless, not here bewildered by such a wealth of topographical boundaries and divisions. It lies entirely beneath the tentorium, which divides to form the lateral sinus. This sinus follows a line nearly corresponding to the superior curved line of the external occipital surface, but a little below it. It would be best in operating to allow, at all events at first, half an inch, and even then to perforate the bone with caution. It must also be remembered that the torcular Herophili is seldom exactly centrally situated—most commonly a little to the left—and that the region three quarters of an inch on either side of the middle line had better be avoided, at least for the first perforation.

Other facts to be borne in mind are that children and the aged have no diploë; that the crania of the aged may be extremely thin; that the frontal sinus is not to be ignored in operating in its neighborhood; that the superior longitudinal sinus is beneath the middle line of the vault; and that the middle meningeal artery lies about an inch and a quarter back of the external angle of the orbit, and is sometimes almost buried in a bony channel.

### *When and Where can One Trephine with Safety and Where should One avoid Perforation of the Bone?*

Probably the safest rule to follow is that the first application of the trephine should be over those well-known areas of the skull which do not overlie large vascular channels, as, for instance, those points where one may wound the middle meningeal artery, the superior longitudinal sinus, the lateral sinus, the occipital sinus, and so forth; but, after an opening has been made at points free from this danger, it may be extended in any direction, to any required extent, with a feeling of security, inasmuch as the larger the opening, the better our ability to cope with hæmorrhage, no matter what its source. Hæmorrhage from the middle meningeal artery can, under these circumstances, be easily arrested. Our greatest hesitation would be with regard to opening one of the sinuses of the skull. Two dangers attend such an accident—one of fatal air embolism, as has happened to Volkmann in the removal of a sarcoma of the vertex of the skull; the other, that of profuse hæmorrhage. The former danger is almost a theoretical one, since operations on the brain proper are not nearly so likely to lead to this accident as lesions involving the bony skull itself. The latter is one which experience has taught is by no means fatal; for, should hæmorrhage thus occur from a sinus, the sinus itself may be plugged, or its wound may be closed with a fine needle and suture. Indeed, Bergmann entirely removed a part of the superior longitudinal sinus in one of his cases. The researches of Schellmann have shown that the integrity of one sinus at least may be destroyed without any serious effect upon the brain itself; though, theoretically, one must perhaps hold to the opinion that the liability to œdema of the brain will thereby be increased.

### *Parts of the Brain which may be considered as Proper Fields for Operation.*

A variety of cases, some slight, some terribly severe in their destructive effects, have shown that, after all, there is but a comparatively small portion of the brain which can not be considered, in some sense, superfluous. We find that, after destruction of one part, another part, by a species of substitution, takes up its action; and we find from experiments on animals that large portions of more than one hemisphere may be removed without serious consequences. We may reasonably say that a tumor or an abscess in the

brain, whose boundaries are continually enlarging, and which is consequently causing an increasing amount of destruction, is doing more harm than can be done by the surgeon's knife which shall judiciously remove it, and thus take away the possibilities of harm caused by such a lesion. We may say, almost without question, that any part of the hemispheres is amenable to surgical attack, and at least a large portion of the cerebellum; only the basal ganglia, the pons, and the medulla can now be considered sacred, partly on account of their inaccessibility, partly on account of their primary functions. Further and more extensive experience may in some slight degree modify this statement, but it seems as though we were justified in making it with a reasonable degree of assurance. If we have any doubts in the matter at all, they are with reference to the cerebellum. The cases of Hulke, Horsley, Weir, Suckling, and Hahn have shown that this part of the brain is amenable to surgery, but we are not sure as to just what extent. The case of Detmold, elsewhere alluded to, showed years ago how deep collections of pus might be evacuated; and a case recently reported by Dr. Blake, of Baltimore, in the "Philadelphia Medical Times," July 2, 1888, also the celebrated case of which the specimen is now in the Harvard Museum, or that reported in the "Medical Press of Western New York" for August, 1888, along with many others, will show that extensive or deep wounds are not necessarily fatal.

*Cerebral and Cerebellar Abscess.*

In his recent masterly paper ("Archiv f. klin. Chir.," xxxvi, 1888), Bergmann, in considering this topic, lays stress on the fact that abscess of the brain in adults has but one result—death; and that the surgeon's knife offers the only relief. The greatest difficulty lies in exactly diagnosticating the nature and locality of the trouble. So far as we know, there is no such thing as idiopathic abscess of the brain; it is always a sequel either of some external wound of the head or of some extension from diseased surrounding bone. The only exceptions to this statement are to be found in the case of pyæmic or tuberculous abscesses. Multiple abscesses are *almost* invariably metastatic, and consequently imply pyæmic processes, though a few exceptions have been reported.

Bergmann assigns a distinct place to acute cortical abscesses which form just underneath a point of fracture or of injury, which are to be distinguished by disturbance of healing, the altered aspect of the wound, or the escape of pus; or, if these be not noted in time, probably later by the symptoms of an acute meningitis. Nevertheless, it is not always easy to distinguish between such an abscess and a suppurative meningitis; either may cause paralytic phenomena. The latter is perhaps more betokened by the changes of the incompletely healed wound than by pathognomonic symptoms. A leptomeningitis may develop with almost lightning-like rapidity, whereas time is required for the formation of an abscess. We scarcely expect an abscess to give characteristic signs before the second week. If slower than this, ample time has been given for such adhesions to form as may constitute an effectual barrier to the advance of pus. Under such circumstances we have a localized collection of pus rather than a diffuse meningitis—one which can be easily opened and drained.

There is a notable difference between these superficial abscesses which develop in a few days, usually with symptoms that remind one constantly of a leptomeningitis acuta, and the formation of those deeper collections of pus in the brain which may lie dormant for weeks, months, or even years. The former are the direct result of surface lesions. The latter are not to be thus explained. Only exceptionally do we see evidences of extensive external lesions. Even violent injuries, such as cause concussion, are not often followed by them. They correspond to the abscesses which form in bone—*e. g.*, the femur—and are the result of intermittent processes. Between the pus and the cortical surface lies apparently healthy brain-matter; whether the exciting impetus is transmitted along the lymph-vessels or the blood-channels is not now clearly made out.

It is the peculiarity of cortical abscesses to follow more or less superficial wounds; the deep ones seldom if ever have such a history. The latter more commonly are associated with foreign bodies or particles of bone driven deeply in. Protracted external suppuration does not seem to predispose toward them of itself, unless followed by caries or necrosis.

Another and non-traumatic class of abscesses is that connected with disease of the middle ear, or non-traumatic suppuration in other parts of the bony envelope of the brain. Nearly half of the entire number of cerebral abscesses have this origin. It is only chronic otitis media suppurativa which leads to this result. Acute brain symptoms have followed acute ear trouble, but never a brain abscess. The method of their extension is too well known to need description here.

The position of abscesses connected with middle-ear disease is of surgical interest. Almost without exception they are found either in the temporal lobe or in the cerebellar hemisphere; in children most commonly in the former; in adults in the latter.

One of the most uncertain features about all of these deep abscesses is the date of their origin. Suppurative processes in other parts of the bony skull have a similar influence in determining deep brain abscess. Perforating tubercular disease of the bone at any point may lead to abscess beneath; so may caries of the ethmoid or frontal, or ulcerative disease in the nose.

The symptoms of deep brain abscesses may be divided into three groups, according to their cause:

1. Those which are inseparable from indications of suppuration. Such are those disturbances which may follow any deep-seated foreign mass.

2. Symptoms of increased intracranial pressure and disturbed relations.

3. Special symptoms by which the locality of the disturbance may be ascertained (localization).

(1) Of all these symptoms and signs, fever is the most significant. This may be very irregular with long periods of intermission. This is of less value when there is coincident suppurative disease of the middle ear, since it may thus be accounted for.

(2) The most significant symptom of increased pressure is headache—a persistent headache, varying in degree, always worse when the patient's temperature is raised. Everything which can increase intracranial blood-pressure—use of alcohol, too low position of head, etc.—increases the pain. In middle-ear cases the headache is more fixed and localized. It is increased by percussion over the affected area.

Other pressure symptoms are less frequent in abscess cases and more variable. Marked alterations of pulse and respiration rate, a pulse even as slow as 30, and Cheyne-Stokes respiration with coma, have been noted. These alarming symptoms may shortly subside, however, and such changes for the better and worse are much more common in abscess than in brain tumor. Choked disc is also less frequent in cases of abscess.

(3) Localization symptoms are often conspicuous when the abscess is in the motor area, the reverse when in the frontal, temporal, or occipital lobes. The local disturbances may be easily confused with those caused by simple degenerative processes (softening), such as in all probability are actually taking place around the abscess. In case the abscess subsides into inactivity and is followed by cessation and contraction, the local symptoms may much improve. The pus collecting in the depths of the hemispheres may only separate the motor impulse conducting paths, without materially affecting their integrity. So long as the gray matter is undestroyed, the collection of pus may assume large dimensions, even involve almost an entire hemisphere, and still no intense motor disturbance appear. But the nearer it approaches the cortex, and the more destruction it causes there, the more we may expect motor disturbances.

Like others, Bergmann lays considerable stress on local elevation of temperature over the abscess. General experience shows this to be a sign of great value when met with, but one the absence of which need by no means negative a diagnosis if made on other rational grounds.

The same writer also maintains that there is less probability of early recognition of abscess in the frontal lobes, since it is well known that these may be almost totally destroyed without symptoms. But the larger it grows and the further its encroachments extend posteriorly, the more likely are we to get disturbances of speech, or paralytic features about the face or eyes. Bergmann says facial paralysis implies that the abscess in the frontal lobe—if such there be—is large.

Certain peculiar features are alleged to pertain to abscess in the *temporal region*. Thus Wernicke has stated that there is a peculiar disturbance of speech which points especially to this lobe as the locality of the disturbance. This is the confusion of correct with incorrect or fictitious ("*erdichteten*") words; it is a species of aphasia implying interruption in co-ordination which results from trouble at this point.

Abscesses in the cerebellum for the most part go unrecognized. Frequent and severe attacks of vertigo, along with headache, loss of sensibility and of motion, are indications not usually lacking. According to Nothnagel, a staggering or swaying gait would imply lesion of the vermiform portion. But a collection of pus above the tentorium may produce similar disturbance in the underlying cerebellum by mere pressure.

In a paper on "Surgical Interference in Cerebral Abscesses," by Dr. Nancrede, of Philadelphia ("Transactions of the American Surgical Association," vol. ii, p. 85), some valuable hints concerning the diagnosis of cerebral abscesses are given. He believes that such abscesses are accompanied in most cases by a subnormal temperature. Where a high local temperature is noted, either the pus is from a localized inflammation of the arachnoid, limited by adhesions, or else there is a meningitis in addition to the abscess. If originating from ear disease, where the abscess is secondary, the temperature is usually above normal, although not invariably so. When the motor area is involved, diagnosis is easy; where the motor area is not involved or has not been primarily affected nor injured, chance only can lead to a determination as to the location of the pus. His paper is additionally valuable on account of the cases to which it calls attention.

In the "Edinburgh Med. Journal" (May, 1887, p. 896, and June, p. 995), McBride and Miller have given some valuable hints as to the diagnosis and treatment of cerebral abscess due to disease in the ear. When the auditory nerve is intact the brain abscess is, in all probability, located in the neighborhood of the tympanum. In this case one should trephine above and a little in front of the external meatus. It would be well to so plan the external incision that one can also attack the mastoid process. When the auditory nerve is involved, the pus will usually be found beneath the tentorium cerebelli. In case of thrombosis of the lateral sinus, one had better abstain from operation. If, instead of an abscess, one comes down upon a diffuse meningitis, the operation will still be serious. McBride calls attention to the fact that in suppuration of the mastoid cells there will usually be pain on pressure over the process. In cases of chronic suppurative disease in the ear, it is better not to wait too long before opening the mastoid, if there is any reason to suspect the presence of pus.

In the treatment of mastoid disease it occasionally happens that after opening the mastoid and detecting pus the surgeon comes to a halt because he considers that he has done enough in the absence of clear indication to the contrary. It may happen that subsequently cerebral symptoms supervene which point toward an abscess in the brain; in such a case it will be proper to enlarge the original mastoid perforation to the necessary extent, to expose the dura, and to explore with a hollow needle. If pus is found, the abscess is treated as usual; if no pus is found, no harm will have been done.

It has been a number of times shown that the temporosphenoidal region of the brain better tolerates surgical interference than almost any other part of it. If it could be generally taught that, anatomically and surgically, no good reasons exist why opening of the dura and draining of the middle fossæ should not be practiced in cases of suppurative meningitis, we should not have the sad fact to contemplate that so many of the cases of cerebral abscess due to ear disease die unrelieved by mastoid operation. If cere-

bral abscess can be excluded in favor of an abscess in the cerebellum, no hesitation should be felt in trephining through the skull below the tentorium. Mr. Barker has laid down an excellent rule in such cases—namely, to explore the opening of the mastoid vein at once; if purulent softening has extended backward toward the cerebellum from the ear, some of the discharge will be found oozing from this opening. Not enough attention has been paid to his observations.

In the general diagnosis of cerebral abscesses it is necessary to remember that there is usually a latent period, devoid of all brain symptoms, which may continue for an indefinite time, from a few days to several years. The stage of active symptoms is usually ushered in by more or less headache and slight rise in temperature; local or motor symptoms can be expected only when the abscess is in the motor area of the brain. With regard to the operative procedure, it is worth while to remember that Renz published in 1867 a case in which a traumatic cerebral abscess was reopened on account of symptoms of compression. In this case Renz practiced regularly a series of aspirations, emptying the abscess cavity through a small hollow needle twice a day for six weeks. Aspirations were discontinued during the sixth week, but had to be resumed five days later, and were continued six weeks longer. The patient recovered in half a year, and has since remained well. This is the first case on record of systematic and intentional aspiration of cerebral abscess. At the present day no one would think of practicing this method, but would make continuous drainage. When we remember that abscesses large enough to cause cerebral symptoms usually have a cavity at least large enough to find and empty, we should be less unwilling to trephine and explore when we suspect the presence of one.

In 1855 Detmold opened the lateral ventricle with a knife and evacuated a quantity of pus, his patient dying later. In this instance he set an example of free evacuation of pus from the depths of the brain, which surgeons were uniformly slow in following.*

The question whether it is best to wash out an abscess in the brain after it has been freely opened is one not yet positively answered, authorities disagreeing; however, it would seem as clearly indicated to thus cleanse a pus cavity in the brain as anywhere else, especially so where the pus is as fœtid as it is in many of these cases. Fenger has suggested that possibly œdema or encephalitis in the neighboring portions, which are more dangerous than the abscess itself, may be by this measure prevented.

### *Operation for Abscess of the Brain.*

Directions have been given by so many writers as to how to proceed in cases of suspected or certain abscess of the brain that it hardly seems necessary to repeat them here. The reader interested in securing explicit directions is referred to the papers of Fenger and Lee, "Am. Jour. of the Med. Sci.," July, 1884, p. 17; Nancrede, "Med. News," Jan. 28, 1888; and Weir, "Med. Record," April 9, 1887. These operations are to a considerable extent satisfactory, since the lesions can be diagnosticated with some certainty. The indication is not, under all circumstances, to operate on every case of abscess, or on those of every part of the brain; we have probably yet to learn, so far as clinical experience can teach us, what to attack and what to leave alone.

Traumatic brain abscesses have long been known, but until recently operators have satisfied themselves with incising the dura and doing nothing more. Quesnay and La Peyronie expressed a wish to explore deeper, but yielded to the conservatism of their day and did not. Dupuytren was the first to put a bistoury into the brain and thereby evacuate pus. Unfortunately, the death of his patient for a long time deterred others. Perhaps the next one to imitate him was Detmold. With the introduction of aspiration methods the hollow needle came naturally to be suggested for brain exploration. The dangers of this procedure are certainly small; indeed, the more certain the diagnosis of abscess, the less the danger. And yet less than five years ago, when the writer ventured to read a paper on this subject and to report cases in which he had resorted to it without harm to the patients, more than one friend whose judgment he valued advised him not to publish it lest he bring discredit on method and writer alike.

The most painstaking investigations which have been made in this direction are those of Spitzka ("Trans. of the Am. Neurological Assn.," 1887). He has made careful search in brains after exploratory puncture had been done. In an autopsy three months after three needle punctures had been made no indication of puncture could be found in dura, pia, nor the surface of the brain. After making thin sections of the region involved, three dark-bluish lines were found extending vertically to the surface. These were found to be minute pencils of coagulated blood. There were no spider cells, nor indications of the slightest inflammatory disturbance, nor did neighboring nerve cells show any change. Several times after injecting foul or irritating material into the brains of dogs, for experimental work, he failed absolutely to find any track of the needle or trace of its having entered the tissues, even though the foreign material injected through it was found encapsulated.

In one case, however, after thirteen months, the entire channel made by the needle was plainly visible. The obliteration of the needle tracks was most conspicuous in the largest and most vigorous animals.

Referring to the depth to which needles may be passed, he advises that they should never be introduced so far as the internal capsule, the contiguous ganglia, nor the lateral ventricles, merely for exploratory purposes, unaided by positive clinical indications of the location of the disease. Certainly the dangers of exploration with a small aspirating needle are small.

But little more dangerous is an incision into the cortex. Among the hundreds or thousands of experiments on the brains of animals, how little evidence of the harmfulness of

* Dr. Detmold's case was reported in "The American Journal of the Medical Sciences," 1850. The brain was exposed on account of necrosis; as exposed, it was felt to be fluctuating; the opening was in the left frontal region, twelve centimetres square. Some four ounces of pus were evacuated, and the patient immediately opened his eyes and answered questions. The patient died over a month later, and, on autopsy, pus was found in both ventricles.

this measure can be adduced! Almost invariably no unpleasant effect follows.

Next to the danger of doing anything of this kind, that from hæmorrhage has been the greatest in common estimation. But even this has been greatly overestimated. Most of the blood comes from the vessels of the pia rather than from the brain matter proper. The picture of a traumatic apoplexy may be most unpleasant, but is a most improbable one. In the use of the temporary tampon we possess an effectual method of combating this. And if it is the vessels of the pia which particularly give trouble, they may be lifted up from their resting places and secured, or one may follow the suggestions of Fluhrer or Nancrede and leave one or more small *serres-fines* in place for a day or two. We must only remember that the cerebral arteries are all terminal.

It has been shown that the brain resembles the kidney in this respect—*i. e.*, that its proper vessels are excentrically directed and run almost perpendicularly to its surface; consequently, if an incision be made in this same relative direction, but few of these will be wounded. It has also been shown that, while oozing from such a wound may be for the moment rather free, it will readily subside after the insertion for a moment of a tampon or sponge.

The danger of hæmorrhage, primary and secondary, will be alluded to again further along.

With regard to brain abscess consequent upon middle-ear disease we have only to add some suggestions as to the best points at which to trephine. According to Bergmann (*l. c.*, p. 801), the best position for application of the instrument is above and behind the ear. Draw a line from the lower border of the orbit to the middle of the external ear, and continue it backward. Four centimetres back from the external auditory meatus erect a perpendicular to this line, and at a point four to five centimetres above the first, on this second line, the middle temporal lobe will be reached, without danger of injuring the posterior branch of the middle meningeal artery—a danger nearly unavoidable if the trephine be applied just above or a little in front of the ear.

Macewen has proposed to make the first perforation through the squamous bone six centimetres above the ear, and then to follow with a second counter-opening on a level with the floor of the abscess, wherever this may be. Numerous cases are on record where death has resulted from failure to make this second opening (Nancrede), although Bergmann considers such through drainage inadvisable, holding that a single opening is sufficient if drainage is favored by position; irrigation, even, in his opinion, being at times injurious.

If abscess in the cerebellum is suspected, important information may be gathered by an incision from the mastoid foramen to the mastoid-occipital fissure. If pus appears here, along the vein or under the periosteum, then it is probable that it has worked its way into the posterior fossæ of the skull and determined an abscess in its contents. For, as Mr. Barker says ("British Medical Journal," December 11, 1886, p. 1155), "if there be inflammation in the posterior aspect of the petrous bone, it can hardly reach the cerebellum without forming a layer of pus under the dura mater of the lateral sinus." Any extensive operative procedure upon the cerebellum means attacking it below the tentorium. An aspirator needle might be passed into the cerebellum through this membrane from above, but any tumor or abscess which it is proposed to radically attack must be reached from below the tentorium. (*Vide* the remarks above on *Topographical Anatomy.*)

(*To be continued.*)

## EFFECTS OF VARYING RATES OF STIMULATION ON THE ACTION OF THE RECURRENT LARYNGEAL NERVES.*

FROM THE PHYSIOLOGICAL LABORATORY OF THE HARVARD MEDICAL SCHOOL.

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In a preliminary communication on this subject† Professor Henry P. Bowditch and I recorded the fact that the rate of stimulation of the recurrent laryngeal nerves was an important factor in producing an opening or a closing of the glottis. We stated that slow rates of stimulation (18 to 28 induction shocks in a second) with weak currents produced in dogs an opening of the glottis, while with more rapid rates (30 to 40 a second), the same feeble current being used, closing was the result. We also surmised that the reason that other observers had obtained an opening of the glottis with weak currents might be sought in the slow rate of vibration of the interrupters they had employed. We submit the following experiments to substantiate the statements set forth in our former communication. These experiments have been performed in conjunction with Professor Bowditch, and witnessed by many others besides ourselves. Eleven dogs and four cats have been devoted to the investigation. One dog out of this number, under the influence of chloral, failed to exhibit the phenomenon so constant in all the other animals. In this exceptional dog we obtained only closings of the glottis with all rates and all intensities applied to the recurrent nerves. We have recorded in previous papers‡ that in dogs sulphuric ether reverses the normal action of the recurrent nerves; the glottis, under the influence of this drug, dilates instead of closing on stimulation of the recurrents. In order, therefore, not to be embarrassed by the "ether effect" in our present research upon the effect of varying rates of stimulation, we used chloralized dogs, inasmuch as we had never been able to produce by the methods previously employed a dilatation of the glottis in dogs under the influence of this narcotic. We propose now to describe in detail the apparatus and methods employed in this investigation, and to give a few tables of typical experiments.

* Read before the American Laryngological Association at its tenth annual congress.

† "New York Medical Journal," November 26, 1887.

‡ "The Respiratory Function of the Human Larynx," "New York Medical Journal," July 4, 1885. "The Anatomy and Physiology of the Recurrent Laryngeal Nerves," "New York Medical Journal," July 9, 16, 23, and August 6, 1887.

The interrupter used was constructed by Professor Bowditch on the principle of Bernstein's acoustic current-breaker. Its construction is shown in Fig. 1. It consists of a vibrating-rod, *A*, the length of which is readily altered by pushing it between steel rollers, *B*, which grasp it firmly. The pressure of the rollers upon the spring is regulated by the screw *C*. The spring, mercury-cup, and electro-magnet are

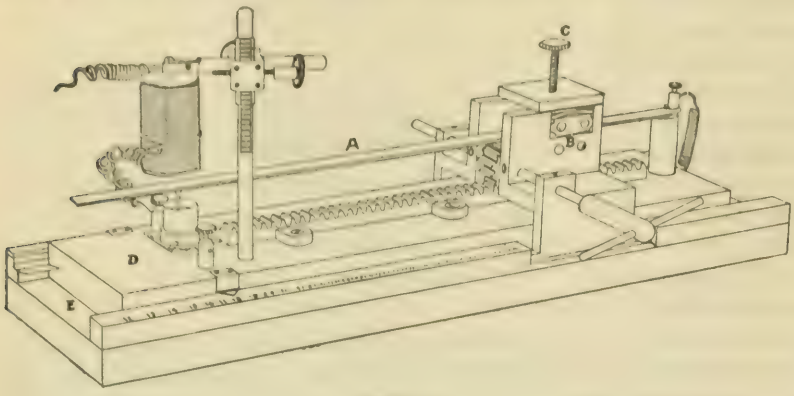



Fig. 1.

supported upon a board, *D*, which is made to slide by a rack and pinion movement upon a second board, *E*, which supports the rollers. A scale graduated empirically upon the board, *E*, indicates, by the position of a pointer, the number of vibrations from 12 to 80 made by the spring in different positions of the apparatus. A second form of interrupter was also employed, which was constructed by Mr. G. W. Fitz, who furnishes the following description of it:

"The interrupter shown in Fig. 2 consists essentially of a steel vibrator (*A*), on which a weight (*B*) slips to regulate the time of vibration. To the weight is attached a cord,

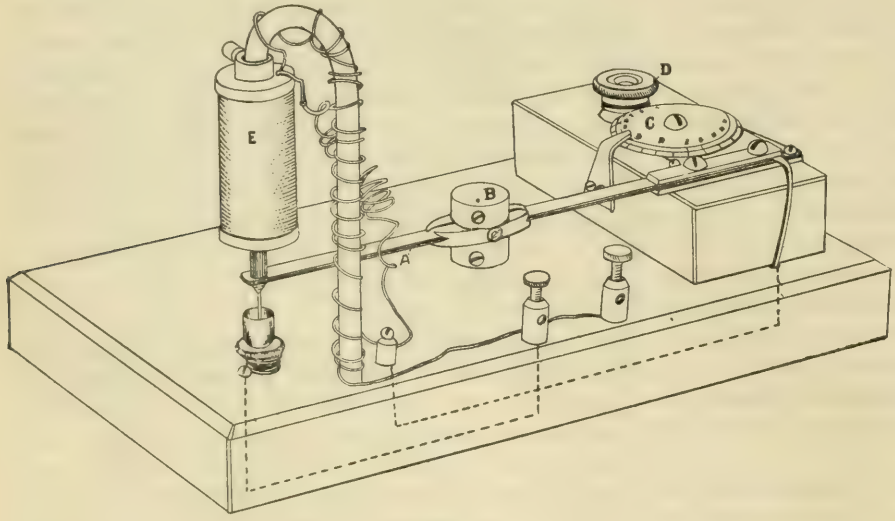



Fig. 2.

which passes over the end of the vibrator and around the index dial (*C*) and setting head (*D*). By turning *D*, the weight might instantly be changed to any point on the vibrator without stopping its motion—the rate being read on the index dial (*C*). The core of the magnet (*E*) is hollow, and the soft iron process from the vibrator plays within, rendering adjustment unnecessary."

The animals were arranged for observation in the manner hitherto described by us in previous papers. Shielded electrodes were placed on both recurrent laryngeal nerves, which were connected with an induction coil, the latter being in communication with the interrupter. By this arrangement the nerves could be stimulated at will with any intensity of current * and with any rate of vibration.

In explanation of the letters used in the following tables, we may say that O indicates an opening of the glottis; OC, an opening in the posterior portion of the glottis, and a contraction of the ligamentous portion in front, which gives to the glottis a rhomboidal shape—the appearance, in fact, to which we have alluded in previous communications as the "mixed movement"; C signifies complete closure of the glottis; V, vibrations of the vocal bands.

*November 3, 1887.*—Mongrel fox terrier dog; medium-sized; eleven months of age; chloralized.

Table I.

| | INTENSITIES. | RATES OF VIBRATION. | | | | | |
|---|---|---|---|---|---|---|---|
| | | 20 | 24 | 28 | 32 | 36 | 40 |
| *a* | 2 | O | O | O | OC | OC | C |
| *b* | 3 | O | O | OC | OC | C | |
| *c* | 4 | O | O | OC | OC | C | |
| *d* | 5 | O | O | OC | C | | |
| *e* | 6 | O | O | OC | C | | |
| *f* | 7 | O | OC | C | | | |
| *g* | 8 | OC | OC | C | | | |
| *h* | 10 | C | C | | | | |

It will be seen by the perpendicular column of figures in the above table that the intensity of the stimulation varied from 2 to 10. The horizontal line of figures, indicating the rates of vibration, varied from 20 to 40 in a second. Starting at *a*, with the very feeble irritation of 2, it will be observed that with the rates 20, 24, and 28 opening of the glottis was produced. On increasing the rates to 32 and 36, a contraction of the glottis in front was noticed, the opening behind persisting (mixed movement). With still more rapid rates (40) complete closure took place. In this first trial, then, with a very weak irritation, opening was effected with rates of vibration as rapid as 28; after this there was a tendency to close, and with a rate of 40 complete clos-

* The intensity of the current is given in arbitrary units, calculated by a method described in a previous paper. "Experimental Researches on the Tension of the Vocal Bands," "Trans. of the Amer. Laryngological Assoc.," 1883, p. 121.

ure supervened. On increasing the intensity to 3 (*b*) and using the same successive rates of vibration, it will be seen that the tendency to close began with a rate of 28 and complete closure occurred at 36. The third trial (*c*) with an intensity of 4, gave the same results as when an intensity of 3 (*b*) was used. At the fourth trial (*d*), intensity 5, openings took place as with previous rates and intensities, but closing was effected with a rate of 32. It will be observed, therefore, that as the intensity of irritation was increased, closing took place with slower rates of vibration; and finally (*h*), with an intensity of 10, closing was effected with a rate of 20, which at the first trial (*a*), when the intensity was 2, gave complete opening, and in which it was necessary to increase the rates to 40 before closing could be elicited.

*November 10, 1887.*—Scotch terrier dog; old, blind, and feeble; chloralized.

TABLE II.

| Intensities. | RATES OF VIBRATION. | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 32 | 34 | 36 | 38 | 40 |
| 2..... | V | VO | O | O | O | O | OC | OC | OC | OC | OC | C |
| 3..... | O | O | O | O | O | OC | OC | OC | C | | | |
| 4..... | O | O | OC | OC | OC | OC | C | | | | | |
| 5..... | O | O | OC | OC | OC | C | | | | | | |
| 6..... | O | O | OC | OC | OC | C | | | | | | |
| 7..... | O | O | OC | OC | OC | C | | | | | | |
| 8..... | OC | OC | OC | OC | C | | | | | | | |
| 10.... | OC | OC | OC | C | | | | | | | | |
| 12.... | C | | | | | | | | | | | |

An analysis of the foregoing table shows that the results do not differ in any marked degree from those of Table I. We note in Table II the vibration of the vocal bands with the weak intensity of 2, and a slow rate of vibration. This vibration of the vocal bands was synchronous with the rate of interruption and was very interesting to watch. On increasing the rate of interruption an opening of the vocal bands was combined with their vibration, yet when a still more rapid rate (22) was used, a pronounced opening was obtained, all vibratory movements of the vocal bands having disappeared.

*May 9, 1888.*—Spaniel dog; medium sized; one year of age; chloralized.

TABLE III.

| INTENSITIES. | RATES OF VIBRATION. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 18 | 20 | 22 | 24 | 26 | 28 | 30 | 34 | 40 |
| 1..... | V | VO | VO | VO | VO | OC | OC | C | C |
| 2..... | VO | VO | O | O | O | OC | C | C | |
| 3..... | VO | O | O | OC | OC | C | | | |
| 4..... | O | O | OC | OC | OC | C | | | |
| 5..... | O | OC | OC | OC | C | | | | |
| 6..... | OC | OC | OC | OC | C | | | | |
| 10..... | OC | OC | OC | C | | | | | |
| 15..... | OC | C | C | | | | | | |
| 30..... | OC | C | | | | | | | |

The point of the effect of varying rates is well shown in the foregoing table. A very convincing manner of demonstrating the phenomenon is by using two interrupters, the connections with the induction coil being so arranged that by turning a switch the current can be directed through either of the interrupters. In this way stimulations, consisting of induction shocks of any two desired rates, can be alternately sent through the nerve in rapid succession. In the animal which was the subject of the experiments on May 9th, it was determined that with an intensity of 3, rate 40, a very sharp closure of the glottis was produced, while with the same intensity and a rate of 20 an opening of the glottis was effected. Now, by arranging the two interrupters so that the one vibrated 40 times in a second and the other 20, by simply shifting the switch either of these rates could in an instant be passed through the nerves, and an opening or a closing of the glottis followed according to the rate employed.

TABLE IV.

| INTENSITY. | Rate of first interrupter. 20 | Rate of second interrupter. 40 |
|---|---|---|
| 3..... | O | C |

The above-described experiments were performed, as already stated, on chloralized dogs, and seemed to us to be very conclusive. They show that starting with the slowest rate and the feeblest intensity that could produce any noticeable effect, an opening of the glottis was the phenomenon constantly observed. This opening could be converted into a closing by increasing either the rate or the intensity. But the closing was produced much more readily by increasing the rate than by increasing the intensity. The tables show that doubling the rate was sufficient to call forth a distinct closure, while it was necessary to increase the intensity from three to four fold. It is evident, therefore, that the cause of the varying results of nerve stimulation with different rates can not be sought in the amounts of electricity which were thus applied to the nerves.

In previous communications we have fully detailed the "ether-effect" phenomena, and have recorded that sulphuric ether reverses the normal action of the recurrent nerves; the glottis, under the influence of this drug, dilates instead of closing on stimulation of the recurrents; that the "ether-effect" varies according to the susceptibility of the dog, to the amount consumed, and to the intensity of the irritation. Under small doses of ether, stimulation produces closure of the glottis; under large doses, complete dilatation.

The following experiments (Table V) show very clearly both the "ether-effect" and the effects of varying rates of stimulation.

*January 19, 1888.*—Black-and-tan bitch; about one year of age; tracheotomized. Ether administered through tracheal cannula.*

TABLE V.

| INTENSITIES. | RATES OF VIBRATION. | | | | |
|---|---|---|---|---|---|
| | 18 | 28 | 34 | 40 | 50 |
| 0·1..... | O | O | O | O | C |
| 2..... | O | O | O | O | |
| 3..... | O | O | O | O | |
| 6..... | O | O | O | O | |
| 10..... | O | O | O | O | |
| 15..... | O | O | O | O | O |
| 20..... | O | O | O | O | |
| 30..... | O | O | O | O | |

* See cut, "New York Med. Journal," July 23,

It will be seen by the foregoing table that when the animal was profoundly etherized, an opening of the glottis was effected with all intensities and with all rates.

The ether was now removed, and, as its effects were passing off, the nerves were stimulated from time to time with different intensities and with varying rates. The results are given in the following table:

Table VI.

| HOUR. | Intensities. | RATES OF VIBRATION. | | | |
|---|---|---|---|---|---|
| | | 18 | 28 | 34 | 40 |
| 10.46..... | 1 to 30 | O | O | O | O |
| 10.48..... | 15 | OC | OC | C | |
| 10.49..... | 2 | O | OC | C | |
| 10.50..... | 2 | O | OC | C | |
| 10.50..... | 30 | C | | | |
| 10.52..... | 15 | C | | | |
| 10.54..... | 2 | O | | | |
| 10.54..... | 13 | C | | | |

In our paper last year, already referred to, we stated that our experiments on cats showed that the normal action of the recurrent nerves in that animal was to produce an opening of the glottis instead of a closure, as in the dog. We must now modify that statement, as we have proved that with rapid rates of vibration a closure of the glottis may be called forth in cats. It requires, however, nearly double the rate in the cat that is necessary in the dog. As far as our investigations go, they teach us that, as a rule, in the dog, a rate of 40 vibrations in a second is followed by complete closure of the glottis, while in the cat it requires from 70 to 80.

*February 16, 1888.*—Female cat; chloralized.

Table VII.

| INTENSITIES. | RATES OF VIBRATION. | | | | | |
|---|---|---|---|---|---|---|
| | 15 | 20 | 30 | 50 | 70 | 80 |
| 1..... | O | O | O | O | OC | C |
| 3..... | O | O | O | O | OC | C |
| 10..... | O | O | O | OC | OC | |
| 20..... | O | O | OC | OC | C | |
| 50..... | O | OC | OC | C | | |

This table may be taken for the type of our experiments on cats. Experiments with the double interrupters were also made in the same manner as described for the dogs. One of the interrupters, being set to vibrate at 80, with a feeble current, gave complete closure, while the other, vibrating at 25, produced opening.

Table VIII.

| INTENSITY. | Rate of first interrupter. 25 | Rate of second interrupter. 80 |
|---|---|---|
| ..... | O | C |

We may summarize our conclusions as follows:

It requires a more rapid rate of vibration to produce ...e of the glottis in cats than in dogs.

... cats the rate of stimulation necessary to effect a ...ust be from 70 to 80 a second; in dogs from 30

3. Rates slower than 70 a second produce in cats an opening of the glottis; in dogs, rates slower than 30 produce opening.

4. The intensity of the current influences the effect of varying rates of stimulation.

5. Weak currents with slow rates produce opening.

6. By increasing the rates, the intensity remaining the same, closing results.

7. By increasing the intensity, the rate remaining the same, closing results.

8. Closing is produced more readily by increasing the rate than by increasing the intensity.

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## A NOTE
## ON THE USELESSNESS AND HARMFULNESS OF SHOULDER-STRAPS, SHOULDER-BRACES, AND *HOC GENUS OMNE*,
### FOR ROUND SHOULDERS, STOOPING, AND INCIPIENT LATERAL CURVATURE OF THE SPINE.*

By BERNARD ROTH, F. R. C. S.,
LONDON, ENGLAND.

When we find an able surgeon like Mr. Walsham, surgeon in charge of the Orthopædic Department of St. Bartholomew's Hospital, London, not only advocating shoulder-braces, but even inventing a new one, still more injurious than most of its predecessors, because of its greater strength from being manufactured of solid rubber bandage,† one feels inclined to rub one's eyes and to ask whether scientific orthopædic surgery is really advancing or whether we have gone back half a century or more.

John Shaw, that enlightened and able author of a more rational treatment of lateral curvature, whose works I have read again and again with ever-increasing pleasure and profit, criticised shoulder-straps as follows:‡ "The effect which this instrument (shoulder-brace or 'common back-collar') produces in ordinary cases may be easily comprehended. . . . If the scapulæ be brought close to the spine by the straps of the brace and kept constantly so, there can be no use for the several strong muscles which pass from the spine to the scapulæ. They must consequently waste and become nearly useless, while those on the forepart of the chest, being excited to resist the straps, will become increased in power; and hence, when the brace is taken off, not only will the shoulders fall forward as in a delicate person, but the muscles on the forepart of the chest will predominate over those by which the scapulæ should be held back and *pull* the shoulders forward."

This was written upward of sixty years ago, and is so complete and simple a refutation of any supposed efficacy

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* Read by title before the American Orthopædic Association at its second annual meeting.

† See "The Lancet," May 3, 1884. "On a New Form of Shoulder-brace for the Treatment of Stooping Habits, Incipient Lateral Curvature, etc."

‡ "Further Observations on the Lateral or Serpentine Curvature of the Spine . . . Being a Supplement to the Work on Distortions of the Spine and Bones of the Chest," London, 1825.

of shoulder-straps for stooping habits that I have little to add to John Shaw's scientific common sense.

I have observed in numerous instances where shoulder-braces have been worn for several months or longer, and where, from misplaced perseverance and severity, they have been worn extra tightly, that the unfortunate wearer has tried to obtain relief from the excessive pressure of the straps over the coracoid process and adjacent clavicle on each side by throwing the whole upper trunk backward by undue arching of the loins, with the result of producing severe lumbar lordosis in addition to the dorsal kyphosis for which the apparatus was being worn. I am quite aware that dorsal kyphosis is generally accompanied by compensatory lumbar lordosis, but in these cases to which I refer the lumbar hollow is much severer than usual and causes an exaggerated thrusting forward and prominence of the abdomen. Of course I am referring to the kyphosis of muscular debility and not to that due to spinal caries. In spite of these facts, ninety-nine out of a hundred medical men of the present day are in the habit not only of allowing, but even of advising patients to wear these instruments of torture. I understand that large fortunes are being made by the sale of those popular American and other shoulder-braces which are so largely advertised at the present time.

The only way in which shoulder-straps might be worn with benefit—not that I ever recommend them—is well illustrated by the following anecdote, which is also culled from good old John Shaw: An eminent surgeon was consulted by a gentleman who became one of our first tragedians as to the best mode of correcting a stoop which he had acquired. The surgeon told him that neither stays nor straps would do him any essential good, and that the only method of succeeding was to recollect to keep his shoulders braced back by a voluntary effort. But the tragedian replied that this he could not do, as his mind was otherwise occupied. The surgeon then told him that he could give him no further assistance. Shortly after this conversation the actor ordered his tailor to make a coat of the finest kerseymere, so as to fit him very tightly when his shoulders were thrown back. Whenever his shoulders fell forward, he was reminded by a pinch under the arms that his coat cost him six guineas and that it was made of very fragile materials; being thus forced, for the sake of his fine coat, to keep his shoulders back, he soon cured himself of the stoop. He then showed himself again to the surgeon, who ever afterward, when consulted whether young ladies should wear shoulder-straps, permitted them, on condition that they were made of fine muslin or valuable silk, for tearing which there should be a forfeit!

I have not referred to the therapeutics of round shoulders, etc., because my articles "Lateral Curvature," "Antero-posterior Curvature," etc., in Heath's "Dictionary of Practical Surgery," will enable any surgeon who follows the lines of treatment there indicated to cure every case of stoop that presents itself in a few weeks, provided he meets with the willing co-operation of the patient.

My pleasure in acceding to Dr. Gibney's request to contribute a paper to this meeting of the National Orthopædic Association of the United States of America will be increased if I am able to convince some of the members present that shoulder-straps and braces are not only useless but also injurious when prescribed for weak backs.

*April 9, 1888.*

## Correspondence.

### LETTER FROM LONDON.

*Sir Morell Mackenzie's Reply.—The Insurance of the Lives of Infants.—The Medical Schools.—Post-graduate Instruction in London.—Incision of a Gangrenous Lung.*

London, *October 20, 1888.*

The long-expected reply of Sir Morell Mackenzie has not made nearly so much stir, either in the professional world or among the general public, as was anticipated when its publication was first announced. This is partly due, no doubt, to the length of time that has elapsed since the events referred to occurred, but partly also to the tone of the book itself. It would have been much wiser and certainly far more dignified if Mackenzie had refrained from violent attacks on the German doctors, even if they were entirely in the wrong, and his threat of an action for libel against any one who should dare to publish a translation of the German report is exceedingly undignified, and has done much to prevent any strong feeling in his favor. On the other hand, the suppression of his book in Germany is a very petty and contemptible action for the Government of a great empire to have taken, and altogether the sooner the whole episode is forgotten the better.

The daily papers have opened their columns recently to a correspondence anent the infant insurance clubs, with which it is certainly very easy to find fault. The insurance of infant lives is a custom that prevails to a very large extent in our chief cities; active canvassing agents go about from house to house, and very easily induce parents to insure their children's lives. It is a hard thing to say and a much harder thing to prove, but I have no doubt that many insured children die every year who would not die if they had not been insured, although in any given case of marasmus it is no doubt exceedingly difficult to say that the child would not have died if more care had been taken of it. The "British Medical Journal," in a recent article on this subject, suggested that statistics should be drawn up of the mortality among insured and uninsured infants. If this could be done in regard to infants of the same station in life and subject to the same hygienic and other surroundings, we should certainly be in a position to decide off-hand whether infant insurance was, as has been asserted, a most fertile cause of infant mortality. The remedy that is proposed, and that seems to meet with a good deal of favor, is that no child should be insured under three years of age. I must confess I hope no such enactment will ever be passed. Granting that some children are put to death or allowed to die (which is the same thing) for the sake of the insurance money, still the very large majority of infant deaths own no such cause, and the numbers would not be very much diminished. All the infants would in future have to be buried at the parish expense, which would not only entail an increase in the rates, but encourage parents in not making some endeavor to provide for contingencies in the future. I think that a law forbidding the insurance companies to do more than pay the actual expenses of the funeral, and this not to the parents but directly to the undertaker, would meet all the difficulties and would not be open to any serious objection.

The medical schools are all in full swing now, but it is too

early yet for any reliable information as to the numbers of new entries. If I am correctly informed, however, at least one school will show a considerable falling off in this respect. With the exception of Charing Cross, they all had some manifestation on the opening day, either an introductory address, a conversazione, or a dinner. A public demonstration of some kind is thought to be necessary as an advertisement, but I very much doubt whether these measures are in the least efficacious in attracting new-comers.

The post-graduate lectures have been resumed at Charing Cross, and are, I am told, as well attended as last year; it is not a little surprising that no other school has followed suit, for, seeing the vast number of practitioners in and around London, to say nothing of the occasional visitors, one would think that two or three other classes could be formed without the smallest difficulty. It is quite certain that before long some permanent development of the Charing Cross scheme on a larger basis will have to be made, so as to throw open the unrivaled clinical facilities of some of our special hospitals—not that the practice in them is not already open to professional men, but the instruction at present afforded is not systematized; the physicians and surgeons do what they can for the visitors, but only while seeing their patients, and they are of necessity unable to give the time requisite for a thorough explanation of any individual case. It comes to this, that visitors to any of these hospitals who are anxious to learn will find plenty of opportunity of doing so, but they will have very little chance of being taught.

An interesting case of gangrene of the lung was reported at the first meeting of the Clinical Society by Dr. W. Pasteur. The patient, a boy aged seven, was admitted with a history of acute illness in which he had coughed up some bright blood, and it was said that since then his breath had been very offensive. The physical signs were those of a cavity at the right apex, the rest of the lung being pneumonic. He coughed up from two to four ounces daily of a watery, stinking fluid, mostly saliva. The cavity was incised at the anterior extremity of the second right intercostal space, an inch from the sternum, and large quantities of gangrenous lung and putrid fluid were expelled through the wound. A counter-opening was made in the sixth space, a drainage-tube was put in, and for a week all went well, but the boy then failed rapidly, and died in three days with pericarditis. At the post-mortem the œsophagus was found adherent to the right bronchus, and a sinus communicating was evidently the cause of the gangrene. It was suggested that the child might have swallowed a foreign body, and thus set up the œsophageal trouble. There was a large gangrenous cavity in the apex of the right lung.

**Spasmus Nutans in Dentition.**—According to the "Lancet," "Dr. E. Tordens's out-patient class in Brussels has been afforded the opportunity of seeing a case of spasmus nutans, or *tic de salaam*. This is not a very common affection, but several examples are mentioned by Henoch in his 'Lectures on Children's Diseases.' The Brussels case was that of a little girl of ten months, still at the breast. She had been very healthy, and was fairly robust. A month previously to her admission the mother had noticed a slight but nearly constant nodding motion of the head. When examined for the first time the chief motion was rotatory; the eyes also rolled from side to side, especially when the head was held. There were two teeth. The child was treated with oxide of zinc and bromide of potassium. The next time the patient was brought, a fortnight later, but little improvement could be detected, and a nodding motion was added to the lateral oscillation. Afterward, however, improvement commenced, and at the end of six weeks from the first visit the child was quite well. By that time she had cut two new teeth. There could be little doubt that the affection was a complication, though of one, of dentition."

THE
NEW YORK MEDICAL JOURNAL,
*A Weekly Review of Medicine.*
Published by D. Appleton & Co. Edited by Frank P. Foster, M. D.

NEW YORK, SATURDAY, NOVEMBER 3, 1888.

## EXOPHTHALMIC GOÎTRE.

This mysterious malady presents all the attraction common to unexplained phenomena. The mechanism of the symptoms and the nature of the disorder are as yet among the things not found out. A disease capable of producing such remarkable nervous complications as existed in a case cited by Bristowe ("Brain," No. 31) is, to say the least, sufficiently interesting. The symptoms of exophthalmic goître were followed by almost complete external ophthalmoplegia, and this by complete right hemianæsthesia (including the special senses), epileptic attacks, paralysis with rigidity of the right side, hæmorrhages from the ears, and persistent pyrexia. The origin of these various manifestations remained unsolved at the post-mortem, for there was no discoverable lesion of the nervous system.

The sympathetic has been accused of causing the peculiar conditions common to Graves's, or Basedow's, disease; but of late there is a decided tendency to exonerate in part that much abused and not too well understood portion of the nervous machinery. The pneumogastric—an interesting and decidedly mixed nerve—seems responsible for a few of the queer things that happen. The central nervous system appears also to take part in them, and must eventually plead guilty, thus producing a mass of testimony from which we may reasonably expect something rich at the cross-examination. But we are not there yet. At present the clerks medical are taking down testimony with assiduity and breathless diligence, lest some discovery should escape the one who runs and reads wisely, and another name for this remarkable disorder be thus forever lost to a rewardful and benevolent posterity.

The cardiac disturbance is the essential feature of the disease, a high pulse-rate maintained even in repose always suggesting it. The other classic symptoms may or may not be present. Hence the inexactness and injustice of our present system of cognominal nomenclature. But what's in a name? The trouble is just as hard to bear, whether it afflicts as Graves's disease, or Basedow's disease, or exophthalmic goître, and is equally perplexing in any guise. The heart goes pitty-pat, like that of the girl in the comic song, but far too often. There is nothing the matter with it as a heart. Its controlling centers have all gone wrong—just as the noblemen did who became pirates off the coast of Penzance. Now, where are the controlling nerve centers, especially those that govern the relation existing between blood-pressure and the frequency of the heart's action? In the sympathetic? Down with thine anatomy from its dusty shelf—or, better still, seize thy bulky Gowers and read the sibylline leaves consolidated on page 1211: "The sympathetic functions are under central control, and the char-

acter of the symptoms is in harmony with the physiological relation between the degree of blood-pressure and the frequency of the heart's action. The chief controlling centers, especially those that determine this relation, are in the region of the medulla oblongata." To this region Filehne in particular has turned his attention, endeavoring by experiment to elicit information concerning which pathological anatomy remains obstinately silent. He divided the anterior fourth of the restiform bodies, producing exophthalmia in one case, enlargement also of the thyreoid in another, and the three classic symptoms in a third. The negative evidence of pathological anatomy and the positive evidence of the symptoms themselves (Gowers) alike suggest that the malady is a neurosis, a disease of the nerve elements proper, having its character determined by their functional relations, and its origin beyond the present range of medical vision. Possibly chemistry may one day throw light on this subject, and reveal to expectant science the exact element in the blood—gas or other toxic agent—capable of producing such marked alteration in functional nerve activity without appreciable change in nerve structure.

With judicial brevity and fairness the "Journal de médecine" for August 26th reviews the present best known methods of treatment. First, there is hygienic treatment, pure and simple; a quiet life in the country, freedom from emotional strain, a milk diet when the heart is not enfeebled, and an abundant ordinary diet when it is, with the addition of coffee and wine. The two methods of medical treatment most in vogue are that of Jaccoud and that of Friedreich. The first consists in the administration of arsenious acid and bromide of potassium. Night and morning, minute doses of arsenious acid are given, and between meals from half a drachm to a drachm of bromide of potassium. This alone is used by Jaccoud in mild cases. Friedreich's method is essentially different; no bromide, no arsenic, but quinine—quinine for an indefinite period. Certain drugs are absolutely contra-indicated. These are the iodides of potassium and sodium, which augment the respiratory difficulty resulting from increased frequency of the heart's action. Digitalis is sometimes useful, sometimes not. When quickened heart-beats are due to loss of cardiac contractility, digitalis is of value in slowing the rapid systole that follows enfeeblement of the myocardium. But when the heart is overexcited without being weakened, digitalis, by strengthening the force of its contractions, must inevitably do harm. Electricity also shows good results, employed in two ways quite distinct. One is the method of Eulenburg and Guttmann, which consists in faradization of the sympathetic, one electrode being applied to the region of the sympathetic in the neck, and the other to the cervical vertebræ. The second mode of electrical treatment is that of Charcot and Vigouroux, who apply galvanism to the precordial region. Hydrotherapy also merits recognition as a valuable adjuvant, though inadmissible in all cases where there is any lesion of the heart or lungs. Sea-bathing, the wet pack, and the needle bath have all been of great benefit. Cheerful companionship and congenial surroundings are advocated by the followers of each and every "method."

If the statements recently mad in regard to hypnotism are just— tion and regulates the action of remedy of France has magnifice and untried field. From the by gestion yet another and novel me the "Lancet," Stiller, of Buda Pes by sending patients to altitudes feet, in the Tyrol and among the pression of the thyreoid, gradually has been known to bring about symptoms. Sometimes the diseas fact that has probably again and drug or therapeutic agent quite in

Marriage, pregnancy, and the maternal state, have caused this there any clew here? Has the hy to do with the case? Health is and co-ordination of large num separated parts of the body, an associated reflexes is a practica center function. Re-enforcing into appropriate areas by the app lar stimuli affects an advantage energy. The maternal state equ lates the action of nerve force. normal activity weak, depraved, fices all their pet peculiarities new creature. This profound in mains indefinitely, perhaps fore trouble is deprived of *raison d'ê* view—to equalize the circulatio certainly based upon a rational obtained by means of the wet the use of drugs, or through the yet only among the possibles.

IS THERE SUCH A DISE

Some months ago we gave a sh of arsenical poisoning in a num France, caused by their drinkin terated with arsenious acid. In th the observation of the physician acrodynia was made. In a comm to the *Académie de médecine*, by mary of which is given in the " man briefly recounted the sym cases. As an example, a railwa living at home, was taken, apart gastric uneasiness without fever amelioration, but diarrhœa soon combated with bismuth. Then dominant; patches of urticaria portable itching, and between th

bernatorial veto has been re- of many laws with respect to the medical profession and a general law dealing with ll have, he thinks, when the cease their bickering and orded to the pharmacist and testimony to the efficient of the County of New York ry under an inadequate law.

TC.

**I and Gynæcological So-** ld on Friday, October 19th, lected as follows: President, presidents, Dr. D. Webster n; treasurer, Dr. George B. . Samuel S. Adams; corre- Cook.

**pital.**—A new building de- last week.

*List of Changes in the Sta- g in the Medical Department, r 21 to October 27, 1888:*

and Surgeon, Fort Snelling, sence for one month on sur- S. O. 100, Headquarters De- Minn., October 20, 1888.

and Surgeon, is relieved from yoming Territory, and will re- anding officer, Fort Douglas, that post. Par. 16, S. O. 248, A. G. O., Washington, October

Surgeon. By direction of the f absence granted in S. O. 209. the Atlantic, is extended one . G. O., October 22, 1888.

Assistant Surgeon. By direc- eave of absence is granted the completion of his present G. O., October 22, 1888.

rgeon (Fort McIntosh, Texas), one month on surgeon's cer- rters Department of Texas, 0, 1888.

Assistant Surgeon, is relieved raska, and will report in per- t. Fort D. A. Russell, Wyo- nat post. Par. 16, S. O. 248, . G. O., Washington, October

enant and Assistant Surgeon, of War, is relieved from duty ill report in person to the com- ld, Texas, for duty at that post. O., Washington, October 23,

d Assistant Surgeon, is granted th, with permission to apply for Par. 3, S. O. 129, Headquar- uri, Fort Leavenworth, Kansas,

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**Spasmus Nutans in Dentitio**

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CHEWING.

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climbing the trees or in illicit and perilous visits to the "jams" of timber that form when the trunks of these stately trees are floated down the rivers in the spring.

Not long ago a distinguished physician from one of the Gulf States, being in New York in attendance at a meeting of one of the special societies, was observed to take a piece of chewing-gum from his pocket and proceed to chew a portion of it. Perceiving that some of the gentlemen seated near him felt interested in this little procedure, he remarked that he thought it improved his digestion. There seems to be some *a priori* reason for supposing that it may have such an effect. It certainly increases the salivary secretion, and, used at the proper time, it may assist materially in the digestion of amylaceous food by that very fact, besides acting as a gentle stimulant to the stomach by reason of some of its aromatic principles being swallowed with the saliva. It undoubtedly cleanses the teeth very effectually, and it is reasonable to suppose that it may exert a wholesome influence upon the pharynx in catarrhal conditions, perhaps even contributing appreciably to guard the throat against the attacks of morbid germs. On the whole, then, although on presumptive grounds alone, we must set it down as our impression that the chewing of spruce gum is in some respects to be commended.

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## *MINOR PARAGRAPHS.*

### SPONTANEOUS BACTERIOTHERAPY.

The occasional cure of a local affection by an attack of erysipelas is a matter of common observation, and the occurrence is not necessarily to be explained as the triumph of one micro-organism over another. In a recent number of the "Giornale internazionale delle scienze mediche," however, Dr. de Biase gives examples in which erysipelas was followed by the subsidence of a systemic disease. He reports three cases of malarial disease that were perfectly cured by an attack of facial erysipelas. Not only did the febrile paroxysms cease, but the phenomena of chronic malarial poisoning disappeared rapidly "after the erysipelas cocci had got the better of the malarial micro-organism."

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### UTERINE COUGH.

A contributor to the "Deutsche medicinische Wochenschrift" reports the case of a woman, thirty-five years old, who, when four months advanced in her third pregnancy, was attacked with tickling in the throat and hoarseness after taking cold. According to a summary given in the "Centralblatt für klinische Medicin," the usual catarrhal appearances vanished in a fortnight, but an exceedingly tormenting dry, rough cough remained, excited by an almost inexpressible tickling in the larynx. No cause for the cough could be discovered on physical examination of the chest and the larynx, but a large erosion of the cervix uteri was found, together with two small mucous polypi in the cervical canal. The polypi were removed and the cervical canal was penciled with tincture of iodine, and within a few hours the cough ceased. The author thinks that the predisposing cause of this reflex cough was general debility due to pregnancy and leucorrhœa, and that its exciting cause was the polypi, while the occasion of the conveyance of the irritation to the cough center was a previous heightening of its sensitiveness by the laryngeal and tracheal inflammation.

## COCCYGODYNIA IN THE MALE.

It was a gynæcologist, the late Dr. J. C. Nott, who first called attention to the subject of neuralgia of the coccyx, and another gynæcologist, Sir James Y. Simpson, gave it the name of coccygodynia. If it has not heretofore been supposed to be confined exclusively to women, its preponderating occurrence in them has been so marked that it has received special consideration in text-books of gynæcology. If, however, as Dr. Emmet maintains, it is but a symptom of deep-seated trouble within the pelvis, its occasional occurrence in men is to be expected, for pelvic affections are sometimes found in them that are perfectly competent to its production. This seems to have been true of two men whose cases are made the text of an article in the "Centralblatt für klinische Medicin," by Dr. Alexander Peyer. One of them had for years been the subject of vesical symptoms, and the other was the victim of sexual neurasthenia. In each case it would be instructive to know the precise physical state of the pelvic contents. Dr. Peyer plainly states his belief in the reflex nature of the affection and his preference for treating it indirectly, by attacking the genital apparatus, rather than by removal of the coccyx.

## A DANGER FROM PERITONEAL IRRIGATION.

At a recent meeting of the Paris Obstetrical and Gynæcological Society, Dr. Polaillon presented the case of a woman who had died on the table after the performance of ovariotomy. As there had been free hæmorrhage from severed omental and pelvic adhesions, the peritonæum was irrigated with about three pints of a one-per-cent. solution of carbolic acid in boiled distilled water of a temperature of about 98·6° F. The process occupied between two and three minutes, at the end of which time the breathing suddenly became accelerated. It then grew feeble and ceased, the face becoming violaceous, but the heart continued to beat regularly. Artificial respiration, tracheotomy, oxygen by inhalation, applications of the actual cautery to the thorax, frictions, hypodermic injections of ether, electrization of the diaphragm, and an attempt to let blood from the arm, all proved unavailing; after two hours spent in their employment, the woman was indisputably dead. M. Polaillon referred to other instances in which irrigation of the peritonæum had produced such an embarrassment of the respiration that great difficulty had been met with in resuscitating the patients, and like occurrences were alluded to by M. Guérin. Polaillon suggests that these untoward effects are produced by the action of the hot water as such upon the lower surface of the diaphragm and upon the solar plexus. The author of the account given in "Lyon médical," however, seems to think that M. Polaillon's patient died rather from the poisonous effect of carbolic acid than from a reflex inhibition of respiration.

## LEGISLATIVE REGULATION OF THE PRACTICE OF MEDICINE.

A lawyer, Mr. W. A. Purrington, of New York, read a notable paper at the recent meeting of the American Social Science Association, entitled "How far can Legislation Aid in Maintaining a Proper Standard of Medical Education?" The paper has been published in the form of a pamphlet, and, like all that emanates from its author, it is bright, suggestive, and utterly free from involved argument. It deals only with propositions that are undeniable when once they are understood in their bearings upon the rights of the citizen—bearings which Mr. Purrington is particularly clever in setting forth clearly. He shows the inadequacy of the New York laws, and even how, on more than one occasion, a gubernatorial veto has been required to undo unlawful legislation in the interest of objectionable medical colleges. In place of many laws with respect to various points of contact between the medical profession and the community, we need, he says, a general law dealing with them all; and such a law we shall have, he thinks, when the so-called therapeutical "schools" cease their bickering and when a professional status is accorded to the pharmacist and the dentist. Meantime, he bears testimony to the efficient work done by the Medical Society of the County of New York in the suppression of gross quackery under an inadequate law.

## ITEMS, ETC.

**The Washington Obstetrical and Gynæcological Society.**—At the annual meeting, held on Friday, October 19th, officers for the ensuing year were elected as follows: President, Dr. Joseph Taber Johnson; vice-presidents, Dr. D. Webster Prentiss and Dr. W. W. Johnston; treasurer, Dr. George B. Harrison; recording secretary, Dr. Samuel S. Adams; corresponding secretary, Dr. G. Wythe Cook.

**The Boston Children's Hospital.**—A new building devoted to out-patients was opened last week.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 21 to October 27, 1888:*

Forwood, William H., Major and Surgeon, Fort Snelling, Minn., is granted leave of absence for one month on surgeon's certificate of disability. S. O. 100, Headquarters Department of Dakota, St. Paul, Minn., October 20, 1888.

Wolverton, William D., Major and Surgeon, is relieved from duty at Fort D. A. Russell, Wyoming Territory, and will report in person to the commanding officer, Fort Douglas, Utah Territory, for duty at that post. Par. 16, S. O. 248, Headquarters of the Army, A. G. O., Washington, October 24, 1888.

Williams, John W., Major and Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. 209. October 4, 1888, Division of the Atlantic, is extended one month. Par. 14, S. O. 246, A. G. O., October 22, 1888.

Carter, Edward C., Captain and Assistant Surgeon. By direction of the Secretary of War, leave of absence is granted for one month, to take effect on the completion of his present duties. Par. 13, S. O. 246, A. G. O., October 22, 1888.

Bartholf, John H., Major and Surgeon (Fort McIntosh, Texas), is granted leave of absence for one month on surgeon's certificate of disability. Headquarters Department of Texas, San Antonio, Texas, October 10, 1888.

Brown, Paul R., Captain and Assistant Surgeon, is relieved from duty at Fort Sidney, Nebraska, and will report in person to the commanding officer, Fort D. A. Russell, Wyoming Territory, for duty at that post. Par. 16, S. O. 248, Headquarters of the Army, A. G. O., Washington, October 24, 1888.

Borden, William C., First Lieutenant and Assistant Surgeon, by direction of the Secretary of War, is relieved from duty at San Antonio, Texas, and will report in person to the commanding officer, Fort Ringgold, Texas, for duty at that post. Par. 11, S. O. 247, A. G. O., Washington, October 23, 1888.

Ball, R. R., First Lieutenant and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month. Par. 3, S. O. 129, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, October 18, 1888.

*Promotion.*

Loring, Leonard Y., Captain and Assistant Surgeon, to be Surgeon, with the rank of Major, October 9, 1888, *vice* Meacham, deceased.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending October 20, 1888:*

Armstrong, S. T., Passed Assistant Surgeon. Granted leave of absence for sixteen days. October 17, 1888.

Woodward, R. M., Assistant Surgeon. When relieved at Marine Hospital, Boston, Mass., to proceed to Marine Hospital, Chicago, Ill., for duty. October 12, 1888. Granted leave of absence for thirty days. October 17, 1888.

Conduct, A. W., Assistant Surgeon. Relieved from duty at Marine Hospital, Chicago, Ill., and ordered to Marine Hospital, Boston, Mass. October 12, 1888.

**Society Meetings for the Coming Week:**

Monday, *November 5th:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians; Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica, N. Y., Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *November 6th:* New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburg Medical Association; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association; Hampden, Mass., District Medical Society (Springfield); Baltimore Academy of Medicine.

Wednesday, *November 7th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association.

Thursday, *November 8th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; New York Physicians' Mutual Aid Association (annual); Medical Society of the County of Cayuga, N. Y.; Pathological Society of Philadelphia.

Friday, *November 9th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *November 10th:* Obstetrcial Society of Boston (private).

OBITUARY NOTES.

**James Crane, M. D.,** of Brooklyn, died on Wednesday, October 31st, in the seventy-first year of his age. He was born in Newark, N. J., and was graduated from the Jefferson Medical College in 1839. After practicing in New York city a few years he settled in Brooklyn in 1845. In 1847 he was appointed attending physician to the Brooklyn City Hospital, which position he retained until 1877. In June, 1877, he was appointed president of the Brooklyn Board of Health, in which position he rendered efficient services. He was a member of the Medical Society of the County of Kings and of the Brooklyn Medical and Surgical Society. His death was due to congestive apoplexy, after an illness of four years' duration.

# Letters to the Editor.

THE ANTISEPTIC FORCEPS LOCK.

Louisville, Ky., *October 8, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In your issue for August 25th, in describing a uterine dilator, I mentioned that it had been much improved, as now manufactured by the Messrs. Tiemann & Co., by the addition of a modified "French lock." I did not claim the lock or *any part* of it as my invention, but supposed it was devised by the Messrs. Tiemann & Co., as I had then seen no description of a similar lock in any medical publication. In your September 22d issue I see a letter from Dr. Charles N. Dixon Jones, from which I extract the following:

"If Dr. Wathen will turn to the 'New York Medical Journal' for March 24th, page 532, he will find therein described, under the title of 'A New Antiseptic Lock for Scissors and Forceps,' a lock which I had made by Messrs. Tiemann & Co., and which is identical with the one he makes use of without taking the trouble to acknowledge its authorship."

I have turned to page 532 and find the following: "In order to overcome these difficulties, with the *aid* of Messrs. Tiemann & Co., I have constructed a lock after the following pattern." In view of the foregoing, is it possible that I have done Dr. Jones an irreparable injustice? I never claimed the lock as my own, nor did he *originally* claim more than a *part* interest in its "authorship." But I beg to call the attention of Dr. Jones to the "Illustrirte Monatsschrift der ärztlichen Polytechnik," in which he may find a description of a lock of which his is only a *slight modification.* This lock is patented in Germany (patent No. 40,642), and the punctilious Dr. Jones used it "without taking the trouble to acknowledge its authorship."

Respectfully, W. H. Wathen.

# Proceedings of Societies.

AMERICAN ORTHOPÆDIC ASSOCIATION.

*Second Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, Dr. Newton M. Shaffer, of New York, in the Chair.

**The Treatment of Club-foot by means of the Thomas Wrench, or "T. T."**—Dr. V. P. Gibney, of New York, read a paper on this subject. (It will be published hereafter.)

**Morton's Operation for the Immediate Reduction of Club-foot.**—Dr. H. Hodgen, of St. Louis, read a paper on this subject. (It will be published hereafter.)

**A Practical Point in the Treatment of Pott's Disease of the Spine.**—Dr. A. B. Judson, of New York, read a paper on this subject. (See page 323.)

**Analysis of Treatment of Seventy Cases of Club-foot.**—In this paper Dr. E. H. Bradford, of Boston, said that the treatment necessarily required:

1. The rectification of the misplaced bones.

2. The retention in a normal position until the abnormal facet of the astragalus became normal under the presence of a new position.

The first of these could be done by mechanical means, stretching or tearing the ligaments, tendons, and forcing the foot into shape. It might be done gradually or forcibly. The second was a mechanical problem, and the retentive appliance

should be worn for a long or short time, according to the size of the distorted bone. The following questions in regard to treatment were at present unsettled: *a*. In what cases was it advisable to correct and treat by mechanical means alone without the aid of any operative interference, even tenotomy? *b*. When was tenotomy advisable? *c*. Could severe cases be entirely corrected and permanently cured without tarsal resection? *d*. Was tarsal resection or osteotomy a justifiable operation?

His conclusions were: 1. That the cases of infantile club-foot could, as a rule, be thoroughly and efficiently treated without tenotomy by mechanical correction and mechanical retention alone. 2. That in older patients tenotomy aided the correction, and was not injurious in the permanent result. 3. That resistant cases of the severest type could be corrected without tarsal osteotomy. 4. That in some cases of resistant club-foot tarsal osteotomy was needed for perfect rectification, and not only was justifiable, but might be indicated in exceptional instances.

**Reflex Valgus.**—The history of a case was reported by Dr. G. W. Ryan, of Cincinnati.

**Observations on Seventy-five Cases of Flat-foot, with Particular Reference to Treatment.**—Dr. Royal Whitman, of Boston, read a paper with this title in which he said that, clinically, flat-foot was an affection which, in the majority of cases, occurred independent of local or constitutional disease. The direct cause was overweight or overwork for feet subjected to mechanical disadvantages. These were (1) the common habit of turning on the toes in standing or walking, an attitude which produced an increased and continual strain on the weakest part of the foot. (2) Weakness of muscles from disease and deformities caused by improper shoes. Flat-foot, being essentially a dislocation, should be treated like other dislocations, by reposition and retention in normal position until, by exercise and avoidance of faulty position, the muscles might regain their normal strength. In ordinary cases such retention could only be accomplished by some form of mechanical support. A brace should be constructed on principles somewhat as follows: It should be inelastic, light, and comfortable; it should fit the foot perfectly, and not interfere with its normal movements or the action of its muscles. A steel brace designed on these principles was shown. The paper was illustrated by casts and diagrams.

Dr. John Ridlon, of New York, exhibited a wrench which he used for the same purpose as that exhibited by Dr. Gibney, being modified from a "Utility" wrench. It differed from Thomas's wrench and Gibney's modification of Thomas's in that the grip was taken by sliding the lower grip-bar toward the upper simply by manual pressure. When in position it was held by a cog-and-spring arrangement which could instantly be released by pressing a trigger. The grip-bars were straight instead of curving toward each other, as in the Gibney instrument. This was an advantage when the instrument was used as an osteoclast in cases of badly united Colles's fracture of the radius. As an instrument for cases of club-foot the author did not think it had any special advantage over Thomas's wrench.

**Femoral Osteotomy for the Correction of Deformity resulting from Hip-joint Disease.**—Dr. Ap Morgan Vance, of Louisville, read a clinical report of eight cases. (It will be published hereafter.)

The President exhibited Colin's osteoclast.

**Senile Coxitis.**—Dr. Henry L. Taylor, of New York, read a paper on this subject. (It will be published hereafter.)

**Hæmatoma Auris as a Sign of Injury to the Spine in the Superior Cervical Region.**—Dr. Benjamin Lee, of Philadelphia, read a paper on this subject. His conclusions were: 1. That this pathological condition was idiopathic, never traumatic. He would not deny the existence of such a condition. It had a *facies* and history of its own. The same amount of violence would probably produce an extravasation of blood in the tissues of the ear in an insane person, but that would not be the "insane ear." 2. That the local tissue change which made an extravasation possible was dependent upon a degenerative alteration in the nerve center which controlled the circulatory apparatus of the auricle, involving, or not, the larger arterial branches.

**Osteotomy for Anterior Tibial Curves** was the title of a paper by Dr. De Forrest Willard, of Philadelphia, who said that rickets, although a constitutional disease, dependent upon malassimilation and malnutrition, yet exhibited its worst phases in deformities of the bones. These deformities were due to the relative preponderance of organic tissues in the bones and the failure of the formative cartilage cells to produce true osseous cells. During this stage of softening many portions of the skeleton became distorted, and when earthy salts were again deposited sclerosis resulted and the faulty portions were permanently fixed. Anterior tibial curves were among the most frequent of these distortions. He presented the following rules for treatment: 1. Manual straightening and the employment of suitable apparatus. This might be successful in young children with the bones still springy, but in all other cases it would utterly fail, and time and money would be wasted. Braces were useful in laterally bowed legs, but not in anterior curves. 2. Forcible fracture—*a*, manual; *b*, instrumental. *a*. Manual fracture: A strong surgeon could usually break the bones of a child under three years of age, especially if the knee was brought into use as a fulcrum, but the point of fracture was uncertain. The result was a simple fracture. *b*. Osteoclasis: The osteoclast applied to the thigh was a definite and comparatively certain and exact instrument in determining the point of fracture, but in the leg the sharp tibial edge rendered the employment of much force a dangerous procedure as regarded the life of the soft parts. 3. Osteotomy—*a*, simple; *b*, cuneiform. *a*. Simple section of the bone with the osteotome, although it produced a compound fracture, was, practically, almost subcutaneous, and if done with thorough asepsis was rarely followed by suppuration. It was applicable to all except the very worst cases of deformity, since even sharp angles of bone were speedily inclosed in the callus. Suturing of the divided bone was rarely necessary. *b*. Wedge-shaped osteotomy was applicable to severer grades of deformity. This operation was much more likely to be followed by suppuration, but with strict asepsis such an accident was rare. Plaster of Paris furnished the most convenient form of after-splint. Osteotomy offered the simplest, surest, and most satisfactory results in anterior tibial curves.

**Two Knee-joint Excisions.**—Dr. A. J. Steele, of St. Louis, read a paper in which he said that in these cases he had done excision of the knee, the first in a lad with chronic fungous and suppurative joint disease which had been going on from early childhood. The second in a young woman with right-angled ankylosis, of nine years' standing, resulting from injury and doubtless subsequent acute synovitis. In the first case the joint was rapidly going on to destruction and the constitution breaking down; in the second the inconvenience in walking prompted measures for relief.

It was hoped arthrectomy alone might afford the required relief in Case I, but on exposing the joint the serious bone involvement prompted its removal. Antisepsis was used, all diseased tissue was removed, including the patella, the bones were pinned together with steel nails, and permanent dressings were applied. Subsequent oozing caused a change of dressing to a bracketed plaster-of-Paris splint, with suspension. Union was rapid and constitutional improvement prompt. At the present

time, three months since the operation, the boy was in robust health and about on crutches, wound healed, bones firm, and limb straight. The removed eroded bones, the pins used, and photograph of limb were shown.

In Case II strict antisepsis was not observed. The joint was removed *en bloc*, the limb straightened, and the bones doweled together with four needles, the ordinary crochet; a bracketed wire splint was applied, and the limb suspended; no untoward symptoms occurred, and little or no pus formed. One bone pin was removed about the fourth week; the other one broke off in the bone. It was expected that this piece left in would soften and be absorbed. For a time it seemed to cause no irritation, but after three months it caused suppuration, came to the surface, and was picked out, being quite eroded. At the present time, eight months since the operation, the patient was walking, usually without even the assistance of a cane, on a three-inch patten, and with scarcely a limp.

It was first supposed that bony union of the patella to the outer condyle had occurred, but subsequent boiling of the specimen showed it to be only very firmly fibrous. Being unresisted by the tibia for nine years, the condyles had grown downward, elongated, presenting with the shortened ligaments an inseparable barrier to straightening without operation. The removed joint, the eroded bone pins, and a photograph of the present useful limb were exhibited, with analytical remarks of the cases and conclusions.

**Remarks on the Operative and Mechanical Treatment of some Joint Diseases and Injuries, with Special Reference to the Hip, Knee, and Elbow Joints, with Illustrative Cases.**—Dr. W. R. Whitehead, of Denver, Colorado, read a paper with this title.

**The Treatment of Hip-joint Disease by Fixation and Extension, with the Exhibition of a New Splint.**—Dr. R. W. Lovett, of Boston, read the paper. He said that American traction splints were criticised by English surgeons on the ground that they afforded imperfect fixation. With a view of determining how much fixation traction alone afforded, some experiments had been made upon a healthy child. It was found that with four pounds traction, exerted by means of a hip splint with one perineal band, in walking, 35° of motion at the hip joint took place. With the highest endurable traction (eight pounds), 15° of motion took place. Evidently traction alone could not afford fixation to a diseased joint. It did not seem likely either that it separated the joint surfaces, inasmuch as in the case experimented on the power of the thigh muscles was roughly estimated to be thirty-six pounds. With all this force, when set in muscular spasm, they would pull the head of the bone against the acetabulum with more than that power, and the antagonizing force was only eight pounds at most. Experiments as to distraction upon the cadaver did not reproduce the clinical conditions, inasmuch as muscular spasm, the most important factor of all, was left out of account.

A hip splint providing fixation as well as traction was shown, being merely a slightly modified combination of the English Thomas splint with the American traction splint. Its best use was in bad cases where any joint motion did harm, and in cases where deformity was present, inasmuch as it was possible to correct the deformity while the child went about on crutches.

**Lateral Curvature and its Early Treatment.**—Dr. Samuel Ketch, of New York, read a paper on this subject.

**Officers for the Ensuing Year** were elected as follows: President, Dr. E. H. Bradford, of Boston; vice-presidents, Dr. Benjamin Lee, of Philadelphia, and Dr. V. P. Gibney, of New York; secretary and treasurer, Dr. R. W. Lovett, of Boston. It was voted to hold the next meeting in Boston, in September, 1889.

## AMERICAN NEUROLOGICAL ASSOCIATION.

*Fourteenth Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, Dr. James J. Putnam, of Boston, in the Chair.

The meeting was opened with an address by the president.

**Nervous Affections following Injury (Concussion of the Spine; "Railway Spine" and "Railway Brain").**—A paper with this title was read by Dr. Philip C. Knapp, of Boston, who said that, excluding the well-known organic lesions, there remained a symptom-complex, consisting of pain in the head, vertigo, irritability and depression, mental impairment, convulsive seizures, muscular weakness or paralysis, muscular wasting, alterations of the knee-jerk, diplopia, nystagmus, and anæsthesia. He referred to the fact that trauma might give rise to a neurasthenia which would present hysterical symptoms. True hysteria was seldom found. The prognosis was grave. Improvement was not uncommon, but recovery was rare.

Dr. E. C. Seguin, of New York, referred to the difficulty of diagnosis. As elements of error he mentioned uncertainty or involuntary deception on the part of the patient, who ascribed to his injury symptoms which he had had before the accident. To these were to be added intentional deception and auto-suggestion. In regard to the hysterical element, he referred to a paper written in 1875, in which he had shown the frequent coexistence of hysterical symptoms with organic disease of the brain and cord. This combination was not peculiar to traumatism, but was found also in morphinism and after moral shock.

Dr. L. C. Gray, of New York, alluded further to the influence of suggestion. The psychical lesion was so large as to make the majority of cases undiagnosticable.

Dr. Zenner, of Cincinnati, referred to hysterical symptoms conjoined with organic disease, alluding to a case of lead poisoning associated with tremor which disappeared under hypnotism, and was cured by two or three applications.

Dr. Knapp recognized the tendency to auto-suggestion and the exaggeration of symptoms brought out in medico-legal trials. Neither of these sources of error had been present in his cases, however, as suits for damages were not in progress, and all the patients had been anxious to get well.

**Heat Centers in Man.**—Dr. Isaac Ott, of Easton, Pa., read a paper with this title in which he said that several centers had been demonstrated, injury of which was followed by increased temperature. All had peculiar laws which served to distinguish one from the other. The author referred especially to a cortical center in the convolutions about the fissure of Rolando, a center about the corpus striatum, and a center in the thalamus. The peculiarities of malarial temperatures corresponded to results obtained by experiments upon the thalamic center.

Dr. Gray referred to a case of local leptomeningitis above the fissure of Sylvius in which the temperature had at no time been above normal.

Dr. Lloyd referred to a case of subnormal temperature after lesion of the motor region.

Dr. Ott explained that he had stated simply that excision of the centers caused rise of temperature; he had not stated whether these centers were inhibitory or not.

**A Clinical Report of Cases of Epilepsy following Cerebral Hemiplegia.**—Dr. E. D. Fisher, of New York, read a paper with this title in which he stated that the epilepsy of infantile spastic hemiplegia was of the idiopathic type. There was loss of consciousness with progressive imbecility.

Dr. Knapp suggested the existence of trophic centers in the cortex. He had seen cases of infantile hemiplegia in which the

atrophy had been as great as that in many cases of spinal paralysis.

Dr. G. E. WALTON described a local epileptic attack. The patient had been healthy to within a few weeks, when the attacks had commenced. The convulsion had affected the left side of the face, there had been slight dilatation of the pupils, and the head had been turned over the left shoulder.

Dr. FISHER suggested another proof that the epilepsy of this condition was not of the Jacksonian type, the fact that there was no aura, or only an epigastric aura.

**The Relation of Renal Diseases to Diseases of the Nervous System.**—Dr. ROBERT T. EDES, of Washington, read a paper on this subject in which he discussed only the rôle of renal diseases in the production of diseases of the nervous system. The phenomena of localized uræmia were due to the retention of water, urea, extractives, potassium salts, and other substances among which the ptomaines could be probably included. The mere retention of urea was not a very serious matter. Anuria was tolerated for a considerable time in the healthy state. The symptoms of poisoning were neurotic, angeioneurotic, anæmic, hydræmic, urotoxic, and uroseptic. The propriety of small doses of opium was suggested for the relief of the nervous symptoms of Bright's disease.

Dr. F. X. DERCUM, of Philadelphia, agreed in a general way with the author, but thought that one should be careful about making deductions which assumed that urea was not injurious to the organism, even in the highest degree. He was willing to try morphine in these cases.

Dr. SEGUIN stated that the most characteristic headache of the prealbuminuric stage of Bright's disease was of the occipital, bilateral form. Dementia paralytica might give rise to confusion in diagnosis. There was high arterial tension in this condition; we might find signs of a coexisting interstitial nephritis, while the epileptoid and apoplectoid attacks might really be due to uræmia. The speaker was not opposed to the trial of the morphine treatment if the nerve symptoms were prominent and persistent and proper precautions could be insured, the responsibility of such advice being partly justified by the fatal nature of the disease.

Dr. GRAY also referred to several cases in which the differential diagnosis had been obscure. The occipital headaches of nephritis often had a quasi-periodicity, with marked relief for many days from a good dose of quinine. On several occasions the speaker had verified the test proposed by Dr. McBride for distinguishing the coma of Bright's disease from an attack of hemiplegia. A man woke up to find himself on the floor, and it became uncertain whether he had fallen under the influence of apoplexy or of the coma of Bright's disease. The cutaneous and tendon reflexes presented the differential test.

Dr. DERCUM stated that it was his custom to treat all doubtful cases as cases of Bright's disease. A man sixty-eight years of age, without any previous seizure, had had twenty-six convulsions within a short time, limited to the right side of the body and face; he had also had one general convulsion. This man had been sweated and recovered consciousness, and was now apparently well. There had evidently been no hæmorrhage.

Dr. ZENNER suggested localized œdema as the origin of the symptoms in such a case, or possibly a plug which had been subsequently washed away.

Dr. EDES stated that urea was not a highly dangerous product. The relief afforded by diaphoresis was very slight compared to the kidney elimination. Morphine, if used at all in these cases, should be used with the greatest caution and in the smallest doses which would produce the stimulant effect. The speaker hoped that no one present would regard him as having recommended the procedure, and that if any one did use it he would do so entirely upon his own responsibility.

**On the Cortical Localization of Cutaneous Sensations.**—Dr. C. L. DANA, of New York, read a paper in which he considered the convolutions about the fissure of Rolando the centers for cutaneous sensation, the area thus represented being less narrowly limited than that for the motor centers.

Dr. C. K. MILLS, of Philadelphia, considered the paper interesting and valuable, yet the final inferences were, he thought, not sustained. He had himself recently gone over cases with the same object in view. It was probable that these cases were at least partly the same. It had been his decision that the limbic lobe, the præcuneus, and the postero-parietal region corresponded to the cortical areas for cutaneous sensation.

Dr. M. A. STARR, of New York, considered Dr. Dana's paper one of great value. In the posterior part of the internal capsule, behind the pyramidal tract, there was a tract known as sensory, going to the parietal and the post-central convolutions. The direction of this bundle of fibers was out of, not into, to the gyrus fornicatus. These facts aided the view advanced by Dr. Dana, and not the view of Ferrier, advanced by Dr. Mills. Further, in comparative anatomy, Zuckerkandl had connected the sense of smell with the gyrus fornicatus, which was small in animals having but a slight sense of smell, though they might have a large general sensory surface, and, conversely, large where the sense of smell was prominent.

Dr. SEGUIN stated that the results of extirpation of the motor zone would support Schiff's theory of a sensori-motor function. The aura of localized epilepsy in brain tumor was another evidence in its favor.

Dr. DANA acknowledged that with a special sense, such as the tactile sense, it seemed more rational that there should be a special center. He had started in his study of the subject strongly prejudiced in favor of the gyrus fornicatus. The facts of pathology were, however, opposed to the existence of a sensory center in the limbic lobe.

**On a Subcutaneous Connective-tissue Dystrophy of the Arms and Back associated with Symptoms resembling Myxœdema.**—Dr. DERCUM read a paper on this subject.

The PRESIDENT considered that, pathologically, the affection described appeared to be related to myxœdema; clinically, the relation did not appear distinct.

Dr. DERCUM stated that the fluid which had exuded in his case had resembled lymph rather than the denser fluid of myxœdema. He thought that the case was allied to the type without being a true myxœdema. He referred to the fact, however, that in quite a number of cases of myxœdema mental symptoms had not been marked. In some cases, too, the thyreoid had not been enlarged, but wanting. He thought it difficult to determine minor degrees of enlargement of the thyreoid through the skin.

**On Subacute Progressive Polymyositis.**—Dr. GEORGE W. JACOBY, of New York, related the history of a case in which he said there had been tension, pain, and redness of the skin, first in the calves and later in the arms. The tendons had felt like tense cords. There had been tenderness on pressure over the muscles. There had been no sensitiveness on pressure over the nerve-trunks and no fibrillar twitchings. Acute cirrhosis of the liver had supervened. The intercostals and the abdominal muscles had then become affected. There had been pain in swallowing, and slight rotation of the head had been unbearable. The face and eyes had not been affected. The sensibility had been normal. The patient had died of marasmus. An autopsy had not been obtained, but specimens taken from the affected muscles had shown an increase of the connective tissue and many fibers waxy or homogeneous in appearance. There had been

augmentation of the nuclei in other fibers, so that the fiber had had the appearance of a giant cell which, at another stage, had broken up into medullary corpuscles, terminating in fibrous degeneration. There had been present also, as had been stated, both the waxy and the fatty degenerations, the waxy being the more common. There had been in this case thus a chronic plastic formative process upon which was grafted a myositis and a perimyositis. The fatty and the waxy degenerations were the product of the chronic affection.

**Muscular Dystrophies.**—Dr. B. Sachs, of New York, followed with a paper in which he proposed to discard the many names used to distinguish progressive muscular wasting in favor of a main classification into two groups, namely: 1. Those of amyotrophic spinal origin, divided into the arm and leg type. 2. The primary muscular dystrophies.

Dr. Knapp distinguished between the primary and the secondary myopathies. There was hypertrophy of the fibers in the former and not in the latter.

Dr. Jacoby thought it doubtful whether all cases could be classed as spinal or muscular in origin. This division had been considered unassailable, but there were cases without nerve symptoms and also without heredity, and without hypertrophy or pseudo-hypertrophy; and, on the other hand, there were certain muscular forms with fibrillary twitchings and the degeneration reaction. As to the primary differential test: the presence of hypertrophied muscle fibers. While the presence of such fibers might exclude spinal trouble, their absence proved nothing. Even this rule, however, was not altogether reliable. The microscope revealed two processes—that of inflammation and that of degeneration. The appearances varied, too, at different stages.

Dr. Gray stated that, while pseudo-muscular hypertrophy was probably of peripheral origin, he thought the question was still open to doubt. Dr. Sachs had said that there were no fibrillary contractions in these cases. When the speaker returned to New York he would be glad to show him a case in which there were such fibrillary contractions. Even pseudo-muscular hypertrophy was mixed with atrophy. He thought it wiser to acknowledge no conclusions rather than to adopt false conclusions, even though they should be those of Dr. Erb.

Dr. W. A. Hammond, of New York, said that eventually he might accept the classification presented, but for the present he would not change, but would sustain the position of Dr. Gray.

Dr. Walton referred to a case of the peroneal type, myopathic in origin. Heredity was traced into the beginning of the seventeenth century. The patient was sixty-two years of age, and had been affected for twenty years. Her mother had died at eighty-seven, having been affected since her thirty-fifth year.

The President referred to a case of hereditary atrophy in which there were no gross signs of pseudo-hypertrophy, but the microscope showed hypertrophic as well as atrophic fibers.

**A Case of Focal Epilepsy successfully treated by Trephining and Excision of the Motor Center.**—Dr. James H. Lloyd read a paper thus entitled.

Dr. John B. Deaver reported the details of the operation. No lesion had been found, but that portion of the cortex had been excised faradization of which had produced the motions of the epileptic attacks. Three months had elapsed since the operation without convulsions.

Dr. David Ferrier congratulated the gentlemen upon the success of their operation. It was perhaps, however, a little early to say that the patient was cured. The case was interesting also as a physiological experiment. He understood that there was paralysis after the operation, while the tactile sense was perfect, any difficulty in distinguishing objects being evidently due to impairment of the mechanism upon which associated movements depended. The speaker inquired whether Dr. Lloyd had tested the sensibility by passive movements. The case was interesting as a proof that, after the removal of the motor centers, the tactile sensibility was preserved.

Mr. Victor Horsley, of London, referring to the question of recurrence in epilepsy, cited a case in which the facial region had been excised after stimulation with faradism. Lingual equilibrium had been obtained, which had not been present before the operation; and the fits had been absent for three weeks, when they had recurred. The speaker referred to another case in which, after excision of a focus, there had been no fits for two years; and another, operated upon twenty-three months ago, in which there had been no fits since. He would not, however, venture to say that the patient was cured. In his opinion, five years should first have elapsed. To free the patient from epileptic attacks for six months or two years would, however, restore mental power, and was no insignificant result. He agreed with the previous speaker that the operation should be done as early as possible. The faradization of the cortex for the purpose of diagnosis was a step in advance. He had himself irritated the corpora quadrigemina in one case without unfavorable symptoms.

Dr. Gray was glad to hear so conservative a rule as that of allowing five years to elapse for determining the cure of focal epilepsy. Even in idiopathic epilepsy the duration of the intervals between the attacks varied enormously at different times. In several cases in his experience the fits had been absent for three or four years. In one case, that of an intelligent man, there had been cessation for ten years.

Dr. Mills shared Dr. Ferrier's impression that true cutaneous sensibility was not destroyed in this case.

Dr. Dana had understood Dr. Lloyd to state that there had been some disturbance of the sensibility in the fingers; he had also stated that there had been a loss of the sensory aura present before the operation. It was hardly fair to say that the cutaneous sensibility had not been disturbed. Further, the part excised had been small; the sense centers occupied a space larger than that of the motor centers.

Dr. Seguin would place upon record the fact that the patient operated upon by Dr. Weir last year was in a fair condition of recovery. During the summer he had had a few convulsions affecting the right hand and cheek. There were no headaches, and there was no choked disc. There was more paresis of the right arm than in the summer. There was unquestionable anæsthesia of the cheek, hand, and forearm to contact tests, as well as to the æsthesiometer. The patient did not feel slight contact tests unless there was some indication in the temperature of the object applied.

**A Case of Acute Fatal Neuritis of Infectious Origin.**—The President related the history of a case occurring in a man of twenty-eight years, free from constitutional disease, who had contracted neuritis after exposure to cold and rain. The disturbances of sensibility had not been marked. In the early part of the disease there had been paræsthesias and pain, but both had disappeared very early. The patient had died of paralysis of the respiration. The spleen was greatly enlarged, the lungs studded with small hæmorrhages. Disseminated changes in the nerve-fibers and cell-infiltration were found in a variety of nerves, as well as in the nerve-roots, including that of the vagus. The spinal cord and medulla were relatively, but not absolutely, healthy.

Dr. Webber, of Boston, had four years ago had a large number of cases under observation in the Boston City Hospital, with three deaths. The history of the case cited by the president was similar to that of these fatal cases.

Dr. Pye Smith, of London, referred to a case of his own in

which both alcoholism and gout had been excluded. He inquired in regard to the position of gout in the ætiology of the affection here.

Dr. Van Bibber referred to a case of multiple neuritis in which the facial nerve had been affected. The attack had passed off, and the patient recovered.

Dr. Dana had not met or found reported a case in which gout had given rise to multiple neuritis; local neuritis was not uncommon from gout. He had seen one case, and perhaps two cases, of multiple neuritis from rheumatism. In one case there had been for several years attacks of rheumatism each autumn. On one occasion, in place of the usual attack, the patient had had an attack of typical multiple neuritis.

The President inquired whether any gentleman had met with the multiple pulmonary hæmorrhages present in his case.

Dr. Webber stated that in the fatal case which he had examined there had been no such hæmorrhages, but that in that case the vagus had not been affected.

The President agreed with Dr. Dana that true gout was rare, at least in Boston. Neuritis did accompany rheumatism, however, both as a local and as a general disease.

**Dislocation of Cervical Vertebræ.** — Dr. G. L. Walton read a paper in which he gave the history of two cases in which spontaneous recovery had taken place. In these cases there had been no paralysis. The author exhibited a photograph of a skull and spine, showing fracture and dislocation of cervical vertebra without interference with the spinal canal.

Dr. Webber referred to a case in which it had been supposed that there had been dislocation of a cervical vertebra so as to compress the cord sufficiently to interfere with its function. When it was reduced, function was recovered so far as the cord was concerned. The injury of the nerves of exit at the point of dislocation had been more permanent, explaining the persistence of paresis and pain in the upper extremities.

Dr. Gray referred to a case, reported seven or eight years before, in which the third cervical vertebra had been dislocated in a young boy from falling down a flight of steps. There had been paralysis of the upper extremities with paresis of the lower, and deglutition had been impaired. The dislocation had been reduced under ether, the curious matter being that the displaced fragment went into place without any snap, and only by palpation of the pharynx through the mouth could its reduction be assured. In one week the boy had been up, and had again fallen down the steps, reproducing the same dislocation. Again he had been given ether, and this time, the ligaments having recovered some of their elasticity, the part went into place with a snap, and every symptom had disappeared within forty-eight hours.

The President understood that in Dr. Walton's case there had remained atrophy of the tongue. The nerves were thus permanently impaired. Possibly rupture at the root would account for this. There was traction exerted in these cases in which the nerves of one side were at a disadvantage, and he thought that rupture was very probable.

Dr. Fisher recalled the case of an old woman in an almshouse who had had a dislocation with paralysis. That in the legs had been recovered from, but in the arms paresis and wasting had remained. The condition had been ascribed in this case to injury of the nerve-roots. There was no exaggerated reflex below in the case.

**A Case presenting the Typical Symptoms of Disseminated Sclerosis with the Post-mortem Showing of Leptomeningitis Cerebri.**—Dr. L. C. Gray presented a paper thus entitled. The patient had had the scanning speech, tremor of the voluntary type, affecting both upper and lower extremities and the tongue. There had been jerking of the muscles of the face, and nystagmus. The patient had had apoplectoid attacks with a temperature of 102°, 103°, and 104°, with chattering of the lower jaw against the upper during the attacks; he had been demented and obnoxious. Motor weakness had not been marked until three weeks before death.

Dr. Webber referred to a case of disseminated sclerosis in which the tremor had been entirely wanting, the case having been diagnosticated as one of locomotor ataxia. Tremor had been supposed to be produced by sclerosis of the medulla or pons, and the explanation had been that the parts producing tremor had not been affected. The case of Dr. Gray's was interesting as presenting tremor with a lesion of the cortex.

Dr. Bannister considered tremor due to interference with conduction, not to the cortical affection *per se*.

Dr. Mills thought that these cases should make us more careful in the analysis of symptomatology. Even symptoms regarded as pathognomonic were probably not due to the nature of the lesion but to its location in the cerebro-spinal axis, irrespective of hard and fast lines.

The President suggested that the tremor in Dr. Gray's case had been similar to that found in old cases of cerebro-spinal meningitis. This was a species of intention tremor.

Dr. Gray replied that he had in his mind a picture of the tremor of meningitis and that it did not correspond to that in his case. This man had had a voluntary tremor throughout and scanning speech. The question of diagnosis lay between intracranial syphilis, disseminated sclerosis, and general paralysis of the insane.

Dr. Blackburn exhibited specimens hardened and prepared for class demonstration by infiltration with Japan wax. On motion, Dr. Blackburn was invited to contribute a paper to the "Transactions" upon the subject.

**Aneurysm of an Anomalous Artery causing Antero-posterior Division of the Optic Chiasm and Bitemporal Hemianopsia.**—A paper by Dr. S. Weir Mitchell with this title was read by Dr. Dercum.

**Contributions to the Study of Muscular Tremor.**—Dr. Frederick Petersen, of New York, read a paper with this title. The tremors had been registered with Edmunds's sphygmograph, a modification of Pond's.

Dr. Sinkler, of Philadelphia, asked whether the author had obtained the knee clonus and the ankle clonus at the same time.

Dr. Petersen replied that he had never attempted it.

Dr. Sinkler explained that, if one first started the patellar clonus and then the ankle clonus, usually the latter would stop the former, but sometimes both would continue for a few seconds together. It would be interesting to know whether they coincided.

Dr. Hare had had some experience in attempting the registry of tremors. The practical difficulty lay in obtaining the tracing of the up-and-down and the transverse movement at the same time.

**Post-hemiplegic Disturbances of Motion in Children.**—Dr. Philip C. Knapp read a paper thus entitled.

**A Case of Tumor of the Cervical Spine.**—Dr. J. H. Lloyd and Dr. J. E. Deaver read the report of the history, and Dr. E. O. Shakespeare presented a pathological report. The patient had had hemiplegic symptoms. The tumor had its origin in osteitis of the vertebræ. There was present also a secondary pachymeningitis and hæmorrhage in the cord. The patient died three days after the operation.

Dr. Mills suggested that the case was interesting from a physiological point of view. The lesion occupied the lateral column, invading the gray matter, but leaving untouched portions which might be concluded to contain the trophic centers of the cord.

The President referred to the fact that the lesion had occupied the antero-lateral column. The statements of Gowers, borne out by a case of his own, located pain and temperature sense in the antero-lateral column. He inquired whether the pain and temperature sense was disturbed in this case.

Dr. Lloyd explained that the patient recognized variations of heat; also the pain from a pinch.

**Hereditary Chorea.**—Dr. Wharton Sinkler, of Philadelphia, read a paper on this subject in which he said that the affection consisted in involuntary movements of the face, neck, and extremities, terminating in dementia. The families observed by the author had been found in the southeastern part of New York. The affection was called megrims by the country people, and its hereditary character was recognized by prohibitions of marriage with the megrim families. It appeared between the thirtieth and fortieth years, was incurable, and eventuated in mental disease. Hyoscyamine had for a time diminished the movements in one case.

Dr. Knapp referred to the case of a woman who had visited the dispensary for some petty ailment and had attracted his attention by her violent choreic movements, which had come on at the age of twenty years without assignable cause. There had been no noticeable mental impairment in the case.

Dr. Mills had recently seen one case of Huntington's chorea. The patient was forty-one years of age, married. One year ago she had been attacked with twitching movements in the hands, head, and trunk. Speech had been affected and there had been a peculiar nervous condition. The patient's father had been similarly affected, and her child had suffered from peculiar choreic movements.

Dr. Gay, of London, stated that they had in England a horse disease which was called the megrims. The affected animal was apt to fall down.

Dr. Brush stated that on Long Island when a man was simply angry he was said to have the megrims. He thought the term was very indefinitely used. About Stamford and North Haddon there would be found, he thought, a number of families who suffered with the disease under discussion.

The President stated that the term megrims was used for various distempers among the common people.

Dr. David Ferrier and Mr. Victor Horsley, F. R. S., of London, were proposed as honorary members of the association.

Dr. E. C. Seguin was elected president for the ensuing year.

# Miscellany.

**The New York Academy of Medicine.**—The programme for the next meeting of the Section in Neurology, on Friday evening, the 9th inst., is as follows: "Report of a Case of Syringomyelia, with Autopsy and Exhibition of Microscopical Sections of the Spinal Cord," by Dr. Ira Van Gieson; and "Preliminary Report on Experiments made to Locate the Sight Center in various Animals, with Exhibition of Animals and Specimens," by Dr. W. G. Thompson and Dr. Sanger Brown.

At the next meeting of the Section in Surgery, on Monday evening, the 12th inst., Dr. G. B Phelps will read a paper on "Tetanus Hydrophobicus"; Dr. W. K. Otis, one on "Recent Improvements in Endoscopic Apparatus"; and Dr. George E. Brewer, one entitled "Report of a Case of Congenital Absence of the Entire Rectum—Artificial Anus established with Perfect Sphincter Formation."

**The American Medical Association.**—The committee of arrangements announces that the opening day of the fortieth annual meeting, to be held at Newport, R. I., has been postponed to Tuesday, June 25, 1889.

**The Washington Obstetrical and Gynæcological Society** has elected officers for the ensuing year as follows: President, Dr. Joseph Taber Johnson; vice-presidents, Dr. D. W. Prentiss and Dr. W. W. Johnston; recording secretary, Dr. S. S. Adams; corresponding secretary, Dr. G. W. Cook; treasurer, Dr. George Byrd Harrison.

**The German Medical Faculties.**—According to Dr. Ascherson's "Deutscher Universitäts-Kalender," cited in the "Deutsche Medizinal-Zeitung," the strength of the medical faculties of the various universities in the German Empire is as follows:

| | Ordinary professors. | Extraordinary professors. | Privat-Docenten. |
|---|---|---|---|
| Berlin | 17 | 28 | 59 |
| Bonn | 9 | 10 | 8 |
| Breslau | 9 | 17 | 13 |
| Erlangen | 8 | 4 | 4 |
| Freiburg | 12 | 5 | 9 |
| Giessen | 8 | 3 | 3 |
| Göttingen | 12 | 7 | 4 |
| Greifswald | 9 | 7 | 5 |
| Halle | 10 | 9 | 8 |
| Heidelberg | 12 | 8 | 8 |
| Jena | 9 | 8 | 5 |
| Kiel | 8 | 4 | 12 |
| Königsberg | 8 | 10 | 9 |
| Leipsic | 15 | 8 | 22 |
| Marburg | 13 | 3 | 4 |
| Munich | 13 | 9 | 25 |
| Rostock | 8 | 2 | 2 |
| Strassburg | 15 | 7 | 12 |
| Tübingen | 8 | 6 | 2 |
| Würzburg | 9 | 8 | 9 |
| Total | 212 | 163 | 223 |

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality" for the month of September, there were 425 deaths, including 3 from cerebro-spinal meningitis, 8 from cholera infantum, 13 from croup and diphtheria, 1 from diarrhœa, 18 from typhoid fever, 2 from malarial fever, 2 from pyæmia, 1 from whooping-cough, 1 from scarlet fever, 1 from septicæmia, and 2 from small-pox.

**The Health of Kansas City.**—For the week ending Saturday, October 20th, according to the city physician's report, there were 39 deaths, including 3 from croup and diphtheria, 1 from dysentery, 1 from enterocolitis, 7 from typhoid fever, 3 from typho-malarial fever, and 1 from pyæmia. The death-rate was 11·2 in a thousand of the population. The number of births reported was 41.—According to the "Weekly Return of Births and Deaths" to the Health Department for the week ending Saturday, October 27th, there were 40 deaths, including 1 from cholera infantum, 2 from diphtheria, 1 from malarial fever, 1 from remittent fever, 5 from typhoid fever, 1 from marasmus, and 2 from meningitis.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending October 26th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending October 6th corresponded to an annual rate of 18·2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Nottingham, viz., 13·1, and the highest in Manchester, viz., 29·8 in a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 5 deaths in Manchester, 2 in Birmingham.

*London.*—One thousand three hundred and fifty-two deaths were registered during the week, including measles, 39; scarlet fever, 24; diphtheria, 35; whooping-cough, 5; enteric fever, 8; diarrhœa and dysentery, 72; typhus fever, 1. Diseases of the respiratory organs

caused 229 deaths; different forms of violence, 51; and 8 suicides were registered. The deaths from all causes corresponded to an annual rate of 16·5 in a thousand. In greater London 1,680 deaths were registered, corresponding to an annual rate of 15·9 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 23; diphtheria, 6; fever, 7; whooping-cough, 7.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending October 6th in the sixteen principal town districts of Ireland was 18·9 in a thousand of the population. The lowest rate was recorded in Wexford, viz., 4·3, and the highest in Armagh, viz., 46·5 in a thousand. In Dublin 158 deaths were registered, including measles, 2; enteric fever, 3; scarlet fever, 2; diarrhœa, 18; whooping-cough, 7; dysentery, 1; typhus fever, 1.

*Bocas del Toro.*—The United States consul at Colon, in his dispatch dated October 3, 1888, states that Bocas del Toro is altogether free of any epidemics.

*Santiago de Cuba.*—Thirteen deaths from yellow fever are reported for the month of August, 1888, and 17 for the first fifteen days of September. Two thousand three hundred and seventy-seven deaths were registered during the year 1887, including yellow fever, 236, and small-pox, 979.

*Cardenas.*—Consular sanitary report of October 12, 1888, states: "Good health in town and harbor."

*Vera Cruz.*—The United States consul in his report for the week ending October 11, 1888, states that the city may be considered fairly healthy, as one death of yellow fever is reported 11th instant, but some of the physicians say it is not yellow fever.

*Palermo.*—Two deaths from small-pox are reported for the month of September, 1888.

*Trapani.*—One hundred and ninety-five deaths from small-pox are reported for the month of September, 1888—almost all children not vaccinated.

*Guaymas, Mexico.*—Consular sanitary report dated September 30, 1888, states: "No particular or epidemical sickness in consular district. Sanitary condition good."

*Marseilles, France.*—Eight hundred and fifteen deaths were registered during the month of September, 1888, including cholera sporadic, 1; small-pox, 4; enteric fever, 56; scarlet fever, 1; diphtheria and croup, 26; and measles, 4. The consul in his report dated October 5, 1888, states that the health of the city is excellent, the average mortality for the month being 3 per diem below the normal rate—an excellent result for September.

*Manila, Philippine Islands.*—The United States consul, in his dispatch dated September 12, 1888, states that "the disease which was officially declared to be cholera, and which made its appearance at the village of Taytay, 8 miles northwest of Manila, about the middle of last month, and subsequently seemed to have found a strong foothold in this city, has so far subsided that there is very little apprehension of a serious epidemic.

"Although able and experienced physicians declare unhesitatingly that the disease was Asiatic cholera in its most malignant form, the accuracy of the diagnosis is now quite generally doubted, and this doubt is very materially strengthened by the facts in the case. At no time were the authorities willing to consider the trouble epidemic, and declare the port 'dirty,' and the number of deaths did not increase with that fearful rapidity characteristic of this terrible plague.

"It now appears that just before the sickness broke out at Taytay a large consignment of rice, which had been stored in a damp place and soured, was sold among the native shops of the village by some speculative Chinamen who had purchased it at very low rates, owing to its damaged condition. As far as is known, all who ate this rice were attacked with what was supposed to be cholera.

"The symptoms attending the first cases were undoubtedly those of ordinary cholera morbus, but subsequent cases showed the most prominent features of Asiatic cholera. The theory that disease is produced or aggravated by the imagination finds some support in this case. The masses, native and European, seem to live in mortal terror of cholera, which has made fearful ravages throughout these islands, and the first indication of an outbreak fills every one with fear.

"After the disease at Taytay was pronounced genuine cholera, the daily death-rate increased very rapidly, and although the village was rapidly quarantined, the sickness spread to Manila, and within a week between 60 and 70 deaths occurred. As the death-rate failed to show the usual rapid increase, the hope gained ground that the physicians might be mistaken, and that what was supposed to be genuine cholera might be an unusually aggravated form of cholera morbus. At all events, the number of deaths began to decrease a few days ago, and the fear that the terrible plague of 1882 was to be repeated has now quite subsided. The total number of deaths in Manila since the disease appeared here late in August is 186.

"The port is now considered comparatively clean."

MORTALITY TABLE, FOREIGN CITIES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
| Paris | October 6. | 2,260,945 | 846 | .. | .... | 2 | .... | 8 | 3 | 24 | 9 | 4 |
| Glasgow | October 6. | 545,678 | 181 | .. | .... | .. | .... | 2 | .. | 3 | .. | .... |
| Calcutta | Sept. 1. | 433,219 | 168 | 10 | .... | .. | .... | .... | .. | .. | .. | .... |
| Calcutta | Sept. 8. | 433,219 | 174 | 8 | .... | .. | .... | .... | .. | .. | .. | .... |
| Amsterdam | October 6. | 389,916 | 153 | .. | .... | .. | .... | 1 | .. | 1 | .. | .... |
| Munich | Sept. 22. | 275,000 | 164 | .. | .... | .. | .... | .... | 3 | 2 | .. | .... |
| Belfast | October 6. | 227,022 | 70 | .. | .... | .. | .... | .... | .. | 1 | .. | .... |
| Bristol | Sept. 29. | 226,510 | 66 | .. | .... | .. | .... | .... | .. | 2 | .. | .... |
| Bristol | October 6. | 226,510 | 61 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Genoa | October 6. | 179,797 | 102 | .. | .... | .. | 6 | .... | .. | 1 | .. | .... |
| Trieste | Sept. 29. | 154,500 | 71 | .. | .... | 4 | .... | .... | .. | .. | .. | .... |
| Stuttgart | October 6. | 125,510 | 52 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Bremen | Sept. 29. | 122,000 | 52 | .. | .. | .. | .... | 1 | .. | .. | 1 | .... |
| Havre | Sept. 29. | 112,074 | 77 | .. | .... | 1 | .... | 7 | .. | 2 | .. | .... |
| Barmen | Sept. 29. | 109,000 | 28 | .. | .... | .. | .... | .... | .. | 1 | .. | .... |
| Leghorn | Sept. 30. | 101,854 | 40 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Cadiz | Sept. 29. | 65,028 | 42 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Cadiz | October 6. | 65,028 | 45 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Carthagena | Sept. 29. | 13,000 | 8 | .. | .... | .. | .... | .. | .. | .. | .. | .... |
| Vera Cruz | October 11 | 23,800 | 18 | .. | 1 | .. | .... | .... | .. | .. | .. | .... |
| Gibraltar | Sept. 30. | 23,631 | 8 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Kingston, Can | October 12 | 17,300 | 8 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Antigua | October 7. | 15,847 | 7 | .. | .... | .. | .... | .... | .. | .. | .. | .... |

UNITED STATES.

*Barton, Fla.*—Dr. J. F. Hartigan reported, under date of October 20, 1888, as follows:

I arrived at DeLand on the 14th of October, and in compliance with your instructions have the honor to report as follows:

DeLand, the county seat, is situated near the geographical center of Volusia County, on a pine ridge fifty feet above the level of St. John's River, its nearest water-course, and five miles distant from the same. It is twenty-five miles from the ocean. Like many other Florida towns of advantageous situation, its development has been rapid and recent. Two years ago a disastrous fire occurred, which destroyed a majority of the business houses, but within a few months the burnt portion was rebuilt with brick buildings. Orange culture is the principal industry.

The town is about three miles from the main line of the Jacksonville, Tampa, and Key West Railroad, with which it is connected by a branch line. Another road is being constructed to extend to the Blue Springs, Orange City, and Atlantic. The spirit of progress has struck this place in other ways. With a population of only two thousand, the town has an electric light company, an ice factory, a model dairy, and the DeLand University, organized under special charter.

Filtered cistern water is mainly used for cooking and drinking purposes; surface wells are also pretty general, but during a drought many who use them are attacked with dysentery. Mild cases of typhoid are also observed at such times, especially where there is carelessness in depositing slops and garbage. Efforts have been made to furnish the town with artesian water. About five hundred feet have been bored, and water found, but there is not enough pressure to bring it to the surface. Work is at present suspended, but it will soon be resumed with steam-power, when it is thought the necessary supply can be obtained.

The night-soil is carted off a mile from town to a low place, disinfected and dumped, then covered over with sand.

No burial permits are required. The number of deaths from May to October could not be ascertained, but it is safe to say they were below the average. There are two cemeteries—one a mile and a quarter, the other three miles from town.

Mayor—F. S. Goodrich.

Health Officer—Dr. R. H. Gillen.

*Tampa, Fla.*—Dr. J. P. Wall, president Board of Health, in his report dated October 17, 1888, states that "during the week ending to-day I have seen 2 cases of yellow fever—both mild—and 2 have been reported, making a total of 4 cases for the week. . . . No new cases since Sunday, the 14th instant. . . . I do not think that there is much more material here for the fever, and as there are very few refugees to return, I hope that the fever is about done. . . . The fever here has been of a remarkably mild type this season, not over 20 cases having albuminous urine, and only 5 deaths, as already reported. . . . Judging by the coolness of the weather this month, I think that we will likely have a pretty cool winter as compared with last; and if the fever does not hibernate in some obscure village again where its presence is denied, I think that we will get rid of it."

*St. Augustine, Fla.*—Dr. R. F. Fox telegraphed as follows, October 18th: "I have thoroughly inspected St. Augustine. No yellow fever, no suspicious case. Will wait orders."

*Bartow, Fla.*—Dr. J. F. Hartigan telegraphs as follows, October 20th: "Just arrived here; have investigated Orlando and Kissimmee; both healthy. Will mail report to-morrow."

October 22d: "Bartow healthy; will be at Fort Meade Wednesday."

*Palatka, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

October 23d: "Three cases and 1 death reported at Enterprise, opposite Sanford. Have instructed Carlisle, secretary Board of Health, to isolate cases. Will send Posey there to-morrow."

*Palmetto, Fla.*—Dr. M. B. Harrison telegraphs as follows:

October 23d: "For eight days ending 6 P. M. Monday, October 22d, there were at Palmetto new cases of yellow fever, 3; deaths, none. Total number cases to date, 79. At Manatee, new cases, 1; deaths, none. Total number cases to date, 41.

*Gainesville, Fla.*—Assistant Surgeon Martin telegraphs as follows:

October 20: "Two new cases (colored)."

October 21st: "One new case, D. Silghman (white)."

October 23d: "One new case, Dr. N. D. Phillips."

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

October 19th: "Morning report. Present: Officers, 6; guards, 11; refugees arrived, 7; discharged, 15; remaining, 82; employees, 44. Fever camp, 5. Dr. Posey instructed to fumigate and disinfect Callahan."

October 20th: "Morning report. Present: Officers, 6; guards, 11; refugees arrived, 23; employees, 43; discharged, 11; remaining, 94. Fever camp, 6."

October 20th: "To-day completes two months at Camp Perry; 810 refugees from infected points have been received; 721 have been discharged; 25 cases of fever developed; 1 death September 9th; not a case contracted in camp. Our 60 unacclimated employees, 5 of whom have been two months in fever camp, not a single case of fever of any kind among them. Not a known case of fever reported from the 721 cases discharged and scattered to all parts of the country. In view of these facts, how any sanitarians can consider Camp Perry as an infected place is incomprehensible. Drs. Faget and Posey, of New Orleans, Guitéras, and Geddings give this their emphatic indorsement."

October 21st: "Morning report. Present: Officers, 6; guards, 11; employees, 37; refugees arrived, 15; discharged, 5; remaining, 104. Fever camp, 6."

October 22d: "Morning report. Present: Officers, 6; guards, 11; employees, 37; refugees arrived, 7; discharged, 6; remaining, 105. Fever camp, 2 sick; 6 convalescent."

October 23d: "Morning report. Present: Officers, 6; guards, 11; employees, 35; refugees arrived, 11; discharged, 9; remaining, 107. Fever camp, sick, 2; convalescent, 6."

October 24th: "Morning report. Present: Officers, 6; guards, 11; employees, 35; refugees arrived, 32; discharged, 8; remaining, 131. Fever camp, 5; sick, 2; convalescent, 3."

*Jacksonville, Fla.*—Dr. J. Y. Porter telegraphs as follows:

October 20th: "New cases to-day, 50; death, 1; total cases reported, 3,769; deaths, 327. Patients, St. Luke's, 12; patients, Sand Hills, 20. Legal authorities of city and county request the aid of the Government to prevent refugees returning, and by formal resolution this evening relinquished to me, as your agent, all their rights in premises, and ample power to use measures to keep people out. Accordingly I have put on an armed mounted cordon on county roads, and will notify railroad companies. Request confirmation of my action."

October 21st: "New cases to-day, 27; deaths, 4; total cases reported, 3,796; deaths, 331. Patients, St. Luke's, 13; Sand Hills, 20."

October 22d: "New cases to-day, 43; deaths, 1; total cases reported, 3,839; deaths, 332. Patients, St. Luke's, 10; Sand Hills, 20."

October 23d: "New cases to-day, 33; death, 1; total cases reported, 3,872; deaths, 333. Patients, St. Luke's, 9; patients, Sand Hills, 17."

*Fernandina, Fla.*—Dr. Ross telegraphs as follows:

October 24th: "Report for twenty-four hours ending 6 P. M.: Ten new cases, two white; one death, Victoria Cumlandu (white), aged ten."

*Jacksonville, Fla.*—Dr. J. Y. Porter telegraphs as follows:

October 24th: "New cases, 31; deaths, 4; total cases, 3,903; deaths, 337. Patients, St. Luke's, 10; patients, Sand Hills, 16."

Dr. Wylie in Sanford writes: "Yellow fever in Enterprise, Fla. Eight cases now, 2 deaths lately. Orange County has cordon of thirty men."

### Mortality Table, Cities of the United States.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Variloid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York, N. Y. | Oct. 20. | 1,539,908 | 661 | .. | .. | .. | .. | .. | .. | 12 | 16 | 18 | 9 | 12 |
| Brooklyn, N. Y. | Oct. 13. | 805,855 | 284 | .. | .. | .. | .. | .. | .. | 8 | 7 | 8 | .. | 8 |
| Chicago, Ill. | Oct. 20. | 800,000 | 233 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Baltimore, Md. | Oct. 20. | 431,879 | 139 | .. | .. | .. | .. | .. | .. | 4 | 1 | 8 | .. | 3 |
| Boston, Mass. | Oct. 20. | 415,000 | ..... | .. | .. | .. | .. | .. | .. | 11 | 1 | 11 | .. | 1 |
| San Francisco, Cal. | Oct. 12. | 300,000 | 100 | .. | .. | .. | .. | .. | .. | 3 | .. | 2 | .. | 2 |
| New Orleans, La. | Oct. 13. | 248,000 | 122 | .. | .. | .. | .. | .. | .. | 1 | .. | 10 | .. | .... |
| Cleveland, Ohio. | Oct. 6. | 227,861 | 76 | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .... |
| Louisville, Ky. | Oct. 20. | 200,000 | 58 | .. | .. | .. | .. | .. | .. | 7 | .. | 2 | .. | .... |
| Milwaukee, Wis. | Oct. 20. | 195,000 | 55 | .. | .. | .. | .. | .. | .. | 2 | 3 | 1 | .. | .... |
| Kansas City, Mo. | Oct. 20. | 180,000 | 39 | .. | .. | .. | .. | .. | .. | 7 | .. | 1 | .. | .... |
| Newark, N. J. | Oct. 16. | 174,954 | 76 | .. | .. | .. | .. | .. | .. | 6 | .. | 8 | .. | .... |
| Rochester, N. Y. | Oct. 20. | 120,000 | ..... | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Detroit, Mich. | Oct. 20. | 116,340 | 78 | .. | .. | .. | .. | .. | .. | 4 | .. | 8 | .. | 1 |
| Richmond, Va. | Oct. 20. | 100,000 | 42 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Denver, Col. | Oct. 19. | 96,000 | 26 | .. | .. | .. | .. | .. | .. | 9 | 1 | .. | .. | .... |
| New Haven, Conn. | Oct. 20. | 82,000 | 51 | .. | .. | .. | .. | .. | .. | 1 | .. | 3 | .. | .... |
| Toledo, Ohio | Oct. 19. | 80,000 | 8 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Nashville, Tenn. | Oct. 20. | 65,153 | 15 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |
| Fall River, Mass. | Oct. 20. | 65,000 | 22 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .... |
| Evansville, Ind. | Oct. 20. | 53,000 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Savannah, Ga. | Oct. 9. | 52,827 | 30 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Lynn, Mass. | Oct. 20. | 50,000 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Manchester, N. H. | Oct. 13. | 41,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .... |
| Galveston, Texas. | Oct. 12. | 40,000 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Mobile, Ala. | Oct. 20. | 40,000 | 12 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Portland, Me | Oct. 20. | 40,000 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Wheeling, W. Va. | Oct. 20. | 35,000 | 10 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| E. Saginaw, Mich. | Oct. 20. | 33,000 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Burlington, Ia. | Oct. 17. | 30,166 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .... |
| New Albany, Ind. | Oct. 20. | 30,000 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Altoona, Pa. | Oct. 13. | 29,546 | 9 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| New Bedford, Mass | Oct. 20. | 26,845 | 17 | .. | .. | .. | .. | .. | .. | 1 | 1 | 1 | .. | .... |
| Auburn, N. Y. | Oct. 20. | 26,000 | 10 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Haverhill, Mass. | Oct. 20. | 25,000 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Jackson, Mich. | Oct. 20. | 22,500 | 6 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Poughkeepsie, N.Y. | Oct. 19. | 22,000 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Newton, Mass. | Oct. 13. | 21,105 | 8 | .. | .. | .. | .. | .. | .. | 2 | .. | 1 | .. | .... |
| Newton, Mass. | Oct. 20. | 21,105 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newport, R. I. | Oct. 11. | 20,466 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newport, R. I. | Oct. 19. | 20,466 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Pensacola, Fla. | Oct. 20. | 15,000 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |

**The American Public Health Association** will hold its sixteenth annual meeting at Milwaukee, in Athenæum Hall, on Tuesday, Wednesday, Thursday, and Friday, the 20th, 21st, 22d, and 23d inst. The preliminary programme gives the following titles: An address by the president, Dr. Charles N. Hewitt, of Red Wing, Minn.; "The History and Administration of Quarantine in Texas, 1878 to 1888," by Dr. R. Rutherford, of Texas; "The Canadian System of Maritime Sanitation," by Dr. F. Montizambert, of Grosse Isle, Canada; "Yellow Fever Panics and Useless Quarantines—Limitation by Temperature," by Dr. J. H. Rauch, of Illinois; "The Organization of the National Health Service," by Dr. H. P. Walcott, of Massachusetts; "State Boards of Health," by Dr. Ezra M. Hunt, of New Jersey; "The Difficulties and Success of the Public Health Service in Large Cities," by Dr. Oscar C.

De Wolf, of Illinois; "Ontario Sanitary Legislation, its Strength and its Weakness," by Dr. John Coventry, of Canada; "The Destruction of Organic Matter by Fire as a Sanitary Measure—Garbage Furnaces," by Dr. S. S. Kilvington, of Minnesota; "Vaccination as a Protection from the Infection of Small-pox," by Dr. D. W. Hand, of Minnesota; "Tuberculosis; its Origin, Detection, and Control," by Dr. D. E. Salmon, of the Bureau of Animal Industry, Washington; "Veterinary Sanitary Work in Wisconsin, with special Reference to Diseases Communicable to Man," by Dr. V. T. Atkinson, of Wisconsin; "The Relations of Bacteriology to the Discovery and Prevention of Causes of Infectious Diseases among Men and Animals," by Dr. Theobald Smith, of the Bureau of Animal Industry, Washington; "Popular and Scholastic Education in Hygiene," by Dr. J. T. Reeve, of Wisconsin; "Remarks on the Classification of Diseases," by Dr. Henry B. Baker, of Michigan; "Meteorological Observations as respects Disease Prevalence," by Professor Payne, of Minnesota; and "Some Personal Observations on Yellow Fever and its Habitudes, as opposed to the Fallacies and Dangers of Personal Quarantine," by Dr. A. N. Bell, of New York.

## THERAPEUTICAL NOTES.

**The Hedwigia Balsamifera.**—Gaucher, Combemale, and Marestang ("Province médicale," Oct. 6, 1888, p. 571) conclude from their experiments with this West Indian terebinthaceous tree that its physiological action is as follows: A rapid and considerable reduction of the temperature; paralysis beginning posteriorly, and extending progressively to the rest of the body, accompanied with general convulsions, dilatation of the pupils, and ejaculation [of what?]; vaso-dilator phenomena discernible in the ear; and, in cases of fatal poisoning, irregularity of the breathing and paresis of the heart. After death, the viscera are found congested, especially the lungs, the congestion being proportionate in degree to the rapidity with which death has ensued. The *Hedwigia balsamifera*, then, is a hypothermic, paralyzing, and convulsive poison, the action of which extends progressively from the lower part of the spinal cord to the medulla oblongata. The authors have found an alkaloid and a resin in the extract. The alkaloid is more decidedly convulsive than the resin, but less paralyzing and hypothermic; the resin is paralyzing and hypothermic exclusively and much more energetically than the alkaloid. Apart from the antithermic action of the plant, which is quite special, it seems to resemble curare in its effects.

**Sulphurous-acid Fumigation in Whooping-cough.**—Mr. F. E. Manby, of Wolverhampton, England ("Practitioner," August, 1888, p. 120), states that, while he can not advance such evidence of immediate cure as has been recorded by Dr. Mohn, he regards the sulphurous-acid treatment as decidedly beneficial. He says: "The method is the following: The children are in the morning put into clean clothes and removed elsewhere. All their clothes and toys, etc., are brought into their bedroom, and sulphur is burned upon a few live coals in the middle of the room. The fire is allowed to remain in the room for five hours, and then the windows and doors are thrown open. The child sleeps in the room the same evening. About twenty-five grammes (a little under an ounce) of sulphur to every cubic metre may be burned; this is equivalent to rather more than ten grains per cubic foot. The additional precaution was taken of having the day-room fumigated in a like manner during the night—the children practically lived in an atmosphere of diluted sulphurous-acid gas for some days, while in several cases I had the process repeated at the end of a week. In every instance, without exception, my observation leads me to look upon the method as a practical cure for whooping-cough. There is no doubt about it—mothers and nurses all agree with me that an immediate improvement is effected. Cough is lessened in frequency, expectoration of the thick clogging mucus much facilitated, paroxysms lessened in violence, and sickness after them as a consequence scarcely known. The children pick up quickly, and in no case has the cough lasted in its form of reduced violence more than a fortnight after the treatment commenced; it gradually, but surely, abates and ceases. I have had no specially severe bronchitic or pneumonic complications to deal with in the twenty or more cases in which I have applied the treatment, but I do not think I should desist if such complications existed. My opinion must go for what it is worth, but I thoroughly believe that, if this method could be at all generally applied throughout the country during, say, six months from any given date, whooping-cough would become as rare a disease as the plague. The action of the sulphur must be that of a germicide, and in twenty-five years' experience I have seen nothing like such results from any other kind of treatment."

**Cannabis Sativa in Exophthalmic Goitre.**—Professor Valieri, of Naples (cited in the "Bull. gén. de thérap.," Sept. 15, 1888, p. 237), mentions three cases of exophthalmic goitre in women, one of whom was admitted into a hospital for incurables on the 12th of June, 1884, and was discharged completely cured on the 19th of the following September. All three of the patients had exhausted the list of ordinary remedies, and only the hemp benefited them. The author says that *Cannabis sativa* must be used in doses twice as large as those of *Cannabis indica*. The most active preparations are the resin, or cannabin, obtained by Gastinet's process, the tincture, and the dried herb in the form of pastilles, tincture, or fumigation. The extracts and aqueous extracts of the shops, made from the fresh herb, are inferior. He gives four grains and a half of Gastinet's cannabin, mixed with sugar of milk, in twenty-four hours.

**Electricity in the Vomiting of Pregnancy.**—"Dr. Günther, of Montreux," says the "Lancet" for Aug. 25, 1888, p. 387, "mentions, in a gynæcological journal, five cases of the vomiting of pregnancy in which he found electricity of the greatest service. In none of the cases could any pathological condition of the uterus or its appendages be detected. Four of the cases were primiparæ. The remaining case was that of a woman who had had two confinements previously; in her first pregnancy she had suffered from sickness, but not in her second; in the earlier months of the latter, however, she had suffered from severe pruritus of the thighs. Some improvement only was obtainable by regulating the diet, but this was not of any long duration. Narcotics, too, had only a temporary effect. In the absence of pathological indications, we must seek for the explanation of the vomiting in the reflex action between the uterine and gastric nervous supplies, just as the tonsils are enlarged in asthma because of the relation between the cranial and gastric nerves. The female genital organs may be considered as related to other parts of the body from a vaso-motor point of view, and the occurrence of vomiting is probably sometimes to be explained from a consideration of that circumstance. In severe cases a definite degree of sensitiveness is present, and Dr. Günther believes that there is a functional neuralgia of a reflex nature. He applied the anode of a constant current in the form of a sponge, in a metal case covered with rubber, to the cervix. The cathode was a plate about four inches by five inches. This was applied over the spine, between the eighth and twelfth dorsal vertebræ. It is important to see that the current is not intermittent, and to use only one of a low strength. He commenced with two and a half to three milliampères, and never increased the strength higher than five milliampères. Each sitting lasted from seven to ten minutes. The vomiting ceased in four days, at the most, in all the cases. As some degree of nausea remained, the treatment was continued for some weeks.

**Oxygen in the Capillary Bronchitis of Children.**—Dr. Sinainski ("Russkaya Meditsina"; "Lancet," Sept. 1, 1888, p. 437) gives some notes of a case of capillary bronchitis in a child a year and a half old, which seemed likely to prove fatal, where oxygen exerted a rapid and beneficial effect, resulting in complete recovery. Hot baths, ipecacuanha, and emetics of sulphate of zinc, sulphate of copper, and apomorphia had been tried, but the pulse was decreasing, and the child was growing more cyanotic and breathing with more and more difficulty. Three or four inspirations of oxygen produced a marked change, the breathing becoming easier and the cyanosis disappearing. The next day the child presented quite a different aspect. Tonics, expectorants, and stimulants were given, and in about four days' time the patient had quite recovered. Dr. Sinainski thinks that in apparently hopeless cases, where there are signs that the blood is not sufficiently oxygenated, the inhalation of oxygen presents us with a means of obviating the danger arising from that source, and in that way of perhaps saving the patient's life.

**Iodoformum Bituminatum.**—The "British Medical Journal's" Vienna correspondent, in the issue of that journal for Septem[illegible]

1888, p. 735, says: "Iodoform, though most valuable in the treatment of cutaneous ulcers, has hitherto been attended by certain drawbacks which have prevented its coming into general use. First among these is its disagreeable smell; next, the fact that it produces toxic symptoms in some persons after a longer or shorter time; thirdly, in ulcers with undermined edges, while the base under iodoform dressing becomes quickly covered with granulations, the undermined portion does not heal, but remains as a pocket for the retention of pus which gradually burrows further beneath the skin. Dr. Ehrmann, assistant to Professor Neumann, of Vienna, after many experiments, was finally led to combine the iodoform with tar. He was led to this by the notion that the latter, being an oily substance, would diminish the volatility of the iodoform, which is evidently the chief cause of the diffuse erythema caused by that substance, and also because tar often brings gangrenous and septic ulcers into a healthy condition. After many experiments, Dr. Ehrmann finally succeeded in making a preparation in which the particles of tar and iodoform are so closely mixed that only hyaline plates can be discovered under the microscope; the characteristic crystals of the iodoform can not be distinguished at all. The preparation can be very easily pulverized, and has a spicy odor. The odor is so feeble that it is only perceptible in large quantities of the preparation, and this slight scent, which is not at all disagreeable, can be disguised by adding a small quantity of 'styrax liquidus' to the powder, and rubbing both substances together. The diseases in which Dr. Ehrmann has hitherto employed iodoform preparations are (1) soft ulcers; (2) as a dressing after the opening or excision of suppurating and strumous inguinal buboes; (3) gummatous ulcers; and (4) in ulcerations of the foot. The following is the method of application: The preparation is brushed over the part, which is then covered with a thin layer of Bruns's wadding, over which an ordinary dressing is applied. The dressing is changed every twenty-four or forty-eight hours. In soft ulcers situated over parts in which they are necessarily moistened by urine or where the suppuration is very profuse, the dressing is changed twice a day."

**Iodoform in Hæmoptysis.**—Chauvin and Jorissenne, of Liège ("Progr. méd.," May 19, 1888, p. 387; "Glasgow Med. Jour.," Sept., 1888, p. 259), publish a short account of the results of the administration of iodoform, at first along with tannin, afterward by itself. In the first six cases pills were given containing ⅔ of a grain of iodoform and 1½ grain of tannin. Sometimes the hæmoptysis stopped after two of these had been taken; in one severe case of advanced phthisis as many as five were given daily for three days before the bleeding ceased. In another patient, who had been in the habit of having eight or ten attacks of hæmoptysis in the year, which had been treated by large amounts of ergotine and morphine, three of the iodoform and tannin pills stopped the hæmoptysis four months before the date of the report, and there had been no recurrence. In the three cases recorded in detail, in which iodoform alone was used, the results were very similar. The authors came to the conclusion that gr. ij of iodoform daily in three pills was an appropriate dose for moderately severe cases, and that more than eight or nine pills was not required in any case they had to deal with. This action they consider quicker than that of ergotine and therefore more useful. In all the cases during the past year in which they have given it there has been no relapse, and during the treatment no disturbance of digestion.

**Saccharin in Ammoniacal Urine.**—At a meeting of the Royal Academy of Medicine in Ireland, the president, Dr. James Little, read a short paper ("Dublin Jour. of Med. Sci.," June, 1888, p. 493; "Glasgow Med. Jour.," Sept., 1888, p. 260) on the use of saccharin in preventing ammoniacal change in the urine. For the past three years, he said, he had seen from time to time a lady, nearly eighty years of age, who was quite confined to bed in consequence of chronic disease of the bladder, which gave rise to frequent and painful calls to pass water. The urine always threw down a copious purulent sediment, and, except when decomposition was prevented by treatment, was always ammoniacal. Phosphatic calculi had many times been passed, with great suffering, and no doubt many such existed in the bladder. Quinine and boric acid, when taken in fair doses, always purified the urine; but, about three months before, her stomach had become so irritable that drugs could not be borne; nor could washing out of the bladder with a weak warm sublimate solution be longer practiced, as the passage of the catheter had become exquisitely painful. The consequence was that the urine became excessively offensive. In this difficulty it occurred to Dr. Little to try saccharin, and he ordered six tabloids daily. In three or four days the urine was no longer offensive. The patient had continued their use ever since, and the urine had not again become ammoniacal, though there had been little, if any, diminution in the quantity of pus contained in it. Four other cases had been observed since. They were all in males; one was a case of catarrh of the bladder in a paraplegic gentleman; one a case of chronic cystitis, with enlarged prostate; and two cases of ammoniacal urine after stricture. In all, the saccharin had been distinctly useful, combined with the daily use of a catheter, so as to prevent the accumulation of residual urine in the bladder. Saccharin had no effect on the cystitis, except so far as the cystitis was kept up by the ammoniacal condition of the urine, and it was only in correcting that condition of the urine that it was of use.

## ANSWERS TO CORRESPONDENTS.

*No. 236.*—It is very nearly a saturated solution.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

Pills, 20

## Original Communications.

# THE CARDIAC CHANGES IN CHRONIC BRIGHT'S DISEASE.*

BY ALFRED L. LOOMIS, M. D., LL. D.

GENTLEMEN: There is no more important fact to be remembered, or one which can form a safer basis for argument in our consideration of disease, than the fundamental law of self-preservation. Viewed from such a standpoint, many so-called pathological processes become physiological, in that they tend to the preservation of health and prolongation of life. It is only when an exhausted vitality, from overactivity or failing nutrition, passes into degeneration of structure, that these processes tend toward death rather than life. As the center of the entire system, the heart furnishes the most perfect illustration of this principle. So long as full nutrition is maintained, it meets every obstacle to its activity with added force, and only when its walls are weakened do we find that all of nature's pathological efforts have been put forth only to end in that evidence of exhausted vitality, cardiac insufficiency.

As one considers that it is a failing, and not an hypertrophied heart which is to be feared in Bright's as in other diseases, one can but be impressed with the fact, when comparing the opinions of various writers upon the relations of cardiac and kidney disease, that, almost without an exception, they have made little or no reference to cardiac degeneration except as secondary to hypertrophy, and dependent either upon excessive muscular strain or malnutrition from obstructed coronary arteries. Cardiac hypertrophy, on the other hand, receives marked attention, and is discussed as though it were of the utmost moment. Many most ingenious theories have been advanced to account for a process which is always conservative and compensatory, and which doubtless we would not arrest if we could, save by the removal of the condition for which it compensates, while it has almost been taken for granted that the degeneration and failure are but the epilogue to a tragedy that is almost ended. Even so late an authority as Fagge makes no mention of cardiac degeneration as one of the important changes in Bright's disease, but specifically states that "the great point to be insisted upon is that hypertrophy of the heart occurs both in parenchymatous nephritis and renal cirrhosis." Strümpell also says, "We now know that cardiac hypertrophy is not confined to contracted kidney, but that it is almost as constant in many other forms of nephritis," but he makes no mention of degeneration as a primary or secondary change. The arterial changes so often met with in chronic Bright's disease, even from the time of Bright himself, have been looked upon as important concomitants of the renal lesions, but within the past decade they have attracted so much attention as to be regarded by some as the most important part of the pathological processes. Some have gone so far as even to speak of Bright's disease without lesions of the kidney. That compensating hypertrophy of the left ventricle is a pathological necessity of such arterial changes seems evident; and if those changes in the glandular structure of the kidneys which are usually included under the general term of chronic Bright's disease are associated with such arterial changes, cardiac hypertrophy will be a necessary part of the history.

My clinical and pathological studies during the past five years, however, have forced upon me the conviction that simple cardiac hypertrophy is not found in so large a proportion of cases of chronic Bright's disease in this country as are reported by English and continental observers; and that when it is associated with extensive changes in the glandular structure of the kidney it is due to the primary arterial rather than to the renal disease. The most constant cardiac changes which I have met with in chronic Bright's disease are dilatation of the heart cavities and degeneration of the heart walls. In most instances where I have found tubular and interstitial changes in the kidneys in addition to obliterating arteritis, cardiac hypertrophy, when present, was associated with degenerative changes in the heart walls and dilated cavities.

In those forms of renal disease in which the principal changes were in the tubes, Malpighian capsule, and connective-tissue stroma, with little obliterating change in the vessels, I have found no true cardiac hypertrophy, but rather the changes which are characteristic of a Bright's heart.

One who studies Bright's disease clinically in our large hospitals soon realizes that the heaving impulse and the increased arterial tension, which seem to be the essential features of the disease as described by many writers, are the exception rather than the rule, for in most of such cases it is difficult to determine the maximum point of cardiac impulse, it is so diffused and indistinct; and, although the cardiac area of dullness may be increased, the other signs of hypertrophy are wanting, and when, at the autopsy, a large flabby heart is found, one comes to look for other cardiac changes in chronic Bright's disease than muscular hypertrophy.

In making so broad a statement as that hypertrophy is not the characteristic cardiac change in chronic Bright's disease, it seems necessary to consider the interdependencies which have been assumed to exist between cardiac, arterial, and kidney disease, and to point out how many of them, rightly interpreted, support our present proposition.

The early supposition of Traube, that the obstruction of the renal circulation alone was sufficient explanation of the increased arterial tension and cardiac change, was but partially accepted, and was generally abandoned when the recognition of a general arterial fibrosis led to a more comprehensive understanding and explanation of the associated processes. Although the description of those pathological changes given by Gull and Sutton was shown to be incorrect, their comprehensive explanation of a general arterial disease coincident with the renal changes as the cause of the cardiac hypertrophy was fully accepted. It was even carried so far by Mahomed as the assumption that the

* Read before the Association of American Physicians at its third annual meeting.

kidney changes were either an ætiological sequence of, or simply associated, with the more important systemic condition.

Gull and Sutton, however, recognize the fact that the cardio-vascular changes vary greatly as the kidney lesions affect the vascular or tubular structures, and ascribe the hypertrophy found in parenchymatous nephritis in part to weakening of the circulation through a general œdema of the tissues and malnutrition from anæmia and uræmia, a point which I wish especially to emphasize. While high arterial tension throughout the body thus becomes the recognized cause of the cardiac hypertrophy, the explanation both of its cause and nature was various and contradictory. So long as the renal disease was regarded as primary, the arterial thickening was considered as inflammatory in character, and due simply to the direct irritation of excrementitious products in the blood upon the delicate capillary walls. When, however, the arterial disease was supposed to be primary and the kidney disease secondary, an irritation must be found elsewhere. An excessive production of uric acid, by its presence in the blood in irritating quantities, as readily explained it as did faulty eliminations; and the recognized ætiological relations of gout and the uric-acid diathesis to granular kidney thus suggested deficient hepatic functions, either inherited or acquired, as the starting-point in the chain of pathological processes which eventuate in both cardio-vascular disease and coincident granular kidney.

That such is the order of change from uric-acid, scarlatinal, alcoholic, and other systemic poisons, as maintained by Mahomed, seems indisputable. Indeed, Reigel ("Zeitsch. für klin. Med.," vol. vii, p. 210, 1884) affirms that the severity and extent of the tubular change in the kidneys may be more accurately determined by the increase in arterial tension than by the amount of albumin present in the urine.

In 1886 Dr. George Johnson stated that the thickening of the arterial walls which was found in muscles, brain, and tissues, generally in connection with kidney disease, was due to an hypertrophy of the muscular coat. In this he was supported by Waller (Virchow's "Arch.," 1887), who states that the change is a true hypertrophy, but not a hyperplasia. Others (Lotnischewsky, Virchow's "Arch.," 1880), however, deny the presence of any muscular hypertrophy in the arteries.

Dr. Johnson's own explanation of the muscular hypertrophy—that it is due to an attempt on the part of the system to shut off from the tissues blood which is irritating by reason of being surcharged with excrementitious products—seems *a priori* untenable. The possibility of such a change, however, even when resting upon no further authority, becomes of extreme interest in connection with the more recent theory of Cohnheim concerning the cause of high arterial tension.

The two together afford an explanation of the arterio-cardiac changes in all cases when cardiac hypertrophy is secondary to kidney disease, which to our mind is more in accord with well-recognized principles of pathological processes than any which has yet been presented for our acceptance.

Briefly stated, Cohnheim's affirmation is that the circulation in the kidneys, as in all other glands, varies with the demands for their functional activity.

Recent physiology teaches that while increased blood-supply to any gland may stimulate its functional activity, stimulation of its function, whether direct or indirect, to a far greater degree increases its blood-supply. The circulation through the kidneys at any given time will thus vary directly as the proportion between the parenchymatous elements of the kidneys and the amount of excrementitious matter contained in the blood. Any diminution of the amount of glandular tissue in the kidneys at once raises the ratio between the excrementitious matters and the functional power of the kidneys. As a direct result, when the lessening of renal functioning is co-existent with retention of excrementitious material, the systemic forces generally are projected upon the kidneys in order that the total elimination may remain undiminished.

It seems but reasonable to suppose that here, as elsewhere, such a sympathetic control of a local circulation should take place through the nervous system and the muscular elements in the vessels rather than by degenerative changes and fibroid thickening. Such vaso-motor changes would not in any degree interfere with fibroid changes dependent upon direct irritation.

We thus have two widely different conditions tending to increase arterial tension, conditions which may act singly or conjointly, and affording a rational explanation of the varying amounts of cardiac hypertrophy found in apparently similar renal conditions: *First*, a general and primary arterial sclerosis, to which both the cardiac and renal changes are secondary; and, *second*, arterial as well as cardiac hypertrophy, which are as compensatory and conservative as is cardiac hypertrophy in aortic lesions.

Recently Dr. Da Costa professes to have established a connection between certain degenerative changes in the ganglionic centers and both the renal lesions and cardiac hypertrophy. Without accepting or attempting to deny his statements as to the pathological changes found in the nervous tissues, we are unable to see that he has established any causal relations between such changes and the cardio-vascular conditions. The evident clinical relations between lithæmia and both the vascular and renal changes would not seem to be affected even by allowing his views. Nearly all authorities agree that parenchymatous nephritis is far less frequently associated with cardiac hypertrophy than is cirrhosis, a fact which does not at all accord with the supposition that cardiac hypertrophy is dependent alone upon increased arterial tension secondary to retention of urea in the circulation.

Senator professes to have determined that the hypertrophy of parenchymatous nephritis is eccentric, while that of renal cirrhosis is simple or even concentric, implying a concomitant degeneration of the cardiac tissue in the former case, and an apparent rather than actual hypertrophy in the latter. It is quite well established that in many cases the fibroid changes are not confined to the arteries, but are associated with similar changes in the cardiac walls. Such examples are evidence of primary cardiac degeneration as-

sociated with the renal disease, dependent either upon the kidney lesion or upon some more general cause.

While most of the theories, as well as the clinical evidence thus adduced, seemed to be directed to establishing a cause for the arterial changes and increased tension, many of the facts presented appear to me to support the proposition that dilatation of the heart cavities with failure of the muscular power of the heart walls are, perhaps, the characteristic cardiac changes in chronic Bright's disease.

Before presenting the tabulated report upon which many of the conclusions in this paper are based, I desire to offer observations made in a series of cases that I regard as typical of the different varieties of kidney and cardiac changes which are found associated in chronic Bright's disease.

My first *observation* was made in the case of a stock broker, forty-four years of age, who applied for life insurance on the 3d of November, 1885, and was rejected upon the ground that his urine contained albumin. The following day he presented himself at my office for examination.

He stated that he had no hereditary tendencies to disease, that he had always been a generous liver, had never been ill, except with a slight attack of gout in the right great toe joint about a year before; so far as he knew, he was in perfect health.

The only evidence of disease which could be appreciated was an enlarged, forcible, and prolonged apex-beat, its maximum point of intensity being two inches below and an inch to the left of the line of the left nipple. The area of cardiac dullness extended beyond the left nipple. The first sound of the heart was prolonged, dull, distinct, and reduplicated. The second was unusually distinct. There was marked increased arterial tension, as indicated by the pulse and sphygmographic tracings; the specific gravity of his urine ranged from 1·010 to 1·016. The average daily amount passed for four consecutive days was 42 ounces. It always contained a moderate amount of albumin, but at repeated examinations no casts were found. Ten days after he came under my observation, while walking on the avenue with a friend, he fell in an unconscious state, and in a few moments was dead.

The autopsy, sixteen hours after death, revealed a large blood-clot, filling both ventricles of the brain. The heart, after its cavities were opened and emptied of blood, weighed 21 ounces. The left ventricle was markedly increased in size; its cavity was not enlarged, but its walls were greatly thickened. The middle portion of its anterior wall was an inch and a quarter in thickness. Its cut surface was of normal color and presented the appearance of healthy muscle; microscopical sections at different points showed simple muscular hypertrophy. The right ventricle was of normal size and appearance. The valves were normal, and no change could be detected in the coronary arteries. The kidneys were slightly enlarged, of an abnormally dark color, their capsules non-adherent, and their surfaces smooth. On section, the cortical substance seemed somewhat increased, but the markings were distinct. Microscopical sections, both of cortical and medullary substance, showed extensive obliterating changes in the arteries; no abnormal changes could be found in the renal tubes or in the stroma of the organs, except a moderate cell infiltration around some of the tufts. Extensive obliterating changes were found in the cerebral vessels.

A similar observation was made in the case of a janitor of an apartment-house, who was admitted into Bellevue Hospital, March 5, 1886. He was forty-five years of age, and had been a moderate drinker for twenty years, but still retained a fine physique. For the past year he had suffered with frequent and severe headaches; otherwise he had been well. Five days before admission to the hospital, while stooping, raking ashes from a furnace, he felt dizzy, attempted to rise, and fell forward; he was unconscious for thirty-six hours. When he became conscious he found it difficult to speak, and was unable to move the right side. When admitted to the hospital there was complete right-side hemiplegia, and the physical evidence of extensive left cardiac hypertrophy, but no cardiac murmur. The pulse and sphygmograph gave evidence of increased arterial tension. The specific gravity of his urine was 1·010. It contained ten per cent. of albumin and a few hyaline casts. There was slight œdema along the line of the tibia. Without any appreciable change taking place in his condition, eight days after his admission he died suddenly.

At the autopsy, twenty-four hours after death, the left lateral ventricle of the brain was found filled with a recent blood-clot, which involved the left corpus striatum. The vessels of the base of the brain, the only ones examined, showed extensive obliterating arteries.

The left ventricle of the heart was greatly enlarged; after the heart cavities were opened and emptied the organ weighed 19¼ ounces. The anterior wall of the left ventricle at its middle portion was 1⅛ inch in thickness, and the papillary muscles were greatly enlarged; the ventricular cavity seemed of normal size. The right ventricle presented a normal appearance; microscopical sections of the walls of the left ventricle at different points showed the muscular fibers increased in size, their striæ distinct, and their nuclei enlarged; there was no connective-tissue increase. The kidneys weighed 9½ ounces; their surface was smooth, their capsules non-adherent, and on section their markings were distinct. Microscopical sections of both their medullary and cortical substance showed extensive obliterating changes in most of the renal arterioles. The tubules presented a normal appearance. There was in some of the tufts a slight amyloid change and a moderate round-cell infiltration.

These two cases are striking examples of extensive hypertrophy of the left ventricle associated with obliterating changes in most of the renal arterioles, with but slight changes in the glandular structure of the kidneys. The fact that these arterial changes were similar to those which are often found in the advanced stage of cirrhotic kidney, and were associated with similar vascular changes in other organs, furnishes a reasonable solution for the cardiac hypertrophies which are so often present with the cirrhotic kidney. Such cardiac hypertrophies are not a part of the pathological history of the tubular and structural changes which take place in the granular kidney, but belong to the general fibrosis and vascular changes which *precede their development.*

My *second observation* was made in the case of a lawyer, thirty-seven years of age, a generous liver, with a strong hereditary tendency to arterial sclerosis, his father and four of his uncles having died before sixty with cirrhotic kidneys, associated with cardiac disease and obliterating arteritis. They all had been under my medical care during life. I saw him in his first severe illness (an attack of general bronchitis) in January, 1886. At this examination I found, in addition to the evidences of bronchitis, extensive left cardiac hypertrophy unattended by cardiac murmur, but associated with very marked arterial tension. The sphygmographic tracings of high tension

were typical. The specific gravity of his urine was 1·024; it was scanty and strongly acid, and contained ten per cent. of albumin and a few hyaline casts. He complained of wandering pains in his joints, but they were not swollen or tender. Under small doses of calomel and colchicum, his diet being restricted to Vichy and milk, his bronchitis disappeared in a few days. His urine became normal in quantity, less acid, and no longer contained albumin, and the arterial tension somewhat diminished. He continued under my occasional observation for several months, and seemed quite well. Frequent examinations of his urine during this period gave negative results. The area of cardiac dullness, however, steadily increased, and the other signs of cardiac hypertrophy became more pronounced. In October, 1887, he came to me complaining of shortness of breath, and said that he had noticed for a few days that his vision was indistinct. He stated that he had been unusually well during the summer until about ten days before. After a long row, he had sat in an open boat in a strong wind fishing, had become chilled, and since had suffered from a constant and severe headache, nausea, and shortness of breath; had noticed that his face was swollen in the morning. His pulse no longer gave evidence of arterial tension, but was feeble, irregular in force and rhythm; his countenance had a languid expression, and he said that food was repulsive to him. I was astonished at the change that had occurred in his heart since my last examination. The impulse was diffused and indistinct. The area of cardiac dullness was greatly increased latterly. The first sound of the heart was indistinct and closely resembled the second in quality. His urine was scanty, specific gravity 1·026, contained 25 per cent. of albumin, epithelial and granular casts. His ankles were œdematous and his face puffy; no sign of œdema of the lungs. An ophthalmoscopic examination revealed slight neuro-retinitis. He rapidly grew worse, and six weeks after died, with the usual symptoms of acute Bright's disease. At the autopsy, eighteen hours after death, the heart weighed twenty ounces; both ventricles were markedly dilated. The walls of the left ventricle were three quarters of an inch in thickness; the right, an eighth of an inch. The cut surface of both were paler than normal and less firm. Microscopical sections of different points showed the muscular fibers of normal size, their striæ indistinct, and their nuclei granular. The connective tissue in the walls of the left ventricle was uniformly increased; the walls of the coronary arteries at their origin were somewhat thickened. The kidneys were enlarged and weighed sixteen ounces. Their surface was smooth and their capsules non-adherent. On section, their cortical substance was markedly increased and of light color. Most of the renal arterioles were thickened and at points obliterated. The epithelium of the convoluted and straight tubes and that of the Malpighian bodies was swollen and granular, and in some of the tubes detached from their walls. There was slight connective-tissue increase. The vessels at the base of the brain showed obliterating changes.

This case is an example of extensive obliterating changes in the renal arterioles associated with the characteristic changes of acute parenchymatous nephritis. With these kidney changes there was extensive cardiac dilatation, moderate thickening of the cardiac walls, and degenerative changes in the cardiac tissue. The natural explanation of these changes is that the obliterating arteritis had been gradually but progressively developing for years, the result of a strong hereditary predisposition to general arterial sclerosis. As a consequence, a compensating hypertrophy was developed. On the occurrence of the parenchymatous changes in the kidneys the nutritive power of the blood became so diminished that all the organs and tissues of the body, especially the heart, became enfeebled, and cardiac dilatation and feeble heart was the result. How much the functional nerve disturbance caused by the attending toxæmia had to do with the heart failure I am not prepared to state.

My *third observation* was made in the case of a fireman, fifty-six years of age, of intemperate habits, who was admitted into Bellevue Hospital on the 23d of April, 1887, with extreme dyspnœa, cyanosis, and general anasarca. He stated that he first noticed swelling of his feet and face three years before; that at that time his urine was scanty and high-colored; he had nausea, vomiting, and headache. These symptoms were relieved in a few days, but afterward he was never quite well, always having some swelling of his feet and trouble with his stomach. One year ago he had an attack of pneumonia. At the time of his admission to the hospital his temperature was 99°; pulse 130, small, weak, irregular and intermitting; respirations 72. His countenance was anxious, his lips markedly cyanosed. Œdema of the lower extremities extended up to the middle of the thighs. Fluids or solids taken into the stomach were immediately rejected. There were the physical evidences of general bronchitis and œdema at the base of both lungs. The cardiac impulse was diffused, feeble, and the maximum point of apex-beat could not be determined. The area of cardiac dullness was markedly increased latterly. The heart-sounds were equal in intensity and duration; there was a blowing systolic murmur at the apex. The specific gravity of his urine was 1·018, and it was completely solidified by heat. It contained blood-corpuscles, epithelial and fine granular casts.

At the autopsy, twenty-four hours after death, the heart weighed 19½ ounces; the anterior wall of the left ventricle was five eighths of an inch in thickness; all its cavities were dilated, especially the right ventricle. There were a few small atheromatous patches at the base of the aortic valves and in the walls of the aorta, which was somewhat dilated. The valves otherwise were normal. The muscular fibers of the ventricles were atrophied and granular. The walls of the coronary arteries were atheromatous and their caliber was somewhat diminished. The kidneys were typical specimens of the large white kidney. They weighed 18¼ ounces, their capsules were slightly adherent, their surfaces smooth, pale, and mottled. The cortex was increased and the markings indistinct. Most of the tubules were denuded of their epithelium; some contained cast matter. The connective tissue between the tubes and around the tufts was markedly increased; the external coat of the arterioles was thickened, but there was no obliterating change in the vessels. The lungs were œdematous and the liver was fatty.

This is an example of extensive parenchymatous changes in the kidneys, with little obliterating change in the vessels, associated with dilatation of the heart cavities and degeneration of the ventricular walls, and slight atheromatous changes in the coronary arteries. The age and grossly intemperate habits of the patient were strong predisposing causes to the cardiac degeneration, but the extensive cardiac dilatation which existed was evidently due to the intraventricular blood-pressure which is a part of the closing history of such renal changes.

My *fourth observation* was made in the case of a merchant, sixty-eight years of age, a descendant of a long-lived race, with

no hereditary taint except gout. Fifteen years ago he came under my medical care with his first attack of gout; from that time he had periodical gouty attacks two or three times each year. Crippling of the small joints developed slowly, and was never excessive. He accustomed himself to an active out-of-door life until two years before his death. So long as he did he showed an unusual physical vigor. During the last four years of his life the signs of cardiac enlargement were slow but progressive. At no time, either by the pulse or sphygmographic tracings, was I able to detect any evidence of increased arterial tension except during and just preceding his gouty attacks. Early last summer, without any apparent cause, he began to lose weight, became pale, was troubled with insomnia, and had dyspeptic symptoms. His urine increased to sixty and eighty ounces in the twenty-four hours, was of low specific gravity (1·008 and 1·010), and contained a trace of albumin and hyaline casts. This was the first time I had ever been able to find albumin in his urine. In September he had a mild attack of gout which confined him to his room for a longer period than usual, after which he occasionally had attacks of difficult breathing. On the 1st of October he came into my office complaining of shortness of breath and pain in his chest. He said that he found it very difficult to walk from his carriage up my steps. I had not seen him for three months, and was surprised at the change that had occurred in him. He was pale and emaciated, and his countenance had a tired expression. His respirations were labored and irregular; his pulse was feeble, irregular in force, and at times intermitted; his heart impulse was feeble and indistinct. The area of cardiac dullness extended from an inch to the right to three inches to the left of the sternum. There was a distinct epigastric impulse. The first sound of the heart was indistinct, and was accompanied by a blowing murmur which was not distinctly audible beyond the ventricular area; the second sound was accentuated, and the cardiac rhythm was irregular. The area of hepatic dullness was increased two inches beyond its normal limits. There was œdema of the feet and ankles, and at the base of both lungs. His urine contained 15 per cent. of albumin, hyaline and granular casts. He passed from twenty to forty ounces in twenty-four hours. From this time he rapidly became worse, and in January died in a condition of general anasarca. At the autopsy the lungs were engorged and œdematous. The liver was large and fatty and showed interstitial changes. The heart weighed eighteen ounces, was flabby, and its cavities were all dilated, especially the right ventricle. The anterior wall of the left ventricle was three fourths of an inch in thickness. The cut surfaces of both ventricles presented a yellow hue, and were soft and flabby. Microscopical sections from different portions of their walls showed the muscular fibers fatty; the transverse striæ were almost obliterated; the connective tissue was uniformly increased. The aorta was atheromatous, and the valves, excepting a few patches of atheroma, presented a normal appearance. Atheromatous patches were scattered along the line of the coronary arteries and their caliber was somewhat diminished. The kidneys were small, weighing five ounces and a half, and presented the gross and microscopical evidences of small granular kidneys.

This is an example of extreme cardiac dilatation, accompanied by fatty, granular, and connective-tissue changes in the cardiac walls, associated with a small granular kidney. As we analyze this case, the first in the cardiac change was unquestionably hypertrophy, which for a long period was purely compensatory, but when the glandular structure of the kidneys became involved, degenerative changes in the heart muscle led to extensive dilatation and heart insufficiency, which was followed by the train of symptoms which are so often present in this class of cases.

My *fifth observation* was made in the case of a chemist, forty-two years of age, who had had three severe attacks of acute rheumatism before he was twenty years of age. I first examined him in March, 1883, when he consulted me for dyspepsia. On examination, I found a forcible apex-beat two inches below and to the left of the left nipple, with a double aortic at the base of the heart which was transmitted into the vessels and downward to the xiphoid cartilage. He gave no cardiac symptoms except a forcible heart action when excited, and occasional attacks of vertigo. Repeated examinations of his urine gave negative results. By a carefully regulated life, a simple diet, and ten drops of the tincture of digitalis twice a day, he was relieved of his dyspeptic symptoms, and after a few weeks passed from my observation. In January, 1886, I saw him again, when he was suffering with extreme dyspnœa and had considerable œdema of his lower extremities. I found the apex beat less forcible and farther to the left than at my previous examination. There was a distinct epigastric impulse, with marked pulsation of the carotids and subclavian vessels. A blowing systolic murmur was heard at the apex and transmitted to the left, and a loud gushing diastolic murmur was heard at the base and transmitted along the vessels. Any sudden exertion caused giddiness and faintness. There were fine moist râles at the base of both lungs, and he was unable to sleep except in a sitting posture. His urine was scanty and high-colored, with a specific gravity varying from 1·015 to 1·024, and contained 10 per cent. of albumin, hyaline and granular casts. He steadily grew worse, his dyspnœa becoming more constant and severe, and, in a condition of general anasarca, he died from heart insufficiency the 6th of the following March. At the autopsy the aortic valves were found thickened, contracted, and fringed with warty excrescences; the anterior leaf of the valve was ruptured and the ruptured edge was studded with recent vegetations. The mitral orifice was surrounded with vegetations; the valves were thickened, and presented a funnel-shaped prolongation on their auricular surface. One of the chordæ tendineæ was broken across at its valvular attachment. The heart weighed twenty-two ounces and a half. The walls of the left ventricle and auricle were thickened and showed evidences of interstitial myocarditis. All the cardiac cavities were dilated, especially the right ventricle. The lower portion of the right lung was the seat of cardiac pneumonia. The liver was enlarged and firm. The kidneys were of a pale-red color and weighed sixteen ounces; their surface was smooth, their capsules slightly thickened, but not adherent. On section, the cortex was thickened, the markings distinct, the pyramids of an unusually dark color. The cortex tubes were dilated, their epithelium swollen, granular, and detached. The arteries of the medullary and cortical substance were enlarged and thickened, and there was an extensive growth of new tissue diffused through the cortex.

This is an example of extensive valvular disease with hypertrophic dilatation of the heart associated with large white kidneys. From the history it seems evident that the kidney changes were secondary to the cardiac. The enlargement and thickening of the renal arteries would be sufficient to suggest such a connection without the history.

In connection with the foregoing observations, I have endeavored to present, in tabulated form, the renal, cardiac, and vascular changes which were found at the autopsies of forty cases of chronic Bright's disease.

TABLE OF KIDNEY, CARDIAC, AND VASCULAR CHANGES IN CHRONIC BRIGHT'S DISEASE.*

| Name | Age | Habits | Duration of disease | Mode of death | KIDNEY. | | | HEART. | | | | | VASCULAR, ETC. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Wt | Macroscopical. | Microscopical. | Wt. | Meas | Cavities and valves. | Coronary art. | Microscopical. | Aorta. | Lungs, etc. |
| James Mell (1) | 35 | Hard drinker; rheumatism 1 yr. ago; lead colic. | 18 mos | Coma; meningitis. | Right 4 ozs | Capsule thickened and adherent; surface granul'r, cortex diminished in thickness; markings absent. | Epithelium of tubes granular fatty, most marked in convoluted portion; tubes dilated and tortuous; connective tissue increased; some glomeruli show amyloid degeneration. | 14 o z. | Right ventricle, ⅛ in.; left ventricle, ⅜ in. | Cavities somewhat dilated; aortic valves thickened & slightly incompetent. | Normal | Muscular fiber normal in size, but granular; nuclei indistinct. | | |
| Harriet W. (2) | 39 | Unknown. | Exact period not known. | Sudden. | Both, 6 ozs. | Color deep red; capsule slightly thickened, and, at points, adherent; surface smooth; cortex normal thickness; markings distinct. | Slight degeneration of the tubular cells; round celled infiltration, about glomeruli particularly; general passive congestion. | 18 zs. | Rt. v., ½ in.; left v. 1 in. | Cavities somewhat dilated, exc'pting left auricle; surface showed evidence of old pericarditis; slight atheroma of mitral; endocardium of ventricles opaque; col. carn. fibrous. | Thickened walls and diminished lumen. | Transv'se markings deficient; nuclei obsc'd; fibers granular & fatty; great increase of fibroid material, showing in places as a dense network of fibrous tissue. | Atheromatous patches | Lungs slightly emphysematous; old pleuritic thickenings and adhesions over both lungs. |
| John M. (3) | 48 | Not known; said he had been a moderate drinker. | 3 years out of health; anasarca 6 weeks before death. | Coma. | Both, 6¼ ozs. | Reduced in size; surface uneven; capsule slightly thickened and adherent; color pale; cortex increased in thickness, while medulla is diminished. | Malpighian capsules filled with amyloid material; stroma slightly increased; interlobular and arcade vessels amyloid. | 12½ ozs. | Rt. v., 5/32 in.; left v., ½ in.; covered with fat. | Cavities not markedly dilated; valves competent. | Normal | Muscular tissue normal. | Aorta dilated, admitting 3 fingers. | Lungs œdematous. |
| Martha L. (4) | 29 | Temperate; gouty. | 1 year. | Convulsions and coma; anasarca. | Both, 5½ ozs. | Size below normal; lobulated on surface; capsule markedly thickened. | Bowman's c'psules thickened, and contained amyloid material; medium-sized arteries thickened; collecting-tubes contained hyaline material. | 17 ozs. | Left v., ⅝ in. | No dilatation of cavities; valves competent though edge of mitral slightly th'kened; acute endocarditis. | Normal | Muscular fiber of left ventricle increased in size. | Aorta below normal size. | Lungs engorged and œdematous |
| Catherine R. (5) | 66 | Temperate. | 2 years. | Pneumonia, heart failure, œdema of feet & ankl's | Both, 7 ozs. | Capsule thickened and adherent; surface granular; color deep red; cortex diminished in thickness. | Stroma increased, mostly near capsule; epithelium of proximal convoluted tubes in condition of granular degeneration; outer walls of vessels thickened. | 13 ozs. | Rt. v., ⅛ in.; left v., ¾ in. | Ventricular c'vities greatly dilated; the left most marked; tricuspid thickened. | Atheromatous; lumen diminished. | Muscular fiber granular and fatty, and contained brown pigment; connective tissue increased. | Atheromatous; walls thickened. | Upper half of rt. lung in 2d stage of acute lobar pneum'nia; liver atrophied, fatty. |
| John E. (6) | 49 | Grossly intemperate. | 1 year. | Found dead in bed. | Rt., 4 ozs. | Pale; capsule nonadherent; cortex diminished; markings poorly shown; medulla engorged. | Advanced parenchymatous degen., with small amt. only of c. tissue increase; all arteries above interlobular in size, oblit. endart.; thickening of intima, particularly in smaller vessels. | 13⅞ ozs. | Left v., ⅝ in. | All cavities dilated; all valves with atheromatous patches. | Atheroma. | Muscular fiber fatty, with intermuscular connective tissue increase. | Atheroma (slight). | |
| James W. (7) | 38 | Temperate. | 3 mos. | Convulsions. | Both, 6½ ozs. | Capsule strongly adherent; cortex diminished; markings indistinct. | Tubular epithelium extensively degenerated; intertubular tissue increased; blood-vessels thickened; adventitia. | 14 ozs. | Rt. v., ⅛ in.; left v., ⅝ in. | C'vities slightly dilated; columnæ fibrous. | Walls apparently thickened. | Interstitial myocarditis; muscular fiber atrophied. | Walls thickened; caliber diminished. | Lungs engorg'd with blood, and œdemato's; c. tissue increase in the liver. |
| Dennis M. (8) | 39 | Moderate drinker; one attack of rheumatism 1 yr. ago. | 18 wks. | Right side, pleurisy; sudden; of heart failure. | Both, 5½ ozs. | Capsule adherent; cortex diminished; markings indistinct. | Epithelium of tubes granular, with desqu'mation in places; hyaline plugs in many convoluted tubes; c. tissue increased; ro'nd-cell'd infiltration; arterioles show'g oblit'g endarteritis. | 16 ozs. | Rt. v., ⅛ in.; lt. v., ⅛ in.; old pericard'l adhesions. | Rt. v. dilated; left v. normal; valves competent. | Walls thickened. | Fiber small; striæ indistinct; nuclei obsc'r'd; adipose betw. fibers in abnormal amount. | Not included in autopsy record. | Left pleural cavity filled with fluid; right lung œdemat'e; liver fatty. |
| Patrick C. (9) | 50 | Hard drinker; No syph. taint. | 1 year. | General anasarca; pul. œdema. | Both, 7 ozs. | Surface granular; capsule adherent and thickened; cortex diminished; markings irregular; color pale. | C. tis. slightly increased bene'th capsule; parenchyma in advanc'd condition of degen.; arterioles showed obliterating endarteritis — a few were amyloid. | 13 ozs. | Rt. v., ⅛ in.; lt. v., ⅛ in. | All cavities dilated; aortic semilunar. | Walls thickened; caliber diminished. | Muscular fiber diminished in size; striæ faint; c. tissue slightly increased; much adipose betw. bundles. | Cerebr'l arteries atheromatous. | Liver cirrhotic; fibrous stroma in spl'n increased. |
| John N. (10) | 52 | Moderate drinker. | 6 wks. last illness; total durat'n not known. | General anasarca; sudden; heart failure. | Both, 8 ozs. | Surface smooth & mottled; capsule non-adherent, excepting at a few points, and not thickened. | Stroma normal, except'g beneath capsule, where it was slightly increased; epitheli'm degenerated; granular casts in tubes; vessels normal. | 16 ozs. | Rt. v., ⅛ in.; lt. v., ⅛ in. | Cavities much dilated; aortic valves thickened & slightly inefficient. | Normal. | Fibers atrophied; nuclei obscured; striæ indistinct; c. tis. increased. | Normal. | Left, pleuro-pneumonia; liver, passive hyperæmia. |
| Marcus D. (11) | 22 | Temperate. | 9 wks. (last illn'ss). | General anasarca. | Both, 7 ozs. | Color dark; surface smooth; cortex thickened; markings distinct. | Round-celled infiltration about Malpighian bodies; epithelium in advanced state of granulo-fatty degeneration; extravasation into collecting-tubes at points. | 10 ozs. | Normal. | Both normal. | Normal. | Muscular fiber atroph'd; striæ indistinct; nuclei prominent; increase of intermuscular c. tissue. | Normal. | Liver, mark'd passive congestion. |
| Martin B. (12) | 66 | Temperate. | 2 yrs. | 10 days previ'us to death became hemiplegic; coma. | Both, 6½ ozs. | Capsule thickened and adherent; color dark red; cortex greatly diminished. | Cortical tubules largely obliterated by c. tissue; blood-vessels show thickened walls and diminished, often obliterated, lumen. | 10 ozs. | Rt. v., 1/16 in.; lt. v., ⅛ in. | Cavities greatly dilated; organ soft and flabby; valves sh'w'd spots of atheroma. | Atheromatous at p'nts nearly obliterating lumen. | Muscular fiber of left vent. shows rows of oil globules, in st'd of normal parenchyma; striæ invisible. | Aorta atheromatous and slightly dilated. | Lungs engorg'd; liver enlarged, fatty; brain not exposed |

* The measurements for thickness of the cardiac ventricular walls have been taken anteriorly, just below the auriculo-ventricular groove. The tissue, in every instance, has been hardened in Müller's fluid, followed by alcohol.

TABLE OF KIDNEY, CARDIAC, AND VASCULAR CHANGES IN CHRONIC BRIGHT'S DISEASE.—*Continued.*

| Name | Age. | Habits. | Duration of disease. | Mode of death. | KIDNEY. | | | HEART. | | | | | VASCULAR, ETC. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Wt. | Macroscopical. | Microscopical. | Wt. | Meas. | Cavities and valves. | Coronary art. | Microscopical. | Aorta. | Lungs, etc. |
| John O'N. (13) | 41 | Intemperate. | Well until 3 m. ago; œdema of feet. | Sudd'n; coma. | Both, 7 ozs. | Somewh't enlarg'd; color dark-red; surface smooth. | Arteries showed extensive obliterating endarteritis; parenchyma and stroma normal. | 18 ozs. | Rt. v., ⅛ in.; lt. v., 1½ in. | Both normal. | Slight thickening. | Muscular fiber increased in diam. and granular; striæ not demonstrable; nuclei large & granular; some intermusc. fat. | All l'rge blood-vessels thickened. | Lungs engorged and œdemato's; liver slightly cir'hotic; brain not examined. |
| Julia E. M. (14) | 38 | Temperate. | 18 mos. | Sudd'n; œdema of lower limbs. | Right 3½ ozs. | Pale; capsule non-adherent; cortex dim.; markings lost; pyramids congested at their base. | Parenchyma in advanced granulo-fatty change, with fibrous tissue increase; small and medium vessels obliterat'd by increase of intima. | 13½ ozs. | Lt. v., ⅝ in. | All cavities dilated; slight vegetations upon semilunar valves. | Atheromatous. | Muscular fiber small; nuclei poorly shown; striæ very indistinct; much intermusc. fat. | Slight atheroma. | Spleen present'd large infarcts. |
| James H. (15) | 44 | Intemperate. | First sympt'm notic'd by pati'nt 5 wks. before death. | Sync'pe on rising; general anasarca. | Right 2 ozs.; left, 4½ ozs. | L'ft kidn'y, surf'ce smooth; capsule slightly thick'd; cortex dimin'd; mark'gs indist.; right resembles the left in general appearance. | Advanced granular and fatty change in tubules; stroma slightly increased; vessels showed obliterating changes. | 17½ ozs. | Rt. v., ¼ in.; lt. v., 1½ in. | Tricuspid orifice admits four fingers; valves normal. | Thickened; lumen diminished. | Muscular fibers increased in size; striæ lost; nuclei indistinct; diffuse c. tissue increase. | Atheroma in small patches only. | Liver cirrhotic; br'n not examined. |
| Th'mas K. (16) | 43 | Temperate. | Last illness 4 wks. | Gangrene of lt. thigh; gen. anasarca; coma. | Right 5½ ozs. | Capsule non-adherent; surface smooth and very pale yellow. | Tubes generally denuded of epithelium; c. tissue normal. | 14½ ozs. | L'rge; walls thin; no meas. taken | Cavities much dilated; valves normal. | Normal | Fiber in advanced and typical fatty degeneration. | Normal | Serous cavities all contain'd m'ch fluid; liver fatty. |
| John M. (17) | 46 | Moderate drinker. | 6 mos. | Sudd'n; slight hemiplegia. | Right 4½ ozs. | Capsule adherent; markings norm'l. | Tubular epithelium normal; slight round-cel'd infiltration in places; endarteritis oblit. very general. | 17 ozs. | Rt. v., ¼ in.; lt. v., 1 in. | No changes in cavities or valves. | Normal | Muscular fiber increased in size; nuclei large. | No change in large vessels; sm. arteries show ath'ma. | Blood-clot in right lateral cerebral ventricle. |
| William O. (18) | 47 | Intemperate. | 1 week. | Acute alcoholism; c'llapse. | Right 4½ ozs. | Capsule non-adherent; cort. slightly dimin.; markings fairly shown | Epithelium normal; c. tissue increased around small arteries only. | 8½ ozs. | Left v., ½ in. | Left. v. greatly dilated; valves normal. | Patches of atheroma. | Slight pigmentation of muscular fibers. | Patches of fatty change. | L'ngs, acute mil. tuberc'losis; passive cong'stion of liv. |
| Clara L. (19) | 35 | Intemperate. | Unknown | Uræmia; coma. | Both, 14 ozs. | Greatly enlarged; capsule adher'nt; cortex increased; mark'gs oblit'd; intense engorgement. | Tubes largely denuded of their lining cells; round celled infiltration; no arterial change. | 14 ozs. | Left v., ⅝ in. | Ventricles dilated; valves normal. | Atheromatous patches | Muscular fibers normal. | Normal | Liver hypertrophic; cirrhosis. |
| John S. (20) | 36 | Temperate. | Unknown | Asthenia. | Right 4½ ozs. | Cortex diminished; markings indistinct. | Free borders of cells denuded; no other changes. | 10 ozs. | Not meas. no abnorm. observ'd | Both normal. | Normal | Normal. | Normal | Lungs, fibr'id phthisis. |
| James W. (21) | 38 | Intemperate. | 1 year. | Sudd'n; under ether. | Rt., 4 ozs. | Normal appearance. | Ext. coat of small arteries markedly thickened. | 9 ozs. | Lt. v., ½ in. | Left v. dilated; valves competent. | Minute br'nch's atheromatous. | Extensive interstitial myocarditis. | Atheroma. | Abscess of liver; dysenteric ulcers. |
| Sarah H. (22) | 23 | Temperate. | 18 mos. | Asthenia. | Rt., 5 ozs. | Mark'gs indistinct; capsule slightly adherent; cortex thickened. | Fatty degen. of tubular cells, particularly free borders of those lining convoluted tubes. | 8½ ozs. | Lt. v., ½ in. | All cavities dilated; valves competent. | Patches of fatty degeneration. | Well-marked fatty degeneration of muscular fiber. | Normal | Acute mil. tuberc'losis both lungs; right, pleurisy; old. |
| Samuel S. (23) | 45 | Intemperate. | Unknown | Coroner's case. | Rt., 4½ ozs. | Cortex diminished; capsule adher'nt; markings indistinct. | Two tubular cells remaining; c. tissue increas'd; ext. walls of arteries thickened. | 20 ozs. | Lt. v., ⅝ in. | Left v. extensively dilat'd; mitral ath'romatous. | Atheroma. | Fibers atrophi'd and, in places, granular. | Atheroma. | Liver fatty. |
| James D. (24) | 42 | Intemperate. | Unknown | Sudd'n; on str't; coroner's case. | Rt., 4½ ozs. | Capsule slightly adherent; cortex dimin'd; markings distinct. | C. tissue increased especially around tufts and sm. arteries; no change in tubular epithelium. | 10 ozs. | Lt. v., 1 in. | No dil. of cavities; valves competent. | Normal | Fibers hypertrophied; oth'rwise normal. | Normal | Hæmatoma of brain. |
| Sarah U. (25) | 30 | Temperate. | Last sickness, 6 mos. | Coma. | Rt., 3½ ozs. | Capsule adher'nt in patches; cortex slightly dim.; markings indistinct. | Thickening of adventitia of small arteries; no parenchymatous degeneration. | 9 ozs. | Lt. v., ½ in. | Lt. v. small; valves all competent. | Atheromatous patches | Fatty degeneration of muscular fiber. | Slight atheroma. | Œdematous |
| James C. (26) | 44 | Generous liver; gouty. | 2 yrs. | Coma. | Rt., 5 ozs. | Dark-red, smooth; capsule non-adherent; cortex slightly thick'd; mark'gs distinct. | Slight round-celled infiltration about glomeruli; vessels in state of oblit. endarteritis. | 19 ozs. | Lt. v., 1¼ in. | Normal. | Normal | Fibers coarse; striæ somewhat indistinct. | Normal | Obl. ch'ng's in cerebral ves'ls; clot in both lateral ventricles. |
| William S. (27) | 45 | Moderate drinker. | 1 year. | Sudd'n; hemiplegia. | Rt., 5½ ozs. | Surface smooth; capsule non-adherent; mark'gs distinct. | Parenchyma normal; few waxy tufts; slight round-celled infiltration; marked obliteration of arteries by thickening of intima. | 18½ ozs. | Lt. v., 1½ in. | Cavities generally dilated and left v. markedly increased; valves competent. | Normal | Fibers much increased in size; striæ sharp and distinct; nuclei large. | Atheroma (slight). | Blood-clot in left lat. vent.; cerebral ves. generally seat of obliterat'g changes. |
| Henry R. (28) | 37 | Moderate drinker; history of cardiac. | 13 mos. | Sudd'n; general anasarca. | Rt., 7 ozs. | Smooth; capsule non-adherent to cortex; pale and thickened. | Parenchyma granul'r and often detached; slight round-celled infiltration; lumen of arterioles diminished. | 20 ozs. | Lt. v., 1 in. | Cavities all dilated. | Atheromatous. | Fibers normal size; striæ distinct; nuclei granular; c. tis. increased. | Atheroma. | Cerebral arteries gr't'ly thick'd (oblit. endart.). |
| Richard B. (29) | 68 | Intemperate. | 4 yrs.; gouty attacks for 15 years. | Coma; pul. œdema. | Rt., 3½ ozs. | Small; capsule adherent; cortex dim.; surface granular. | Larger arteries showed thick'd intima and adventitia; advanced parenchy. degen.; c. tis. betw. tube increased. | 11 ozs. | Lt. v., ⅝ in. | Cavities all dilated. | Atheroma; caliber diminished. | Fibers granular & fatty; striæ and nuclei indistinct; c. tis. increased. | Atheroma. | Liver fatty and cirrhotic. |
| John S. W. (30) | 53 | Intemperate. | 10 yrs. | Sudd'n; pul. œdema. | Rt., 7 ozs. | Surface smooth; color deep red; old and recent infarcts; markings normal. | Parenchyma granular; increase of middle coat of small arteries. | 23 ozs. | Lt. v., ¾ in. | Cavities all dilated. | Atheroma (slight). | Musc. in m'rk'd degree of fatty degeneration. | Atheroma (slight). | Infarct in lower lobe of both lungs. |

TABLE OF KIDNEY, CARDIAC, AND VASCULAR CHANGES IN CHRONIC BRIGHT'S DISEASE.—*Concluded.*

| Name | Age | Habits | Duration of disease | Mode of death | KIDNEY | | | HEART | | | | | VASCULAR, ETC. | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Wt. | Macroscopical. | Microscopical. | Wt. | Mens. | Cavities and valves. | Coronary art. | Microscopical. | Aorta. | Lungs, etc. |
| John M. (31) | 42 | Temperate. | Acute rheumatism 10 yrs. ago. | Sudden. | Both kidneys weigh 9¼ ozs. | Surface smooth; capsule slightly thickened, but non-adherent; cortex thicken'd; markings distinct; pyramids dark. | Tubes dilated; epithelium swollen, granular, and in places detach'd; arterioles show thickened walls; connective tissue generally increased. | 20½ ozs. | Lt. v., ¾ in. | Cavities all dilated, and especially the rt. v.; aortic valves fring'd with warty excres.; ant. leaflet rupt.; mitral op'n'g sur'nd'd with vegetat'ns; 1 of the chordæ tend. broken; all valves mark. thick. | ..... | Intermuscular c. tis. increased; muscular fibers in condition of fatty degeneration. | ..... | Liver: passive hyperæmia. Lungs: brown induration & œdema. |
| Jennie S. (32) | 12 | Temperate. | 14 mos. scarlet fever 18 mos. ago. | Sudd'n; diabetic coma. | Right 2¾ ozs. | Surface granular; color pale (mottled) red; pyramids engorged at base. | Marked round-celled infiltration; parenchyma granulo-fatty, with free borders generally wanting; obliteration of arteries by thickening of intima. | 6 ozs. | Lt. v., ⅛ in. | Cavities all dilated; valves competent. | Normal | Muscle fatty; nuclei faintly shown; striæ almost obliterated. | Normal | Pulmonary œdema; diabetes. |
| Th'mas P. (33) | 40 | Intemperate. | 2 yrs.; history of h'rt dise'se. | Coma. | Rt., 4¼ ozs. | Capsule adherent; surface pale, granular; cortex dimin'd; markings indistinct. | Tubules of cortex dilat'd and tortuous, with granulo-fatty cells, often detached and forming plugs in lumen; c. tissue greatly increased; intima and adventitia of vessels increased. | 17 ozs. | Lt. v., ⅜ in. | Cavities all dilated; valves competent, excepting for two fenestræ in one cusp of aortic valve. | Normal as to size and gross appearance. | Muscular substance showed fatty degeneration. | Normal | Pulmonary engorgement. |
| Benjamin S. (34) | 41 | Grossly intemperate. | 2 yrs. | Coma. | Rt., 5½ ozs. | Color intense red; capsule thicken'd and adherent, excepting at a few points. | Markings fair, excepting when bands of c. tissue pass from capsule to pelvis; parenchyma extensively granulo-fatty altho' cells all intact; musc'lar media of l'rge arteries increased and amyloid; many glomeruli, also waxy. | 12½ ozs. | Lt. v., ¼ in. | Cavities all increased; valves competent; very slight roughening of endocardium covering aortic cusps. | Lumen diminished. | Muscular fiber granular; nuclei and striæ indistinct. | Normal | Right lung solid from lobar pneumonia. |
| Anson W. (35) | 44 | Intemperate at rare intervals only. | 10 mos. | C'nvulsions after exposure during 'spree.' | Rt., 5½ ozs. | Color red; surface uneven; capsule thickened and adherent; cortex diminished. | Extensive degen. of tubular cells; many tubes obliterated; c. tissue much increased; many tufts waxy; external coat of arteries thickened. | 16 ozs. | Lt. v., ⅜ in. | Cavities much dilated; valves normal. | Normal | C. tissue much increased; fatty degen. of muscular fibers. | Dilated. | |
| Freeman H. (36) | 56 | Grossly intemperate. | 4 yrs. | Coma. | Rt., 7¼ ozs. | Surface smooth; capsule adherent, slightly; cortex much thickened; markings indistinct. | Tubules very generally denuded of cells; c. tis. greatly increas'd; external coat of arteries increased. | 20 ozs. | Lt. v., ⅝ in. | Cavities dilated, particularly the right vent.; valves competent. | Atheroma; caliber diminished. | Muscular fiber granular and atrophied. | Dilated. | Lungs œdematous. |
| Julius P. (37) | 39 | Temperate. | 15 mos. | Convulsions; œdema of legs. | Rt., 6¼ ozs. | Surface granular; pale; cortex increased; capsule non-adh.; markings fair; base of Malpig. pyr. engorged w. blood. | Convoluted tubes dilat'd; epithel. almost all w'nting; extensive round-celled infiltrat'n; blood in collecting-tubes; extern. coat of large arteries much thick'd. | 13½ ozs. | Lt. v., ⅜ in. | Cavities all dilated; valves all competent. | Atheroma. | Fibers small; nuclei clear; protoplasm granulo-fatty. | Atheroma. | Atheroma of basilar artery. |
| Adam B. (38) | 47 | Intemperate. | 2 yrs. | Sudden | Both, 14 ozs. | Cortex slightly dimin.; capsule adherent; mark'gs indistinct; color deep red. | C. tissue increased about tufts, and around small arteries; parenchymatous degeneration. | 20 ozs. | Lt. v., ⅜ in. | Left v. dilated; valves normal. | Normal | Musc. fiber in cond'n of fatty degen., not evenly distributed, however. | Atheroma. | Liver: hypertrophic cirrhosis. |
| Thos. C. (39) | 45 | Always been a "before breakfast drinker." | 5 mos. | Sudden | Both, 9 ozs. | Small; color red; cortex dimin'd; capsule adherent; markings poorly shown. | Interstitial and parenchymatous nephritis; obliterating endarteritis well marked. | 8¾ ozs. | Lt. v., ⅜ in. | Left v. dilated; valves normal. | Atheroma. | Interstitial myocarditis, with fatty degeneration. | Atheroma. | Pulmonary œdema; liver cirrhotic. |
| Jenevra A. (40) | 42 | Temperate. | 2½ yrs. | Coma. | Rt., 3 ozs. | Small; deep red; cor. diminished; fibrous bands projected from capsule; small infarcts thr'ughout | Excreting epithelium largely absent; c. tissue much increased, with thickening of outer coat of arteries; sm. arteries amyloid. | 11 ozs. | Lt. v., ⅜ in. | Left v. dilated; valves competent; abscess in anterior wall of left ventricle. | Atheromatous, with many sm. extravasa. | Slight increase of con. tissue; mus. fiber large and granular; nuclei prominent. | Atheroma. | Inactive tubercular nodule at right pulmonary apex. |

In these tables will be found most of the varieties of kidney lesions usually present in this disease. Twelve were studied as private patients during a considerable period before death, with a definite purpose of endeavoring to ascertain the relationship, if any exist, between the renal and cardiac changes. The remainder were hospital patients, the records of which were made under my direction. All examinations were made in the same way, and a uniform method was pursued in preparing and staining the microscopical sections. In eight cases a microscopical examination of the kidneys, heart, and vessels of the brain was made. In thirty-two cases the examination was limited to the kidneys and heart. An analysis of these cases readily groups them according to features described more or less minutely, as follows:

1. In eleven cases the vaso-renal changes seemed confined to the adventitia. It is true that frequently no sharp line of demarkation can be demonstrated between the external coat of the vessels and the interstitial or sustentacular tissue of organs, and this is especially true of the *arcade arteries* of the kidney. The smaller vascular branches do not present the same difficulty. No case has been placed under this head except those in which the line appears well established in consequence of the difference in the age of the respective tissues.

2. In twelve cases the intima alone was involved.

3. Special reference has been made in five instances of thickening of the muscular media of the smaller vessels or renal arterioles.

4. In six cases the vascular lesions were not accompanied by changes in the glandular structure of the kidneys.

5. In four cases there were the tubular changes of parenchymatous nephritis with little change in the vessels.

6. In ten cases the changes were mainly in the connective-tissue stroma and the adventitia of the vessels.

7. There were twenty-four cases in which the cardiac walls were thickened, and twenty-nine in which the heart muscle had undergone some form of degeneration; three cases exhibited no degenerative change in the cardiac muscle in connection with extensive hypertrophy of the cardiac walls. In these cases the renal changes were confined to the vessels.

8. In twenty cases the heart muscle showed degenerative changes accompanying the hypertrophy. In these cases tubular and stroma changes in the kidneys were associated with obliterating changes in the vessels.

9. In four cases, cardiac dilatation and degeneration were accompanied by marked thickening of the cardiac walls.

10. In seven cases the heart was not hypertrophied, or the walls but slightly thickened, notwithstanding there were extensive obliterating vascular changes in the kidneys.

11. Of the twenty-nine cases of fatty and granular degeneration of the cardiac muscle, twenty-seven showed degeneration of the renal epithelium.

12. Of the twenty-four cases of cardiac hypertrophy, twenty-two showed obliterating changes in the renal vessels.

13. The arteries in the forty cases show in thirty instances some form of obliterating change.

14. In twenty-two cases obliterating change in the arteries was associated with renal epithelial degeneration.

15. Granulo-fatty degeneration of the heart is found in twenty-nine instances. In twenty-four this is accompanied by obliterating changes in the renal vessels.

16. Of the twenty-four cases of cardiac hypertrophy, twenty are accompanied with degeneration of parenchyma of the kidneys.

A general review of my cases fairly indicates the following conclusions:

As a rule, the more extensive the obliterating changes in the renal arterioles, the greater the degree of cardiac hypertrophy. I have been impressed by the distinct relations which one seems to bear to the other. In the few cases in which cardiac hypertrophy was not present with the obliterating changes in the arteries, the general nutritive condition was markedly faulty. In two instances of drunkards, although the kidneys were extensively granular and the arterioles much thickened, no evidence of hypertrophy existed, although the dilatation was excessive. Even in the cirrhotic kidney the primary cardiac hypertrophy has no necessary connection as cause and effect with the kidney changes, but both are a part of the general fibrosis which has its origin in a fibroid diathesis, either hereditary or acquired, the hereditary influences being far stronger than the acquired. In two cases where the cardiac hypertrophy was most extensive, the only change found in the kidneys was obliterating arteritis in the renal vessels. In the other varieties of Bright's disease the heart changes seemed to be directly dependent upon the renal disease, or rather upon the toxæmia and faulty nutrition which results from them; the evidence of this faulty nutrition was shown first and most markedly by changes in the heart walls and cavities.

In all forms of chronic Bright's disease increased arterial tension and more or less compensating hypertrophy is an early phenomenon. In the cirrhotic it is usually gradual in its development, in some cases extending over years, but in all instances, when the period is reached at which the renal symptoms clearly establish interference with the functional anatomical elements of the kidney, a feeble heart action and diminished arterial tension will indicate degenerative cardiac changes. When once the period of tension is passed, it can never be re-established, except temporarily by the action of certain drugs.

Synchronously with the failure of heart power, changes occur in the venous blood system, which give rise to many of the distressing symptoms which are present in the advanced stage of so many cases of Bright's disease. There seems to be no fixed or uniform relation between the character and extent of the changes in the glandular structure of the kidneys and those in the renal and systemic vessels; the changes observed in the vessels of the pia mater, however, were usually less in degree than those in the kidney. In all cases where advanced cirrhotic changes in the kidneys existed the ventricular cavities were dilated. In cases of extensive dilatation, with little or no thickening of the cardiac walls, some form of degeneration of the muscular tissue existed. If the cardiac substance was soft and flabby, the fibers were granular, their nuclei obscured, and their striæ more or less obliterated, with a loss of consistence which allowed them easily to break down when an attempt was made to separate them. The papillary muscle of the mitral valves was frequently the seat of fibroid change, their columns having lost their fleshy appearance and assumed that of tendinous cords.

The edges of the flaps of the mitral valves were not infrequently found slightly thickened, but the evidences of acute endocarditis, secondary to the renal disease, were present in but one of my cases, while slight thickening and induration at the base and tip of the valves, indicating interstitial endocarditis, were present in a few cases.

Sudden heart failure accompanied by dilatation, secondary to cirrhotic kidneys, are sometimes regarded during life as cases of mitral regurgitation on account of the presence of a loud systolic apex murmur; but in no instance did I find at the autopsy evidence of mitral lesions in such cases. Clinical experience teaches that rheumatic valvular disease of the heart may remain latent for many years, during which the heart will perform its functions with efficiency; if, however, renal disease supervene in such a case, its effects are most disastrous, as is evidenced by my sixth case, for the valvular lesions which had remained latent so many years in this case became pronounced under the strain on the circulation which was produced by the complicating renal disease, and led rapidly to the development of the distressing symptoms of heart insufficiency. The association

of valvular affections of the heart with Bright's disease has been sharply insisted upon by many observers. On the one hand, the kidney disease has been alleged to be the cause of the cardiac affection; on the other, valvular lesions have been asserted to be the cause of the renal disease. In only three of my tabulated cases were valvular lesions found which could be regarded as secondary to the kidney disease.

The great discrepancy in the statistics given by different observers in regard to the frequency of the valvular disease as a cause of Bright's kidney is my excuse for presenting the following statistics taken from the records of Bellevue and Roosevelt Hospitals.

While it is but fair to admit that hospital records are more or less unsatisfactory when searched with a view of determining any definite point, I think I can justly say that these records present as fair a basis of comparison as similar reports from other hospitals. The method employed was to take every case of heart disease recorded for a certain period, omitting only those cases of combined cardiac and kidney disease in which there was no evidence of the cardiac lesion having been primary.

A total of one hundred and sixty-four cases was thus gathered. Of this number, forty-three were complicated by evidences of Bright's disease, as shown by the presence of albumin and casts in the urine, or in 20 per cent. of all the cases.

In thirty-five of the forty-three cases there was a history of chronic cardiac disease extending over periods of from one to twenty-five years. Thus, making all due allowances, it seems to me that these cases evidence a much closer relation between valvular disease of the heart and secondary disease of the kidneys than is usually given in hospital statistics.

Three cases included in my tables are well-marked examples of the usual kidney changes found in such cases. In all, the kidneys were enlarged, and, in addition to the usual changes which are found in the large white kidney, the arteries were thickened and dilated; in each of these cases there was right heart insufficiency. The results of these studies seem to indicate that the cardiac changes in chronic Bright's disease have a wide range of variation, and that one can not predict with certainty the exact nature of the changes which may be present in any given case, except that they probably are degenerative, and that, sooner or later, a condition of heart failure will be reached which may fairly be designated as a Bright's heart.

The more marked these are in any case, the more unfavorable the prognosis. We must, as it seems to me, regard Bright's disease as a constitutional disease, in which the repair and waste in all the tissues of the body are imperfectly carried on, and in one way or another the kidney changes are expressive of other visceral and arterial changes, which, combined with the kidney lesion, make up the clinical and pathological history of the disease.

**The Manhattan Medical and Surgical Society** has elected officers for the ensuing year as follows: Dr. Edmund C. Wendt, president; Dr. Thomas L. Stedman, vice-president; Dr. Dillon Brown, secretary and treasurer.

# SURGERY OF THE BRAIN,

## BASED ON THE PRINCIPLES OF CEREBRAL LOCALIZATION.

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(*Continued from page 485.*)

### *Brain Tumors.*

The various tumors of the brain are no longer of interest solely to the clinician and the pathologist. Thanks to the researches of these gentlemen, a field of cerebral, and I may add cerebellar, surgery has been opened to us which was a few years ago literally *terra incognita*. Prompted by the brilliant discoveries of Hitzig, Fritsch, Ferrier, and others only less well known, Macewen, Godlee, and Horsley were quick to take practical advantage of their results and to inaugurate a new era in surgical achievements—an epoch, indeed, whose remarkable results have only been surpassed by Mr. Horsley's recent successful removal of a myxoma from the spinal cord, and Macewen's somewhat similar cases.

Indeed, if you will pardon the moment's digression, so astonishing have been the advances of the past twenty years that one finds ample justification in maintaining that, with the sole exception of the science of electricity, nowhere in the whole domain of theoretical or applied science has progress been so rapid or visible results so remarkable as in surgery. So far as operative surgery is concerned, it can now rank as an exact science.

But little must here be said of brain tumors save in a purely operative sense. Their general features, which most concern the surgeon, have been well summarized in a paper read by Dr. Zenner before the Cincinnati Academy of Medicine, February 1, 1886. The principal features of a brain tumor which produces symptoms are: first, its location; second, its size; third, its character; fourth, rapidity and manner of its growth; and fifth, extent to which it affects the surrounding brain. The various ways in which a tumor may produce symptoms are: first, by increased pressure; second, by direct influence on brain tissue. When a tumor is in the cortex, the adjoining brain gradually accommodates itself, to a certain extent, to the increasing pressure; at the base or in the neighborhood of the nerve trunks such condition is not met with in many cases. When a part of the cortex has been destroyed, another part assumes a certain portion of its function. The symptoms produced by these changes may arise either from loss of function or from irritation. Nerves may be compressed where they pass through the dura, or directly in their course, or by enlarged blood-vessels. Convulsions may occur from tumors in any part of the brain; optic neuritis is by no means common. The chief localizing symptoms are paralysis of the cranial nerves, hemiplegia, monoplegia, hemianæsthesia, partial spasms, reeling gait, aphasia, and hemiopia. In the frontal lobes, the corpora striata, and the optic thalami, brain tumors are frequently latent. When an individual suffers from constant headache that is not relieved by ordinary methods of treatment, he should be examined for brain tumor. Wernicke has suggested an operative procedure in cases where removal is not to be

thought of—namely, tapping the ventricles in order to relieve intracranial pressure. This may be of value in rare or unusual cases. Tumors in the posterior fossæ of the skull usually cause a large accumulation of fluid in the ventricles. The distended third ventricle presses downward on the optic chiasm and produces optic-nerve atrophy; these are the cases in which blindness appears early—in other words, atrophy of these nerves is usually the result of a tumor in the posterior fossæ of the skull, generally in the cerebellum.

Considered in their surgical relations, we may, with Bergmann, divide brain tumors into (*a*) the circumscribed (encapsulated); (*b*) the infiltrated (diffuse), around which, as a rule, there is a zone of softening.

The former displace the brain substance, the latter destroy and supplant it. The former may be enucleated, the latter not. In order to remove the latter, one must remove a wide margin of surrounding tissue, as in removal of similar growths in other parts, or he must make total ablation, which is only possible in two places—the frontal and occipital extremities. Obviously these limitations reduce at once the number of cases suitable for operation.

Yet another class of neoplasms deserves at least mention here—*i. e.*, those growing from the interior of the cranium. These by pressure may give rise to meningeal irritation or pressure symptoms, or both. Providing that a reasonably satisfactory diagnosis can be made, it must be indeed an extensive growth from the cranial vault which shall contraindicate operation. It is not so uncommon an event at present to see large areas of the bony covering of the brain removed for the extirpation of neoplasms involving them or the membranes, and pressing on the brain. Gussenbauer has removed half the frontal bone with a little of the great wing of the sphenoid and the squamous, recovery following without disturbance of any kind. Macewen has done nearly the same thing. Langenbeck and Bergmann have excised large pieces of the dura, and the latter, as well as Küster, not only has done this, but has removed a portion of the superior longitudinal sinus. No hesitation need then be felt in attacking any such lesion so long as the general condition of the patient may warrant it.

But supposing the case of a tumor in or near the cortex, we are, if possible, to learn yet more about it. It should not be a diffuse growth surrounded by a zone of degenerated tissue, nor should it be too large or extensive. These tumors are not always so constituted that they are easy of recognition even after exposing the brain. Unfortunately, diagnosis as regards one of these features is as difficult as concerning the other. Bergmann says that when amidst slight and late brain symptoms signs of increased intracranial pressure quickly develop, the probability is that we have to do with an infiltrated tumor. Tumors growing from the skull can be estimated with perhaps a little more exactitude, although these penetrate a considerable distance, even over motor areas, before they occasion great disturbance.

Considering the uncertainties of diagnosis, some would think it advisable before removing a large area of bone to make an exploratory opening with the trephine, and even an exploratory incision down to the white matter. Such a procedure would be quite in accord with the principles laid down in the beginning of this paper when advising more frequent exploratory operations. No harm is likely to be done by the preliminary operation, and a clear indication to abstain, thus gained, will often be more satisfactory than the uncertainty which must otherwise surround the case.

According to Jastrowitz ("Deutsche med. Wochschft.," No. 11, 1888, p. 209), one should only undertake to extirpate those tumors which are peripherally situated, and in respect to which it can be determined that they are non-multiple, not too large, not infiltrated, and not located in vital parts. Still, if we are to be confined too strictly to this dictum it will prevent us from removing as large tumors as Durante has already shown us we can extirpate successfully, and it will hinder us from trying to imitate Weir's success in removing an infiltrating tumor with two adjoining secondary growths.

*What and how many Brain Tumors are Accessible?*

The best answer to this question has been given by Hale White ("Guy's Hosp. Rep.," 1886, p. 117). He carefully studied the records of one hundred brain tumors found in the dead-house of Guy's from 1872–'84, with particular respect to possibility of operation. According to the records, one brain tumor was found in every fifty-nine autopsies.

Of the 100 studied, 45 were of tuberculous nature, 24 gliomas, 10 sarcomas other than glioma, 2 glio-sarcomas, 5 carcinomas, 4 cysts, 1 lymphoma, 1 myxoma, 5 gummata, 3 undetermined—total, 100.

Bergmann has carefully gone over White's researches, and concludes that all the tuberculous and gummatous neoplasms must be excluded from consideration in an operative sense. Brain tuberculosis is almost impossible of diagnosis and has always occasioned most unfavorable prognosis, but this he hopes modern surgery may make brighter. Nevertheless, as these tuberculous masses consist almost always of caseous material, it would be most difficult to extirpate them from the soft tissue in which they lie imbedded with any such completeness as is indicated. An operation would in such a case be necessarily incomplete, and return would quickly take place, with, in all probability, tuberculous meningitis. In all of White's forty-five tuberculous cases some other organ was affected, usually several others. In only three of them could operation have offered any prospect of success; but in one of these, with a tuberculous mass on the median side of the left hemisphere, there was tuberculosis also of the peritonæum and Falloppian tube; in the second, with a nodule near the fissure of Rolando, there was infection of lungs and intestines; and in the third, with a focus in the left side of the cerebellum, there was similar disease in the mesenteric glands.

Judging from these cases, it is extremely rare that cerebral tubercle will be considered amenable to surgical help, even could it be exactly diagnosticated. Bergmann considers it impossible that the cases reported by Macewen—one as a successful removal of a caseous nodule from the ascending frontal convolution, and the other as a successful evacuation of a tuberculous cyst ("Lancet," 1885, i, 881, 934)—

were cases of genuine tuberculosis; in his estimation they were distinctly syphilitic, and should have been treated with antispecific remedies. Thus far the only genuine and undoubted case is the brilliant one of Horsley, who removed a tuberculous mass from the right cortex of a young man of twenty. Brain syphilis is, in Bergmann's opinion, to be treated with drugs rather than by instruments.

Of the thirty-six sarcomas included in White's studies, fifteen were diffuse and widely infiltrated, and fourteen were utterly inaccessible. Only in four could operation have effected any good. In one of these the tumor was in the middle line of the cerebellum; in the second it sprang from the dura and pressed on the cerebellum; in the third its site was the frontal lobe; and in the fourth the occipital. Two of the three undetermined tumors were operable; one lay in the left lobe of the cerebellum, the other, of dural origin, invaded the right hemisphere.

Of the four cysts, two were multiple and one was complicated with a cancer on the neck and was accidentally discovered; the fourth might have been easily removed, since it lay isolated in the cerebellum. So, too, might the myxoma have been attacked, since it was quite superficial.

In brief, of White's one hundred tumors only nine could have been removed—namely, one tuberculous nodule, four sarcomas, two undetermined tumors, one cyst, and one myxoma. In other words, 9 per cent. could have been attacked, *providing* a fairly accurate diagnosis had been made. *Ante-mortem* diagnosis, however, and anatomical diagnosis are two very different feats. Of the above-mentioned nine, five were located in the cerebellum, one in the frontal lobe, and one in the extremity of the occipital. It is very doubtful if these seven could have been recognized accurately enough during life to have justified attack, while the myxoma was impossible of diagnosis. We are then narrowed down to one tumor out of the hundred which was susceptible of both exact localization and extirpation, even when looked at in the light of the acquirements of to-day. This is not a very favorable showing, to be sure, and is to be accepted only for what it is worth. If it has any very striking bearing I should regard it as only another argument in favor of tentative exploration.

### *The Operation for Intracranial Tumor.*

With regard to the technique of operations on the cranial contents, Mr. Horsley has left but little to be added to the admirable remarks which he has published in the "British Medical Journal," October 9, 1886, page 670, and in the same journal for April 23, 1887, page 863.* To these papers of his the reader and the student of the subject should certainly be referred, and the writer will make no effort to copy his observations in detail. Nevertheless, owing to the extreme importance of the subject and the general interest in it, a brief rehearsal of the most important points in operative technique will not be out of place here.

*Preparation of the Patient.*—The patient's head should be shaved two or three days before the operation and carefully washed with green soap and ether, or a mixture of ether and turpentine. From that time the vault of the skull should be kept enveloped in a moist antiseptic compress. In this connection it is worth while to add just here that Dr. Keen has called attention to the utility of shaving the scalp in every case of suspected intracranial lesion, since in two cases he found scars after shaving which were previously unnoticeable.

Aside from this, the usual preparatory treatment suitable for all severe operations should be adopted. The anæsthetic should be chloroform, unless some peculiar feature about the case makes it unwise. Chloroform is known to have a contracting influence on the vessels of the brain; hence its efficiency in these cases. Mr. Horsley has suggested and advised hypodermic administration of morphine previous to operation, with a view of also profiting by its effect in contracting the cerebral vessels. Dr. Keen has resorted to ergot for the same purpose. To the writer it would seem that a combination of the two might be preferable to either alone. In case the patient was already so unconscious that no anæsthetic was needed, the hypodermic use of ergot would amply meet the indication. The lesion should be located as accurately as possible by the methods spoken of in another part of this paper. The writer would suggest the driving of a small, disinfected, headless tack through the scalp into the skull over the center of the area previously located. After dissection of the external flap this tack will serve to point out accurately the portion to be first attacked.

Another point in operative technique. In order to prevent hæmorrhage from the scalp during the superficial explorations, an elastic bandage may be tightly tied around the skull for as long a time as may be required. The question might also be raised whether in some very extensive operations of this kind it would not be justifiable to put into practice that which Senn has shown can be successfully done upon dogs—namely, the isolation of the trachea and the application of a rubber bandage back of it around the whole of the neck. By this procedure he found that the most extensive operations could be done upon the brain or skull as bloodlessly as they are now done upon the extremities.

The styptic properties of cocaine solutions have led Keen and others to resort to them as hæmostatics in brain surgery. Experience must yet show their real value, but they are well worthy of a trial. We are not yet in position to say whether their secondary relaxing effects upon the vessels will lead to any unpleasant disturbance or hæmorrhage. For my own part I have also repeatedly seen benefit from the application of antipyrine solutions on account of its styptic properties. Antipyrine is not only a good hæmostatic, but has some antiseptic properties. It is possible, therefore, that a spray of a one-to-forty antipyrine solution, directed upon the exposed brain tissue, would prove of considerable benefit. In order to test this matter I have anæsthetized animals, and, after extensively uncovering the brain, have cut into it in various directions, and, after causing a free hæmorrhage, have directed upon the

* *Vide* also papers by Macewen, "Med. News," Aug. 18, 1888, p. 169, "Brit. Med. Jour.," Aug. 11, 1888; and by Weir, "Am. Jour. of the Med. Sci.," September, 1888, p. 219.

part a spray of three-per-cent. antipyrine watery solution. Invariably I have seen almost instantaneous evidence of its styptic virtues, and should not hesitate to use it at any time in operating on the human brain.

The old method of beginning the operation was to make crossed incisions. The raising of a semilunar flap, or one of horse-shoe shape, is much superior. This flap should have its apex in such a position that, as the patient lies upon his back, drainage may be made by mere force of gravity. There is an advantage also in raising the periosteum with the flap of the skull. While the Lister carbolic spray is not now often used, still most authorities agree that in theory and in practice it is safer to do these operations under the spray, although there may be no objection to using any other antiseptic, such as hydronaphthol, instead of the carbolic acid. In fact, it seems to me far preferable.

With regard to the methods of perforating the bone, the English and Continental surgeons differ. The former prefer usually the trephine and cutting bone forceps; the latter, the hammer and chisel. American surgeons for the most part agree in practice with the former, and the writer, for his own part, can not avoid the conclusion that the first exploration, at least, can be made more readily with the trephine than in any other way. Those whose facilities permit the use of the surgical engine will find it to be an admirable adjunct to cranial surgery.

*What shall be done with the Pieces of Bone removed?*

Since Macewen has taught us how to save these fragments and restore them to place, the method has been widely tried and generally commended, and it is now the proper thing to put all pieces of bone thus removed at once into a warm antiseptic compress to be utilized at the close of the operation. Spitzka, among others, has paid particular attention to this technical point. At an autopsy three months after operation he found the reinserted button of bone in part firmly reunited; it was raised above the surrounding level, but the inner contour of the calvaria was restored, and the dura was not adherent. He concludes that buttons of bone, aseptically reimplanted, may, at least in young persons, become reunited to the calvaria, and that, even in the event of failure of bony union, they are perfectly harmless. He regards it as very essential that they be replaced, and illustrates this by a case-record to the point ("Trans. of the Am. Neurol. Assoc.," 1887, p. 22).

Dr. Mills deems it inadvisable to reinsert large or irregular areas of bone, or those with very irregular edges or inner surface, until they have been smoothed off. But, as we know, whenever it may be unwise to restore an integral portion of the bone it may be chipped into minute pieces, and these strewn over the external surface of the dura before laying the skin-flap in place.

Dr. Dercum has, furthermore, called attention to the inadvisability of preserving fragments of bone in a bichloride solution for so long a time as might be necessary in certain cases, and he thinks, most wisely, that the risk of long-continued immersion would be greatly diminished by keeping them in fresh blood-serum, or in the physiologist's salt solution (7·5 *pro mille*) ("Polyclinic," June, 1888).

*Treatment of the Dura Mater.*—This should be incised, according to Horsley, around four fifths of the circumference of the area exposed, at a distance of an eighth of an inch from the edge of the bone, so that it may be afterward conveniently stitched. Arterial branches running in its substance may have to be severed, but may be easily secured. Portions of this membrane which adhere to underlying tumors are usually considerably altered. If the case is of recent origin, the dura will be found highly vascular; in advanced cases it may be yellowish, and in some instances, on separation from the growth beneath, it is found to be of a dirty-reddish color. Whenever adherent, it should be freely excised. After division of the dura, one must first look for protrusion of the brain. Horsley maintains that marked protrusion of the dura indicates pathological intracranial tension, obviously a sign of great importance. Next, the color of the brain should be observed. It will be remembered that the cerebellum has normally a different appearance from that of the cerebral cortex. In the latter, it is said that the existence of a yellowish tinge or a pink lividity indicate the existence of a tumor beneath. In the light of some pathological experiences of his own, Jastrowitz advises us to trust to the sense of touch, when in doubt, rather than to that of sight, in estimating the condition of the brain after exposure ("Deutsche med. Woch.," No. 11, 1888, p. 210).

It has more than once happened that, even after careful exposure of the brain according to the best rules of localization, uncertainty has arisen as to which convolution was the desired one. In such cases the battery has been applied, by Horsley, Keen, and Deaver, with satisfactory result. It will therefore always be well to have this adjuvant at hand.

The condition of the vessels must be observed, note being taken of yellowish-white patches in the perivascular lymphatics, which are indicative of old mischief. Next, a species of manipulation should be practiced in order to detect either fluctuation or an increased resistance denoting a tumor; nothing being found upon the surface and no tension being discovered indicative of deeper lesion, further exploration can be conducted with a small aspirating needle, or with a probe or grooved director. The general harmlessness of the introduction of a small hollow needle into the brain has been clearly demonstrated already.

*Further Investigations.*

If the symptoms have been sufficiently grave to call for so much exploration, it is not likely that the careful separation of the convolutions with the rounded point of the probe, or even the pushing of the same through the layers of the cortex, will give rise to any serious disturbance, while the needle or the probe may reveal the presence of pus, or, by the increased resistance offered by a tumor, may indicate its presence.

Should a tumor present or be discovered, the method of its removal will depend somewhat on its depth and character. Incisions for the removal of tumors should be made perpendicularly to the surface of the brain, both because bleeding can be more readily controlled and because, by

these vertical cuts, the paths taken by the fibers of the cortex to the internal capsule are divided to the smallest possible extent; in other words, all incisions should be directed into the corona radiata. When it is possible, a portion of each motor center should be allowed to remain, so that absolute paralysis of a given part may be prevented, so far as this can prevent it, since total destruction or ablation commonly means absolute loss of motor power for all time in the part supplied therefrom.

Removal of a layer of cortex, whether normal or abnormal, does not leave, as might be supposed, a prominent gap with vertical sides, for in a short time the most depressed portion is made to bulge almost to the level of the intact parts surrounding. In addition, the cut edges are also slightly everted, and if less brain is removed than bone, these are extruded into the opening in the skull; thus, owing to mechanical arrangements, there is a continual normal tendency to hernia cerebri. But Bergmann and others have shown that the tendency to hernia cerebri is in inverse ratio to the area of bone removed, so that there is the greatest danger of hernia when but a small trephine opening has been made. As experience has extended in these cases, we are taught that it is to the best interest of the patient to remove brain tissue to an extent greater than was at first supposed—that is, one should go as wide of lesion in the brain as he would of the apparent border of the ulcer in excising a cancer of the lip. Bergmann and Horsley have also made plain that which was not previously generally appreciated—that in all operations for epilepsy of traumatic origin the portions of the cortex nearest the evident lesion should be freely removed.

*Drainage.*—The question of drainage must be decided by the circumstances attending each case. An abscess must plainly be drained so long as pus is discharged, but the wound or cavity left after antiseptic removal of a tumor should hardly ever, if ever, be drained for more than twenty-four or forty-eight hours, and this draining may be effected by rubber tubing or strands of horse-hair or catgut.

*Closure of the Wound.*—All hæmorrhage must first be checked; suitable drainage is then provided for, according to the necessities of the case. We wish, so far as possible, to obtain primary union; also to make sufficient pressure upon the brain to check tendency to protrusion. During the first twenty-four hours there is usually a slight or continuous oozing of blood and serous fluid from the fresh surfaces, but in all save abscess-cases the drainage-tube may be removed on the succeeding day, and the wound dressed with a certain amount of pressure over the flap. Any exudation that subsequently collects in the cavity or over it will thus be retained and may give rise to some pain in the wound, with apparent distension, so long as pressure remains. Symptoms from this are not severe. The wound may be left with confidence that the fluid will be reabsorbed in due time and that pressure will be the best check to protrusion. In case the primary union be broken up by this pressure, it may be regarded as simply a safety-valve action; otherwise the increased pressure will merely compel the lymphatics to more rapid absorption. According to Horsley, the cavity is gradually filled with a delicate pink, spongy connective tissue, whose meshes contain this fluid, which forms a plastic barrier between the scalp and the brain, and which subsequently separates the brain from its environment by a cushion of soft, normal connective tissue. Fine catgut should be used for closing the dural wound, and catgut or silk, as may be necessary, for the scalp.

### *How much Brain may be removed?*

As a study of the numerous recorded cases will show, we know scarcely any limit as to the amount of either brain or bone that may be removed. Certainly we can unroof large areas of the brain, including ten or a dozen square inches if need be, feeling confident, from the assurance given by many surgeons, that the larger the opening the less the danger of hernia cerebri. So, too, with the brain itself. Spitzka and others maintain that, if in animals, so long as the *brain axis* is not interfered with, life may go on undisturbed, we have not yet reached the limit of what may be accomplished in man, since he has removed the brain in dogs to an extent which a few years ago would have been deemed incredible.

### *Dangers of the Operation.*

In considering the main sources of danger to a patient after removal of a brain tumor, we must perhaps first mention any lack of or failure in aseptic precautions. If any operation seems to call loudly for such measures it is such a one as this. The records of the past are full of the fatal results of such omissions; and yet we meet, just here, with facts which constitute a strange anomaly. We know too well the danger attending the entrance, ordinarily, of foreign or septic material beneath or even in the scalp. Still Spitzka assures us that he has deliberately injected a drachm of the foulest street mud he could procure into the thalamus after trephining. The dog recovered without untoward symptoms. In the arachnoid of the ponto-chiasmal lamina two large masses of dirt were found after the dog had been subsequently killed; a third portion of it was found in the arachnoid lamella on the basilar surface of the oblongata ("Transactions of the American Neurological Association," 1887). His general inference from experiments is that the oftener a dog's brain or dural spaces are insulted by the insertion of indifferent or virulent substances, the greater becomes their resisting power to injurious agencies such as prove fatal to an animal operated on for the first time. In other words, that final immunity is gained by repeated attacks. Let us, notwithstanding, not judge from these interesting experiments that we can afford to disregard any precaution which the best practices of the day afford.

But the principal immediate dangers are two—*i.e.*, *hæmorrhage* and *œdema*.

*Hæmorrhage.*—When the pia is cut, its vessels may bleed freely, so that ligature or its equivalent may be demanded. The brain substance is not likely to give rise to alarm on this account. But that disastrous hæmorrhage from unexpected sources may occur is a lesson we may learn from Birdsall and Weir's case; here two bleeding points were discovered—one from near the straight sinus, probably be-

longing to the pedicle of the growth, the other probably a terminal branch of the posterior cerebral artery. Direct pressure checked their flow and the cavity was filled with iodoform gauze. Nevertheless, oozing continued and the man died of loss of blood nine hours later.

Dr. Keen found in one of his cases that the vessels were so friable that if one end of the catgut ligature were pulled harder than the other the vessel would be cut through; hence absolute equality of traction may be essential.

Bergmann advises, as a rule, to tie arterial stems of appreciable size, and condemns the tampon if it can be avoided. In the brain one may ordinarily cut to a depth of four centimetres before an artery spurts—before there is even more than an oozing; but when such a branch as one from the posterior cerebral on the basal surface of the occipital lobe is cut, experience shows that it must be secured. When necessary one may do as he did in one case: tampon the cavity with iodoform gauze, and make secondary suture of the flap forty-eight hours later if need be. After inserting the tampon the dural and skin-flaps are laid over it and an absorbent dressing applied over all. This tampon must be a rolled-up wad of gauze, covered by as many more as may be needed, till the level of the skin be reached. It thus effects *compression* and *drainage*, and is much better than an inefficient plugging with a strip packed down in the ordinary manner. The subsequent removal of all this, with secondary suture of the flap, may require a repetition of the anæsthetic (chloroform), but this is much preferable to a failure by other methods.

Spitzka speaks of the danger of hæmorrhage beneath the button of bone from too sudden relief of counter-pressure made to repress any tendency to hernia cerebri; also of the danger in exposure of large brain areas in old persons with feeble vascular walls, from relief of pressure upon the intracerebral vessels—practical points worth noting.

On the other hand, Jastrowitz raises the question whether in some cases of cerebral hæmorrhage we ought not to trephine simply for relief of intracranial pressure in order that absorption may more easily take place. He shows that in most cases of brain tumor the *pressure* is a much more serious factor in the fatal result than any other element. Fifty years ago Magendie made experimentally cerebral hæmorrhages in animals, and after they were comatose and paralyzed he quickly opened their skulls, after which they recovered consciousness and part at least of their muscular power.

A second danger is that of *acute brain œdema*. This led to the loss of one of Bergmann's patients five days after operation. This sudden transudation, which perhaps is an exaggeration of the process by which the cerebro-spinal fluid is produced, may be brought about in two ways—either by increase of intra-arterial pressure, or by obstruction of the venous channels of escape. Production of the normal fluid seems to be in proportion to the former; obstruction to venous return must be followed by similar obstruction to lymphatic return. Under this accumulation, however brought about, the brain becomes more sodden. Removal of a portion of the cranium is in effect a diminution of the pressure normally exercised on its contents. Such relief of pressure is here, as elsewhere, often followed by a reaction with production of excess of fluid. Magendie's often-repeated experiment, showing how rapidly the cerebro-spinal fluid may be reformed after it has been freely drained off, is here very instructive.

Danger of œdema is probably greater after temporary diminution of blood-pressure as a result of considerable loss of blood and through interruption of the venous blood-stream. In large intracranial tumors there is an increase of fluid particularly in the brain cavities—an increase which, after the onset of typical pressure signs, finds its expression in choked disc. It is well known how pressure upon the vena magna Galeni leads to hydrops ventriculorum. If there be added to these conditions of such profuse substitution of fluid yet others which increase production and limit escape—such as the effect of an operation—then one may understand how œdema may quickly supervene or be rapidly increased if already present.

When a fatal brain tumor has produced severe pressure symptoms like stupor or coma, one may surely rely on finding marked œdema at the autopsy. And since this œdematous condition is rather likely to be increased by operation, it is not strange that it should prove fatal within six or twelve hours.

*Results.*

In closing this brief casuistic there remains to be considered only the important feature of results. These I have thought best to present in tabular form. From this table I have excluded every case in which the operation was not dictated alone by a study of its phenomena relating to the nervous system. I have omitted all trephinings for recent hæmorrhage,* since these are not founded primarily on the principles of localization in our present acceptation of that term; also all operations for epilepsy or insanity or other trouble, when the operation has been apparently performed on account of external scars or on generalized principles. Every recent case or "primary operation" has been omitted. A very large number of cases is thus excluded—cases which have a deep interest and significance of their own, and yet which are not strictly germane to our subject this evening.

(*To be concluded.*)

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## OBSERVATIONS ON THE USE OF TEREBENE.†

By D. M. CAMMANN, M. D.

A few introductory words may be said equally applicable to terebene and to most of the terebinthinates. The medicinal value of the turpentines was known to the ancients. The benefit to consumptives of inhaling the atmosphere of pine forests has, as Dr. Loomis‡ remarked in a paper before this society last year, been always recognized, and he goes on to state that the changes attributable to the

* Mr. Jacobson has collected seventy such operations with fifty-seven deaths.

† Read before the American Climatological Association at its fifth annual meeting.

‡ "Evergreen Forests as a Therapeutic Agent in Pulmonary Phthisis."

persistent inhalation of such an atmosphere indicate that it is not only aseptic, but antiseptic. It is probable that this antiseptic element is the peroxide of hydrogen, which has been found present in varying amounts in the air, in rain, in snow and hail, and in different kinds of forests, more especially among pines. That the peroxide of hydrogen is a powerful antiseptic and oxidizing agent has been proved by numerous experiments.* It is stated that each molecule of turpentine gives rise in the presence of air and moisture to a molecule of peroxide of hydrogen, and that this is produced in the presence of pine forests in almost illimitable amount. Doubtless the peroxide of hydrogen has often been mistaken for ozone, as the tests for the two are similar. The important property of absorbing atmospheric oxygen, generating peroxide of hydrogen, and keeping it stored away for future use, is possessed not only by the oil of turpentine, but by terebene, benzine, eucalyptol, and many other essential oils, all animal fats, and a large number of other hydrocarbons.† In the peroxide of hydrogen thus stored away half of the oxygen is in a form of loose combination, and is readily given off on contact with certain substances, such as pus and blood. In fact, if peroxide of hydrogen is brought into contact with blood without the body, it is decomposed with great violence, although it has been injected directly into the circulation without undergoing decomposition, and readily passes without change through animal membranes.‡ Terebene, due to the presence of this powerful antiseptic, has high deodorizing powers, quickly destroying the odor of the most offensive wounds,# and it has even been advocated in preference to carbolic acid in such cases.‖ Given internally, terebene is antiseptic, expectorant, and diuretic, relieves flatulence, and is readily borne by the stomach. In cases of pleuritic adhesions it seems to hasten the absorption of the exudation. Dujardin-Beaumetz places in the order of their relative utility terpinol and terebene first in bronchial affections, and terebinthine and terpine in renal diseases. I have not only found terebene more useful than terpine in diseases of the lungs, but also in renal diseases. It is one of the most satisfactory drugs that I have used for relieving the dyspnœa of emphysema. Its action may be partly due to the relief of the flatulence with which such cases are so apt to be troubled, but is doubtless owing somewhat to the presence of oxygen in a loose form of combination which passes into the circulation and supplies the blood with that much-needed element.

The value of terebene in winter cough was first recognized by Dr. Murrell,△ of London, and its use in bronchial affections, both chronic and acute, has been indorsed by the few articles ◊ that have since appeared upon the subject.

For the past two years I have used terebene in a large number of cases. A report of some of these has already been made; of the others, more than forty in number, a few short histories will be given and a brief analysis of the results attained. I am indebted to Dr. F. N. Patterson for valuable assistance in keeping the histories:

Case I.—K. L., aged twenty-eight years. Waitress. October 15, 1887. Gives a history of having been ill for three years. Physical examination shows emphysema and bronchitis. ℞ Terebene, ʒ ss., t. i. d.

*October 22d.*—Cough less frequent and not so hard. Expectoration and dyspnœa less. Urine not increased. After taking the medicine feels dizzy and nauseated. Reduce terebene to ♏ xv, t. i. d.

*November 5th.*—Cough almost gone. Has a feeling of "smothering" at night.

*12th.*—Scarcely any cough or expectoration. Used to be very short of breath, but now has scarcely any dyspnœa.

*January 3, 1888.*—Says she has felt quite well, has had no cough since last note, and has not taken medicine. For the past two weeks, however, has again had cough. ℞ Terebene, ♏ xv, t. i. d.

*19th.*—Cough and expectoration less. Has a "smothering" sensation over the chest at night. Urine increased.

*March 3d.*—Says she was entirely free from cough after the last time she was here until lately, when she caught fresh cold and returns for the terebene mixture.

Case II.—J. H. Z., aged twenty-six years.

*November 19, 1887.*—History of illness for two years. Physical examination shows chronic bronchitis and pleuritic adhesions. Six months ago he took terebene, ♏ xv, q. i. d., for several weeks. At that time his cough improved, and the expectoration became less in amount and thinner. Has not taken medicine for several months. ℞ Terebene, ♏ xv, q. i. d.

*December 3d.*—Cough, expectoration, and dyspnœa a great deal less. Urine not increased. Feels better in every way.

Case III.—P. C., aged thirty-nine years.

*December 13, 1887.*—Has had cough for one week. Physical examination shows bronchitis. ℞ Terebene, ♏ xv, t. i. d.

*15th.*—Cough less; expectoration the same in amount, but thinner. Urine not increased.

*17th.*—Coughs and expectorates scarcely at all. Feels much better.

Case IV.—H. W., aged forty-eight years.

*December 17, 1887.*—Has had cough more or less all the time for the past eight years. Has had attacks of asthma for the past eight weeks. The history that he gives shows asthma, and the physical examination bronchitis. ℞ Terebene, ♏ xv, t. i. d.

*22d.*—Cough less at night. Expectoration the same in quantity, but thinner. Urine increased. Terebene increased to q. i. d.

*31st.*—Cough better. Expectoration less and thinner. Dyspnœa less. Appetite improved.

*January 5, 1888.*—Still improving. Urine increased.

*21st.*—At times better and at others not so well, but, on the whole, steady improvement.

*31st.*—Cough no better than at first. Thinks that he has taken fresh cold. Dyspnœa very much less. Expectoration less and thinner. Urine increased. Terebene stopped. ℞ Potass. iodid., ʒ ij; liq. potass. arsenit., ʒ ss.; spt. ether. co., ℥ ss.; syr. prun. virg., q. s. ℥ ij. M. S.: ʒ j, t. i. d.

* Kingzett, "Lancet," June 11, 1881.

† Day, "Lancet," August 17, 1878.

‡ "Mat. Medica," Nothnagel and Rossbach, New York, 1883.

# F. T. Bond, "Lancet," Sept. 16, 1876.

‖ Cambridge Med. Soc., "Lancet," April 2, 1888.

△ "Pure Terebene in the Treatment of Winter Cough." Murrell, "Brit. Med. Jour.," Dec. 12, 1885; also "Pure Terebene and Terpine," *ibid.*, Feb. 27, 1886.

◊ "Terebene in Diseases of the Lungs." Cammann, "N. Y. Med. Jour.," Oct. 8, 1887. "Terebene for the Relief of Dyspnœa." Cammann, "Therapeutic Gazette," Nov. 15, 1887. Owen, "Brit. Med. Jour.," 1887.

*February 11th.*—Cough and dyspnœa much worse. He asks that he may have terebene again. ℞ Terebene, ♏ xv, q. i. d.

*18th.*—Cough somewhat better. Expectoration less. Dyspnœa not much improved. Urine increased.

Case V.—G. N., aged thirty-nine years.

*December 22, 1887.*—History of illness for six years. Physical examination shows phthisis pulmonalis. ℞ Terebene, ♏ xv, t. i. d.

*January 24, 1888.*—Has been taking the terebene, but not regularly. Cough is much improved. Expectoration less and thinner. Urine increased.

*March 29th.*—The terebene benefited him. Lately he has not felt the need of it, and so has not taken it for some time. Returns for more. Does not pass as much urine when he is not taking the medicine.

*April 7th.*—Cough a little better and expectoration thinner

*June 28th.*—Cough and dyspnœa have been steadily improving, and he feels better than he did.

Case VI.—J. L., aged twenty-four years.

*December 27, 1887.*—He gives a history of illness for the past six months. Physical examination shows bronchitis and emphysema. ℞ Terebene, ♏ xv, q. i. d.

*31st.*—Cough and dyspnœa less. Expectoration less and thinner. Urine not increased.

*January 11, 1888.*—Improvement continues.

Case VII.—L. P. R., aged fourteen years.

*January 7, 1888.*—He gives a history of cough during the winter for several years. Physical examination shows bronchitis with old pleuritic adhesions. ℞ Terebene, ♏ xv, t. i. d.

*11th.*—Cough less. Expectoration less and thinner. Urine not increased. Terebene increased to q. i. d.

*21st.*—Continued improvement to four days ago. Since then he has been out of medicine and thinks that he took fresh cold.

*28th.*—Cough less. Expectoration less and thinner.

*February 4th.*—Continued improvement. Urine increased.

*April 21st.*—The cough had disappeared entirely. Now he complains of pain in the chest and the cough has reappeared.

Thirteen * cases were of chronic bronchitis, most with more or less extensive pleuritic adhesions. Three were acute bronchitis, ten emphysema, two asthma and bronchitis, ten phthisis, one pleurisy, and one of the third stage of pleuropneumonia. Two of these, both cases of acute bronchitis, were cured, one in four and the other in eleven days. Thirty-three cases were improved, most of them markedly, but a few only to a slight degree. Five were unimproved, two of the patients being obliged to discontinue the drug after two or three days, as it produced vomiting. The shortest time the treatment was continued in any case was four days, the longest time six months. The average length of treatment was a little over twenty-six days. Most of the patients took fifteen minims and some as much as half a drachm in a mucilaginous mixture four times daily. In all except three the cough was improved, becoming softer and less frequent. In twenty-six the quantity of the expectoration was lessened, in four it was unchanged, and in two it was increased. The latter were under treatment only one week, and it was found in some of the other cases that the expectoration was increased for the first few days and afterward diminished. In seventeen cases the expectoration became thinner and more watery; in six it was no thinner. In the other cases no note was kept in regard to this point. In those troubled with dyspnœa it was diminished in thirteen and undiminished in eight. The patients noticed an increase in the urine in nine cases; no increase was noticed in fifteen. In many of the cases the appetite improved. In two cases the terebene caused vomiting, in two nausea, in one dizziness and nausea, and in two dizziness. These symptoms usually disappeared when the dose was reduced. It is beneficial in affections of the bronchial mucous membrane, both acute and chronic. It relieves the dyspnœa of emphysema, it is readily borne by the stomach, and it seems to have a resolvent action on pleuritic adhesions.

19 East Thirty-third Street.

* Most of the cases were treated at the Demilt Dispensary, New York.

## GONORRHŒAL INFECTION OF THE MOUTH.

By CONDICT W. CUTLER, M. D.

Miss J. C., aged twenty-one, presented herself for treatment at the New York Dispensary, July 18th, with the following history:

Ten days previously, while under the influence of liquor, she yielded to the unnatural desires of a sailor, and had taken his penis several times into her mouth. The next morning her mouth felt raw and dry, and the saliva had a horrible taste. On the second day little sores made their appearance about the lips, and the condition of the mouth remained the same. On the third day the gums and tongue became swollen and painful, and on the fifth day the whole inside of the mouth was so intensely inflamed that she was unable to eat, and a whitish fluid, mixed with blood, having a nasty odor and taste, was secreted. This continued until the pain and inability to eat compelled her to seek medical advice at the dispensary. On examination, the lips were found cracked and covered with herpes in all stages of development. The mucous membrane of the lips and cheeks was thickened, reddened, denuded of epithelium in places, and, in small areas, covered with a false membrane, which was easily detached, leaving an excoriated surface.

The gums were swollen and retracted from the teeth, bleeding readily upon pressure. The tongue was swollen, very tender on touch and pressure, and could be but slightly protruded, and then only with great pain and effort. The surface was red and glazed in appearance, with small superficial ulcers here and there, secreting a thick yellowish pus. The soft palate and anterior pillar of the fauces presented an inflamed appearance, but beyond the parts seemed to be in a normal condition. The breath was extremely offensive, although there was but little salivation.

The secretion from the mouth consisted principally of mucus, pus-cells, and epithelium, with presence of large numbers of bacteria. The false membrane contained micro organisms resembling the gonococcus, but their identity was not fully established.

The sailor freely admitted that he had been suffering from a severe attack of gonorrhœa, and, not wishing to infect the girl, had entreated her to comply with his unnatural demands. She had yielded to his wishes, and become affected with a purulent stomatitis, probably gonorrhœal in character.

The symptoms were greatly relieved with the local application of glycerin and bismuth subnitrate, together with a mouth-wash of chlorate of potassium, but the patient disappeared from under observation before the cure was complete.

150 West Fifty-third Street.

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## IE INJURIOUS EFFECTS OF FACTITIOUS LIQUORS.

r a recent meeting of the French Academy of Medicine, ort of the proceedings of which we find in the "Union ale," M. Laborde concluded the reading of a paper on the ous action of alcoholic liquors. So far as we are able to from the account, the author had reference mainly, if not y, to factitious spirituous liquors. His paper was founded y upon laboratory experiments in which the products vere made the subject of investigation had been admin- l by intravenous injection. Some of those present ob- to conclusions drawn from this method of administra- M. Laborde, however, maintained that, especially in the f highly diffusible substances, the effects were quite the no matter what the avenue of ingestion.

e particular substance considered by M. Laborde on the on referred to was *essence de noyau*, a compound contain- each pint ninety grains of a "bouquet" consisting of nitrile and benzoic aldehyde. This "bouquet," whether ed or given by the stomach, proved fatal to dogs, when in sufficient quantity, death being preceded by convul- Post mortem, the left side of the heart was found contracted, and this, the author thought, might explain n fatal cases of acute alcoholism in man. However, as in instances the heart was found in diastole, it was probable he effect upon the organ was not always tetanizing, but imes inhibitory. According to M. Laborde, it is not even ary to swallow the *essence de noyau* in order to experi- its deleterious action; the inhalation of its vapor is h, and this, the author stated, had often caused him and istants trouble. He himself had suffered most severely, t with vertigo, headache, tremor, and dyspeptic symp- These phenomena having subsided during an interval en experiments, he grew negligent and was subsequently ed with fulminant symptoms. As he was leaving the tory on a certain day, he was taken with a veritable of vertigo (*un véritable ictus vertigineux*), accompanied aintness, profuse perspiration, palpitation, precordial dis- and tremor. He did not lose consciousness, but stood g against a wall for perhaps a quarter of an hour, until a mployed by the *Faculté* came to his aid. This, he said ppened a year before, and he was not yet well, his urine reath still showing traces of benzoic aldehyde. In one hat of a distillery employee, he had observed epileptoid s.

Laborde classes the non-convulsivant substances of this s follows: 1. Those that may prove fatal, such as cin- aldehyde, cinnamate of ethyl, and the flavoring essences (*essences bouquets*) of Irish whisky, London gin, Holland gin, cherry brandy, Dutch bitters, and kirsch. 2. Those that are not usually fatal, including the benzoates of amyl and of methyl, acetate of amyl, the butyrates of ethyl and of amyl, the succinates of ethyl and of methyl, the malate, the valerianate, and the œnanthylate of ethyl, malate of methyl, acetal, methylal, amyltartaric acid, etc. 3. Those that are almost harmless, such as the flavoring essences of rum, cassis, cognac, brandy, curaçao, kümmel, maraschino, benedictine, Paris anisette, grenadine, etc.

But it is not alone in flavoring compounds that M. Laborde sees danger, but also in the spirit forming the fundamental ingredient of factitious liquors, either from defective processes of distillation or from deliberate sophistication. As to the former, the remedy, he thinks, lies in repeated rectification. He closed his paper with a warm denunciation of the ways pursued by the makers of spirituous liquors. In the discussion, M. Lancereaux, who remarked that he had been reproached with attributing too many accidents to alcoholic intoxication, although he did not look upon it as the cause of generalized atheroma or of renal diseases, stated that he had never observed epilepsy in cases of alcoholism in man. M. Laborde, however, was convinced that true epilepsy was sometimes met with as a sequence of acute alcoholism. It will be seen that, while the author of the paper expresses the opinion that certain flavoring essences, those of rum, brandy, etc., are almost harmless, it does not follow that those factitious spirits may be regarded as innocuous, for the spirit that forms their chief constituent may itself contain very injurious ingredients. It is manifest that all such products should be avoided, and it is not unreasonable to hope that before long their sale may be interdicted.

## A REMARKABLE CASE OF CONGENITAL MALFORMATION.

A case of peculiar interest is reported in the "British Medical Journal" for October 20th, that of a man who had reached the age of fifty-four years with an imperforate anus. Immediately after birth it was discovered that fæces and urine were passed by the urethra, and that the anus was imperforate. An attempt was made to establish an anus in the natural situation, but only a narrow and useless fistulous opening resulted, and the passages continued as before, except that fluid from time to time escaped from the anus. When the patient was ten years old the urethra became blocked with hardened fæces, and relief was afforded by an incision into the urethra immediately in front of the scrotum. This incision resulted in a permanent fistula, through which the patient continued to pass fæces and urine. He was in the habit of taking a laxative daily, and had to squeeze the fæces through the fistula with his fingers, the proceeding occupying from an hour to an hour and a half. From time to time the urethral fistula became blocked, and then everything was passed by the meatus. Sometimes, also, the urethra became blocked, and then the fæces escaped by the urethral fistula and the urine by the same opening and also by the anal orifice till he succeeded in displacing the ob-

struction. The urine was generally clear and normal, though it sometimes contained a brown deposit and had a fæcal smell. At the time of his death the man had been married twenty-four years, and was the father of a child.

The man was small of stature and had a peculiar dark complexion, not unlike that of a patient with Addison's disease. Latterly the urethral fistula had contracted and his difficulty had increased. Three days before his admission into a hospital the urethra had become blocked, and this had compelled him to seek assistance. On examination, a fistulous opening was found in the urethra just in front of the scrotum, along which a probe passed readily into the bladder. The urethra between the fistula and the meatus was blocked by a fæcal concretion. The anal opening only admitted a fine probe.

The urethra was slit up through the fistula an inch and a half, and the substance blocking the canal was removed. The mucous membrane was then sutured to the skin and the fistula converted into a good-sized opening, through which he continued to pass both urine and fæces so comfortably that he refused further operation.

The case is one coming under the sixth variety in the classification of Papendorf and most other standard writers on the rectum—that in which the anus is absent and the rectum ends in the bladder, urethra, or vagina. Of these varieties, that in which the rectum opens into the vagina is most common. In females the rectum seldom if ever opens into the bladder, but it sometimes opens into the urethra. In males it opens oftener into the bladder than into the urethra, and in such cases it may terminate either by a narrow duct running obliquely through the bladder and opening into the *bas-fond* between the orifices of the ureters, or by a free opening (Kelsey).

These cases are rare, and generally they are quickly fatal from intestinal obstruction or from cystitis, and in this consists the great interest of the case reported. For, though several have been recorded in which life has been prolonged three or four years, the one mentioned by Gross and quoted by Kelsey, in which the patient lived to the age of thirty years, has up to the present time been considered quite phenomenal. In the case under consideration, however, the man had lived fifty-four years, was the father of a child, and, after the relief given by the slight operation mentioned, bade fair to get along without further trouble. The opening was evidently urethral and not vesical—a point in the diagnosis often very difficult to decide and one having a great influence on the prognosis.

## *MINOR PARAGRAPHS.*

### A DEFENDER OF SIR MORELL MACKENZIE.

Dr. John O. Roe, of Rochester, has been "interviewed" by a reporter on the staff of the Rochester "Post-Express" on the subject of the controversy over the conduct of the late Emperor Frederick's case. The reporter's questions and Dr. Roe's answers have been reprinted in the form of a pamphlet, a copy of which has kindly been sent us with Dr. Roe's compliments. This is the only instance that we remember of the republication of a newspaper interview by a physician. Under ordinary circumstances we should consider it a procedure of very questionable propriety, but perhaps the publicity previously given to the wrangle may be looked upon as having done away with that objection. We hope, however, that it will not be taken as a precedent. As to the tenor of Dr. Roe's argument in the case, it is an out-and-out indorsement of Sir Morell Mackenzie's course, not only in the management of the case, but also in that of his publication—an indorsement that neither the "Lancet" nor the "British Medical Journal" can bring itself to give, and one that, in our opinion, the facts do not justify. In the opening paragraph of the "Post-Express's" article it is stated that Dr. Roe has "enjoyed the intimate personal acquaintance of the celebrated English surgeon," so that it is presumably in the light of personal loyalty, rather than of judicial appreciation, that Dr. Roe's argument is to be taken.

### THE PROPOSED NATIONAL PATHO-BIOLOGICAL LABORATORY.

Elsewhere in this issue we print the text of a bill, shortly to be laid before Congress, for the establishment of a national laboratory for investigation and teaching in the field of experimental ætiology and cognate matters relating to the public health. The bill seems to have emanated from the director of the Patho-biological Laboratory of the State University of Nebraska, Mr. Billings, a bacteriologist of known ability. Concerning its general purpose there can, we suppose, be very little difference of opinion in the medical profession; but as to some of its details—and it appears to us to give too many details—it calls for deliberate consideration, and we trust that it will receive such consideration before being acted on in committee.

### SIR MORELL MACKENZIE AS AN EMENDATOR OF VERGIL.

One of the English newspapers drops into merriment over Sir Morell Mackenzie's use of the word *hirudo* instead of *arundo*, in a quotation from Vergil, in his book entitled "The Fatal Illness of Frederick the Noble." This, as well as another error in the same quotation, which we shall presently specify, attracted our notice in the New York "Sun's" version of the book, but we presumed at the time that the passage in the book itself would be found to be correct. Such, however, is not the case. The quotation occurs on page 186, and is printed

*hæret lateri fatalis hirudo—*

*i. e.*, the deadly leech (!) sticks to his side. Of course, our readers do not need to be reminded that in the "Æneid" the passage reads:

*hæret lateri lethalis arundo.*

The substitution of *fatalis* for *lethalis* was the other error to which we alluded above. This is not so laughable a blunder as the confounding of darts and leeches, but, if one is quoting the classic authors, it is desirable to quote correctly, especially in a controversial publication.

### THE DIAGNOSTIC SIGNIFICANCE OF EPIGASTRIC MURMURS.

In the "Riforma medica," Dr. Gabbi, of Florence, publishes his conclusions from clinical and experimental studies of murmurs heard in the epigastric region, and a summary of them is given in the "Centralblatt für klinische Medicin." In cases of cancer of the stomach, he says, a blowing murmur is often heard at the epigastrium, interposed between the two cardiac sounds and imitating the *bruit de galop*. In many instances this murmur depends on stenosis of the left superior coronary artery, in others more probably on stenosis of the abdominal aorta from the pressure of the neoplasm. Its intensity is gov-

ed by the degree of the stenosis and by the force of the cur-
t of blood, and varies somewhat also with the condition of
stomach as to fullness or emptiness, and with the patient's
ture. It is occasionally observed in cases of ulcer of the
nach, and then it may disappear when the ulcer heals. It is
ays heard most distinctly at the epigastrium. An epigastric
wing murmur may be heard, too, independently of either
cer or ulcer of the stomach, synchronous with the first sound
the heart or intermediate between the two sounds. In the
t instance it is propagated from the heart; in the second it is
ited by too great pressure with the stethoscope, especially
anæmic subjects, or is caused by atheromatous growths in
abdominal aorta, abdominal aneurysm, etc.

## RESECTION OF A DETACHED LOBE OF THE LIVER.

Dr. C. Langenbuch, of Berlin ("Berliner klinische Wochen-
rift"; "Centralblatt für Gynäkologie"), relates the case of a
man, thirty years old, who had suffered for eight years with
dominal pain on walking, standing, or lying down. A mass
large as one's fist was found in the upper part of the abdo-
n, hardly noticeable externally. It was symmetrical, extend-
; about four fingerbreadths from side to side and reaching
m the xiphoid cartilage to within two inches of the navel,
ooth, and somewhat elastic. It was thought to be an echino-
ecus sac, but, on opening the abdomen, it was found to be a
ge detached lobe of the liver, proceeding from that portion
the organ lying to the left of the gall-bladder. Its ligament-
s connection with the proper mass of the liver was tied in
parate parts, and then, with the exception of a knob of tissue,
was cut away. There was no bleeding at the time, and the
dominal incision was closed. Within a few hours, however,
ere were urgent signs of internal hæmorrhage, the wound
s opened, and the abdomen was found filled with blood. A
ssel was still bleeding slightly, and a ligature was applied to
The patient recovered without fever. Moderate ascites de-
oped gradually, but disappeared after two tappings.

## HE POST-GRADUATE TRAINING SCHOOL FOR NURSES.

The "Second Annual Report of the Training School for
rses connected with the Post-graduate Medical School and
spital" gives substantial evidence of the usefulness of this
w addition to the nurse-teaching institutions of New York,
own both in the number of pupils and in the increased de-
and for their services outside the hospital. There are two
atures in the management of this school that seem to us to
ll for particular commendation. One of them is the fact that
e pupils are not restricted to this one hospital in their field of
servation, but are sent by turns to various other hospitals for
finite terms of service. The other is the very satisfactory na-
re of the document that each nurse takes with her to a private
mployer, which document the employer returns at the end of
r engagement, with such remarks as he may think proper
ncerning her conduct and efficiency. This must give the man-
ers of the school such an insight into the real character and
pacity of a nurse as they never could acquire by mere obser-
tion of her qualities while she was under their own direct
rutiny.

## THE ACTION OF ANTIPYRINE ON THE TEETH.

According to the Paris correspondent of the "Lancet,"
mong the inconveniences ascribed to the use of antipyrine is
e lately brought forward by Dr. Galippe, a dentist, who
ates that it has blackened the teeth in several instances in
hich it has been given internally. He offers no explanation of the manner in which it acts on the teeth, but he has found that the teeth blacken more readily when they have lost their enamel. The inconvenience is readily remediable, he says, for the discoloration may be removed by simply rubbing the teeth with oxygenated water.

## ITEMS, ETC.

**The Health of Kansas City, Mo.**—For the week ending Saturday, November 3d, according to the city physician's report, there were 35 deaths, including 2 from diphtheria, 1 from intermittent fever, 4 from typhoid fever, 4 from typho-malarial fever, 1 from meningitis, and 1 from cerebro-spinal meningitis. The death-rate was 10·1 in a thousand of the population.

**The New York Academy of Medicine.**—The next meeting of the Academy, on Thursday evening, the 15th inst., will be devoted to the delivery of the annual address, entitled "The Means of Effecting the Unity of the Medical Profession," by Dr. D. B. St. John Roosa. This meeting is open to the general public, including ladies.

**The Cincinnati Polyclinic** was organized on the 31st of October. The faculty is as follows: General medicine, Dr. A. C. Kemper and Dr. E. W. Mitchell; diseases of children, Dr. H. W. Rover; diseases of women, Dr. R. B. Hall (treasurer), Dr. Charles A. L. Reed (dean), and Dr. Edwin Ricketts; diseases of the eye, Dr. Robert Sattler; diseases of the throat, Dr. A. B. Thrasher and Dr. J. H. Boylan; diseases of the skin, Dr. A. Ravogli and Dr. Merril Ricketts; surgery, Dr. H. Longstreet Taylor (secretary) and Dr. Wallace Neff. Only graduates in medicine will be admitted as pupils.

**The New York Post-graduate Medical School and Hospital.**—Dr. Joseph O'Dwyer has been appointed professor of diseases of children.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from October 27 to November 3, 1888:*

Baily, Elisha I., Colonel and Surgeon, and Cochran, John J., Captain and Assistant Surgeon. Detailed for duty on Army Retiring Board, to meet at San Francisco, Cal., for the examination of such officers as may be ordered before it. Par. 3, S. O. 253, A. G. O., Washington, October 30, 1888.

Norris, Basil, Lieutenant-Colonel and Surgeon, will be relieved from duty in the Department of the Columbia by the commanding general of that department, and will report in person, on or before November 14, 1888, to the commanding general, Division of the Pacific, for duty as Medical Director of that division and of the Department of California. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

Vollum, Edward P., Lieutenant-Colonel and Surgeon, on being relieved from duty as Medical Director, Department of Texas, by Lieutenant-Colonel Joseph C. Baily, Assistant Medical Purveyor, under War Department Order dated October 31, 1888, S. O. No. 256, A. G. O., will, by direction of the Secretary of War, repair to New York city, assume the duties of Acting Assistant Medical Purveyor, and take charge of the medical purveying depot at that place. Par. 2, S. O. 255, A. G. O., Washington, November 1, 1888.

Alexander, Charles T., Lieutenant-Colonel and Surgeon, is relieved from further duty in the Department of Dakota, and will report in person to the commanding general, Department of the Columbia, for duty as Medical Director of that department. Par. 14, S. O. 255, A. G. O., Washington, November 1, 1888.

Baily, Joseph C., Lieutenant-Colonel and Assistant Medical Purveyor, is, at his own request, relieved from the charge of

the Medical Purveying Depot in New York city, and is by direction of the President, under the provisions of the act of Congress approved June 23, 1874, assigned to duty as Surgeon in the Medical Department. He will report in person to the commanding general, Department of Texas, for assignment to duty as Medical Director of that department, to relieve Lieutenant-Colonel E. P. Vollum, Surgeon. Par. 1, S. O. 255, A. G. O., Washington, November 1, 1888.

STRONG, NORTON, Captain and Assistant Surgeon, is, by direction of the Secretary of War, relieved from duty in the Department of Arizona, and will report in person to the commanding officer, Fort Schuyler, New York, for duty at that post, and by letter to the commanding general, Division of the Atlantic. Par. 4, S. O. 255, A. G. O., Washington, November 1, 1888.

ARTHUR, WILLIAM H., Captain and Assistant Surgeon, is, by direction of the Secretary of War, relieved from duty at Fort Bowie, Arizona, and will report in person to the commanding officer, Fort Bayard, New Mexico, for duty at that post. Par. 21, S. O. 250, A. G. O., Washington, D. C., October 26, 1888.

OWEN, W. O., Jr., Captain and Assistant Surgeon, Fort Leavenworth, Kansas, will proceed at once to Fort Sill, Indian Territory, and report to the commanding officer for temporary duty at that post. Headquarters Department of the Missouri, Par. 1, S. O. 133, Fort Leavenworth, Kansas, October 30, 1888.

*Appointments.*

GLENNAN, JAMES D., and BRADLEY, ALFRED E., appointed Assistant Surgeons, U. S. Army, with rank of First Lieutenants, to rank from October 29, 1888.

GLENNAN, JAMES D., First Lieutenant and Assistant Surgeon, recently appointed, will, by direction of the Secretary of War, repair from this city to Willet's Point, New York, and report in person to the commanding officer of that post for duty. Par. 3, S. O. 255, A. G. O., Washington, November 1, 1888.

*Death.*

WEISEL, DANIEL, Captain and Assistant Surgeon, U. S. Army, died at Fort Sill, Indian Territory, October 30, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending November 3, 1888:*

SMITH, HOWARD, Passed Assistant Surgeon. Detached from the Wabash and granted six months' leave, with permission to leave the United States.

ANZAL, E. W., Assistant Surgeon. Ordered for examination preliminary to promotion to Passed Assistant Surgeon.

WIEBER, F. W. F., Assistant Surgeon. Ordered for examination preliminary to promotion to Passed Assistant Surgeon.

ANZAL, E. W., Assistant Surgeon. After examination, detached from Naval Academy and ordered to Navy-yard, New York.

URIC, J. F., Assistant Surgeon. Detached from the Franklin and ordered to Coast-Survey Steamer Gedney.

OWENS, THOMAS, Assistant Surgeon. Detached from Coast-Survey Steamer Gedney and ordered to Coast-Survey Steamer Blake.

BERRYHILL, F. A., Assistant Surgeon. Detached from Coast-Survey Steamer Blake and ordered to Naval Academy.

HARRIS, A. N. T., Assistant Surgeon. Detached from Naval Hospital, Mare Island, California, and to wait orders.

HALL, JOHN H., Passed Assistant Surgeon. Detached from the Monongahela and to wait orders.

CRAWFORD, M. H., Passed Assistant Surgeon. Detached from the Vandalia and ordered to the Monongahela.

GIHON, A. L., Medical Director. Ordered to Naval Hospital, Brooklyn, N. Y.

TAYLOR, JOHN Y., Medical Director. Detached from Naval Hospital, N. Y., and assigned to Examining Board.

HUDSON, ADRIAN, Medical Inspector. Promoted to Medical Director.

BRADLEY, MICHAEL, Medical Inspector. Promoted to Medical Director.

BATES, NEWTON L., Medical Inspector. Promoted to Medical Director.

WOOLVERTON, T., Surgeon. Promoted to Medical Inspector.

WHITE, C. H., Surgeon. Promoted to Medical Inspector.

WOODS, G. W., Surgeon. Promoted to Medical Inspector.

DUBOIS, F. L., Surgeon. Promoted to Medical Inspector.

COOKE, G. H., Surgeon. Promoted to Medical Inspector.

WELLS, HOWARD, Passed Assistant Surgeon. Promoted to Surgeon.

BERTOLETTE, D. N., Passed Assistant Surgeon. Promoted to Surgeon.

GAINES, J. H., Passed Assistant Surgeon. Promoted to Surgeon.

DERR, EZRA Z., Passed Assistant Surgeon. Promoted to Surgeon.

STEPHENSON, F. B., Passed Assistant Surgeon. Promoted to Surgeon.

**Society Meetings for the Coming Week:**

MONDAY, *November 12th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club (annual); Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

TUESDAY, *November 13th:* New York Medical Union (private); Medical Society of the County of Rensselaer, N. Y.; Newark, N. J., and Trenton (private), N. J., Medical Associations; Camden, N. J., County Medical Society (semi-annual—Camden); Norfolk, Mass., District Medical Society (Hyde Park); Baltimore Gynæcological and Obstetrical Society.

WEDNESDAY, *November 14th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society; Medical Society of the County of Albany, N. Y.; Pittsfield, Mass., Medical Association (private); Worcester, Mass., District Medical Society (Worcester); Philadelphia County Medical Society.

THURSDAY, *November 15th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

FRIDAY, *November 16th:* Chicago Gynæcological Society; Baltimore Clinical Society.

SATURDAY, *November 17th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

## Book Notices.

BOOKS AND PAMPHLETS RECEIVED.

A New Antiseptic. By D. W. C. Wade, M. D. [Reprinted from the "Transactions of the Michigan State Medical Society."]

Martin's Druggists' Directory of the United States and Canada, 1888–'89, containing Lists of the Wholesale and Retail Druggists, and

various Branches connected with the Drug Trade. Advertiser Publishing Company, Boston. [Price, $2.50.]

Diseases of the Skin. Their Description, Pathology, Diagnosis, and Treatment. By H. Radcliffe Crocker, M. D. Lond., Fellow of the Royal College of Physicians of London, etc. With 76 Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvii–746. [Price, $5.50.]

Practical Anatomy. A Manual of Dissections. By Christopher Heath, F. R. C. S., Holme Professor of Clinical Surgery in University College, London, etc. Seventh Edition. Revised by Rickman J. Godlee, M. S. Lond., F. R. C. S., etc. With 24 Colored Plates and 278 Engravings on Wood. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvi–598. [Price, $5.]

A Text-book of Physiology. By M. Foster, M. A., M. D., LL.D., F. R. S., etc. With Illustrations. Fifth Edition, largely revised. Part I—comprising Book I—Blood, the Tissues of Movement, the Vascular Mechanism. London and New York: Macmillan & Co., 1888. Pp. xviii–352. [Price, $2.60.]

Elements of Practical Medicine. By Alfred H. Carter, M. D. Lond., Member of the Royal College of Physicians, London, etc. Fifth Edition. London: H. K. Lewis, 1888. Pp. xvi–472.

The Diseases of the Chest, including the Principal Affections of the Pleuræ, Lungs, Pericardium, Heart, and Aorta. By Vincent D. Harris, M. D. Lond., F. R. C. P., etc. With 55 Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xi–420. [Price, $2.50.]

A Manual of Ophthalmic Practice. By Charles Higgens, F.R.C.S.E., Ophthalmic Surgeon to Guy's Hospital, etc. With Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 8–314. [Price, $1.75.]

## Miscellany.

**A Bill for the Establishment of a National Patho-biological Laboratory.**—We are informed that the following bill is to be presented to Congress:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled:

That for the purpose of the better protection of the health of the people of the United States from the ravages of contagious, infectious, and malarial diseases, and for the preservation and protection of the great live-stock interests of the country from the decimating devastations of pestiferous diseases of a similar nature, and for the more complete elucidation of the relation existing between many diseases of our domestic animals and the life and health of human beings whose business calls them into intimate relations with them, and of the welfare of the public as consumers of animal food or animal products, there shall be established at Washington, in the District of Columbia, and the United States of America, a laboratory for the purpose of making a continuous and scientific study into the causes and nature of the classes of disease herein mentioned, and of all subjects connected therewith, bearing either upon the public health or animal economies of the country, and that said laboratory be known as the Patho-biological Laboratory of the United States of America.

It is further enacted that the general supervision and control of said patho-biological laboratory shall be in the hands of the Surgeon-General of the Marine Hospital and Quarantine Service of the Government of the United States; that the said Surgeon-General shall, at the completion of the buildings and grounds herein provided for, appoint two distinct and independent directors, who shall be the heads of two distinct and independent departments of investigation, and who shall be known respectively as the director of the humano-patho-biological, and the zoo-patho-biological institutes of the Patho-biological Laboratory of the United States. The directors of the institutes named above shall be competent and skilled patho-bacteriologists, the one in human, the other in animal diseases, and shall, respectively, be graduates from a thoroughly organized and world-accredited medical and veterinary school, college, or department of some university, and shall have both been engaged in, and have published in some accredited journal or report, investigations which have gained them each reputation in the medical-scientific world, and have demonstrated their fitness for the positions and responsibilities herein provided for.

The salaries of the directors of the institutions above mentioned shall be five thousand dollars ($5,000) per annum.

The said Surgeon-General, with and by the advice and consent of the directors of the institutes named, shall also appoint an assistant to each at a salary of twenty-five hundred dollars ($2,500) per annum, respectively; the one assistant to be a creditably graduated doctor of medicine, and the other a doctor of veterinary medicine, both of whom shall be citizens of the United States and shall have done creditable work in the field of patho-bacteriological investigation.

The directors of the institute named shall appoint, with and by the consent of the Surgeon-General of the United States Marine-Hospital Service, such other assistants and servants as shall be necessary to carry on the work herein provided for.

The said Surgeon-General shall also appoint to each of the institutes named a competent chemist, each of whom shall be fully equal to conducting investigations in search of the true character and value of the ptomaines or toxines produced in the evolution of micro-organismal life, and who shall have previously distinguished themselves in this line of research. The salary of said chemists shall be five thousand dollars each ($5,000) per annum. The Surgeon-General aforesaid is also authorized to employ such assistants and servants for the aid of the said chemists as shall be necessary to the faithful and thorough conducting of their investigations.

The salaries of the persons herein named in connection with the work of the Patho-biological Laboratory of the United States shall be paid out of the funds in the treasury upon warrants drawn by the said Surgeon-General, countersigned by the Secretary of the Treasury Department of the United States. It is further provided that, in order to stimulate and encourage original research into the cause and nature of the classes of disease herein mentioned, the said Surgeon-General is hereby authorized to offer the free use of such rooms and appurtenances as shall be provided therefor in the said laboratory to a limited number of such citizens of the United States as may volunteer their services, at their own expense, and who are known to the said Surgeon-General to have been creditable graduates of an honorable veterinary or medical school or college, and to have distinguished themselves by original research in the lines of work herein provided for, the necessary room, materials and appliances to be supplied by the officials of said laboratory. Said voluntary workers shall agree, in writing, with the said Surgeon-General, to accept two young medical or veterinary students of American schools or colleges, to be selected by the said Surgeon-General, as assistants and students, and to instruct them in the lines of work they may be engaged upon. Such students must be at their own expense, except as to the instruments and implements necessary to work with. The said volunteer investigators must furthermore agree, in writing, to continue any given series of investigation until completed, to the satisfaction of the said Surgeon-General, unless otherwise excused thereby, and must further agree to engage upon any special line of research that may be deemed necessary by the said Surgeon-General, or the director of the institute, of this laboratory, to which they may have been detailed. They must further agree that all the results and benefits of any work performed by them in any department of this laboratory shall become the property of the Government of the United States of America, and be reported in a full and exact manner for publication in the reports of the same. With and by the consent of the director of the institute of this laboratory, in which such a volunteer may be working, and with the written agreement of the Surgeon-General aforesaid, such volunteer investigators may have the privilege of publishing advance reports of their work in the medical or scientific journals of this country. It is further provided that the sum of five hundred and fifty thousand dollars ($550,000) be hereby appropriated, from funds in the treasury of the United States, for the purpose of purchasing the necessary land in the city of Washington, and for grading and fencing the same, and for the erection of the necessary buildings thereon and the equipment of the same, in accordance with the uses herein provided for, to wit:

For the purchase, grading, and fencing the land, one hundred and fifty thousand dollars ($150,000). To a laboratory building, two hundred thousand dollars ($200,000).

The necessary apparatus and equipment of the same, one hundred thousand dollars ($100,000). For stables, pens, cages, etc., and residences for grooms and servants, one hundred thousand dollars ($100,000).

It is further provided that the Secretary of the Treasury of the United States, the Secretary of Agriculture, and the Surgeon-General of the Marine-Hospital Service shall constitute the board of trustees and building and purchasing committee of the Patho-biological Laboratory of the United States, and that the persons named are hereby empowered to purchase a location, secure the necessary plans, and build and equip the said institution in the manner herein provided for, and to draw the necessary warrants for the payment of the same in accordance with the letter of this act.

**Rewards for Meritorious Discoveries and Inventions.**—The Committee on Science and the Arts of the Franklin Institute, of the State of Pennsylvania, respectfully announces that it is empowered to award, or to recommend the award of, certain medals for meritorious discoveries and inventions which tend to the progress of the arts and manufactures. These medals are: 1. *The Elliott Cresson Medal* (gold).—This medal was founded by the legacy of Elliott Cresson, of Philadelphia, and conveyed to the trustees of the Franklin Institute. By the act of the institution, May 17, 1849, the Committee on Science and the Arts was designated and empowered to award this medal, and the committee decided to grant it, after proper investigation and report by sub-committee, either for some discovery in the arts and sciences or for the invention or improvement of some useful machine, or for some new process, or combination of materials in manufactures, or for ingenuity, skill, or perfection in workmanship. 2. *The John Scott Legacy Premium and Medal* (twenty dollars and a medal of copper).—The John Scott Legacy Premium and Medal was founded in 1816 by John Scott, a merchant of Edinburgh, Scotland, who bequeathed to the city of Philadelphia a considerable sum of money, the interest of which should be devoted to rewarding ingenious men and women who make useful inventions. The premium is not to exceed twenty dollars, and the medal is to be of copper, and inscribed "*To the most deserving.*" The control of the Scott Legacy Premium and Medal (by act of 1869) was transferred to the Board of Directors of City Trusts, and referred by the board to its Committee on Minor Trusts, and that committee resolved that it would receive favorably the name of any person whom the Franklin Institute might from time to time report to the Committee on Minor Trusts as worthy to receive the Scott Legacy Premium and Medal. The Franklin Institute, by resolution in 1882, accepted the above-named action of the Committee on Minor Trusts, and referred the duty of making such recommendations to the Committee on Science and the Arts. The committee determined that the recommendation for such reward should be made on the favorable report of a sub-committee which should be appointed to examine the invention or discovery.

Upon request therefor, from interested persons, made to the secretary of the Franklin Institute, full information will be sent respecting the manner of making application for the investigation of inventions and discoveries; furthermore, the Committee on Science and the Arts will receive and give respectful consideration to reports upon discoveries and inventions which may be sent to it with the view of receiving one or the other of the awards herein named, and full directions as to the manner and form in which such communications should properly be made will be sent on application.

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending October 26th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending October 13th corresponded to an annual rate of 18·2 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Derby, viz., 11·9, and the highest in Manchester, viz., 35·7, in a thousand. Small-pox caused 1 death in Preston. Diphtheria caused 5 deaths in Manchester and 3 in Newcastle-upon-Tyne.

*London.*—One thousand five hundred and thirty-six deaths were registered during the week, including measles, 50; scarlet fever, 30; diphtheria, 26; whooping-cough, 18; enteric fever, 18; diarrhœa and dysentery, 43; simple cholera, 2. The deaths from all causes corresponded to an annual rate of 18·7 in a thousand. In greater London 1,896 deaths were registered, corresponding to an annual rate of 17·9 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 14; diphtheria, 8; scarlet fever, 6.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending October 6th in the sixteen principal town districts of Ireland was 20 in a thousand of the population. The lowest rate was recorded in Lurgan, viz., 5·1, and the highest in Armagh, viz., 25·8 in a thousand. In Dublin 160 deaths were registered, including measles, 2; enteric fever, 3; scarlet fever, 2; diarrhœa, 13; whooping-cough, 7.

*Italy.*—The Minister of the Interior issued the following order under date of September 26, 1888:

[Translation.]

1888.—Marine Health Order, No. 11.

The Minister of the Interior, by virtue of the law of March 20, 1865, on public health, Supplement C, and the ministerial instructions of December 26, 1871,

Decrees:

That from to-day on the sanitary treatment of vessels arriving in the ports of the kingdom with unclean bills of health owing to yellow fever is established as follows:

Article 1. Vessels recognized to be in good healthy condition will be admitted to free pratique after a medical visit, if it appears from the explicit declaration of the ship's surgeon—

(*a*) That aboard the same there have not been laden soiled effects for personal or domestic use, or at least that such effects were taken aboard after being washed or disinfected in a suitable manner.

(*b*) That during the voyage there has been neither a verified case nor a suspected case of yellow fever.

Art. II. Those vessels which are not found in the conditions indicated in Article I will be admitted to free pratique after a rigorous medical visit and a regular disinfection of the soiled personal and domestic effects; always provided that it appears from the declaration of the ship's surgeon, or, in the absence of such officer, of the captain, that during the voyage there has been verified no case of the above-named disease.

Art. III. Those vessels furnished with a ship's surgeon, which, although having had cases of yellow fever during the voyage, remained free from it for at least twelve days after the complete cure or death of the affected persons, will be admitted to free pratique under the precautions indicated in the preceding article. In such case, however, a physician's certificate will be necessary, from which it must appear that the most rigorous disinfections have been made of the effects belonging to the diseased (malati), and of the places in which they were treated.

Art. IV. Those vessels which, after having had cases of yellow fever aboard, arrive in a port of the kingdom, and are not found in the conditions indicated in the preceding article, will be sent to the maritime sanitary station which, case by case, shall be designated by this ministry.

Those vessels may also proceed direct to the Asinara Station (Asinara Lazaretto) before mooring in any Italian port, in order there to submit to the practices which this ministry may command.

Art. V. It will be in all cases forbidden to any vessel whatsoever, coming from regions infected with yellow fever, to discharge ballast, if of earth or of sand; such shall be made on the open sea at the distance of at least five kilometres from the shore.

Art. VI. With the present order the preceding ordinance of May 29, 1878, No. 9, shall be understood to be revoked in all its parts.

*Bordeaux, France.*—One hundred and twenty-two deaths were registered during the month of September, 1888, including enteric fever, 11; scarlet fever, 4; diphtheria and croup, 11.

*Marseilles, Spain.*—Eight cases and 2 deaths from small-pox were reported during the month of September, 1888.

*Havana.*—Seventy deaths from yellow fever are reported for the week ending October 13, 1888.

MORTALITY TABLE, FOREIGN CITIES.

| CITIES | Week ending | Estimated population | Total deaths from all causes | DEATHS FROM— Cholera | Typhus | Enteric or Typhoid | Typhus | Relapsing | Scarlet fever | Diphtheria | Measles | Whooping-cough |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Barcelona | Oct. 13. | 220,000 | 57 | | | | | | | | | ... |
| Leghorn | Oct. 14. | 100,000 | 34 | | | | | | | | | ... |
| Malaga | Oct. 6. | 62,000 | 17 | | | | | | 1 | 1 | | |
| Cadiz | Oct. 13. | 61,000 | 9 | | | | | | | | | ... |
| Vera Cruz | Oct. 18. | 21,000 | 6 | | 1 | | | | | | | ... |
| Gibraltar | Oct. 1. | 20,000 | 10 | | | | | | | | | ... |
| Kingston, Can. | Oct. 20. | 17,000 | 1 | | | | | | | | | ... |
| Cape Haytien | Oct. 13. | 15,000 | | | | | | | | | | ... |
| St. Thomas, W. I. | Oct. 13. | 13,000 | 4 | | | | | | | | | ... |
| Lagunitas | Oct. 13. | 7,000 | | | | | | | | | | ... |
| Paris | Oct. 13. | 2,269,000 | 880 | | | 1 | | 1 | 10 | 24 | 1 | 2 |
| Glasgow | Oct. 13. | 545,000 | 220 | | | | | 2 | 8 | 6 | | ... |
| Warsaw | Oct. 6. | 442,000 | 200 | | | | 7 | | 21 | 8 | | ... |
| Amsterdam | Oct. 13. | 388,000 | 104 | | | | 1 | 2 | | 2 | | ... |
| Munich | Sept. 29. | 277,000 | 140 | | | | | | 6 | 1 | | ... |
| Palermo | Oct. 13. | 250,000 | 78 | | | 1 | | | | 1 | | ... |
| Genoa | Oct. 13. | 179,000 | 61 | | | 1 | 11 | | | 1 | | ... |
| Trieste | Oct. 6. | 156,000 | 62 | | | 7 | | | 2 | 3 | | ... |
| Palermo | Oct. 20. | 250,000 | 58 | | | | | 1 | | 2 | | ... |
| Stuttgart | Oct. 13. | 125,000 | 37 | | | | | | 1 | 2 | | ... |
| Brussels | Oct. 6. | 123,000 | 34 | | | | | | | 1 | | ... |
| Havana | Oct. 6. | 112,074 | 108 | | | 1 | | 11 | | 4 | | ... |
| Pernambuco | Oct. 6. | 110,000 | 70 | | | | 2 | 1 | | | | ... |

UNITED STATES.

*Palmetto, Fla.*—The following has been received under date of October 20, 1888:

I sent telegram reporting situation for week ending October 14, since which time to the present, 9 P. M., 20th, there have developed only 3 new cases in Palmetto and 1 new case in Manatee.

There are about four families, living in the outskirts of the town, who have not been much exposed. I have had Board of Health to quarantine these, and if we can prevent these from getting fever I don't expect more than 4 or 5 more cases. Last death on 9th.

The people here, as a rule, are poor. They depend chiefly for a living on the vegetables which they ship to Northern markets. On account of the fever they will not be able to raise vegetables this winter; have been unable yet, in consequence of quarantine, to prepare for it.

Five dollars which Dr. Murray sent to help the needy is every cent of help Palmetto has received from the charitable. They can boil their bedding (quilts, blankets, etc.), but I think it would be safer to destroy their mattresses. Should they be destroyed, however, nine tenths of the people could not replace them, and they argue that they have all had the fever, and are not willing to destroy their property, unless they were able to replace it, to prevent the possibility of some one else getting the fever. Our county Board of Health is too poor to relieve us.

On September 22d I discharged two guards, McLean and Pinkens, and have had one in the week formerly done by those two. This guard has been necessary, and will be so long as we have to keep up the quarantine. Very respectfully,

M. B. HARRISON.

The following inspection reports have been received from Sanitary Inspector Hartigan:

*October 22, 1888.*

Sanford, Orange County, Fla., is situated on the south shore of Lake Monroe, at the head of navigation for large steamers on the St. Juanis River. It is a business center and distributing point, its streets are broad and regular, the soil is a sandy loam. In addition to the water facilities five railroads enter the city, placing it in rapid communication with every section of the country. The town is on a broad plain, rising from the lake gently, and reaching an elevation of forty feet in less than a mile, thus favoring thorough drainage. Immediately adjacent is the Sanford grant of 30,000 acres, embracing all kinds of land. Since the yellow-fever many improvements have been inaugurated to put the city in a good sanitary condition. A late ordinance requires the removal of plank sidewalks. Except in the business streets, which are brick or asphalt, these will be replaced by shell from prehistoric mounds that are found along the water-courses; it consists principally of periwinkles and snails and a liberal sprinkling of broken pottery.

There are twenty-five to thirty artesian wells now in use. The outlet from these is 14,000 to 80,000 gallons daily for each well, which is carried through seven or eight drains, emptying into the lake. These drains also carry off the excess of storm-water. Along the southern limits is a large trench which carries off the swamp-water and intercepts that which flows from more elevated places, thus preventing it from entering the town. These drains will soon be reinforced by wells which will be sunk along Sixth Street, where there is a ridge, throwing the water northward into the lake, and in a southerly direction will communicate with the larger ditch above referred to.

The climate of Florida is generally regarded as the most equable in the country, not being subject to either extremes of heat in summer or cold in winter. The nearness of the Gulf Stream causes the trade-winds of the Atlantic to sweep over the land from east to west during the day, lapping moisture from its numerous lakes—the returning cool winds from the Gulf gently blowing across the State by night.

Following are meteorological data for two years at Sanford, commencing July, 1886, and ending June, 1887, furnished me by Observer Hersey, of the Signal Service:

| | Mean temperature. | Highest temp. | Lowest temp. | Rainfall. |
|---|---|---|---|---|
| | Deg. | Deg. | Deg. | Inches. |
| 1886—July | 79·5 | 94·7 | 70·0 | 8·42 |
| August | 79·7 | 94·9 | 70·9 | 6·75 |
| September | 75·5 | 95·8 | 68·4 | 10·73 |
| October | 70·4 | 90·4 | 48·2 | 7·48 |
| November | 62·7 | 86·5 | 34·9 | 0·29 |
| December | 55·6 | 84·9 | 22·0 | 1·85 |
| 1887—January* | 54·1 | 77·0 | 21·9 | 4·77 |
| February | 57·4 | 78·7 | 31·3 | 1·18 |
| March | 62·2 | 86·0 | 42·4 | 8·17 |
| April | 66·1 | 86·0 | 44·2 | 6·60 |
| May | 74·4 | 93·1 | 57·6 | 9·89 |
| June | 79·3 | 94·7 | 65·0 | 11·08 |
| July | 78·1 | 90·3 | 66·8 | 10·21 |
| August | 79·6 | 94·4 | 67·9 | 4·12 |
| September | 79·3 | 92·4 | 65·8 | 5·01 |
| October | 72·6 | 85·8 | 56·0 | 8·75 |
| November | 64·9 | 80·2 | 42·4 | 0·79 |
| December | 57·9 | 78·0 | 36·8 | 3·20 |
| 1887—January | 55·9 | 79·9 | 31·7 | 1·82 |
| February | 67·9 | 84·7 | 44·1 | 1·10 |
| March | 62·6 | 82·7 | 39·4 | 2·32 |
| April | 69·5 | 89·8 | 44·0 | 3·19 |
| May | 73·9 | 90·7 | 54·3 | 3·22 |
| June | 77·6 | 94·8 | 64·4 | 6·12 |

Yearly average temperature, 1886–'8, 68·24°; 1886–'7, 69·87°. Rain-fall, 1886–'8, 66·31 inches; 1886–'7, 49·25 inches. Trade-winds from N. E. and S. E. were the prevailing winds.

Sanford is supplied with water from a lake three miles south of the town. It flows by gravitation through a main two miles and a half to the reservoir, which holds 200,000 gallons. From the reservoir it is forced into the pipes by the Holly system of water-works. It is thought by Drs. Wylly and Montgomery that its purity is affected by the storm-water draining into it. Another possible source of contamination in the future, they claim, is the proximity of the cemetery, which is one fourth of a mile distant and situated on an elevation. Property owners throughout the city are gradually introducing more artesian wells. Cistern water is used to a limited extent. There are no surface wells.

* Month of severe frost, which was considered unexampled, and destroyed the fruit crops in nearly every section of the State. Only the younger orange-trees, however, suffered to any great extent, as the present year's crop is larger than any former one.

Night-soil is carted two miles southeast of town, and converted into a fertilizer. It is mixed in 20 per cent. of plaster and 6 per cent. sulphate of potash, dried cow-chips being used as an absorbent. All the privies are furnished with duplicate zinc buckets, and regularly changed. They contain both fluids and solids, and in this way are removed to the poudrette establishment. Garbage is hauled westward a mile and a half from limits of town, where it is dumped and burned.

Burial permits are required. There were eight deaths between April and October, 1888, only one being from zymotic causes.

Mayor, H. L. Lillienthall; city physician, Dr. J. S. Montgomery; population, 3,500, about one fourth of whom are colored.

An epidemic of dengue prevailed in Sanford in 1883, but there were no deaths. According to Dr. King Wylly, a leading practitioner there, the disease was ushered in abruptly by a chill, usually at night, followed by fever. This was at its height in 6 hours, and subsided generally in from 18 to 20 hours. The highest temperature noted was 105°; during remission it would fall to 100° and 101°, with subsidence of pain, nausea, and the other violent symptoms. Then apparently another attack similar to the first, and occasionally a third attack would take place. The violence of the attacks seemed to be manifested every other day. Tongue was furred, with other indications of torpid liver. Quinine generally controlled the disease. Convalescence was slow. Eruption in majority of cases, and desquamation only in the worst forms was seen. It is the opinion of the doctor and other observing physicians that as a rule dengue follows yellow fever the next year, even in districts where there has been no yellow fever. In 1882 Pensacola had yellow fever; dengue developed there in 1883, and swept over the entire State. So with Savannah in 1876 and 1877. In Tampa there is dengue this year. So surely contagious is it that a man coming where it prevails, from the country, is sure to catch it and carry it wherever he goes. One illustration given was that of a whole circus company being seized with dengue in Macon in 1877 after performing at Savannah.

Yellow fever was introduced into Sanford on the 8th of October last year by a colored family who came from Tampa with their bedding. The first person who had it outside of this family was a young white man for whom they did laundry-work. This young man's nurse in turn contracted the disease; and so it spread, until there were 150 cases in all and 8 deaths.

Respectfully submitted,

J. F. Hartigan,

*October 22, 1888.*

Orlando, the capital of Orange County, is 200 feet above the sea, and lies 120 miles south of Jacksonville. It has a metropolitan look. The population is 5,500, about one third being colored.

Probably there is no town in the State whose development has been more rapid, or whose growing tendency and permanency is more secure. It is beautifully situated in the heart of a productive country, with ample railroad facilities, and has a most enterprising population. Orlando has another attraction. Within the city limits and vicinity there are sixteen to twenty spring-water lakes, some of them quite large. From one of the purest of these her water-supply is obtained, which, according to analysis, is not excelled anywhere. The works are two miles northeast of city, and situated on an elevation a few hundred yards off is the standpipe. This is more than sufficient for all emergencies. A small portion of the population use surface wells.

The same system of zinc buckets are in use here that I found at Sanford. The matter is carted out in them a considerable distance beyond the suburbs, and there made into a fertilizer. It is mixed with dried muck, which is indigenous to the place, and then screened. It makes a very rich soil, has no offensive odor, and is in active demand.

This method of disposing of night soil, in a place like Orlando, is perhaps as good as any that can be devised, in my opinion, as it is impracticable for any town to empty sewerage into any body of water, unless it be running or tidal water; otherwise the matter would be continually accumulating where deposited, and in time become a nuisance and source of danger to the health of the community.

The cemetery is on an elevation two miles southeast of center of town. No burial permits are required, but soon will be. There were 28 deaths from May 1 to October 1, 1887, 4 being zymotic diseases. From May 1 to October 1, 1888, 27 deaths, 10 zymotic. No case of yellow fever has ever been known in Orlando.

Mayor, Dr. F. S. Chapman; city physician, Dr. R. N. Dickenson.

Respectfully submitted, J. F. Hartigan.

*October 24, 1888.*

Bartow, the county-seat of Polk County, is the southern terminus of the Bartow branch of the Southern Florida Railroad, and of the Pemberton Ferry branch of the same road; it is also the northern terminus of the Charlotte Harbor division of the Florida Southern Railway. The town is two miles square; it was incorporated in 1884; its elevation is about 100 feet, and its soil is a dark spongy loam. Population, 2,500; about one fourth colored. Farming is the principal industry. Rich pine, live-oak, and hamack growths surround it everywhere.

The location of Bartow is most favorable for drainage. It is on a broad, flat hump, sloping north, east, and west, into a run which extends to Peace River. After the heaviest rain the water does not stand an hour.

Water is obtained principally from wells, averaging 35 feet deep. In sinking them, in every case, five or six feet of rock have to be drilled through, showing the whole town to be on a bed of rock, similar to that found on the coast; the rock is generally 30 feet below the surface. This fact affords immunity from contamination, and is the reason there are no such evil results here as are seen from wells elsewhere. After the rock is drilled a pump is sunk. There are some open wells, averaging 25 to 30 feet, from which water is obtained on the surface of the rock; this is far inferior to that below the rock. About 10 per cent. of the population use cistern water.

The same system of buckets is used here as at Sanford and Orlando. The soil, after disinfection with lime and copperas, is carted two miles from town to a dumping ground in a low place near Peace River, which empties into Charlotte Harbor and the Gulf.

Mayor, Dr. J. P. Statham; secretary Board of Health, Dr. F. M. Wilson. No burial permits are issued. The cemetery is two thirds of a mile from center of town.

Dr. Wilson states that during five years' practice there have not been more than ten cases of typhoid fever, and none of dengue.

Respectfully submitted, J. F. Hartigan.

*October 23, 1888.*

Kissimmee, the county-seat of Osceola County, is situated at the head of Lake Tohopekaliga, on the South Florida Railroad. It is 54 feet above the sea, and has a population of 2,000. The town only dates from 1883, when the Okeechobee Drainage Company, who had a contract with the State, commenced the gigantic undertaking of reclaiming 5,000,000 acres of land. Canals were cut communicating with the chain of lakes and Kissimmee River, leading down 75 miles to Lake Okeechobee and the Gulf. One of the results of these operations is the establishment of a mammoth sugar-mill, and plantations 6 miles from the town on the richest kind of muck soil. Thousands of acres of newly drained lands in the vicinity are now being utilized where steamboats floated only three years before. The sugar industry, therefore, of South Florida bids fair to rival the orange.

Cistern water is principally used, although water from the lake is being gradually introduced. There are some few surface wells.

Open-air privies are in use almost exclusively, and most of the matter is systematically disinfected and removed a mile outside, where it is burned with sweepings from the town. A large proportion, however, is buried in the yards.

Ditches are dug for drainage, which flows toward the east and empties into the lake. About the center of town is a ridge running north and south, and sloping east and west, emptying into the lake in the east, and in the west the storm-water is carried off from a valley along a circuitous route into the lake a mile south of the town.

No burial permits are issued, but an ordinance has just been passed requiring them. The present cemetery is half a mile from center of town. It has been ordered to be abandoned and removed a mile and a half north. There were not more than 6 deaths from May 1 to October 1, 1888.

Mayor, J. W. Aderhold; health officer, Dr. S. G. Worley. Dr.

Worley says he has seen no typical cases of malarial or typhoid fever. "Dengue," however, prevailed to a certain extent; it simulates typhoid, but is amenable to antiseptic treatment, such as salol, creasote, and bichloride of mercury. It attacks all ages. Some deaths have occurred, perhaps two per cent. But the disease has practically subsided since the surface wells have been in a measure abandoned. The deaths that have taken place, he thinks, seem to have been due to septic poisoning, inasmuch as suppuration of the parotid glands has occurred in some instances.

When the doctor first came here, six years ago, he treated it for typhoid, but the result was unsatisfactory. He therefore thought of the septic theory, from its clinical course. Unlike typhoid fever, there was a tendency to remit from time to time; besides, the highest temperature was in the morning. It also lacked the usual incubative period of that disease. Quinine seemed to intensify the nervous symptoms, which predominated in every case. He observed no eruption or desquamation.

The disease commenced abruptly, accompanied by gastric irritation and vomiting, temperature sometimes reaching 106°. It only assumed the form of typhoid or continued fever after the third or fourth day, then prostration and low muttering delirium; in some instances sudamina, rose-colored spots, hæmaturia, etc. He claims that he has uniformly aborted the disease since he adopted the salol treatment. He had only seen it among those who had used surface water. In every instance it was traceable to these wells. It is known by various names, as physicians thought fit to call it, such as typho-malarial dengue, relapsing fever, etc. It is a disease of South Florida, and, in his opinion, is a hybrid form of typhoid, modified by the peculiar conditions of the climate, and quite amenable to salol and like antiseptic measures.

Respectfully submitted, J. F. Hartigan.

*October 22, 1888.*

Titusville, the county seat of Brevard County, is situated on the west bank of Indian River, 12 miles from its head, 18 miles from the ocean. It was incorporated in 1886; soil a sandy loam. A branch of the Jacksonville, Tampa, and Key West Railroad enters the place from Enterprise Junction, over which road visitors come to pass the winter along the banks of the river down to Lake Worth, 180 miles distant.

Following is Titusville meteorological register for the past year:

| | Mean temperature. | Highest temp. | Lowest temp. | Rainfall. |
|---|---|---|---|---|
| | Deg. | Deg. | Deg. | Inches. |
| 1887—July | 80·5 | 98·8 | 67·9 | 7·82 |
| August | 80·8 | 94·4 | 69·4 | 2·47 |
| September | 77·8 | 91·7 | 64·0 | 6·32 |
| October | 74·8 | 87·0 | 44·8 | 12·17 |
| November | 65·4 | 81·9 | 32·5 | 0·88 |
| December | 63·2 | 81·0 | 40·2 | 1·91 |
| 1888—January | 62·5 | 80·5 | 36·5 | 0·74 |
| February | 63·7 | 81·0 | 37·9 | 7·11 |
| March | 63·4 | 87·0 | 41·0 | 2·16 |
| April | 71·6 | 86·8 | 56·0 | 2·59 |
| May | 75·3 | 88·0 | 62·0 | 2·92 |
| June | 78·7 | 93·1 | 60·1 | 6·56 |

Yearly average temperature, 71·47°; rain-fall, 53·65 inches; prevailing winds, S. E.

A ridge runs through the town north and south, 16 feet above the river, gradually sloping on the east to the river and west to a little communicating stream. Four main ditches carry off the rain-fall.

Water, so far, is obtained principally from driven wells, averaging 20 feet deep. It is considered wholesome. Several cisterns are also in use. About six weeks ago an artesian well was begun. At about 130 feet, water, strongly impregnated with salts and sulphur, began to flow. At the present time 700 feet have been reached without any perceptible change in it. Already nearly 600 feet of rock has been drilled, and the contractor thinks when he penetrates this he will find a vein of fresh water. At Smyrna, 40 miles north, and Daytona, 55 miles, also south at Rock Ledge, 20 miles, a pure water is obtained at only 150 feet deep.

Night-soil is carted off 2 miles beyond the town, and, after disinfection, is used for agricultural purposes. Garbage is gathered together as far as practicable and burned. It is intended to improve the drainage and sewage system the ensuing winter.

No burial permits are issued. There were five deaths from April to October, 1888, one being from typho-malarial fever, contracted away from his home.

The cemetery is situated three miles from town, about eighteen feet above water-level.

Mayor, George B. Rumph; physician and member county Board of Health, Dr. B. R. Wilson; population, 1,200; one third colored.

Respectfully submitted, J. F. Hartigan.

Tampa, Fla., *October 27, 1888.*

In compliance with Dr. M. B. Harrison's request, I forward the letters herewith inclosed.

Dr. Pelot denied the existence of yellow fever at Manatee last fall and this summer. Like many other physicians in the State, he either does not know yellow fever when he sees it or else will not admit it on account of popular pressure. I am thoroughly satisfied that unless you remain in charge of the State and keep up a course of investigation during the winter there is great probability of the fever hibernating again at Manatee and other points.

You have experienced for yourself how senseless the people and press of Florida can be when the truth conflicts with local interest of any community. I am determined after this season to have nothing to do with public health matters, unless paid a liberal salary, and have so written to the Governor. I will no longer hold any office whose emolument is abuse.

Unless the Governor calls an extra session of the Legislature this body will not convene till in April, when the season for eradicating the disease will have passed; hence the importance of your remaining in charge. Though more than I, do not see how you can accomplish much without the cordial support of these internal county boards of health.

Four new cases in the last two days. No deaths since last report.

Very respectfully, John P. Wall.

Palmetto, Fla., *October 24, 1888.*

I am placed in an awkward position, and deem it my duty to write you for advice and instructions.

You have been informed that Dr. Pelot, a local physician at Manatee village, has denied the existence of yellow fever on the Manatee River, while, in the opinion of Dr. Wall, Dr. Murray (United States Marine-Hospital Surgeon), and others, we have had it here, at least since last July. Dr. Murray was ordered off from here about September 1st, leaving me in charge as inspector, telling me to look after the yellow fever on the river, and make weekly reports by telegraph to you until you ordered me to discontinue them.

I understood that it was my duty to see all "suspicious cases" here, and whenever and wherever I found a case of yellow fever on Manatee River, to report it.

I have done so up to the present time. Last week I was sent for to see a case at Manatee. When I got there I found it a well-marked case of yellow fever, in my judgment; that Dr. Pelot was attending the case, and, while I did not see Dr. Pelot, I understand he pronounces it a case of "dengue." Through one of the members of the Board of Health, I learned to-day that another member of the same family took fever yesterday, and that he saw a case of Dr. Pelot's yesterday, at Braidentown, which, in his judgment (and he is an intelligent man, of a large family, and all his children have just had yellow fever), was a well-marked case of yellow fever. I intended visiting these cases to-day, but the President of our Board of Health, a brother-in-law of Dr. Pelot, made such remarks as to deter me. Such as "Dr. Pelot was an eminent man and physician, who had been and was respected; that he had the confidence of at least many people; and that while Dr. Murray, a surgeon, might be sent by the Government to inspect suspicious cases, he, Dr. Murray, could not delegate that authority to another; that Dr. Pelot did not like any other physician, who had no authority to do so, to visit his patients without an invitation from him, or at least having his consent to do so, etc." Such was about the substance of what he said.

Now, then, I am quite well convinced that some one is opposed to having me find yellow fever on the south side of the river, either at

Manatee or Braidentown; and I fully believe, from information, that there is at least one case in each of those places; but, until or unless clothed with authority from you, I can have nothing more to do with Dr. Pelot's cases. Very respectfully, etc., M. B. HARRISON.

*October 26, 1888.*

Fort Meade, Polk County, incorporated June, 1885, is situated ten miles south of Bartow, on the Florida Southern Railway. It is embowered in orange groves and in the heart of a rich pine and hummock country. The population is 800, 10 per cent. being colored.

Here also, as at Bartow and other Florida towns, a ridge runs north and south, adapted by nature for the important purpose of drainage; in the east it slopes to Peace River, and westerly to a run which communicates along a circuitous route with the river.

About one half of the population use cistern water. The other half is obtained from wells which are sunk about twenty feet through a clay-bed, then bricked and cemented to keep out the surface water. In some cases the wells are curbed from the bottom with pine boards. The country is well supplied with fresh-water springs.

A mild form of remittent or bilious fever prevails, which is easily managed. Typhoid is rare and only seen in the country. Dr. Weems attributes its cause to drinking rotten limestone water.

Open-air privies are the rule, but there is no ordinance requiring methodical removal. An inspector, however, requires the people to use dry earth and lime, and in most cases it is then converted into a fertilizer.

The cemetery is within the corporate limits. No burial permits.

Mayor, William Thompson; member county Board of Health, Dr. W. L. Weems. Respectfully submitted, J. F. HARTIGAN.

*October 26, 1888.*

Arcadia, De Soto County, is 50 miles south of Bartow, on the Florida Southern Railway, and has a population of 250.

Mayor and physician, Dr. Edward Greene.

Five or six stores on the line of railroad constitute the business portion. On an oak ridge a few hundred yards west, across a branch, 30 or 40 houses are scattered.

The water supply is from surface wells. There is no system of disposal of the contents of privies, which are generally above ground.

With the exception of ridge above mentioned, the vicinity is low and flat, and in some places swampy. Remittent and intermittent fevers are the prevailing diseases. Cattle-raising, principal industry.

Respectfully, J. F. HARTIGAN.

*October 26, 1888.*

Fort Ogden, De Soto County, is 10 miles south of Arcadia, on same line of railway. Population, including surrounding country, about 350.

Mayor, I. O. Carr; physician, Dr. O. E. Rush.

This place is higher than Arcadia, and, in addition to the cattle industry, orange culture is considerable.

The water supply is from wells. There is no systematic disposition of night-soil. Respectfully, J. F. HARTIGAN.

DEPARTMENT OF HEALTH,
*Brooklyn, N. Y. No date.*

DEAR SIR: John Jellard, captain steamship Careuse, Red Cross Line, from Pernambuco and Para, died in this city yesterday, 9 P. M., of yellow fever.

Vessel arrived at quarantine October 22d, city same day. Captain taken sick and in bed Friday the 19th.

Vessel ordered out of city's jurisdiction.

Respectfully yours, R. C. BAKER, M. D.

J. B. HAMILTON,
*Supervising Surgeon-General.*

TAMPA, FLA., *October 24, 1888.*

DEAR SIR: For the week ending to-day there have been only two cases of yellow fever reported, and one death on the night of the 22d inst. This patient had no physician, and I was called to see her an hour or so before she died. I have heard of a few other cases of fever—probably as many as four or five—which were probably cases of the fever.

If new material can be kept out of here, the fever must soon cease. For the past week the weather has been very warm for the season.

The recent death makes a total of six for the season so far since the 7th of August. Very respectfully,

JOHN P. WALL, M. D.,
*President Board of Health.*

Surgeon-General J. B. HAMILTON, *Washington, D. C.*

SURGEON'S OFFICE,
FORTRESS MONROE, VA., *October 29, 1888.*

SIR: I have the honor to report that seaman Tore Sanchez, of the Spanish steamship Buenaventura, died in hospital on Fisherman's Island, on the 27th instant, of yellow fever. The ship will be thoroughly cleansed and disinfected before her release from quarantine. No other cases have occurred. Very respectfully,

THE SURGEON-GENERAL, L. L. WILLIAMS,
U. S. MARINE-HOSPITAL SERVICE, *P. A. Surgeon, M.-H. S.*
*Washington, D. C.*

*Gainesville, Fla.*—Dr. Martin telegraphs as follows:

October 26th: "One death, D. D. Sillghman (white).

October 26th: "One new case (colored); 2 cases under treatment."

October 27th: "One new case (colored)."

*Enterprise, Fla.*—Dr. Posey telegraphs as follows:

October 29th: "Seventeen cases on hand; 2 deaths in last 48 hours; area of infection extending into country."

November 1st: "One new case to-day; no deaths. Census being taken shows large idle colored population, and unless epidemic subsides shortly will have to be fed."

*Palmetto, Fla.*—M. B. Harrison telegraphs as follows:

October 30th: "For week ending 6 P. M., Monday, October 29th, there were at Palmetto, Fla., new cases of yellow fever, 3; death, 1. Total number cases to date, 82; total number deaths to date, 8."

*Live Oak, Fla.*—Passed Assistant Surgeon Urquhart telegraphs as follows:

October 28th: "Dr. Hankins reports a case of yellow fever at this place. He desires an expert to investigate it. I have had the house quarantined."

October 30th: "No mail is put off here. Cars will have to be moved. There are two more people ailing here."

November 1st: "Dr. Hankins reports 4 cases here. Will go with (fumigating) cars immediately to Dupont. The F. R. and N. train is ordered not to stop here. No passengers from infected points to-day."

Mayor Carroll telegraphs November 1st: "Can you send a yellow-fever expert here immediately?"

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

October 25th: "Morning report. Present: Officers, 5; guards, 11; employees, 35; refugees arrived, 9; discharged, 6; remaining, 134. Fever camp, 4."

October 26th: "Morning report. Present: Officers, 5; guards, 11; employees, 35; refugees arrived, 26; discharged, 8; remaining, 152. Fever camp, 4—all convalescent."

October 26th: "Dr. Posey reports 12 cases and 2 deaths at Enterprise; also great destitution. Wants nurses and supplies. Will instruct him to apply to Dr. Porter for supplies."

October 27th: "Mr. Upton, of Uptonville, 12 miles north, returned there from Baldwin Monday; Tuesday reported sick. Sent Guitéras and Posey, who reported case suspicious. Brought Upton to camp yesterday; to-day brought a second case to camp. Have prohibited passenger-trains stopping there. Fumigated Upton's premises, and will keep close watch on the place."

October 27th: "Morning report. Present: Officers, 5; guards, 11; employees, 38; refugees arrived, 28; discharged, 17; remaining, 163. Fever camp, 5."

October 28th: "Morning report. Present: Officers, 5; guards, 11; employees, 38; refugees arrived, 36; discharged, 14; remaining, 185. Fever camp, 5—last two cases brought from Uptonville."

October 29th: "Morning report. Present: Officers, 5; guards, 11; employees, 38; refugees arrived, 3; discharged, 26; remaining, 162. Fever camp, 5.

October 30th: "Morning report. Present: Officers, 4; guards, 11; employees, 38; refugees arrived, 5; discharged, 20; remaining, 147. Fever camp, 4. Dr. Guiteras examined every man, woman, and child, and every house and room in Baldwin, and did not find a case of sickness of any kind. Place perfectly healthy."

October 31st: "Morning report. Present: Officers, 4; guards, 11; employees, 39; refugees arrived, 6; discharged, 30; remaining, 123. Fever camp, 5."

November 2d: "Morning report. Present: Officers, 4; guards, 11; employees, 40; refugees arrived, 3; discharged, 11; died, 1; remaining, 124."

*Jacksonville, Fla.*—Dr. J. Y. Porter telegraphs as follows:

October 25th: "New cases, 71; deaths, 2; total cases, 3,974; deaths, 339. Patients, St. Luke's, 10; Sand Hills, 14."

October 25th: "President Board of Health at Enterprise wires this A. M. nine cases; six in critical condition; himself only physician up. Need fumigating material and everything for taking care of population of 500. I have wired that Posey would go."

October 26th: "New cases, 23; deaths, 2; total cases, 3,997; deaths, 341. Patients, St. Luke's, 12; Sand Hills, 12."

October 27th: "New cases, 46; deaths, 4; total cases, 4,043; deaths, 345. Patients, St. Luke's, 10; Sand Hills, 13."

October 28th: "New cases, 16; deaths, 3; total cases, 4,059; deaths, 348. Patients, St. Luke's, 10; Sand Hills, 12."

October 29th: "New cases to-day, 36; deaths, 4; total cases reported, 4,095; deaths, 352. Patients, St. Luke's, 11; Sand Hills, 9."

October 30th: "New cases, 32; deaths, 1; total cases, 4,127; deaths, 353. Patients, St. Luke's, 7; Sand Hills, 6."

November 1st: "New cases, 56; deaths, 2; total cases reported, 4,210; deaths, 356. Patients, St. Luke's, 11; Sand Hills, 4."

MORTALITY TABLE, CITIES OF THE UNITED STATES.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Varioloid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
| New York, N. Y. | Oct. 27. | 1,539,908 | 673 | .. | .. | .. | .. | .. | .. | 13 | 16 | 23 | 6 | 14 |
| Philadelphia, Pa. | Oct. 20. | 1,016,758 | 337 | .. | .. | .. | .. | .. | .. | 2 | 4 | .. | 2 | 3 |
| Brooklyn, N. Y. | Oct. 27. | 805,855 | 296 | .. | 1 | .. | .. | .. | .. | 12 | 4 | 20 | .. | 5 |
| Chicago, Ill. | Oct. 27. | 800,000 | 277 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| St. Louis, Mo. | Oct. 20. | 440,000 | 169 | .. | .. | .. | .. | .. | .. | 6 | 1 | 14 | .. | 2 |
| Baltimore, Md. | Oct. 27. | 431,879 | 157 | .. | .. | .. | .. | .. | .. | 7 | .. | 2 | .. | 1 |
| Boston, Mass. | Oct. 27. | 415,000 | 195 | .. | .. | .. | .. | .. | .. | 8 | 1 | 13 | 1 | 1 |
| San Francisco, Cal. | Oct. 19. | 300,000 | 100 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. |
| Cincinnati, Ohio. | Oct. 27. | 255,139 | 98 | .. | .. | .. | .. | .. | .. | 3 | .. | 5 | .. | .. |
| New Orleans, La. | Oct. 20. | 248,000 | 121 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 |
| Pittsburgh, Pa. | Oct. 20. | 230,000 | 73 | .. | .. | .. | .. | .. | .. | 11 | .. | 5 | .. | 1 |
| Washington, D.C. | Oct. 20. | 225,000 | 106 | .. | .. | .. | .. | .. | .. | 9 | .. | 2 | .. | 3 |
| Washington, D. C. | Oct. 27. | 225,000 | 92 | .. | .. | .. | .. | .. | .. | 11 | .. | 2 | .. | 2 |
| Louisville, Ky. | Oct. 27. | 200,000 | 60 | .. | .. | .. | .. | .. | .. | 9 | .. | 2 | .. | .. |
| Milwaukee, Wis. | Oct. 27. | 195,000 | 66 | .. | .. | .. | .. | .. | .. | 3 | 3 | 1 | 2 | .. |
| Kansas City, Mo. | Oct. 27. | 180,000 | 40 | .. | .. | .. | .. | .. | .. | 5 | .. | 2 | .. | .. |
| Minneapolis, Minn. | Oct. 20. | 180,000 | 59 | .. | .. | .. | .. | .. | .. | 7 | .. | 6 | .. | .. |
| St. Paul, Minn. | Oct. 20. | 175,000 | 49 | .. | .. | .. | .. | .. | .. | 8 | .. | 4 | .. | .. |
| Newark, N. J. | Oct. 23. | 174,954 | 82 | .. | .. | .. | .. | .. | .. | 3 | 1 | 10 | .. | .. |
| Rochester, N. Y. | Oct. 27. | 120,000 | 32 | .. | .. | .. | .. | .. | .. | 1 | .. | 4 | .. | .. |
| Denver, Col. | Oct. 26. | 96,000 | 32 | .. | .. | .. | .. | .. | .. | 8 | .. | .. | .. | .. |
| Columbus, Ohio. | Oct. 27. | 93,000 | 25 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Toledo, Ohio. | Oct. 19. | 80,000 | 17 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Nashville, Tenn. | Oct. 27. | 65,153 | 27 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | 1 |
| Fall River, Mass. | Oct. 27. | 65,000 | 22 | .. | .. | .. | .. | .. | .. | 2 | 1 | .. | 1 | .. |
| Charleston, S. C. | Oct. 20. | 60,145 | 43 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Evansville, Ind. | Oct. 27. | 53,000 | 12 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .. |
| Savannah, Ga. | Oct. 26. | 52,827 | 23 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Lynn, Mass. | Oct. 13. | 50,000 | 13 | .. | .. | .. | .. | .. | .. | 1 | 1 | .. | .. | .. |
| Manchester, N. H. | Oct. 20. | 41,000 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | 4 | .. | .. |
| Mobile, Ala. | Oct. 27. | 40,000 | 12 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Portland, Me. | Oct. 27. | 40,000 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .. |
| Wheeling, W. Va. | Oct. 20. | 35,000 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| E. Saginaw, Mich. | Oct. 27. | 33,000 | 8 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| Davenport, Ia. | Oct. 20. | 30,084 | .. | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. |
| New Albany, Ind. | Oct. 27. | 30,000 | 4 | .. | .. | .. | .. | .. | .. | 2 | 2 | .. | .. | .. |
| Wheeling, W. Va. | Oct. 27. | 30,000 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Altoona, Pa. | Oct. 20. | 29,546 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| New Bedford, Mass | Oct. 27. | 26,845 | 14 | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .. |
| Auburn, N. Y. | Oct. 27. | 26,000 | 8 | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. |
| Haverhill, Mass. | Oct. 27. | 25,000 | 11 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Jackson, Mich. | Oct. 20. | 22,500 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Poughkeepsie, N.Y. | Oct. 19. | 22,000 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. |
| Newport, R. I. | Oct. 25. | 20,466 | 10 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. |
| Pensacola, Fla. | Oct. 27. | 15,000 | 10 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .. |

**Experimental Typhoid Fever.**—"After reviewing the literature of the subject of experimental typhoid fever," says the "Lancet," "and after detailing the results of some fresh experiments, Dr. Perret, in the 'Province médicale,' No. 16, comes to the conclusion that Eberth's bacillus freshly taken from the human body, whether living or dead, does exhibit a poisonous effect when injected into certain animals. The resulting experimental disease, however, does not bear a faithful resemblance to true typhoid fever, but is really a septicæmia, perhaps capable of a certain measure of attenuation, as seemed to be indicated by the recent researches of Perret and others."

**Changes of Address.**—Dr. Joseph A. Andrews, to No. 39 West Thirty-second Street; Dr. W. F. Mittendorf, to No. 140 Madison Avenue.

## ANSWERS TO CORRESPONDENTS.

*No. 237.*—The time and place of meeting of the next board for examining candidates for appointment in the Marine-Hospital Service can not now be stated, but usually such a board is convened once a year (in the spring). A board for examining candidates for appointment in the medical corps of the army (consisting of Surgeon George M. Sternberg) Surgeon Henry McElderry, and Assistant Surgeon Edward C. Carter, was ordered to meet in New York on the 1st of October, "or as soon thereafter as practicable."

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### THE TREATMENT OF ROTARY LATERAL CURVATURE OF THE SPINE.*

BY R. H. SAYRE, M. D.

I SHALL not this evening enter fully into the subject of the ætiology of rotary lateral curvature of the spine, as it would occupy more time than I have at my disposal, but shall confine my remarks almost exclusively to the diagnosis and treatment.

I would remark here that many cases begin prior to the seventh year, but are not noticed by the parents until a much later period, or, if noticed, are not considered of sufficient importance to require treatment, and it is to this cause that almost all the inveterate cases with frightful deformity are due, for there is no disease which more clearly illustrates the proverb that "an ounce of prevention is worth a pound of cure."

In making the diagnosis of any curvature of the spine it is necessary to have the back completely exposed. The clothing should be fastened tightly about the hips just above the trochanters and showing the cleft between the buttocks. The undershirt is to be removed and fastened around the neck by the sleeves, hanging in front of the chest like an apron. The shoes should be removed and the patient then stand with the back turned toward you in the attitude she is accustomed to assume. At first you may hardly notice any curvature, but in a few moments the patient will relax her muscles and allow herself to sag, and you will notice a slight bending of the spine to one side. Often there is only to be noticed a slight flattening of the normal curve at the waist, and the space between the trunk and the two arms as they hang by the sides will be less on one side than on the other. One hip may seem to be higher, possibly on account of actual difference in the length of the legs, oftener on account of the flattening of the curve above the pelvis on one side and abnormal sinking in at the corresponding point on the other. It may be that the angle of one scapula is higher than the other, and that their inner borders are not parallel.

In the commencement there is merely a twisting of the spine in a lateral direction, accompanied by a rotation of the bodies of the vertebræ on one another, but later on there is added to this a curving of the ribs, and the amount of this curving of the ribs is the most prominent factor in determining the amount of improvement to be expected in any given case. To show the amount of curvature of the ribs the patient should stand with the back to the surgeon, who should be seated, and grasp her legs with his knees while his hands steady her hips. She should then bend forward toward the ground, touching it with her fingers if possible. In this position the shoulder-blades are drawn forward and the amount of difference between the ribs on the opposite sides of the body can easily be noted. If this is slight, the chances for improvement are very much more favorable, as when there is a marked angle in the ribs it is impossible wholly to rectify the deformity.

With the patient in the erect position the distance from the navel to each nipple should be noted, as this is one of the early signs of rotation in lateral spinal curvature. I am aware that no importance is attached to this by some authors, as they say one nipple may be higher than the other without any spinal curvature; but, while I acknowledge the truth of this remark, I nevertheless think the measurement of value, as I have seen cases where there was a difference of an inch or more in which after treatment there was the same distance from each nipple to the umbilicus, showing the difference to have been due to the position of the body and not to abnormal location of one breast.

In order to preserve a record of the case, before attempting to rectify the curve I make it a rule to photograph the patient, sometimes taking a lateral as well as a posterior view, in order to show the projection backward of the scapula on the convex side, which always occurs, and in some cases I have also taken front views, as the deviation of the body from the straight line is often as marked in front as at the back.

If the curvature is due to any inequality in the length of the legs, the short one should be built up by means of a thicker sole and heel on the shoe, until the curve is obliterated as nearly as possible, and in such cases it is advisable to drop the clothing so as to expose the gluteo-femoral fold, and use this as a guide in determining the length of the legs. In finding the exact difference between the legs I use a number of blocks of well-seasoned wood, eighteen inches long by six inches wide, and ranging from an eighth of an inch to an inch in thickness, placing them one by one under the short leg until the amount is reached which renders the back straight, or as nearly so as possible. The suggestion of Dr. Morton, of Philadelphia, in this regard is well worth mention, which is to have boards six or eight feet long and of various thicknesses, and, after having determined what seems to be the right amount to be added to the short leg, to make the patient walk with the long leg on the floor and the short one on a board of this thickness, noticing meanwhile whether this corrects the limp which is due to the inequality of the legs, and, if it does not, changing the board until the proper height is attained.

In the treatment of lateral spinal curvature we must remove the cause if possible. If there is inequality of the legs, build up the short one; if there is paralysis of any sort—infantile, post-diphtheritic, or any other—use galvanism or faradism as the case may require, with nerve tonics internally, and massage of the affected muscles. If there is torticollis as a foundation for a lateral curvature in the dorsal or lumbar region, rectify the torticollis first by stretching, tenotomy, electricity, or all, according to the requirements of the case. If there is strabismus or inco-ordination of the ocular muscles, or defective vision of any sort, let that be remedied, and then you are ready to turn your attention to the curved spine itself.

Any or all of the conditions I have mentioned above may

* Read before the Alumni Association of Bellevue Hospital, October 3, 1888.

be the starting-point of lateral spinal curvature, but in many cases we find none of them present, and here we may meet with rhachitis as a cause.

These cases begin as the very slightest deviations from the normal, and, being favored by abnormal development of certain muscles, insufficient exercise of others, aided by vicious habits of sitting, standing, and lying, the slight curve which at first was a simple change in the relative positions of the vertebræ and ribs, which could be voluntarily rectified by muscular action, becomes a bony deformity which it is impossible to remove.

The ribs and vertebræ, however, are capable of being altered in their relative positions by muscular movements, and as the disuse of the muscles is in a vast majority of cases the cause, so the proper use of them must be the cure of the deformity. When the deformity is slight I rely on gymnastic exercises alone for a cure, but if the case is more advanced, I find that the patient is not able to retain by voluntary effort so good a position of the body as can be obtained by partial self-suspension by means of a pulley and head swing. (See Figs. 1 and 2.) I therefore in these cases apply to the patient thus suspended a plaster-of-Paris jacket, which is cut down in front, supplied with lacings, and then worn in the daytime, being applied in the morning while the patient is partially self-suspended, and removed at night before sleeping. The patient exercises in the morning before the corset is applied and at night after it is removed.

Although my father has for years taught that the corset was only useful as a means of retaining the improved position obtained by self-suspension, and was to be supplemented by proper exercises, yet I often see patients who have been put in plaster-of-Paris corsets and never told to exercise, the physician apparently not recognizing the fact that the jacket was only an adjuvant.

This may be because of the difficulty of understanding many of the exercises which are used in the treatment of lateral curvature from a written description, and so I have this evening brought two patients here to practically demonstrate before you this part of the treatment. One of these girls I have concluded to treat by gymnastics alone (Figs. D and E); the other I am still watching, as she has been but a short time under treatment, and I have not yet decided whether or not a jacket will be necessary.

I wished to have here also a patient who wore a jacket for some years, whose back now shows hardly any curvature, but she was unfortunately prevented from coming by professional engagements, she now being on the stage, where no one, seeing her act, would dream of her having had a curved spine. I have also two jackets to exhibit the improvement which can be made in the worst sort of cases. These jackets are the first and sixth which were applied to the patient whose photographs are now passing around, showing the results of six months' treatment and the improvement in position gained by partial self-suspension. When she was standing, the distance from the navel to the right nipple was two inches and three quarters greater than from the navel to the left nipple, and while self-suspended only half an inch, and with the corset on she was an inch and an eighth taller than without it. When

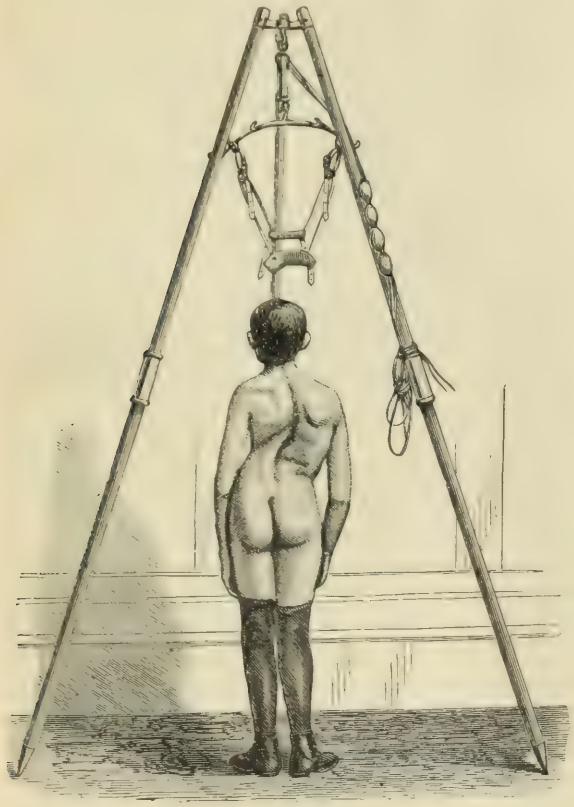


Fig. 1.



Fig. 2.

first seen, a plumb-line from the chin passed to the right of the right foot, and the left nipple was an inch to the right of this line. Behind, the plumb-line from the occiput passed an inch to the left of the inner border of the left scapula. In the photographs of the first and sixth jackets I have drawn perpendiculars through the axilla and hip on each side, showing the improvement that has taken place in the lateral deviation. (See Fig. 3.) This patient I am sure would not have made so marked an improvement if treated by gymnastics alone. She had been under instrumental treatment for nine years before I first saw her, during which time she grew progressively worse, and, having had extensive personal experience with braces of various kinds, she gives emphatic testimony as to the superiority of the plaster-of-Paris jacket as a means of support. The history of this case is a repetition of that of many others whose curvature, beginning in a very slight twist, as shown not only by the patient's statements but by photographs taken at the time, has, in spite of the constant wearing of instruments, gone on from bad to worse. These patients have come from the hands of various surgeons of large experience, so I am convinced this result was not due to some particular kind of machine or to inexperience on the part of the surgeon, and, as the patients in my hands have been most anxious and willing to follow out instructions, I can not lay the fault at their door, and therefore am forced to the conclusion that the various forms of instruments I have seen for pushing the spine straight are worse than useless, and especially as in some cases the deformity had been quiescent for years, and after the application of mechanical support rapidly began to grow worse.

I have frequently seen patients with machines on in which they were more crooked than with no support, and I show you here the photographs of a boy who came to me two years ago wearing a brace in which he was more curved than without it. I sent him to the photographer and had his picture taken with and without his machine, and then instructed him in some exercises. These he continued at home twice a day with his father's help, coming to see me at very infrequent intervals; but, though he did not come nearly so frequently as I should have desired, he has, however, made a vast change in his back by exercises alone, without any artificial support, as seen in the photograph I took a short time since. (See Figs. A, B, and C.)



*D*, F. S., June 18, 1888.



*E*, F. S., August 30, 1888, treated by exercises.

The various exercises I shall now describe may be repeated three times each at the commencement, and later on a greater number of times, stopping short of fatigue in all cases. In beginning the exercises a mat or thick shawl is



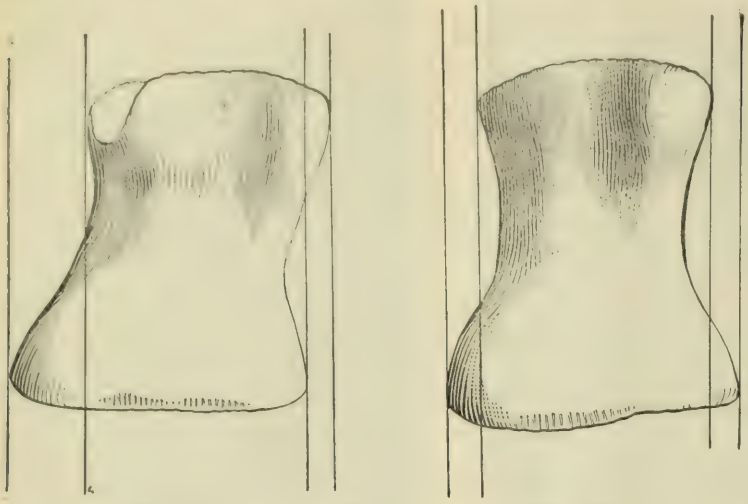
*F*, R. L., July 6, 1887.



*G*, R. L., March, 1888, treated by exercises.

laid on the floor and the patient lies prone, the arms at right angles to the trunk, palms down, face turned to the convex side, and the back as straight as possible. (See Fig. 4.) The patient supinates the hands, throws the scapulæ well back, raises the hands from the floor, and lifts the trunk, while the surgeon holds the feet down. (See Fig. 5.) This is repeated three times; later on it can be done oftener. The breath should not be held during any of these exercises, but the patient should breathe naturally. If necessary to secure this, make them count out loud while exercising.

With the hands behind the head, the patient raises the elbows from the floor, and raises the trunk as before, the feet being held by the surgeon. (See Fig. 6.)



First jacket. FIG. 3. Sixth jacket.

With the hands behind the head and the elbows raised, the body is swayed toward the convex side, the patient trying to "pucker in" the bulging ribs and *not* to bend in the lumbar concavity. The feet are fixed as before.

With the arm on the side of the convexity under the body, the other arm over the head, the heels fixed, the patient raises the trunk from the floor.

Sometimes the arm on the side of the concavity is put on the opposite buttock (see Fig. 7), while the patient raises the trunk (see Fig. 8). Sometimes the arm on the convex side is put on the buttock (see Figs. 9 and 10), and in cases of marked lordosis, with great stooping of the shoulders, both hands are put on the buttocks while the patient raises the trunk.

The patient now lies on the back, arms at the sides, palms up, and lifts first one foot in the air, while the surgeon makes resistance graduated to the patient's power; repeated, say, five times. The same is done with the other foot, and then with both. The feet are next separated and then brought together once more while the surgeon resists. Each leg then describes a circle, first from within out, then from without in.

If there is special weakness at the ankles, with a tendency to flat-foot, the patient flexes the foot and extends it against resistance, and turns the sole of the foot toward its neighbor, the surgeon resisting, and it is then forcibly everted again by the surgeon, the patient resisting.

The patient now lifts the arms from the sides, passing



*A*, E. M. as seen first, July 5, 1886, wearing a brace.



*B*, E. M. on the same day, without the brace, the back being straighter without it than with it.



*C*, E. M., August 18, 1888, treatment having consisted simply of exercises.

perpendicularly to the floor till they are stretched as far beyond the head as possible, and then, going at right angles to the trunk and parallel with the floor, returns them to the sides, palms up.

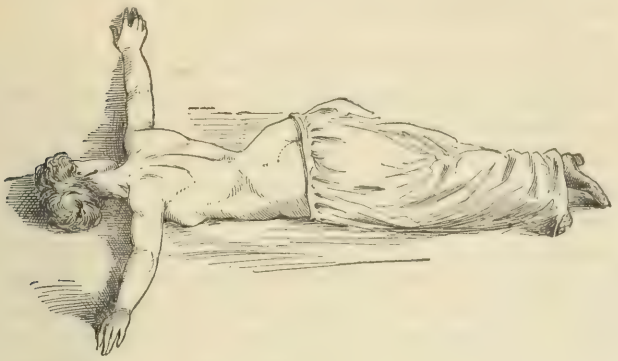


Fig. 4.

While the heels are held, the patient rises to the sitting position, hands at the sides; then she rises from the floor with the hands behind the head and the elbows at right angles to the trunk.



Fig. 5.

The patient now stands with the heels together, toes turned slightly out, hands behind the head, elbows at right angles to the trunk (see Fig. 11); then rises on tip-toe, bends the knees and hips, keeping the back as straight and erect as possible, and rises up once more. With the arm on the



Fig. 6.

concave side high above the head, the arm on the convex side at right angles to the body (see Fig. 12), she rises on tip-toe, bends the hips, knees, and ankles so as to squat, then rises and stands. All this time care must be taken to

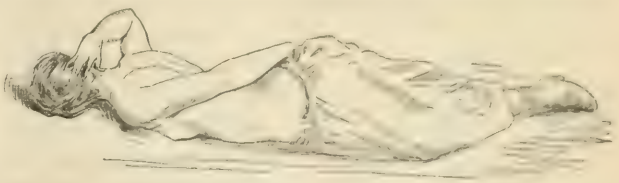


Fig. 7.

push the body as straight as possible, and gradually educate the patient to hold it so without wiggling during these movements.



Fig. 8.

Let the patient practice walking in these positions, both on the flat foot and tip-toe, and also step high as if walking up-stairs. With the palm of the patient's hand on the convex side against the ribs, pushing them in, the hand on the

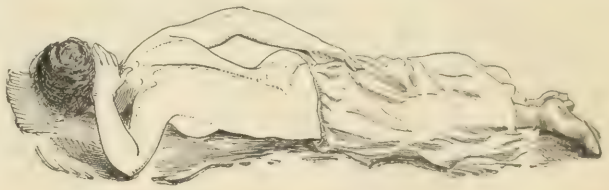


Fig. 9.

concave side, she pushes a slight weight up in the air, while the body swings so as to straighten out the curves.



Fig. 10.

Sit behind the patient, fix her thighs with your knees, while she holds both arms above the head and bows toward the floor, keeping her knees stiff while you keep her ribs as straight as possible with your hands.

With the arm on the concave side across the top of the

head, and the arm on the convex side around in front of the abdomen, the patient bends to the convex side through the ribs and *not* through the waist. (See Fig. 13.)



Fig. 11.

The patient sitting with the back toward the surgeon, the latter pushes one hand against the most projecting part of the convexity, and, with the other hand passed under the shoulder of the concave side, straightens out the curve as much as possible, the hand on the "bulge" acting as a fulcrum in straightening the curve.

The patient sits on a stool in front of the surgeon, who fixes the pelvis with his knees. The patient then twists the projecting shoulder to the front while the surgeon holds



Fig. 12.

the elbows, which are at right angles to the trunk, the hands being behind the head, and makes resistance. In the same position the patient swings forward and back, swinging through the hips, keeping the back stiff, and not bending in the waist.



Fig. 13.

The patient pushes in the ribs on the convex side with the hand, and pushes up with the hand on the concave side, the same as when standing. She also lifts the arm on the concave side up at right angles with the body while holding a weight.

In cases of round shoulders, windmill motions of both arms and to-and-fro movements of the head against resistance are advisable.

The patient lies prone on the couch, all the body above the waist projecting from it, while the surgeon holds the heels. With the hands behind the head, the elbows thrown back, the body is bent toward the floor, then raised up; later on, resistance is made by the surgeon. The patient lies on the concave side and rises up laterally. The patient lies with the convexity on the edge of the couch, and hangs off as far and as long as possible.

One of the best exercises for removing the curve is for the patient to place the head in a collar attached to a cross-bar above the head suspended from the ceiling by a compound pulley and rope. The patient now grasps the rope as high up as possible, and pulls up hand over hand until the toes just touch the floor. (See Figs. 1 and 2.) While hanging thus she takes three deep, full, slow inspirations and expirations. While she is hanging thus the surgeon corrects the rotation by pushing the ribs with one hand while he steadies the pelvis with the other.

Another good thing is for the patient to have a belt passing around the pelvis, with a handle at each side. Holding these in the hands, she straightens the arms out, and the spinal column is thus stretched and straightened much in the same way as by self-suspension.

The patient stands bent forward as if playing leap-frog, her hands on a chair, while the surgeon, with one hand under the shoulder on the convex side and one hand on the projecting ribs, corrects the rotation. It is advisable to steady the patient with the knee while doing this.

There are some other movements I might mention did time permit, and some exercises with weights and pulleys that are beneficial, but those I have illustrated I consider the most important, and, as each individual case must be a separate study by itself, the exercises must be adapted to meet its peculiar requirements. Above all, the co-operation of the patients must be secured, and I have found it useful to let them look at their backs by means of two large looking-glasses, and thus know when they are standing straight and when they are crooked, for they often are so habituated to an improper mode of carriage that when put straight they feel as if they were crooked, but by means of training with the looking-glasses they can be made to associate the feelings caused by the straight position with the fact that they are straight as seen in the glass, and so during the day retain themselves straight by putting themselves into the position which produces these same feelings.

The patients should have chairs of such height that the feet are on the ground while the thighs are on the seat, and with a back that will support the lumbar spine without inducing them to loll about, and I also direct them to lie down straight whenever they are too tired to sit up properly.

At night I have recently tried making extension by a weight and pulley attached to the head by the chin-piece of the suspension apparatus, while counter-extension is made by a similar weight and pulley attached to a pelvis-belt. The cord attached to the pelvis-belt should go both to the front and back of the latter, as, if fastened to the back only, it causes the front part of the belt to cut into the abdomen. I have not tried this method long enough to speak of its merits, but think it will prove beneficial.

# SURGERY OF THE BRAIN,

## BASED ON THE PRINCIPLES OF CEREBRAL LOCALIZATION.

By ROSWELL PARK, A. M., M. D.,
PROFESSOR OF SURGERY, MEDICAL DEPARTMENT, UNIVERSITY OF BUFFALO.

(*Concluded from page 519.*)

The table includes every case which I have been able to find where the exploration or the complete operation was practiced on account of lesions previously diagnosticated, according to the principles of cerebral localization and without reference to scars or surface markings, although probably the corroborative evidence which they might afford could not be disregarded. In this table are included three of my own cases, never before reported, the first of which antedates Mr. Horsley's first case, according to his published table of personal cases, by three months. It has been difficult to decide, in a few instances, whether a given case was entitled to a place in this collection or not. This I have had to determine on perhaps insufficient data, and accordingly desire to express a hope that I have not been guilty of any injustice in either direction.

My summary of cases and table include sixty-three cases. Certain data deduced from these will be of interest. The deaths were seventeen in number, of which only *five* can be justly laid to the operation itself. Fifteen of these cases were abscesses, subdural or subcortical. In eleven the lesion was a tumor, exclusive of tuberculous nodules. Of cysts, properly speaking, there were twelve. The twenty-five other cases were of a miscellaneous nature. In three cases the true nature of the lesion was not revealed during the operation and was only discovered at the autopsy. In two cases in which no palpable or visible lesion was discovered at the time of operating, the symptoms which led to its performance were nevertheless relieved, though nothing but careful exploration was practiced.

Of the 63 operations, 17 have been done by American surgeons. Those who have themselves operated more than once are, with the number of their operations, Macewen, 12; Horsley, 11; Bergmann, 4; Keen, 3; Weir, 3; and Park, 3.

### Cases.

1. Macewen, 1879.—Boy who had had a fall six days previously from which he apparently recovered; six days later convulsions; paresis of left arm and leg; phenomena indicating lesion of lower part of fissure of Rolando. That portion was excised; the dura was found bulging; two ounces of fluid, coagulated blood removed; patient rapidly recovered.—"Med. News," Aug. 18, 1888; "Brit. Med. Jour.," Aug., 1888, p. 303.

2. Stimson.—Male, twenty-six years, hit on the right side of the head with a stone. No fracture found, but a scalp wound. In the fifth week hebetude and headache. In the eleventh week was seen to have wrist-drop on the left side. Operation, July 20, 1880. No anæsthetic, only slightly sensitive to pain. Trephined above upper end of scar, at a point about back of the middle of the post-central gyrus. Two ounces of pus drawn from an abscess at opening but a quarter of an inch below the surface. A probe was passed two inches. The patient died nine hours after operation. On autopsy, there was found a collapsed cavity at a point "in the parietal lobe behind the lower part of the ascending parietal convolution, from which it was separated by a shallow sulcus."—"Archives of Medicine," 1887, v, p. 218.

3. Macewen, 1881.—Large cerebral abscess in temporo-sphenoidal lobe. Patient aphasic. Sudden signs of abscess having burst into lateral ventricle. Operation while patient was *in extremis*. Abscess reached at a depth of a quarter of an inch, and several ounces evacuated. Autopsy proved it to be an old encysted abscess.—"Brit. Med. Jour.," Aug. 11, 1888, p. 304.

4. Macewen, 1883.—Case of brachial monoplegia. Operation. Lesion in white substance of motor cortex of middle of ascending frontal convolution, found to be an old extravasation of blood, around which encephalitis had occurred, inducing irritation and compression.—"Brit. Med. Jour.," Aug. 11, 1888, p. 304.

5. Macewen.—Boy aged three. Brachio-crural monoplegia with rigidity, resulting from injury eight months previously. Operation (no date given). Large, thick-walled, subdural cyst found, and a spiculum of bone pressing on the brain. Almost complete recovery.—"Brit. Med. Jour.," Aug. 11, 1888, p. 306.

6. Macewen.—Patient with ptosis, mydriasis, paresis of ocular muscles of left side and right facial paralysis, and paresis of right arm. Diagnosis of abscess in temporo-sphenoidal lobe. Operation (date not given). Evacuation of three ounces of pus. Rapid recovery.—"Brit. Med. Jour.," Aug. 11, 1888, p. 307.

7. Wernicke and Hahn.—Male, aged forty-eight. Hemiopia, paralysis of right leg, paresis of right arm, speech unaffected. Operation, August, 1881. Trephining over occipital bone; considerable deep resistance; deep exploration; pus found at depth of four centimetres. Death six days later. Tuberculous abscess found in left temporo-occipital lobe perforating into the ventricle.—Seydel, "Antiseptic und Trepanation," p. 142.

8. Polaillon.—Male, aged fifteen years. Blow on skull seven months and a half previously; aphasia and paralysis of right arm and leg. Diagnosis of blood-clot over affected centers. Operation, 1882. Trephining over left motor area; clot found in upper part of fissure of Rolando; death in six days. Autopsy showed two abscesses in brain beneath the cortex.—Seydel, *loc. cit.*, p. 137.

9. Macewen, 1883.—Male, thirty-five years of age. Had gonorrhœa for three months, followed by bleeding from the ear. Unconscious for twelve hours. Complained of loss of strength in left arm and leg; later right facial paralysis. Diagnosis of meningitis from hæmorrhage and brain lesion of the middle portion of the right gyrus centralis anterior. Trephining over right temporal bone. Dura when exposed unevenly red; after incision there was an escape of clear fluid. Along the ascending frontal convolution there was a yellow opaque membranous mass which reached into the fissure of Rolando, which was extirpated and the button of bone replaced. Wound healed in eight days, and in six weeks recovery was complete. Macewen's diagnosis was tuberculosis. Bergmann considers it to have been a gumma.—"Lancet," 1885, p. 881. *Vide* also Bergmann, *loc. cit.*

10. Macewen, 1883.—Female, aged twenty-five. Syphilitic history; paralysis of left side, of gradual onset, with prickling sensations. Removal of a square inch of right parietal bone. Surface of brain covered with opaque yellow mass over the middle and upper thirds of the ascending frontal convolution and the sulcus frontalis. After incision, in the upper anterior part of the gyrus anterior, where the brain matter seemed more resistant, some brown, cloudy fluid escaped. Reimplantation of bone and rapid healing. At the end of the first week there was movement in fingers and toes; after eight weeks good mo-

tility and complete recovery. After two years, condition good. —"Lancet," 1885, p. 934.

11. Macewen, 1879.—Patient with mental symptoms and convulsions limited to right side, commencing in face and arm and later involving the leg. Diagnosis of lesion involving lower and middle portion of the ascending frontal convolution. Application of trephine. Tumor of the dura mater removed, along with the membranes so far as they were involved; rapid recovery.—"Med. News," Aug. 18, 1888, p. 170; "Brit. Med. Jour.," Aug. 11, 1888.

12. Macewen.—Male, twenty-two years old. Epileptiform convulsions, appearing on an average every five minutes, limited to the tongue, right facial muscles, and platysma on the same side. Eight years previously had received an injury to the head, after which right arm became weak. Diagnosis of lesion of ascending frontal convolution. Operation; cyst found in ascending frontal convolution, size of a filbert, surrounded by inflammatory zone. Extirpation of entire lesion; rapid recovery and return of motor power.—"Med. News," Aug. 18, 1888.

13. Macewen.—Girl, seven years of age, with frequently recurring epileptiform seizures. The first sensation was experienced in great toe of right foot, which was soon extended in clonic spasm, and sometimes was followed by contractions of entire limb, with motor paralysis in affected parts. Diagnosis of lesion, probably multiple, in upper region of ascending frontal convolution, thought to be possibly tubercular. Exposure of this region. A few tubercular nodules were discovered on the surface. On careful palpation, discovery of a circumscribed nodule in the cerebral substance. On incision, this was found to be a tubercular mass, size of a hazel-nut, which was easily shelled out. Rapid recovery without disturbance.—"Med. News," Aug. 18, 1888.

14. Macewen, 1883.—Adult male. Injury a year previous, followed by melancholy and intense headache. Behind the angular process of the frontal bone was a slight osseous depression which could not account for his symptoms. No motor phenomena, but discovery of psychical blindness. Physically he could see, but there was conveyed no mental impression. Diagnosis of lesion in the angular gyrus. On exposure of the part, a detachment of internal table was found, which had caused pressure on the part beneath. The depressed bone was removed and reimplanted in proper position. Rapid healing and wonderful benefit to his general condition.—"Med. News," Aug. 18, 1888.

15. Leo.—Male, aged twenty-five. Struck on the back of the head with a brick when thirteen years old. First fit at nineteen while sitting at work. "Felt himself swelling immensely; all his surroundings seemed to become grossly enlarged; he uttered a sharp cry." He had a convulsion, and after it remained comatose for a time. Before the fit he uttered a prolonged cry, and his head turned to the right and backward. The fit was limited to the right side of neck and right arm, and of short duration. Recovered with a start of surprise. At last could not repeat words distinctly except monosyllables, and could swallow but very little. Operation, August 11, 1882. Disc of bone an inch in diameter was removed from right side, an inch and a half above and behind the mastoid process, over squamous ridge of temporal bone. The patient recovered.—"Am. Jour. of Neurol. and Psychiatry," vol. ii, 1883, p. 38.

16. Durante.—Fibro-sarcoma extending across middle line from the left anterior cranial cavity; destroying lamina cribrosa; pressing superior orbital plate downward; extending posteriorly nearly to sella turcica; with extensive atrophy of left frontal lobe. Operation, May, 1884. Incision from left internal canthus upward and outward toward temporal region; large piece of cranium removed, by hammer and chisel, downward as far as superior border of orbit. Tumor removed without much hæmorrhage; drainage made by tube into the nose; wound closed; tampon of gauze around drainage-tube for ten days. Patient discharged cured. Previous symptom: protrusion of the left eye, anosmia, weakness of memory, uncertainty of motion, tendency to depression and silence. Three months after operation, mental depression and disturbances of memory had disappeared.—"Transactions of the Ninth International Medical Congress," vol. i, p. 570.

17. Bennett and Godlee.—Male, twenty-five years of age. Headache for four years; violent attacks of emesis and suffocation; intelligence and special senses not affected; double optic neuritis; paralysis of left hand and fingers; loss of rotation of forearm; limitation of motion of left shoulder; slight paresis of left leg and left side of face. Operation, November 25, 1884. An opening two inches by an inch and three quarters was made on the right side over upper third of fissure of Rolando. Enucleation of a tumor the size of a walnut; bleeding checked with galvano-cautery; cavity drained. Tumor found to be glioma. Good result for four days, then suppuration and œdema of face and scalp. A little later hernia cerebri, suppurative basilar meningitis, etc. Death four weeks after operation.—"Lancet," 1884, vol. ii, p. 1090, and 1885, vol. i, p. 13.

18. Mills.—Male, aged forty years. In 1873 had an injury to the skull with supposed fracture, followed by violent reaction, the convulsions increasing in severity and number during the ensuing eight years. All this time he suffered from headache, which was sometimes intense. Three years after the injury his eyesight began to fail and was almost lost. Just before entering the hospital paresis of the right arm and leg supervened. In the hospital he suffered from convulsions with spasms of the right arm and leg, alternating with rigidity; eyes fixed, deviating to the right; pupils dilated, and between convulsions oscillating horizontally. During the night convulsions followed at intervals of fifteen minutes; toward morning he became comatose, and when seen by Dr. Mills was in this condition. Dr. Mills and Dr. Hearn decided to trephine on the left side, about the Rolandic line, concluding that the convulsions were due to involvement of the dura. Operation, without anæsthetic, 1884. Dura found adherent to overlying bone; no depression nor fracture of internal table apparent. Soon after the operation he became quieted, the convulsions were less marked, and he was again able to swallow and take nourishment. The following day he recognized his mother and spoke intelligently. During the eighty hours after the operation he had a few mild convulsions, and at the expiration of this time died quietly. On autopsy, there were found on the left side, at the site of the operation and in its neighborhood, firm adhesions of the dura to the pia and brain substance. The tissues as a whole formed a common mass; the dura was also adherent to the skull; the membranes showed necrobiotic spots, and the cause of death was shown to be a pachymeningitis.—Reported by Roberts, "Annals of Surgery," vol. ii, p. 112, 1885.

19. Gussenbauer, 1884.—An eighteen-year-old scholar sustained a perforating gunshot wound of the right side of the forehead. The contused and lacerated wound healed after suppuration, and was followed by necrosis of the superficial part of the bone. Later symptoms of compression of the brain appeared, with certain local and motor symptoms, from which Gussenbauer diagnosticated abscess of the brain and trephined at the injured spot. After exposure of the brain he detected a deep fluctuation, made a deep incision, and evacuated a deep abscess. Complete recovery followed, complicated only by a tendency to epileptic spasms, which required subsequent medicinal treatment.—"Prag. med. Wchschft.," 1885, Nos. 1 to 3.

20. Truckenbrod.—Male, aged twenty-eight. Left otorrhœa. Pain on top of head and occiput; vertigo; fever. Several ear and mastoid operations. Paresis of right side of face. Stuttered while reading and used wrong words. Did not remember the number of his children, his own age or name. Aphasia marked. Œdema behind and above ear. On January 31, 1885, opened skull above the ear and removed a cupful of pus from under dura; abscess as big as a small orange. Bright and well next day. Steady recovery, which resulted in complete cure for four months.—"Archiv. of Otol.," 1886, xv, pp. 176–185.

21. Hirschfelder and Morse.—Male, thirty-seven years old. Headache, epileptoid attacks, vertigo, amaurosis, motor and sensor paralysis of left arm, contractures of arm and left side of face. Operation, February 15, 1886. Three trephine openings, making one opening of three inches in diameter, in right parietal bone over fissure of Rolando. Tumor found to be diffuse and very soft, of which only a part two centimetres and a half in size could be removed. Tumor found to be glioma. After the eighth day, until death, a profuse flow of sanious bloody pus with gliomatous elements. No autopsy.—"Pacific Med. and Surg. Jour.," April, 1886, p. 210.

22. R. Park.—Girl, aged fourteen. In August, 1881, fell from window, contusing right side of the head. Total unconsciousness for ten days, followed by left hemiplegia, which gradually disappeared. Two years later had her first fit; convulsive seizures beginning in right arm, involving first the right side of the body. Depression of bone an inch and a half above left ear. Diagnosis of cystic degeneration of blood-clot in the neighborhood of center for right arm. Operation, February 24, 1886. Bony defect two centimetres and a half in diameter. This was found filled in with fibrous membrane, over which the periosteum was adherent; underneath this a cyst. Large opening made with trephine and bone forceps and a cystic cavity three centimetres and a half in diameter uncovered. Excision of overlying dura and removal of cyst. Immediate union of wound, great improvement, though she still has epileptoid seizures when her digestive organs are deranged. Reported for first time.

23. Horsley.—Male, aged twenty-two. Scar in brain from old depressed fracture of skull. Fits beginning in the right leg. Twenty-eight hundred and seventy fits during the first thirteen days of his stay in the hospital. Complete paralysis of right arm and leg. Diagnosis of lesion involving the end of the superior frontal sulcus. Operation, May 25, 1886. Free incision and excision of lesion, which was found to be cicatricial; primary union; no drainage after second day. General improvement, paralysis unchanged, but has had no fits since operation.

24. Horsley.—Male, twenty years of age. Repeated attacks of pleurisy. Since the 15th of January, 1884, began to suffer from clonic cramps in left thumb and index finger, first severe attack being in March, when he fell to the ground. During 1885 no pronounced epileptic attacks. Seizures began in the fingers of his left hand, extending up the arm. In April, 1886, had practically lost power of his left arm, with severe pain from occipital to right parietal region. Diagnosis: Lesion of uncertain nature in ascending central convolution at center for finger. Operation, June 22, 1886. After exposing brain there appeared a large tumor. This was superficial and seemed half an inch wide. Excision of this with a surrounding zone of healthy tissue. It was found to extend somewat deeply into the cortex. Tumor found to be tuberculous, composed of two caseous masses. Nearly all the wound healed immediately. On the day following the operation, paralysis of left arm; later, all motility was recovered save that in the index finger.

25. Bergmann.—Male, aged nineteen. Bullet wound of right temple; unconsciousness. Wound healed in three weeks without pus. Three months later sudden loss of consciousness, occipital pain, spasms of several muscles; subsequently atrophy of optic disc on right side, local temperature elevated, and paralysis of left side of face. Diagnosis of abscess near lower third of right fissure of Rolando. Operation, June, 1886. Three openings made, no pus found, wound packed with iodoform gauze; three days later spontaneous rupture of an abscess and evacuation of a large quantity of pus. Condition much improved; two days later second small abscess emptied in the same way. Patient eventually died. On autopsy, a third abscess was discovered.—"Wiener med. Presse," Nov. 27, 1886.

26. Horsley.—Man, aged twenty-four. Old punctured fracture of skull involving cortex in motor area, causing severe epileptiform seizures in groups every three weeks. Slight paralysis of right arm and face; dull headache. Operation, July 13, 1886. Trephining at seat of external scar; removal of small piece of inner table, which was depressed into a traumatic cyst; surrounding brain substance also removed. Primary union, general improvement, only three fits since operation.

27. Hulke.—Female, fifty-five years of age. Long subject to discharge from right ear; mouth drawn to left; intense pain in right ear and right side of head; stiffness of nape of neck. These symptoms for four days, then drowsiness deepening into coma. Diagnosis of abscess in cerebellum. Operation, April 14, 1886. Immediate effects striking, breathing easier, cyanosis of face relieved; coma less deep, but consciousness never returned, death following morning.—"Lancet," July 3, 1886, p. 5.

28. Bennett and Gould.—Male, aged thirty-six. Blow on right side of the head six years before. Six weeks later had fits limited to left side; continued since at intervals of about one week. Fit followed by violent mania lasting several hours or even days; he was dangerous then. He became suddenly senseless and had general convulsions, most marked on left side. Fits lasted from five to ten minutes. He saw a red light just before the fit came on. Operation, July 8, 1886. Trephined at site of cicatrix from old injury due to fall. This was three inches and a half from the median line, and two inches and three quarters back of the meatus. Bone and piece of dura were removed (both normal); brain explored and nothing found. Wound closed. Uninterrupted recovery, and five months after operation had not had a fit. Bennett located the trouble and site of operation at the angular gyrus.—"Brit. Med. Jour.," 1887, vol. i, p. 12.

29. Horsley.—Male, aged thirty-eight. Left side paralyzed, with epileptiform seizures beginning in the left shoulder; in a semi-comatose condition for ten days previous to operation. Operation, September 23, 1886. A firm glioma weighing four ounces and a half found in the center for left arm; excision along with surrounding zone of brain tissue. Drainage till second day. Wound nearly all healed by immediate union. On eighth day aspiration of a little serous fluid for relief of pressure. Sensation returned and was complete, with consciousness, for two months and a half, when rapid return of growth took place. Patient died in March, 1887.

30. Horsley.—Boy, aged ten. Irritative lesion causing epileptic seizures beginning at left angle of mouth. Three to six fits every day—a moral imbecile. Incomplete paralysis of face, volition, and speech. Operation, October 19, 1886. Exposure of facial center, removal of cortex composing the two centers, determined at the time by faradaic battery. Primary union; general improvement in all respects.

31. Horsley.—Male, aged thirty-seven. Blow on head fourteen years previously; first fit three years later; dull, bad memory; paresis of right arm and leg; epileptic attacks. Diagnosis of cicatricial lesion in and behind center for movement of

hallux at upper end of Rolandic fissure. Operation, November 8, 1886. Large cystic cicatrix at point diagnosticated. Excision of dural cyst was incomplete owing to collapse of the patient. Improvement of motor power of the upper limb only, and of sensory power in both; mental condition much improved; a few seizures during first week after operation, then only a slight attack once a week.

32. R. Park.—Male, aged forty-seven. August, 1885, thrown from a wagon; totally unconscious for sixteen hours; slight paresis of right leg; paralysis of right arm, nearly complete aphasia. First epileptic attack four months after injury. Of late these occur very frequently. No scar or depression. Diagnosis: cystic degeneration of blood-clot involving centers for right arm and speech. Operation, November 17, 1886. After trephining, dura bulged into the wound; fluid felt underneath; bone cut away with surgical engine. A cystic tumor found, containing an ounce and a half of clear fluid, about five centimetres in length by two in the other directions. This was freely opened, its interior scraped, its margins sewed to those of the dura, and the whole cavity drained. Wound healed immediately without disturbance. Result has been but partial improvement; no marked improvement in speech. Reported for first time.

33. Horsley.—Man, aged thirty-seven. Severe and intractable headache of three years' standing, incapacitating him for work. Operation, November 12, 1886. Trephining at seat of pain, removal of part of parietal bone, whose inner table had been perforated and was being eroded by a Pacchionian body. Rapid recovery with relief of pain.

34. May.—Male, aged seven. Severe and persistent headache, chiefly frontal, with vomiting; conjugate deviation of the eyes to the left, and paralysis of right external rectus muscle. Nearly blind from bilateral neuro-retinitis. Staggering gait, especially backward, and sometimes to the left; unable to stand. Retraction of the head, absolute blindness, and nystagmus. No knee-jerk on right side. Much emaciation. Operation, October 8, 1886 (or after, not stated). Occipital bone trephined on right side under superior curved line, midway between it and the foramen magnum. Dura bulged very much. Dug out cerebellum with small spoon-handle, and hard tuberculous tumor size of pigeon's egg; trifling hæmorrhage. Death in a few hours. No autopsy permitted.—"Lancet," April, 1887, vol. i, p. 768.

35. Heath.—Male, aged twenty. Intemperate. A fall when six years of age, and in December, 1886, another fall on the right temple, from which the next day he lost sight in the right eye. First epileptic attack about Christmas, 1883. Constant headache. Not very intelligent. Right optic atrophy and commencing left. Right anosmia. Left face, arm, and leg paretic. No anæsthesia. Head, arm, and shoulder of left side convulsed during fits. Spot tender on percussion about an inch and a half behind external angular process of frontal bone and two inches from zygoma. Operation, October 13, 1886. Trephined over tender spot and bone removed further forward with forceps. A deeply seated tumor found fixed to the base of the anterior fossa. Operation abandoned. Thirteen months after operation the patient was in fair condition, but troubled with headaches and epileptic attacks returning with greater frequency.—"Lancet," April 7, 1888, i, p. 67.

36. Horsley.—Boy, aged four years. Almost complete paralysis in his right arm and leg; semi-comatose; having three to fourteen fits a day. Diagnosis: probable hæmorrhagic cyst beneath the motor cortex. Operation, November 29, 1886. Trephining over left motor area; exploration of brain by incision; nothing found; no harm done. Rapid recovery without drainage; no fit for a month; then six slight ones, and none since.

37. Horsley.—Male, aged thirty-seven. Headache; gradual onset of paralysis of right arm and hand, and paresis of right leg; epileptiform attacks beginning at the fingers, which had ceased three months before operation. Operation, December 7, 1886. Removal of tumor weighing four ounces and a half. Immediate union of nearly all the wound; eventual recovery.

38. Bergmann.—Male, aged sixty-six. External tumor on temporal bone, of twenty years' standing, which suddenly, in the spring of 1886, began to soften, after which began symptoms of aphasia and trouble in right arm. By December, 1886, right arm nearly completely paralyzed. Operation, December 10, 1886. Removal of tumor by chiseling away its margin; bone found perforated; brain invaded by tumor of the size of a small apple. It was necessary to remove a layer of brain-tissue in order to be sure of complete extirpation; ligature of several branches of the middle meningeal; extirpation of a considerable portion of the superior longitudinal sinus; hæmorrhage free but controllable. Tumor sarcomatous. Death on fifth day from intense œdema of the brain.—"Archiv für klin. Chir.," vol. xxxvi, p. 831.

39. Horsley.—Male, eighteen years of age. Increasing headache; vomiting; optic neuritis; diminishing muscular power of all limbs, especially of left arm and leg; affection of the sphincters; epileptic seizures, with turning of head to right; consciousness good; had been in bed one year. Operation, December 17, 1886. Trephining over right hemisphere of cerebellum; removal of a tuberculous mass weighing seven drachms. Death nineteen hours after. Autopsy revealed disseminated tuberculosis.

Note.—Horsley's cases, given above, were reported in his brochure on "Brain Surgery," from "Brit. Med. Jour.," Oct. 9, 1886, and April 23, 1887.

40. Markoe. Reported at a meeting of the New York Surgical Society, October 26, 1887.—Man, aged twenty-five. In 1879 he fell eight feet, striking on his head; unconscious for some time. Brain fever followed, and two months after the accident he had his first convulsion. Convulsions recurred at irregular intervals for two years, then became less frequent, and ceased for two years. In January, 1887, while bathing, he struck his head, and within a week had another convulsion, which was subsequently frequently repeated. On examination, his head was irregular in shape, the right parietal region protruding, the left parietal region markedly depressed. In the center of the left parietal region was a marked depression, and all pain was referred to this spot. His convulsions were not preceded by aura, nor did muscular spasm begin at any single point. The fits increased in frequency and severity, and were followed by great excitement. Operation, January 27, 1887. Large trephine applied over the depressed area. On exposure, the dura did not bulge, but fluctuated, and between the dura and the brain a firm, hard substance was felt. On reflecting the dura, a cyst was found underneath containing a drachm of fluid, and presenting two firm masses lying close together, about an inch in diameter. These were turned out of their bed, and the cortex found to be exposed beneath them. The dura was closed, and the wound dressed in the usual way with catgut drainage. Operation followed by some mental excitement, with amnesic aphasia for several days, and with some paresis in his right arm. Wound healed kindly. Discharged well on February 19th. Since this time he has so remained. The masses thus removed were of anomalous construction; they were decided by Dr. Prudden to be developed growths of aberrant brain-tissue.

41. Bergmann.—Male, aged twenty years. When four years of age fractured his skull by injury to left side of head. Soon after, paresis of right side appeared. Two years later, attacks of vertigo; later still, cramps; loss of consciousness; epileptic

spasms; gradual failure of mental and physical powers. At the time of operation he was confined to bed. There was atrophy of the right arm and leg; the arm and fingers were constantly extended; and he had at least two fits a day, beginning invariably in the right fingers. Scar on left side was over center for the right hand. Operation, February 2, 1887. Adhesion of dura and arachnoid to fragment of bone found between the dura and calvarium; removal of same with excision of dura over affected area; cortex beneath excavated and filled with a cystic mass; excision of all this. Wound tamponed with iodoform gauze; secondary suture forty-eight hours later. Recovery. Intensity of tetanic cramps relieved for a time only; no improvement in intelligence.—"Archiv f. klin. Chir.," vol. xxxvi, p. 860.

42. Greenfield and Caird.—Patient with diagnosis of abscess in anterior part of left temporo-sphenoidal lobe. Operation; evacuation of two ounces of fœtid pus. Wound completely healed in eighteen days. Recovery complete.—Ed. note, "Brit. Med. Jour.," 1887, Feb. 5, p. 94.

43. Barker.—Male, aged thirty-three. Previous trouble in right middle ear, and epileptic attacks when young. In 1886, weakness and coldness in right leg; subsequently, severe headache; tenderness over mastoid and right occipital regions. January 23, 1887, two epileptic spasms within an hour; right side of body convulsed; subsequently, unsteady gait, staggering to the left, and contraction of right pupil. January 25th, mastoid trephined in usual way; no pus found. Later, became semi-comatose, with paresis of left arm, and right pupil dilated. Diagnosis: suppuration over or in arm and face centers of right side. February 3, 1887, operation. Trephine applied over fissure of Rolando; dura bulging; serum found at depth of an inch and a quarter; when an inch and a quarter behind external meatus, pus found at considerable depth, and nearly half an ounce removed; abscess cavity drained by rubber tube, after which as much more pus escaped. Serious collapse of patient; reaction finally established. Patient soon convalesced, made nearly complete recovery.—"Brit. Med. Jour.," April 14, 1888, p. 777.

44. Birdsall and Weir.—Male, aged forty-two. Paretic symptoms in limbs of right side, with diplopia, nausea, headache, etc.; later, hemianopsia and neuro-retinitis. Diagnosis of tumor in cuneus. This diagnosis was fortified by further observation, and symptoms of inco-ordination explained by its pressure on the cerebellum. Operation, March 9, 1887, by Dr. Weir. On opening skull, dura did not pulsate, but was of dark color; incision; appearance of tumor of reddish color, covered with vascular connective tissue; enucleation of same after its incision, and removal in two parts; hæmorrhage troublesome. Tumor found to be spindle-celled sarcoma; greatest circumference, eight inches and a half; weight, 140 grammes. Five hours later, patient in collapse from secondary hæmorrhage; infusion of salt solution; bleeding continued. Death nine hours after operation.—"Med. News," April 16, 1887, p. 423.

45. G. Hammond.—Woman, aged thirty-two. First sign of trouble two years and a half previous. Began with loss of consciousness, left-side convulsions, paralysis of left side of face, left hand, arm, then left leg; no sensory disturbance. Operation, March 30, 1887, by Roberts. Opening, exploratory puncture, and incision of brain; nothing found; dura wound closed by suture. She remained unconscious, and died in twenty-four hours. Autopsy showed three cysts deep in brain-substance; their fluid was serous, containing broken-down brain-substance. They were close together, and in position to affect the face and arm and leg centers.—"Med. News," April 23, 1887, p. 472.

46. R. Park.—Male, aged twenty. In 1885 stabbed with knife at middle of left parietal eminence. Paresis of right arm followed for a few weeks. Recovery of the wound with suppuration. Six months later, first epileptic attack. Of late, fits at frequent intervals, aura beginning with spasms in left side of face and left angle of mouth; depressed scar nearly over the right arm center, not low enough for that of speech. Diagnosis of hæmorrhagic cyst, involving centers for arm and hand and face. Operation, March 31, 1887. Rectangular piece of bone removed with chisel; depression of inner table; dura adherent to bone above and beneath; cortex bound to the bone by adhesions. These were all loosened and the dura excised. Exploration revealed nothing further. Speedy healing of wound. Four months later was perfectly well and free from fits. Reported for first time.

47. Bullard and Bradford.—Boy, four and a half years old, who was delivered by the forceps, and had over the right parietal bone a scar and a depression supposed to have been caused by them. There had been no convulsions. He presented much diminished intelligence, inability to speak or to use any of his limbs well, with right internal strabismus and right spastic hemiplegia, in addition to the well-marked cicatrix. Operation, June 27, 1887, by Bradford. Trephining on the right side of the head directly over the cicatrix. It was determined that the outer portion of the bone had been fractured and the inner table fissured. The dura, which was thickened and vascular, was incised, but no lesion of the brain beneath was detected. The trephine was then applied over the motor area on the left side, over the junction of the middle and lower thirds of the fissure of Rolando. Here there had been detected a very slight superficial scar in the skull. After the disc of bone had been removed a depression of the brain substance was exposed. This was considered a porencephalic cavity. The patient's condition was so poor after this had been detected that the wound was speedily closed. He died seventeen days after the operation; no autopsy was permitted.—"Boston Med. and Surg. Jour.," 1888, cxviii, p. 162.

48. Birdsall, Amidon, and Weir.—Female, aged twenty-six. Had had four operations for sarcoma of neck. During the last operation the left brachial plexus was injured and paralysis of left arm followed for two months. Precipitate micturition and defecation; then cramps in left leg and paresis of same; later, cramps and numbness in right hand; for three weeks intense headache. Operation, August 11, 1887, by Weir. Tumor supposed to be in upper portion of Rolandic fissure; large opening made; dura tense and bulging. After incision of dura, brain bulged in wound. Nothing was felt under the finger, no resistance to needle upon pressure. A portion of protruding brain was sliced off, but nothing discovered. Bleeding profuse; checked by thermo-cautery. One week later, hernia cerebri, which developed to the size of a hen's egg. No reaction, but death two months and a half after operation, with signs of lesion in medulla. On autopsy, a tumor was found springing from left lobe of cerebellum; the medulla crowded to right and forward; the tumor extending down spinal canal found to be a spindle-cell sarcoma.—"Med. News," March 5, 1887, p. 273.

49. Suckling.—Girl, aged twelve years. Symptoms of two years' duration; vomiting, vertigo, inco-ordination, paresis of left facial muscles, closure of left eye impeded; tongue points toward the right. Diagnosis of tumor in left side of cerebellum, covering left side of pons and left facial and abducent nerves. Operation, summer of 1887. Trephining of occipital bone so as to enter cranial cavity below transverse sinus. Dura exposed and divided transversely; cerebellum seemed soft; removal of considerable of its substance; free hæmorrhage; drainage-tube inserted and wound closed. Patient comatose for twenty hours and died in forty-eight. Autopsy showed de-

generation, probably tubercular, of entire left lobe of cerebellum.—"Brit. Med. Jour.," Nov. 7, 1886, p. 870.

50. Oliver.—Boy, aged sixteen, suffering from epilepsy. Nine months previously, concussion of brain; well for ten days; then had his first convulsive shiver, and became unconscious for a time. On recovery, severe headache in right side. From that day several fits daily, disposition altered; pain and tenderness referred to right temporal region; left arm and leg much more convulsed than right. During fits had occasionally choreiform movements of these limbs; stupor after the fits. Patient would lie speechless and deaf. Operation, 1887, by Hume. Opening made beneath the tender area. After incision into dura there was an escape of nearly an ounce of serum. Dural wound drained. During the next twenty-four hours there was a free escape of serum. Patient had a few fits during ensuing days, then rapidly recovered. Was free from fits for six months, then they recurred but were changed in character; were treated as hysterical, and after rest in bed he completely recovered.—"Brit. Med. Jour.," Feb. 4, 1888.

51. Seguin and Weir.—Man, aged thirty-nine. Spasms of right side and neck. In 1886 fell unconscious one day; epileptic attacks preceded by aura in right hand and arm and right side of face. Diagnosis of tumor in left motor area. Operation, November 17, 1887, by Weir. Dura protruded slightly; appeared normal; extensively incised; brain seemed to protrude; yielded deep resistance on palpation. Tumor, size of an almond, discovered at depth of an inch, not encapsulated, apparently infiltrating surrounding brain tissue. It was lifted out with a Volkmann spoon. A small fragment, which had separated in process of loosening, was also separately removed. No hæmorrhage from brain; wound drained and irrigated; discs of bone with several fragments replaced over the dura. Tumor found to be sarcoma, principally of round cells. Patient recovered; several months later was in good general condition; better as regards paresis of face and hands; speech much improved. Five months later, no recurrence of growth.—"Am. Jour. of the Med. Sciences," July, 1888, p. 225.

52. Horsley and Ferrier.—Man, aged forty-seven. Offensive discharge from left ear. When seenwas drowsy; had pain over left side of head and back of eyes; photophobia; slight discharge from left ear. Became worse; showed affection of speech; used wrong words. Diagnosis of cerebral abscess in anterior third of temporo-sphenoidal lobe. Operation, December 10, 1887, by Horsley. Five drachms of pus evacuated. Complete recovery.—"Brit. Med. Jour.," March 10 and 24, 1888.

53. Keen.—Male, aged twenty-six. Fell from a window when three years old, his head striking on a brick. A superficial wound was made, and no trouble was experienced until he was twenty-three, when epilepsy developed, associated with aphasia and paralysis of the right arm and leg. Later, there was recovery from much of this disturbance. Operation, December 15, 1887. Keen removed a considerable area of bone and uncovered a tumor nearly three inches in length in its long axis. During the operation great trouble was experienced from hæmorrhage, which was checked partly by hot water. Patient did well. For several hours on the third day symptoms of brain pressure were observed, and this was attributed to the presence of a large clot of greater size than the original tumor. This was removed by careful washing, and all went well for ten days; then pressure symptoms were again observed. There was also severe diarrhœa and a temperature of 104·5°. The presence of pus was suspected and the wound reopened. No pus was found, and a certain amount of hernia cerebri supervened. It was inferred that the unfavorable symptoms were largely due to the diarrhœa, and two or three other similar attacks made this still more apparent. The hernia was finally overcome, partly by skin-grafting. The wound was drained by bichloride gauze for eight weeks. It healed perfectly, but with a concave shape instead of convex, and has since continued to be depressed.—"Med. News," April 21, 1888, p. 107.

54. Harrison.—Boy, aged fifteen. Severe pain in head following a blow on right side of same eight days previously. Three days later, convulsions in right side of body, first in arm, then in face, then in leg. When they ceased, paralysis of these parts took place. A cicatrix was observed on left side of head covering an uneven surface of bone. It was then learned that eleven years previously he had received a severe blow on this side, causing compound fracture. During the last twelve months twitchings had been noted in the right arm. Diagnosis: abscess of brain in left motor region of cortex. Operation, December 23, 1887. Scar found to correspond to upper part of left ascending frontal convolution. Its center was made the center of the bone wound. The dura was found adherent to the bone with a ridge of bone pressing abnormally on the brain; more bone was removed for the purpose of removing entire ridge; no bulging of dura mater; wound closed. December 27th, condition not improved. Wound reopened, dura incised, opening made to depth of an inch and a quarter, and pus was found. A free incision was made and four drachms of fœtid pus evacuated. Abscess cavity washed out and drained; subsequent complete recovery. Abscess rather than tumor diagnosticated because of history of original injury with latent symptoms followed by acute and accelerated by recent blow.—"Brit. Med. Jour.," April 21, 1888, p. 848.

55. Stokes reported a case of successful trephining for cerebral abscess, and exhibited the patient. The man had been struck with a poker on the left side of the mesial line of the head, and about an inch anterior to the coronal suture. He was admitted to the hospital, several weeks having elapsed from the date of the injury. He soon presented brain symptoms, became convulsed and comatose, and it was determined to trephine. Operation, 1887. A small fracture was found under the scar, the dura bulging into the wound; and an exploring needle was introduced to the depth of an inch and a half, and pus was at last found. The dura mater was then incised and an ounce and a half of pus was evacuated. The patient completely recovered and is now attending to his ordinary work.—"Brit. Med. Jour.," March 3, 1888.

56. Macewen.—Male, aged forty-five. Injury to parieto-temporal region of skull some months before. Hemiplegia almost immediate and persistent. January, 1886, trephining over fissure of Rolando over center for lower extremity. Dura tense and pulsating, incised, and several ounces of clear fluid escaped. Subdural cyst lined with brownish membrane. Sharp fragment of bone projecting into brain removed; cyst cavity scraped out, and counter-opening made for better drainage; bone disc reimplanted. Complete cure.—Senn's "Four Months among the Surgeons of Europe."

57. Drummond.—Patient of unknown age. Headache in left temporal region; optic neuritis; cramps beginning in right eyelid, involving right leg, then left side of face and left arm; finally paralysis of right side and spastic rigidity of left side; motor aphasia. Operation, 1887. Bone removed over facial center; opening made; nothing abnormal discovered. Several days later, delirium and death. Abscess found in posterior part of frontal convolution.—"Lancet," October, 1887, p. 656.

58. Cecil.—Male, aged fifty-two. Blow on temple, with depression. Two months later, hemiplegia and loss of sphincter control of bladder, with stupor. Operation, 1887. Dura adherent to bone and thickened; underneath adhering to a clot; some of the blood still fluid; no pus. Almost complete recovery.—Congress of Italian Surgeons, 1888.

| No. | Operator. | Year. | Nature of case. | Result. | Remarks. |
|---|---|---|---|---|---|
| 1 | Macewen. | 1879. | Degenerated clot. | Recovery. | |
| 2 | Stimson. | 1880. | Abscess of parietal lobe. | Death after 9 hrs. | |
| 3 | Macewen. | 1881. | Abscess in temporo-sphenoidal lobe. | Death. | Patient *in extremis* at time of operation. |
| 4 | " | 1883 (?). | Hæmorrhagic lesion in ascending frontal convolution. | Recovery. | |
| 5 | " | (?) | Subdural cyst and depressed fragment of bone. | " | |
| 6 | " | (?) | Abscess of temporo-sphenoidal lobe. | " | |
| 7 | Wernicke and Hahn. | 1881. | Abscess in occipital lobe. | Death in 6 days. | Perforation into ventricle found. |
| 8 | Polaillon. | .... | Subcortical abscess. | Death in 6 days. | |
| 9 | Macewen. | 1883. | Tubercular meningeal lesion. | Recovery. | Bergmann considers this to have been gumma. |
| 10 | " | " | Inflammatory and cystic degeneration. | " | |
| 11 | " | .... | Dural tumor over ascending frontal c. | " | |
| 12 | " | .... | Cyst in ascending frontal c. | " | |
| 13 | " | .... | Tuberculosis. Nodule in cortex. | " | |
| 14 | " | .... | Depression of inner table over angular gyrus. | " | |
| 15 | Leo. | 1882. | Depressed bone. | " | |
| 16 | Durante. | 1884. | Sarcoma of frontal lobe. | " | |
| 17 | Bennett and Godlee. | " | Glioma. | Death after 4 wks. | |
| 18 | Mills and Hearn. | " | Meningeal adhesions. | Death 80 hrs. later fr'm pachymeningitis | |
| 19 | Gussenbauer. | 1884 (?). | Abscess, subcortical. | Recovery. | |
| 20 | Truckenbrod. | 1885. | Abscess, subdural. | " | |
| 21 | Hirschfelder & Morse | 1886. | Glioma in motor area. | Death. | |
| 22 | R. Park. | " | Subdural cyst in motor area. | Recovery. | |
| 23 | Horsley. | " | Cicatrix near upper end of sup. frontal sulcus. | " | |
| 24 | " | " | Tuberculous tumor in motor area. | " | |
| 25 | Bergmann. | " | Abscess beneath motor area. | Death. | Temporary improvement. On autopsy another abscess found. |
| 26 | Horsley. | " | Traumatic cyst and depressed bone. | Recovery. | |
| 27 | Hulke. | " | Abscess in cerebellum. | Death in 24 hours. | |
| 28 | Bennett and Gould. | " | No internal lesion discovered. | Recovery. | Relief from epileptic seizures for which operation was made. |
| 29 | Horsley. | " | Glioma, weighing 4½ ounces. | " | Death 6 months later from return. |
| 30 | " | " | Irritative lesion in facial center. | " | |
| 31 | " | " | Subdural cyst and cicatricial lesion. | " | |
| 32 | R. Park. | " | Cyst involving speech- and arm-centers. | " | Slight improvement in paretic condition. |
| 33 | Horsley. | " | Irritative lesion of dura and bone. | " | |
| 34 | May. | " | Tuberculous tumor of cerebellum. | Death same day. | No autopsy. |
| 35 | Heath. | " | Tumor fixed to base of anterior fossa. | Operation abandoned; recov. from what was done. | |
| 36 | Horsley. | " | Cyst suspected; no lesion found. | Recovery. | Complete relief of symptoms. |
| 37 | " | " | Tumor in motor area of 4½ oz. weight. | " | |
| 38 | Bergmann. | " | Sarcoma "size of small apple." | Death on 5th day. | Œdema of brain. |
| 39 | Horsley. | " | Tuberculous mass 7 drachms in weight. | Death. | Disseminated tuberculosis. |
| 40 | Markoe. | 1887. | Lesion of uncert'n and anomalous nature | Recovery. | |
| 41 | Bergmann. | " | Depressed bone and dural cicatricial lesion. | " | No improvement in symptoms. |
| 42 | Greenfield and Caird. | " | Abscess in temporo-sphenoidal lobe. | " | |
| 43 | Barker. | " | Abscess in temporo-sphenoidal lobe. | " | |
| 44 | Birdsall and Weir. | " | Sarcoma of occipital lobe. | Death in 9 hours. | Uncontrollable hæmorrhage. |
| 45 | Hammond & Roberts. | " | Deep, subcortical cysts. | Death in 24 hours. | Cysts not found till the autopsy. |
| 46 | R. Park. | " | Cicatricial dural lesion of arm-center. | Recovery. | |
| 47 | Bullard and Bradford. | " | Dural and porencephalic lesion. | Death on 17th day. | No autopsy. |
| 48 | Birdsall, Amidon, and Weir. | " | Sarcoma of left lobe of cerebellum. | Recovery. | Death in 10 weeks. Tumor not discovered till autopsy. |
| 49 | Suckling. | " | Degeneration of left lobe of cerebellum. | Death in 48 hours. | Probably tuberculous. |
| 50 | Oliver and Hume. | " | Cystic lesion. | Recovery. | |
| 51 | Seguin and Weir. | " | Sarcoma in motor area. | Recovery. | Nine months later no return. |
| 52 | Horsley. | " | Abscess in temporo-sphenoidal lobe. | " | |
| 53 | Keen. | " | Tumor in motor area, "3 inches long." | " | Recovery retarded by hernia cerebri and other complications. |
| 54 | Harrison. | " | Subcortical abscess. | " | |
| 55 | Stokes. | 1887 (?). | Subcortical abscess. | " | |
| 56 | Macewen. | 1887 (?). | Subdural cyst, with depressed spicule of bone. | " | |
| 57 | Drummond. | 1887. | Abscess of frontal c. | Death. | Lesion not discovered till the autopsy. |
| 58 | Ceci. | " | Fluidified clot (cyst?). | Recovery. | |
| 59 | Filkin. | " | Large and deep cyst, with osteophyte. | " | |
| 60 | Keen. | 1888. | Dural (cicatricial) lesion, with degenerated cortex and a cyst. | " | |
| 61 | " | " | Irritative lesion in hand-center. | " | |
| 62 | Mills and Steinbach. | " | Depressed bone and cicatricial lesion in dura over motor area. | " | |
| 63 | Lloyd and Deaver. | " | Irritative dural and cortical lesion. | " | |

59. FILKIN.—Girl, aged seventeen. Fracture of skull when ten months old. Right arm and leg almost completely paralyzed and ill developed. Temperature 2° lower on left side. Operation, January, 1888, over motor area. A large cyst extending to depth of two inches from surface; also an osteophytic growth extending half an inch below level of surrounding bone. Rapid healing: great improvement in motility.—"Edinburgh Med. Jour.," 1888.

60. Keen.—Man, twenty-five years old. History of fall eighteen months previously. Depression two inches long on right side of head, over supramarginal and post-Rolandic convolutions; paralysis of left wrist and hand; four epileptic fits. Operation, April 12, 1888. Opening three inches and a quarter by an inch and a half; excision of underlying dura which had attached to its under surface a small fragment of bone. Brain tissue found diseased throughout length of scar, and in posterior end of latter a small cyst. Removal of all diseased brain tissue. Patient out of bed on fifth day. Ergot given instead of morphine, and cocaine applied locally as a hæmostatic with good results. Button of bone removed was sewed to under surface of scalp flap by catgut ligature passed through two apertures made in the bone for that purpose.—"Med. News," April 21, 1888, p. 438.

61. Keen.—Man, twenty years of age. Suffered from epilepsy for seven years; cause obscure. Attacks all began in left hand. Diagnosis of lesion in center for left hand toward inferior extremity of post-Rolandic convolution. Operation, May, 1888. Opening made in skull two inches and a quarter by two inches and a half. It was difficult to decide which was the post-Rolandic convolution. By use of faradaic current the hand center was determined to lie in the anterior of the three gyri, and this portion was accordingly excised. Replacement of trephine button with a number of smaller fragments. Wound drained. Temperature never reached 100°. On the eighth day patient was out of the house. Integrity of skull entirely re-established. The left hand has since been paralyzed, but no other paralysis has ensued. Epileptic spasms at first increased in number, but have since diminished in frequency and severity.—"Med. News," June 15, 1888, p. 672; "Am. Jour. of the Med. Sci.," Oct., 1888; also personal communication.

62. Mills and Steinbach.—Male, aged thirty-five. Blow on head twenty-nine years previously; epilepsy ever since; convulsive movements in left leg and arm, less on right side; depression of bone over left Rolandic fissure. Diagnosis of lesion in the brain at this point. Operation, July 18, 1888. Trephining over this area. A cicatrix found in dura; excision of same.

63. Lloyd and Deaver.—Blow on head at fifteen; unconscious and bedridden for a week. First fit at twenty-one years of age. Fits both nocturnal and diurnal, gradually increasing in frequency. While in the hospital has had as many as twenty-eight in one day. Aura from fore and middle fingers of left hand. Fit begins in forefinger of left hand, involving especially (and sometimes only) muscles of left arm and left face. Left arm and left face (especially) paretic during intervals between fits. Loss of consciousness in these slight seizures little if any. Has occasional greater fits, spreading very generally over body on both sides, but always worse on left side. No aphasia. No ocular symptoms. Little headache. No gastric symptoms. Operation, June 12, 1888, by Deaver. No gross lesion discoverable in bone, membranes, cortex, or subcortex. Motor centers for arm and face mapped out with faradism by Dr. Lloyd and carefully excised. Antiseptics. After operation, slight twitchings occasionally in left hand and face for six days, maniacal delirium, with visual and auditory hallucinations. Recovery. No convulsion since. Paresis of left face and flexor muscles of finger and thumb continues.—Personal communication.

Note.—I desire to express here my obligation to Professor Mills for assistance in the collection of these cases, and to Professor Keen and Dr. Deaver for personal accounts of their own cases.

**The Hoagland Laboratory.**—The first lecture of a course on bacteriology, by the director of the laboratory, Dr. George M. Sternberg, will be given this (Saturday) evening.

## A CASE OF RENAL CALCULUS AND HYDRONEPHROSIS; EXPLORATORY LUMBAR INCISION, AND FINAL PASSAGE OF CONCRETION PER URETHRAM.*

By FRANK W. ROCKWELL, M. D.,
BROOKLYN.

The following case is presented to the association as a contribution to the history of the operative treatment of renal calculus, more especially as it illustrates in a most marked degree the difficulties and uncertainties which may attend exploratory operations as practiced in the lumbar region, and the search for small calculi in normal or but slightly diseased kidneys. The fact that since the first performance of the lumbar operation by Morris in 1880 over fifty cases have been reported (*vide* Greig Smith's "Abdominal Surgery," p. 464), and that failure to find the stone has occurred in *over half of them*, goes to prove that, however valuable the procedure may be from a surgical standpoint, the diagnosis upon which its success depends must for the present remain to a high degree obscure and unsatisfactory. That the failures recorded were not always due to inexperience on the operator's part may be inferred from the histories of two of Morris's own cases, in one of which a calculus of the "size of a marble" could not be localized, even after the kidney containing it had been removed and laid upon a hard surface, while unsuccessful cases have been published by Lloyd, Barker, Godlee, and Thornton, the latter having for that reason abandoned the lumbar incision, and suggested in its place the combined operation now known by his name. It is, in fact, in the very class of cases to which the present one belongs—viz., a small calculus in a healthy kidney—that most difficulty is experienced both before and during operation, and herein lies its principal interest.

Early in the fall of 1887 Mr. B., a well-nourished and robust man, forty-one years of age and of perfectly temperate and regular habits, consulted me in regard to a nephralgia from which he was suffering, and gave me the following history: As a boy he had been the subject of frequent and most alarming attacks of hæmaturia, which had finally abruptly terminated in the expulsion of a small uric-acid calculus. Since that time nothing had occurred until within the last few years, when he had again begun to suffer from a return of the hæmaturia, accompanied by sharp pain, which he had always noticed as localized in the right kidney, and accompanied by the usual symptoms—such as retraction of the testicle on the affected side, genito-crural neuralgia, etc. Fragments and detritus had been carefully searched for, but none ever found. An examination of the urine passed at this interview showed a large amount of blood (one sixth), and renal and bladder epithelium in abundance, also oxalate of lime in scanty, granular masses, but no urates nor uric acid, or evidence of any inflammatory condition of the kidney or its pelvis.

He was put upon a carefully restricted diet, with alkalies internally, and the frequent use of warm baths, the flesh-brush, etc., and for a few weeks seemed to derive some benefit, but by November had again begun to pass large quantities of blood, and to suffer at intervals of about a week with attacks of renal

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting.

colic so severe as to make the question of their relief imperative. This could only be obtained by the use of such large quantities of opium and chloroform as to make their administration a matter of extreme difficulty, especially as the patient's tolerance of both drugs was excessively bad, and the depression and vomiting following their employment lasted for days after the attack had ceased. On November 5th an unusually severe paroxysm occurred, and was followed by acute retention, necessitating the use of the catheter. While I was withdrawing the urine the patient drew my attention to the fact that a fullness in the right flank, of which he had previously complained but which I had never been able to detect, was again present. On examination, I was able to make out an ill-defined tumor occupying the right loin in the vicinity of the kidney, dull on percussion, and slightly movable in the direction of the abdominal cavity. The next day retention of urine occurred, and the emptying of the bladder by the catheter was followed by rapid subsidence of the swelling. The patient now began to complain of tenderness over the bladder and in the vicinity of the orifice of the right ureter, also of intense pain in the glans penis after micturition. Hoping that the calculus, which from the previous history I believed to be a small one, was perhaps engaged in the ureter, or lying at its vesical orifice, I went with the patient on November 8th to Professor E. L. Keyes to consult as to the immediate and future treatment of the case. The renal tumor, which had three days previously been felt, had now almost disappeared, and Dr. Keyes was uncertain as to whether he could discover any trace of it, but, believing that a calculus was engaged in the urinary passages, advised flushing the whole tract by the free use of lager beer, with the view of dislodging it, and, in the event of the failure of the plan after a few trials, an exploratory nephrotomy, preferably by the abdominal incision, as recommended by Langenbuch.

The first trial of the plan was made on November 12th, and on the following morning the patient was seized with the worst attack he had yet suffered from, requiring for its relief during the twelve hours it lasted fourteen grains of morphine, given by the skin and stomach, and the inhalation of a pound of chloroform, the vapor being administered during the intervals of comparative relief from pain obtained by the opium. On recovery, the patient at once determined to submit to the operation, but concluded to postpone its performance till the latter part of December. During the interval the attacks occurred with varying frequency, and, the patient desiring further counsel, Professor H. B. Sands was consulted, who agreed with Professor Keyes and myself as to the propriety of an exploratory operation, but, as the kidney was probably unaffected, and its examination through a lumbar incision comparatively easy, suggested this plan as preferable to the former and free from its dangers. After a few days' preparation the patient entered St. Mary's Hospital, and on December 29th I did the following operation:

An incision four inches and a half in length and parallel with the last rib exposed the border of the quadratus lumborum, and, its edges being well retracted and the hemorrhage controlled, the deep fascia was divided and the circumrenal fat scratched through sufficiently to afford room for thorough palpation of the kidney. This, however, was found to be a most difficult matter, as the patient was very muscular, and the lower border of the kidney barely perceptible below the edge of the last rib. The wound was therefore enlarged by prolonging its outer angle downward for about three inches, when, on strong retraction of the flap, I was able to identify with the finger the lower two thirds of the kidney, with its pelvis, and to feel the pulsations of the renal artery. The most careful palpation of the organ, even over its anterior surface, failed to show any of the characteristic induration described by Morris, or to reveal anything in connection with the ureter, the upper portion of which could be traced downward for an inch or two. At one time, when two fingers were used and the pelvis was gently pressed between them, I thought I detected a hard mass near the hilum, but, after withdrawing the hand and cleansing it of blood to insure greater delicacy of touch, I was unable to find it again. A long exploring-needle was now passed into the pelvis and through the kidney in as many directions as possible, but with no result. As the patient was not bearing the anæsthetic well, I was reluctantly obliged to abandon further examination, which I had hoped to make through incisions in the kidney itself, and as nephrectomy—even if deemed advisable—was for the same reason impracticable, I was compelled to content myself with thoroughly irrigating the wound with the mercuric biniodide solution, closing it with silk sutures and dressing it with iodoform gauze, a large rubber drain having been first introduced and the dressing completed by a thick layer of paper wool.

The patient rallied well from the anæsthetic, and expressed himself as very comfortable until early in the evening, when I was hastily summoned to the hospital on account of a sudden hæmorrhage which had occurred. This proved to be from a vessel in the wound itself, as the drainage-tube was unobstructed and the blood welled up by its side, being evidently due to the effect of reaction from the ether on some unsecured vessel. The wound was partially reopened, the vessel secured, and iodoform gauze again packed about the drain, after which no further bleeding occurred. Half a pint of perfectly clear urine was withdrawn from the bladder, and the patient passed a fairly comfortable night. On the third day, as the dressings were very moist and had a faint urinous odor, I removed them, and, the wound being united except where the gauze had been applied, I introduced a few catgut sutures under cocaine anæsthesia, and brought its deep surfaces together, leaving only sufficient room for the drainage-tube. Under this treatment the wound continued to heal, though daily change of dressings was necessitated by the free discharge of fluid.

On the twentieth day (January 18th) this discharge, which had been steadily diminishing, suddenly ceased and symptoms of vesical calculus developed, and for the next six days were present with varying intensity, when on the seventh (January 24th) the wound, which was now a mere fistulous tract, again began to discharge large quantities of *limpid fluid free from all odor*, and so copious as to saturate the patient's bedding in spite of large absorbent dressings repeated every three hours. This continued for two days, when it again suddenly ceased, and the patient began to complain of severe vesical tenesmus and pain. On the morning of the third day (January 27th) he passed an oxalate-of-calcium calculus weighing six grains, and his symptoms disappeared. In another week he was about his room, and the fistula now rapidly closed under naphthaline dressings. On February 17th he left the hospital, and on March 1st went to Florida, though still complaining of an irritable bladder and occasional pain on urination. This, from the appearance of the calculus passed, I felt certain was due to a small fragment still remaining in the bladder, though I was unable to detect it. On the 17th of March he passed a fragment longer than the first and weighing fourteen grains, and from this time improved rapidly, returning home on March 26th, when he reported himself as free from all pain and rapidly improving as to his frequent micturition.

An examination of the right flank at this time revealed an elastic and obscurely fluctuating tumor in the ileo-costal space, flat on percussion, and with an area of resonance between its anterior edge and the normal liver dullness. A catheter was passed but no urine obtained, the patient having emptied the

bladder about half an hour previously; subsequent examination, however, showed the presence of renal epithelial cells and small amounts of pus. The patient volunteered the statement that he could detect marked diminution of the swelling at irregular periods, which corresponded with the passage of large amounts of urine. As the irritability of the bladder remained to a slight degree, he was put upon the use of gradually increasing doses of borax, at the suggestion of Dr. Keyes, and under this treatment slowly improved. On April 18th he presented himself at my office, when I find on my note-book a memorandum to the effect that the tumor in the flank had entirely disappeared, and the normal areas of dullness were found on percussion. The urine, however, remained as at the previous examination. During the summer I have not seen him, but a letter dated September 14th states that under a milk diet he had improved so much that the urine was now almost clear, though the swelling in the flank still troubled him at times. He regards himself as in excellent health, though in all probability a slight pyelitis and hydronephrosis still remain as the results of his past experiences.

The interesting points in regard to this and similar cases are, of course, those pertaining to the choice of operations for their relief, and the methods most likely to succeed in localizing the calculus both before and at the time of operation. If I am right in my belief that I felt the stone for a moment during the operation, I probably helped its progress onward into the ureter by the very manipulations I was practicing, but I am sure that, judging from the difficulty I had in examining the kidney with the finger, I should have been unable to make any incision into the organ at a point higher than its lower third. Whether the increased facility of manipulation gained by Thornton's operation would have warranted the increased risk in a case of this kind seems to my own mind more than doubtful, especially in view of the fact that from the abdominal side the operator would have the same difficulty in examining the posterior surface of the kidney that makes the reverse true of the lumbar incision.

The case adds one more to the list (eleven of which have been collected by Morris) of intermittent hydronephrosis, supposing the diagnosis to be confirmed by its future history.

In the discussion before the Clinical Society of London in 1887 I find a similar case reported by Godlee, in which he operated upon a man on whom an unsuccessful lumbar exploration had been made some time before by Marcus Beck. All attempts to find the calculus proved futile, but in a few days it was voided and rapid recovery ensued.

## Correspondence.

### LETTER FROM PARIS.

*The Diminution of the Birth-rate in France.—The Determining Causes of Sex.—The Respiratory Importance of Nitrogen.—The Medical Students of Paris.—A Case of Double Placenta at a Single Birth.*

Paris, *October 24, 1888.*

M. Lagneau made some interesting statements to the Academy of Medicine lately in regard to the diminution and disappearance of families, from which it appears that most of the noble families of former days have ceased to exist. In 1846 Laine found only two of the descendants of 314 families that had existed in the twelfth century; and, according to another writer, 380 noble families had had an average duration of only three hundred years. It was the same with ordinary people, as only 11 per cent. of the persons whose names were on a certain election list of the year 1555 had remained in that locality to this day. At about the beginning of this century, in France, there had been an average of four children to a family, and at present there were not more than three. Taking this fact as a guide, M. Lagneau shows that there is a very considerable and rapid diminution in families having but three children. In one hundred families who had an average of three hundred children, in the fifth generation, after one hundred and twenty-four years, more than half of them had had no male descendants. Only forty-nine of the men had married. In the seventh generation, after one hundred and eighty-six years, two thirds of the families had failed to supply descendants, as but thirty-four of the men had married. An allowance was made for the number who became priests and for those who remained bachelors. It may also be stated that it has been found that in France 34 per cent. of all marriages are without issue. Finally, after four hundred and thirty-four years, nine tenths of the one hundred families taken as an example had had no male descendants to hand down the name, and this notwithstanding that there had been a proportion of one hundred and five males to one hundred females born.

Professor (*agrégé*) Charpentier, at a subsequent session of the Academy, made a communication upon the causes that determine sex. He first said that but little was certainly known about the matter up to the present day, but that some few facts seemed to be established almost beyond doubt. One of these was that the absolute or relative age of the parents had a real influence in producing a certain sex in the embryo. For instance, when a man was ten years older than his wife, while she was still in the active period of production, there would be more boys than girls born to them. Another point which seemed to be established was that that one of the couple who had the most energy decided the sex of the child. Furthermore, that if coition was practiced some time after menstruation (at least eight days) a male child would result. Bidder, after examining the records of some twelve thousand births, had come to the following conclusions on this subject: 1. That very young primiparæ might be expected to have mostly boys. 2. That a primipara of middle age would be more apt to have girls. 3. That a primipara after the middle period of life would have more boys. The multiparæ followed the same rule, but ceased to have boys sooner. In a word, the sex came from the male or female quality of the ovum; the male ones were most likely to be fecundated in youth; afterward, during the fullest activity of the woman's sexual life, the female eggs were most numerous and most likely to produce; and this became less and less probable as time went on, when the male element or tendency again predominated. While upon this subject it may be well to give Dr. Charpentier's good advice to physicians as to the most prudent answer to be given when they are asked what they think the sex of the child is going to be. He suggests that they should reply to this important question by asking the mother what sex she would prefer in the child, and then giving it as his opinion that the opposite sex is the one to be looked for. In this way, if the sex turns out to be the one which he has prognosticated, he will be thought to be a wonderful man, while if it proves to be the one which the mother has wished for, she will be so pleased that she will easily overlook the error made by the doctor.

Professor Brown-Séquard remarks that nitrogen is of considerable importance in respiration, and he thinks that physi-

ologists will find, however much to their surprise, that oxygen is much less needed for the regular action of our organs than has been thought hitherto. He also thinks that it must now be admitted that carbonic-acid gas is much less toxic than it has been taught to be up to the present time. M. Franck long ago showed that the frog's heart would continue to contract in an atmosphere containing very little oxygen; and Dieffenbach, with Magendie, found that the nerve-centers continued to act when there was but a slight trace of oxygenated blood in them, and that during an attack of cholera, when the blood contains much less oxygen than in asphyxia, the brain still continues to act for hours. Again, he shows that it has been possible to reduce the quantity of oxygen in the blood to the fifty-fifth part of the normal quantity without depriving an animal of life, while in asphyxia the quantity of oxygen is never less than three per cent. He concludes, therefore, that some other cause must be at work in asphyxia besides the diminution of oxygen, and looks in various directions for this new factor. As to the question of its being a poisoning by carbonic-acid gas, M. D'Arsonval and M. Brown-Séquard gave animals as much as 60 per cent. of this gas without killing them, and they themselves breathed a twenty-per-cent. dilution without feeling any inconvenience. They compare this result with that of the famous experiments of M. Gréhant, who quickly killed animals by making them breathe a mixture of carbonic-acid gas and oxygen, and conclude that the difference arose from the fact that they had used air to mix with the carbonic-acid gas, and not oxygen. He thinks that the air had the advantage of containing nitrogen, and that this gas must have a most important part to play in respiration. How nitrogen acts, M. Brown-Séquard does not know as yet, but calls the attention of physiologists to the fact that it has some sort of influence, and proposes to continue his experiments with a view to finding out this action if possible.

To recur to the subject of sex in children, I must mention the studies of M. Dupuy on the influence of the menstrual period on the production of boys or girls. He has collected statistics from more than two hundred families, containing over a thousand children, which go to show that when the sex of the first child is known it is possible to tell beforehand what the sex of the next one will be, as it will depend on the menstrual period during which it is conceived; and he goes so far as to state that the sex of the second child can be fixed beforehand by following certain rules. He says, for instance, that if the first child was conceived in a menstrual period which may be called, for convenience, number one, and if it was of the male sex, then all the children who are conceived in the eleventh, thirteenth, fifteenth, one hundred and fifth, or one hundred and seventh following periods will also be males, while those that are conceived in the other periods, such as the twelfth, sixteenth, or one hundred and sixth, etc. (or the periods with even numbers succeeding the first conception), will be females; so that a father who wishes to have a daughter, after having had a son the first time his wife conceived, needs only to count the menstrual periods that his wife has had since her last accouchement, and then see that the next child is conceived during an even-number period, such as the fourth, sixth, or eighth after the first confinement. If the first child has been a girl, then the uneven-number periods must be selected in which to beget a male; that is, the first, third, or fifth period after the first confinement. After twins the rule can still be followed if there was a single placenta. The foregoing rule is good only for the offspring of a certain couple—that is, if one of a pair married again, either the husband or the wife, a new estimate would have to be made, as in the first case, based on the sex of the first child born to the new couple, and counting the periods as before. M. Dupuy, who gave this communication to the *Société de médecine pratique*, is an old Paris physician. He says the rule is a correct one in practical application; he can not explain the regularity with which it works, but has found it to be constant.

The statistics of the Paris faculty of medicine, published for the year 1887–'88, show 373 graduates, of whom 321 were French. Fifty were foreigners, and two were women. One of the latter was a French subject, Mme. Sollier, a colored lady of Martinique origin, and the other was a Roumanian lady. The list of male graduates comprises those of all nationalities. Thirty-six were Russians. Americans stand next in order of numbers, but almost all of them were Spanish students from the South American states; only one was from the United States. At present the number of students enrolled on the books of the faculty is 3,782. Of these, 114 are women. Only one of them comes from the United States, and only two men come from there. Twelve of the women are French, 90 are Russian, and there are a few English, Greek, and Austrian. The male foreigners number more than 560, including 140 Russians and Poles, 130 Spaniards and Spanish Americans, 19 Greeks, 56 Turks, and the others from various European states, there being 34 Englishmen.

M. Guéniot reports a case of double placenta in a single birth. He presented the placenta in question to the Academy of Medicine as having a certain interest owing to the medico-legal aspects of such a case. This double placenta came from a secundipara who was delivered of a female child at eight months and a half. Each placenta resembled one of about seven or eight months. They were separated by a membranous interval of about three centimetres at its center, and of about seven centimetres at the ends. They both received the arteries going to the cord, also the funicular veins. The cord itself was inserted upon the membranes, and looked like an ordinary one for the first few inches, but beyond that Wharton's gelatin was no longer found, and it divided into two portions which were implanted upon the membranes. Dr. Guéniot calls attention to the clinical difficulties in such a case if there should be a retention of the placenta, and to the care that should be used in inspecting the cord and membranes in every case, following the cord to its insertion instead of throwing it aside.

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**Chromatic Asymmetry of the Iris.**—"It is well known," says the "Lancet," "that the iris may change color with the lapse of time, and pass, for instance, from blue to green. M. Féré directs attention to the color of the iris in the subjects of nervous disease. In lunatic asylums a blue iris is considered by the uninitiated to indicate insanity, but Féré's statistics do not lend any support to this idea. Asymmetry in the color of the irides, however, appears to show that its possessor belongs to the neuropathic class. It is very frequent in the insane, in epilepsy, and in hysteria; twenty-six per cent. of epileptics were found to have the sign, and about the same percentage obtained in hysterics. This iridic stigma, it is thought, may prove of practical value."

**Lardaceous Degeneration of the Stomach.**—"Although but little mention is made by works on pathological anatomy of lardaceous degeneration of the stomach," says the "Lancet," "yet Edinger states that this lesion is frequent enough. The muscular fibers and the walls of the vessels are attacked, and Edinger observed a hyperplasia of the connective tissue of the mucosa. The epithelium of the gastric glands was not found to be degenerated. In one case there was an ulcer in the smaller curvature; in another the kidneys showed interstitial changes. In some of the cases the gastric juices were tested during life, and found not to contain hydrochloric acid, although pepsin was freely secreted. The chemical defects consisted chiefly in the proteids not being peptonized and the development of intense gastric fermentations."

THE
NEW YORK MEDICAL JOURNAL,
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## DISORDERS OF THE LIVER AS A CAUSE OF HÆMORRHOIDS.

In these days of surgical energy, the lesson can not too often be inculcated that in many cases it is not enough to destroy a local lesion, but that the whole state of the patient must be attended to. This lesson is wholesomely brought out in a recent article by Dr. L. H. Petit, of Paris, in the "Bulletin général de thérapeutique," on the treatment of certain hæmorrhages on the theory that they depend upon an affection of the liver. The idea, to be sure, is not a new one, for, besides the general impression that the bleeding from hæmorrhoids is often salutary, it is found that the ancients entertained the theory of the dependence of some hæmorrhages on abnormal conditions of the abdominal organs. In cases of bleeding from the right nostril, for example, Galen prescribed the application of cups over the liver, and for bleeding from the left nostril he applied cups over the spleen. Some years ago M. Verneuil became impressed with the relationship between hæmorrhoids and disordered states of the liver, and at his instigation M. Duret examined into the question from an anatomical point of view, particularly with reference to the anastomoses between the portal radicles and the hæmorrhoidal veins. These investigations, together with clinical observation, were so convincing to M. Verneuil that he almost abandoned the usual operations for hæmorrhoids, and now relies nearly always on simple dilatation of the anus, with the addition of interstitial cauterization and, when the piles are very voluminous and vascular, the use of Paquelin's cautery.

Two years ago Mr. Alexander Harkin contributed a remarkable article to the "Lancet," sustaining the same theory and giving a number of histories of cases showing the dependence of hæmorrhoids on hepatic trouble, together with one of a case of vicarious hæmorrhage from the lower lip that had supervened on the treatment of hæmorrhoids by ligation. Mr. Harkin quotes the late Dr. Van Buren's forcible remarks upon the influence of obstruction of the abdominal circulation by overdistension of the large intestine, an abdominal tumor, or a congested liver upon the valveless hæmorrhoidal veins; and asks how surgeons can go on in the indiscriminate removal of hæmorrhoids by the ligature, by the actual cautery, or by the écraseur to the neglect of causative abdominal affections, and how physicians can content themselves with the routine of turning over their hæmorrhoidal patients to the surgeons.

All these facts are forcibly set forth in M. Petit's article, and he fortifies the theory to which they relate by putting on record a number of previously unpublished notes of cases, some of hæmorrhoids, others of epistaxis, and still others of hæmoptysis. Even traumatic hæmorrhages, as he shows, are not wholly uninfluenced by disorders of distant viscera. It is generally the liver that is at fault, and in most of the cases given it was enlarged. The treatment found efficacious consisted mostly in the application of blisters over the liver, but sometimes in the use of the cold douche to the same part. In most instances where disease of the liver has been ascertained to exist, this treatment has promptly arrested or greatly diminished the hæmorrhage, and in many of them it has gradually cured or decidedly mitigated the hepatic trouble itself. It is evident that there was some substantial foundation for the old injunction to "unload the portal circulation."

## THE ÆTIOLOGY OF EPILEPSY.

The general tendency of contemporary research and deduction seems to have set decidedly against allowing any very great pathogenetic influence to heredity. It is still freely admitted that predispositions are inherited—that is to say, that certain children are born with inherited constitutional peculiarities that tend to make them more readily fall a prey to accidental causes of disease—but the necessary conjunction of an occasioning cause is more and more insisted upon, even if that occasioning cause acts before birth. As M. Marie put it about a year ago, in the "Progrès médical," "I admit that a child may have been born an epileptic, provided the cause attacked it during intrauterine life, but what I can not admit is that that child can have been conceived an epileptic." That writer was insisting upon the rarity of inherited epilepsy and upholding the theory of an accidental physical cause of the disease, usually the result of infection. It is not to be understood that he maintained the infectious nature of epilepsy as a disease, but simply that the exciting causes of epilepsy were commonly the relics of some infectious malady, notably the infectious fevers of childhood, syphilis, and septic puerperal affections.

In a recent number of the same journal, M. Lemoine, an adjunct physician to the Bailleul Asylum, expresses his entire concurrence with M. Marie, and elaborates the doctrine in a most ingenious and interesting manner. It is true, he says, that measles, scarlet fever, and the like are so common that hardly any child escapes them, and yet only a few become epileptic. This may be held up as an objection to the theory, but he replies that not every syphilis is cerebral, and not every cerebral syphilis gives rise to epilepsy; to do so, he implies, it must affect the cerebral cortex, and the epileptic phenomena most commonly make their appearance when the original lesions have yielded to medication and the parts have entered upon the cicatricial stage of repair. In the case of other infectious diseases also, epilepsy is commonly among the remote effects of an exceptional localization of the poison in the central nervous system. Epilepsy, says M. Lemoine, often follows in the wake of infantile paralysis, and it is frequently seen in persons who are the subject of some arrest of physical development, such as asymmetry of the face and the like, which defects, he thinks, are, in common with infantile paralysis, due to disseminated lesions of the trophic portion of the central nervous system.

Incidentally he draws an interesting comparison between infantile paralysis and a paralytic affection to which young dogs are subject. M. Mathis, of the Veterinary School at Lyons, professes to have discovered the microbe of this disease, and it is stated that many consider it identical with infantile paralysis in the human subject. M. Lemoine predicts that infantile paralysis will yet be shown to be of infectious origin.

## *MINOR PARAGRAPHS.*

### THE ALLEGED FALSE PASSAGE IN THE CASE OF THE LATE GERMAN EMPEROR.

Sir Morell Mackenzie's allegation that Professor von Bergmann made a false passage—one that led to the formation of a diffuse abscess—in endeavoring to replace a tracheotomy-tube in the case of the late German Emperor, has called forth a statement, signed by Professor Virchow and Professor Waldeyer, that to the ordinary mind seems to set the question at rest; but Sir Morell Mackenzie and Mr. Hovell have published rejoinders in which they virtually deny the accuracy of Virchow and Waldeyer's conclusions. On another page we reprint these documents from the "British Medical Journal." The German necroscopists declare that the tissues in which the alleged abscess must have been situated were found at the autopsy "normal and showing no signs of cicatrization." Mackenzie replies: "It is quite true that there was no cicatrization. No cicatrization is ever present after death where a diffuse abscess has remained in a state of activity up to a few days of the patient's death." And he accounts for the failure to find pus in the pre-tracheal tissues by the fact that in dying persons suppuration often ceases a few days before death. All this may be granted, but it is no answer to Virchow and Waldeyer's statements. It is plain that, if there had been an abscess in the situation referred to, either its cavity or a cicatrix must have remained, whether pus was found or not. It is inconceivable that its situation should have been found occupied by normal tissues. There are other points of disagreement in the statements, but they involve questions of veracity, or at least of accuracy of observation, and their discussion by us is wholly unnecessary.

### THE "MARITIME MEDICAL NEWS."

We have received the first number of this new journal, dated November, 1888. It is a bi-monthly of twenty-six double-columned pages, published at Halifax, Nova Scotia, and edited by D. A. Campbell, M. D., and Arthur Morrow, M. B., of Halifax; J. W. Daniel, M. D., M. R. C. S., and L. C. Allison, M. B., of St. John; and James McLeod, M. D., of Charlottetown. The new journal takes its name from the maritime provinces of British America, within the reach of whose medical men, it says, there has hitherto been no professional journal "which they could regard with any lively sense of interest and ownership." The contents of the first number are of interest and value, and we have no doubt that the "News" has a creditable career before it.

### THE TREATMENT OF PYOSALPINX BY ASPIRATION.

In cases of distension of the Fallopian tube it is doubtless desirable to have some efficient resource less radical than removal of the tube and ovary. The withdrawal of the fluid by puncture has, of course, suggested itself to many minds, but the difficulty in most cases of making a precise diagnosis without opening the abdominal cavity has justly been looked upon as rendering laparotomy the safer course in general. In a recent number of the "British Medical Journal," Mr. R. H. B. Nicholson, of Hull, gives the notes of a case of double pyosalpinx in which he effected a cure by aspiration. He thinks that the result proves that, as compared with Tait's operation, "the less heroic treatment was the better, and certainly the less dangerous"—a conclusion that, it seems to us, further trials will be needed to justify.

### THE CURE OF A CASE OF SCLERODERMA.

In the "Archiv für Kinderheilkunde" Dr. J. Friedländer reports the history of a case of scleroderma that he has succeeded in curing. According to an abstract given in the "Centralblatt für klinische Medicin," the patient was a girl, five years old, in whom the disease had existed for about six months and was advancing in development and extent. The treatment, which took about six months to effect a cure, consisted in daily baths of a temperature of 80·6° F., each bath lasting for three hours, daily massage of all the indurated parts, inunction with oil every evening, envelopment in flannel at night, the administration of preparations of iron, the use of albuminous food, and free exposure in the open air by day.

### THE VULVO-VAGINAL CATARRH OF LITTLE GIRLS.

M. Suchard, of Lavey, France, reports in the "Revue mensuelle des maladies de l'enfance" an instance in which twelve girls, between six and fourteen years old, who had been sent to Lavey on account of slight scrofulous affections, were all given a bath together in one tank, their genitals having previously been examined. On the fourth day afterward, one of them, six years old, was found to be affected with vulvo-vaginal catarrh, and in five days more all the others were attacked with the same disease. Dr. Sprengel, of Dresden, who furnishes a summary of M. Suchard's report to the "Centralblatt für Chirurgie," remarks that it was undoubtedly through the medium of the water that the infection was conveyed to the eleven children who were attacked after an interval following the development of the first case, but that in the case of the child who first showed the disease a like origin is not established with certainty.

### PEPTONIZED-POTATO BISCUITS.

According to the "Progrès militaire," quoted in the "Revue générale de clinique et de thérapeutique," the military storehouses of France are furnished with large quantities of biscuits or croquettes of peptonized potatoes. They are expected to keep for two years, but those stored in June, 1887, have already been found spoiled. Moreover, each biscuit contains 150 grains of peptones, and, according to authorities cited by the military journal mentioned, from 170 to 375 grains of peptones may produce fatal poisoning. It follows that, if an officer or soldier deprived of all other food, as he might be in time of war, were to eat two of the biscuits at a meal, he would be poisoned.

### VIVIPAROUS FROGS AND INSECTS.

Unless there is a reporter's error in an account of the proceedings of a recent meeting of the *Deutsche Gesellschaft für Gynäkologie*, given in the "Deutsche Medizinal-Zeitung" (copied from the "Archiv für Gynäkologie"), there must be viviparous frogs and insects in Preyer's laboratory; for Dr. Ahlfeld having described certain visible movements of the abdominal wall that he had observed in pregnant women, his

opinion that they were due to respiratory efforts on the part of the fœtus was combated by Dr. Wiener, whereupon Dr. Ziegenspeck remarked that in Preyer's laboratory he had seen such intra-uterine movements in frogs and insects (*solche intra-uterine Bewegungen an Froschen und Insekten*).

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 13, 1888:

| DISEASES. | Week ending Nov. 7. | | Week ending Nov. 13. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 42 | 4 | 20 | 11 |
| Scarlet fever | 140 | 23 | 139 | 28 |
| Cerebro-spinal meningitis | 2 | 1 | 2 | 2 |
| Measles | 160 | 6 | 136 | 11 |
| Diphtheria | 115 | 31 | 66 | 24 |
| Small-pox | 2 | 0 | 0 | 1 |

**The Health of New York City.**—During the four weeks ending Tuesday, November 13th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 145 cases and 32 deaths; scarlet fever, 491 cases and 80 deaths; cerebro-spinal meningitis, 6 cases and 5 deaths; measles, 513 cases and 27 deaths; diphtheria, 360 cases and 104 deaths; small-pox, 3 cases and 1 death.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 4 to November 10, 1888:*

Baily, Joseph C., Lieutenant-Colonel and Assistant Medical Purveyor, will, by direction of the Secretary of War, transfer at once the public funds for which he is now responsible to Captain Henry Johnson, Medical Storekeeper, who will assume temporary charge of the medical purveying depot in New York city, retaining charge thereof until relieved in person by Lieutenant-Colonel E. P. Vollum, Surgeon, under his assignment as Acting Assistant Medical Purveyor, to whom Captain Johnson will then transfer the public funds. Par. 1, S. O. 257, A. G. O., Washington, D. C., November 3, 1888.

McElderry, Henry, Major and Surgeon, is, by direction of the Secretary of War, granted leave of absence for two months, to take effect on the completion of his present duties. Par. 3, S. O. 256, A. G. O., Washington, D. C., November 2, 1888.

Ewen, Clarence, Captain and Assistant Surgeon, is relieved from duty at Fort Sidney, Nebraska, to take effect on the expiration of his present leave of absence, and will report in person to the commanding officer, Madison Barracks, New York, for duty at that post. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

Appel, Daniel M., Captain and Assistant Surgeon, is relieved from duty at Fort Davis, Texas, and will report in person to the commanding officer, Fort Sill, Indian Territory, for duty at that post, reporting by letter to the commanding general, Department of the Missouri. Par. 2, S. O. 258, A. G. O., Washington, November 5, 1888.

Hoff, J. Van R., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of one month. S. O. 134, Headquarters Department of the Missouri, Fort Leavenworth, Kansas, November 1, 1888.

Price, Curtis E., Captain and Assistant Surgeon, is granted leave of absence for two months, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

Wood, Marshall W., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of ten days. Par. 2, S. O. 257, A. G. O., Washington, November 3, 1888.

Cochran, John J., Captain and Assistant Surgeon, is, by direction of the Secretary of War, relieved from temporary duty at Headquarters Division of the Pacific, and will report in person to the commanding officer, Fort Adams, Rhode Island, for duty at that post. Par. 2, S. O. 256, A. G. O., Washington, November 2, 1888.

Bradley, Alfred E., First Lieutenant and Assistant Surgeon (recently appointed), will, by direction of the Secretary of War, report in person to the commanding officer, David's Island, New York, for duty at that depot, reporting by letter to the superintendent of the recruiting service, New York city. Par. 14, S. O. 260, A. G. O., November 7, 1888.

**Society Meetings for the Coming Week:**

Monday, *November 19th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *November 20th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Societies of the Counties of Kings and Westchester, N. Y.; Ogdensburgh Medical Association; Baltimore Academy of Medicine.

Wednesday, *November 21st:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); New Jersey Academy of Medicine (Newark).

Thursday, *November 22d:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private).

Friday, *November 23d:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

Saturday, *November 24th:* New York Medical and Surgical Society (private).

# Letters to the Editor.

## THE ANTISEPTIC FORCEPS LOCK.

Brooklyn, *November 5, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: I am greatly indebted to Dr. Wathen for calling my attention to the instrument described in the "Illustrirte Monatsschrift der ärztlichen Polytechnik." I was not aware of the existence of a published description of any such instrument. As stated in my first communication, my efforts were in the direction of overcoming the objection to the French lock, which I freely admit I worked from as a basis.

Charles N. Dixon Jones.

# Book Notices.

*A Practical Treatise on the Medical and Surgical Uses of Electricity;* including Localized and General Faradization, Localized and Central Galvanization, Franklinization, Electrolysis, and Galvano-cautery. By GEORGE M. BEARD, A. M., M. D., and A. D. ROCKWELL, M. D. Sixth Edition, revised by A. D. ROCKWELL, M. D. With nearly Two Hundred Illustrations. New York: William Wood & Co., 1888. Pp. xxx–758.

THIS book was first given to the profession in 1872, and since that time six editions have appeared. The work has been translated into German and has been sold largely both in that country and in England, and, whatever may be its merits or demerits, these facts have a certain *a priori* value in determining its worth and its position in the medical literature of our time. Previous to the writings of the authors upon this subject electricity was still too commonly regarded as a mere stimulant, and its use restricted in the main to the various forms of paralysis. In the original edition they took broader grounds, and maintained that electrization, besides being a local stimulant, exercised also an influence over general and local nutrition, at once "unique and unrivaled," and that the accepted system of making the applications exclusively local was both illogical and inconsistent.

For the purpose of bringing the system as a whole under the influence of the current, they suggested and described in detail a method now familiar to the profession under the name of general electrization, asserting that by its use the success of electro-therapeutics could be materially enhanced and its sphere very greatly widened, so as to include its use in a variety of frequent and distressing constitutional morbid conditions in which merely localized electrization was but imperfectly indicated. While some do not agree with these conclusions, it is perfectly safe to say that among those who have had practical experience in the use of electricity by this method their correctness is generally acknowledged. That the work should have held its own through so many years, outliving indeed most of the books on the same subject since published, argues well for the worth of the principles which it first enunciated, and indicates that in other respects it has been kept abreast of subsequent developments in this department of therapeutics. In the present edition the changes and additions are restricted mostly to the chapter on Diseases of Women. The chapter has indeed been almost entirely recast, the new matter consisting more especially of descriptions of the treatment of uterine fibroids after the method of Apostoli, and of the use of the galvanic current to promote the absorption of old exudations associated with chronic pelvic inflammation. While according much credit to Apostoli for what he has done in suggesting a better therapeutic method, Dr. Rockwell does "not believe that a more extended experience will fully confirm everything that has with so much enthusiasm been maintained by some of his followers." He thinks that it is seldom if ever possible to dissipate a fibroid tumor entirely by electricity, although in the majority of cases the size of such growths can be reduced to a greater or less extent. Even a very slight reduction in size will frequently cause most marked alleviation of the discomforts of the patient, and, so far as symptoms are concerned, result in a practical cure.

## GENERAL LITERARY NOTES.

AMONG recent foreign publications we note the following:

F. ALCAN, Paris.—Martineau, "Leçons sur la thérapeutique de la métrite." (3*fr.*) —— P. Aubry, "La contagion du meurtre." —— M. Lannois, "Chorée héréditaire."

ASSELIN & HOUZEAU, Paris.—J. Gottstein, "Maladies du larynx." (7*fr.*) —— V. Hanot and A. Gilbert, "Études sur les maladies du foie." (25*fr.*)

J. B. BAILLIÈRE & FILS, Paris.—E. Nacé, "Traité pratique de bactériologie." (8*fr.*) —— J. C. F. Guyon, "Leçons cliniques sur les affections chirurgicales de la vessie et de la prostate." (16*fr.*) —— P. Moreau, "La folie chez les enfants." (3*fr.* 50.) —— A. Charpentier, "La lumière et les couleurs au point de vue physiologique." (3*fr.* 50.) —— E. Couvreur, "Le microscope et ses applications à l'étude des végétaux et des animaux." (3*fr.* 50.) —— L. Garnier, "Ferments et fermentations." (3*fr.* 50.) —— R. Chabannes, "Traitement de la dyspnée par les inhalations d'acide carbonique." (2*fr.*) —— Rafin, "Étude clinique sur le massage appliqué au traitement des fractures juxta-articulaires." (1*fr.* 50.) —— Coste de Lagrave, "Hypnotisme." (2*fr.*) —— J. Chaumier, "Essai sur le mal de tête." (2*fr.* 50.) —— Galezowski and Koppf, "Hygiène de la vue." (3*fr.* 50.) —— Gallois, "Douze cents formules." (3*fr.* 50.) —— A. Mazet, "Asepsie et antisepsie." —— L. Reuss, "La prostitution au point de vue de l'hygiène et de l'administration en France et à l'étranger." (7*fr.* 50.) —— G. Bécavin, "L'École de Salerne et les médecins salernitains." (2*fr.* 50.)

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## BOOKS AND PAMPHLETS RECEIVED.

Landmarks Medical and Surgical. By Luther Holden, ex-President of the Royal College of Surgeons of England, etc. Fourth Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 79. [Price, $1.25.]

On the Preventive Treatment of Calculous Disease and the Use of Solvent Remedies. By Sir Henry Thompson, F. R. C. S., M. B. Lond., etc. Third Edition. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. 87. [Price, $1.]

The Urine and the Common Poisons—Memoranda, Chemical and Microscopical, for Laboratory Use. By J. W. Holland, M. D., etc. Illustrated. Second Edition, revised and much enlarged. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. vi–9 to 65. [Price, 75 cents.]

The Fatal Illness of Frederick the Noble. By Sir Morell Mackenzie. London: Sampson, Low, Marston, Searle, & Rivington, 1888. New York: Brentano. Pp. 6–9 to 246.

The Anomalies of the Ocular Muscles. By Dr. George T. Stevens, New York. First Paper. Second Paper. III—Differential Character-

istics of Heterophoria and Strabismus. [Reprinted from the "Archives of Ophthalmology."]

Lilly's Hand-book of Pharmacy and Therapeutics. Third Edition., Thoroughly revised. Eli Lilly & Co., 1888.

# Reports on the Progress of Medicine.

## CUTANEOUS AND VENEREAL DISEASES.

By GEORGE THOMAS JACKSON, M. D.

**The Basis of the Present Treatment of Syphilis** is the theme of Dr. Ernst Schwimmer in the second supplement to the "Monatshefte f. prakt. Dermatologie" for 1888. We commend the brochure to our readers as an admirable *exposé* of the modern treatment of syphilis, and very readable withal. The subject is treated under three headings: 1. The preventive or abortive treatment of syphilis. 2. The methodical treatment of syphilis; and 3. The duration of treatment. The author is a firm believer in the specific nature of the infection and the duality of the soft and hard chancre. He is not an advocate of the excision of the chancre, believing that in most cases the induration is the primary expression of constitutional infection. The early treatment of the disease is advocated in order to prevent the worst after-effects of the dyscrasia. If the sclerosis is not well marked at first, a purely local treatment may be employed during the first three or four weeks. If a well-marked initial lesion is present at the time of the first examination, general treatment should be begun at once. For local treatment caustics should not be used; salol has been found efficacious to promote the healing of the ulcer, and mercurial plaster for the induration. Mercury is the most reliable means for combating the disease, and can be used either internally or externally, preferably the latter, either by inunction or injection hypodermically.

The various salts and combinations of mercury are fully considered in their action and mode of administration. Corrosive sublimate is preferred for internal administration, particularly in pill form. Calomel is useful in the treatment of children, and the following formula is commended: Calomel, Dover's powder, each 1½–2 grains; sugar of milk, 45 grains. Divide into ten powders. Of these powders, two to three may be given daily to a nursing infant, and six to nine to a child over one year old, and their use continued for four to six weeks. The protiodide of mercury is less energetic than the bichloride, but useful in slight relapses, while we are cautioned against the use of the biniodide. Tannate of mercury is a reliable salt for internal medication, more active than the sublimate, but not so efficient as the inunction method of treatment. It causes but little disturbance of the digestive tract and can be administered for a long time in the dose of one grain and a half two or three times daily, either in solution or in pill form. The treatment by mercurial fumigation is not regarded with favor, on account of its unhandiness. Mercurial baths are of little service in the treatment of syphilis in adults, but very good in that of congenital syphilis in children, two or three baths a week being given, each containing from eight to forty-five grains of the bichloride, according to the age of the child. Special emphasis is laid upon the inunction treatment of syphilis, some forty-five grains of blue ointment being rubbed each day into the non-hairy parts of the body. Thirty to sixty rubbings are about as many as can be prudently employed in one series, and then they should be stopped for a while, some preparation of iodine being taken meanwhile. The oleate of mercury is not so active as the blue ointment. The mercurial soaps of Fanta, Unna, and Oberländer form excellent substitutes for the mercurial ointment and act very promptly. The treatment by hypodermic injection has been tried by him, the various proposed solutions having been employed from time to time. It is a valuable method where the physician wishes to have complete control of the treatment, but does not take the place of the older methods.

The treatment by one or other form of mercury should be continued until the symptoms of the disease have disappeared, and should be thoroughly carried out. The iodides are regarded as rendering good service after a thorough course of mercury. The iodides of potassium, ammonium, and iron are those specially useful. The "mixed treatment," so called, is not considered favorably; better results are to be obtained by the separate administration of the drugs. But space will not permit us to go further in abstracting from this practical little work, and we will take only enough to give the author's two summaries, as follows:

*Summary of the Use of Mercury.—a.* The most reliable preparation and the most lasting in its effects is the blue ointment, which should be used, where possible, from the beginning of the treatment.

*b.* The subcutaneous injection of mercury is next in reliability, but must be used with caution. The least soluble preparations should be used when there are gummatous or ulcerative processes to combat, or an energetic treatment is necessary on account of parenchymatous syphilitic affections. In the slighter forms of syphilis the more soluble preparations may be used.

*c.* The mercurial soap and Unna's mercurial plaster-muslin are very useful, as is also the tannate of mercury.

*d.* As a preparatory course for the use of the stronger preparations of mercury the bichloride of mercury may be given in pill or solution.

*e.* As intercurrent medication, between two courses of either inunctions or hypodermic medications, the protiodide of mercury should be used.

*f.* The constitution of the patient should guide us in the choice of our remedies, whether we shall use a stronger or a weaker preparation or dose.

*Summary of the General Treatment of Syphilis.*—1. Syphilis is a chronic disease, and requires a long-continued course of treatment.

2. Mercurial treatment should be commenced as early as possible in cases with marked onset; in slighter forms somewhat later.

3. Mercurial treatment should be continued for two or three months. Then the iodide should be given for two months.

4. After four or five months' unbroken treatment, a pause of two or three months should be made. Any local lesions should be treated by local treatment.

5. In relapses the same course of treatment should be followed, only of shorter duration, say three months; if no relapse occurs within the first six months after the beginning of treatment, the second course can be deferred until the eighth to the tenth month, reckoned from the beginning of the disease.

6. The treatment with decoctions is to be employed in diseases of parenchymatous organs if such do not yield to a second course of mercury and iodides.

7 and 8. Balneotherapy and hydropathy are useful at times as final methods of treatment.

9. If the disease continues into the second year, in spite of treatment, a two-to-three-months' course of mercury and iodide is to be gone through with, or one of greater duration if marriage is proposed.

10. Generally speaking, after a year and a half to two years of well-directed and early-begun treatment, the result will be highly satisfactory.

**Anthrarobin in Psoriasis, Herpes Tonsurans, and Pityriasis Versicolor.**—Neumann has tried this new medicament in four cases of psoriasis, two cases of ringworm, and two of pityriasis versicolor. He finds ("Allg. Wien. med. Zeit.," 1888, June 26th) that it is much less active than chrysarobin, that it acts much slower, but irritates the skin far less. That it is well adapted for the treatment of pityriasis versicolor, but too mild a remedy for inveterate psoriasis.

**Epithelioma Contagiosum** is the name which Neisser ("Viertljhr. f. Derm. u. Syph.," 1888, xv, Heft 4) proposes for what has been previously known as molluscum contagiosum. He denies positively that the sebaceous glands take any part in the formation of the tumors, and he has never found in any section of these bodies the evidence of the participation of the follicular epithelium, nor any hair near enough to the tumor to suggest any connection with it. On the other hand, he has found that the process begins in the rete mucosum and grows downward, and that the transformation of the rete cells into the outer cells of the molluscum body can be readily seen. He believes that on this account the terms molluscum sebaceum, acne varioliformis, and the like must be dropped, and proposes the name epithelioma contagiosum. He is not only convinced of the contagious nature of the tumors, but believes that they are caused by a parasite which is of the nature of a coccus and of the class of *Gregarines*. This coccus he has dem-

onstrated microscopically, but has not been able to cultivate. The molluscum corpuscle is regarded by Neisser as a completely cornified, nucleated epithelial cell entirely filled with the parasite. As a neoplasm the molluscum contagiosum is an epithelioma; but, at the same time, it is a sort of retention cyst composed of abnormally developed epithelium and of corneous matter abnormally piled up among the cells of the parasite, and of the parasite itself.

**Treatment of Sycosis.**—In our report of July 28th Unna's division of sycosis into the hyphogenous and coccogenous forms was given, as also the treatment he proposes for the first form. In the "Monatshft. f. prakt. Dermat.," 1888, No. 11, he gives us his plan of treatment for the second form, which is better known by the name *folliculitis barbæ*, or non-parasitic sycosis. He regards shaving as a very important part of the treatment. This is to be followed in bad cases by the constant application of his carbolic-mercurial or resorcin-plaster muslin; or, if the patient will submit to a nightly treatment only, a zinc-sulphur salve muslin is to be worn during the night, followed in the morning by epilation of the pustules, washing of the part, and the application of a five-per-cent. alcoholic solution of resorcin to each affected follicle. The whole series of his "reducing agents," such as sulphur, ichthyol, resorcin, pyrogallol, and chrysarobin, may be used at night in ointments of 2 to 5 per cent. strength, or ichthyol may be employed in 10 per cent. strength as a fomentation. Mercurial ointment with 10 per cent. of carbolic acid and up to 1 per cent. of sublimate is also useful. If the patient will not allow the beard to be shaved it will be harder to cure the disease, and we must proceed by the removal of each affected hair, washing out the suppurating hair follicle, and the application to it of a zinc-sulphur or weak resorcin-sublimate salve. Scarification does harm, and general epilation should not be practiced. Only the diseased hairs should be plucked out. The rhinitis which is often present should be treated by the nasal douche with a one-per-cent. solution of ichthyol. For some time after the disease is practically cured the face should be shaved with sublimate soap, each hair that is diseased should be plucked and the follicle touched with the alcoholic solution of resorcin, and every night the face should be anointed with a resorcin or sublimate ointment or paste.

**Treatment of Sweating Hands and Feet.**—Unna recommends for this affection, when the parts are cold, that before the patient goes to bed he should bathe the affected parts with hot water to which has been added some irritating substance, such as camphor, mustard, or vinegar. Then, after drying, the part should be enveloped in an ointment which will cause hyperæmia, such as one of turpentine and ichthyol, each five parts, to oxide-of-zinc ointment, ten grammes. In the morning the ointment is to be washed off and the parts are to be rubbed with ice-cold water, the friction being continued till hyperæmia and warmness of the skin are induced; then the skin is to be powdered with a powder containing mustard flour. If the feet are affected, the stockings should be powdered before they are put on. Where the parts are warm, the hot and cold baths are to be omitted and ichthyol is to be used; lukewarm baths in the evening, followed by a two-and-a-half-per-cent. ichthyol ointment, washing off with lukewarm water and ichthyol soap in the morning and leaving on some of the dry soap-suds, is the method of treatment.

**Treatment of Corns on the Soles of the Feet.**—This very annoying affection is best treated, according to Unna ("Monatsheft f. prakt. Dermat.," 1888, No. 13), by painting a circle of zinc-clay paste about the corn, and, when this has dried on, placing inside the ring a piece of salicyl-creasote plaster muslin (salicyl 40, creasote 40); then the whole is covered over with the paste and allowed to dry. With sweating feet or where the feet are very hot, the part is to be enveloped before the dressing is dry with a soft muslin bandage; this is to be stuck fast with the paste. The dressing is to be changed once or twice a week, each time removing the loosened horny layer.

**Treatment of Multiple Warts.**—Unna ("Monatshft. f. prakt. Dermat.," 1888, No. 13) recommends enveloping the whole affected part with a salicylic creasote plaster muslin (20 to 40), which should be stuck on with zinc paste and covered either with a bandage or glove. An ointment composed of ten parts of salicylic acid, twenty of creasote, and enough wax and lard to make an ointment mass will be found also efficacious.

**The Bacilli of Syphilis and of the Smegma.**—Markuse, in the "Vierteljahresschrift für Dermatologie und Syphilis," 1888, Heft 3, examines into the present condition of the discussion over the relation of these bacilli, and also gives the results of his own investigation. He first examined the secretions from syphilitic and non-syphilitic lesions, and then microscopical sections of tissues, in order to find bacilli either of syphilis or of the smegma. In the secretion from 23 initial lesions he found bacilli only 10 times; in that of 57 papules and condylomata of the genitals and anus they were found 43 times; in that of 19 papules of the mouth and pharynx they were found but once; in 8 tertiary lesions they were absent, as also in 2 cases of vesicular and pustular syphilis. The initial lesions that gave the most positive results were those of the prepuce, frenum, glans, and labia majora. Among the initial lesions that gave negative results were one on the breast, one of the urethral orifice, and one on the labium. Bacilli of the same nature were found once in 12 cases of soft sore, once among 3 cases of balanitis, 4 times in 8 cases of simple erosion (3 of the prepuce and 1 of the sulcus coronarius). The smegma bacillus of Matterstock and others was found in every one of the 125 specimens examined. In 57 sections of a single initial lesion the bacillus of syphilis was not found. Attempts at the cultivation of the smegma bacillus were failures.

The differential marks between the bacilli of syphilis and of the smegma are not so distinct as might be desired. The smegma bacillus occurs in much larger groups than that of syphilis, but it would be very difficult if not impossible to distinguish which were syphilis bacilli and which smegma bacilli if the specimen under examination was taken from a region in which both bacilli were present. The smegma bacillus offers much greater resistance to acids than the syphilis bacillus. The resemblance between the two is at the best very great, and, though they are not yet found to be identical, it is at present impossible to regard with certainty the Lustgarten bacillus as the bearer of the syphilitic poison.

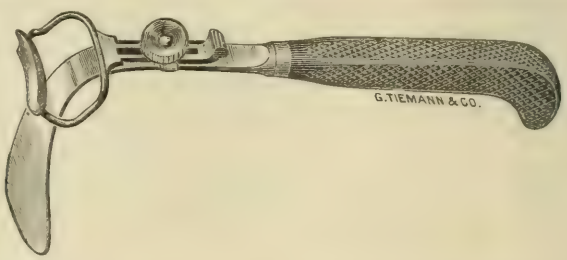
**The Treatment of Syphilis by Calomel Injections** has been tried by Neumann in 52 cases, 344 injections having been made. His judgment is ("Wien. med. Presse," 1888, No. 32 *et seq.*) that its effect is far less rapid and a great deal more disagreeable than that of the old reliable method of mercurial inunction.

## New Inventions, etc.

### A SELF-RETAINING TONGUE DEPRESSOR.

By J. J. Higgins, A. M., M. D.

In examinations of the fauces, and especially in operations thereon, the need of a self-retaining tongue depressor and speculum oris is sadly felt. For all the minor operations—such as penciling, applications of remedial agents in divers ways, excision of the uvula, etc.—the convenience (in some cases the necessity) of having the use of both hands is without question. So strongly have I felt the want of a suitable instrument for such purposes in my own practice that I have been compelled (the armamentarium of our instrument-makers not having one at all adapted to the regular and daily use of the practitioner) to invent and have one made for my own use. It has found such favor with all physicians who have seen it that I feel constrained to make it more generally known through the columns of your valuable paper. Mechanical description would be tedious and is unnecessary, as the



cut illustrating the instrument is a perfect representation and tells the story at a glance. It is adjustable for any size of mouth, or opening thereof—with not even discomfort, much less pain—can be handled and placed *in situ* as readily as the usual tongue depressor, and is self-retaining. It is manufactured by Messrs. G. Tiemann & Co., of this city, of the best quality of steel—handsomely nickel-plated—handle and other attachments of vulcanite, baked on and highly polished, and thoroughly aseptic in construction.

Too great credit can not be given the above-mentioned firm for their well-known superior workmanship, which is again shown in the beautiful instrument which they have produced to supply this long-felt want. Moreover, its construction is such that, by a simple turn of a milled screw, an ordinary tongue depressor of a special and improved pattern and shape is at one's service.

For the photographing of the posterior fauces or buccal cavity it is exceedingly serviceable, the sides or walls not being occluded by the instrument, as is the case with vaginal or other specula, but they are seen in their entirety.

## Miscellany.

**The Late Emperor Frederick: the Alleged False Passage.**—"With regard to the charge made by Sir Morell Mackenzie in 'The Fatal Illness of Frederick the Noble' against Professor von Bergmann, that he inflicted a serious and indirectly fatal injury on the illustrious patient on April 12th by pushing the cannula into the tissues in front of the trachea," says the "British Medical Journal," "the following statement has been published by Professors Virchow and Waldeyer, who made the post-mortem examination:

"'The undersigned declare:

"'1. That in the protocol of the necropsy drawn up at the Friedrichskron Palace on June 16, 1888, there is no mention whatever of an abscess-cavity.

"'2. That the large surface, nine centimetres in length, covered with gangrenous shreds, belongs to the only cavity found, of which mention is also made at the beginning of the protocol—namely, the cavity formed by the ulcerative destruction of the larynx and upper segment of the trachea, which was distended by the cotton-wool introduced at the time of embalming.

"'3. That the protocol of the necropsy gives no ground for the inference that an abscess-cavity had ever existed.

"'4. That the tissues in which, according to Sir Morell Mackenzie's report, and the illustration at p. 80 of his pamphlet [German edition], the cannula must have made a false passage, and the abscess in question must have existed, were at the necropsy found normal, and showing no signs of cicatrization. (See p. 102, line 3, of the report of the German physicians.)

"'5. That the windpipe was opened in its whole extent down to the bronchi. (See p. 102, line 9, of the German report.)

"'(Signed) RUDOLPH VIRCHOW,

"'BERLIN, *October 17, 1888.* WILHELM WALDEYER.'"

"To this statement Sir Morell Mackenzie and Mr. Mark Hovell have published the following replies:

"'Professors Virchow and Waldeyer having published a declaration in the "National-Zeitung" that there was not at the post-mortem any abscess at the front of the trachea, it is necessary to explain that an abscess may be either circumscribed or diffuse, and that the effect of ramming an unguarded cannula several times into the soft tissues in front of the trachea would be calculated to cause, as it did in this instance, a diffuse abscess.

"'In a young and healthy subject it is possible that a circumscribed abscess might be formed, but, in the case of an invalid, it is extremely unlikely that such an injury would be followed by the establishment of a limiting wall, which, in point of fact, is Nature's effort to effect a cure.

"'In the case of the Emperor there was not sufficient constitutional vigor to limit the morbid process. Hence the abscess became diffused, and I saw with my own eyes at the post-mortem examination that the whole areolar tissue at the front and sides of the trachea was destroyed, leaving a large cavity, especially pronounced in the lowest part of the trachea. These cavities in the neck were in uninterrupted communication across the front of the trachea. Seen in profile, the collection of matter would produce a pyriform cavity on each side, though, of course, in my illustrative diagram (Fig. 21 in my book) the abscess is only shown on one side. When Professor Virchow spoke of a "cavity" five centimetres deep, nearly as long, the opening of which, after removing the suture, gaped to the extent of two centimetres and a half at the post-mortem examination, I felt uncertain as to whether his description applied to the diffuse abscess or not; but the description itself is extremely obscure, as will be seen from the German report (page 100) and the translation in the "British Medical Journal." The front of the neck had been plugged with bismuth and cotton-wool, and, as the secretion of pus had been entirely arrested during the last few days of the Emperor's life (as such secretions often cease in dying persons), the subcutaneous tissue did not contain any pus, as I have stated in my book (page 184). I am not surprised that the diffuse abscess was not recognized by Virchow at the post-mortem examination. Had there been a hard limiting wall, of course, it would have been seen.

"'There are two other points contained in the document in the "National-Zeitung"—viz.: 1. That there was no evidence of any process of cicatrization. 2. That the tissues in front of the trachea were healthy. It is quite true that there was no cicatrization. No cicatrization is ever present after death, where a diffuse abscess has remained in a state of activity up to a few days of the patient's death. As regards the statement that the tissues in front of the trachea were normal, it may be remarked that as a quantity of bismuth and cotton-wool had remained in contact with these parts (see German pamphlet, page 100) for more than twenty-four hours, it was quite impossible for any person to judge of the condition of the tissues.

"'(Signed) MORELL MACKENZIE.'

"'Having been informed that Professors Virchow and Waldeyer have published a statement to the effect that at the post-mortem on the Emperor Frederick there was no evidence of an abscess having existed in front of the trachea, I consider it necessary to mention what I know of the matter.

"'Subsequently to April 12th I have on many occasions caused pus to flow out by the side of the cannula by placing my fingers over the sides of the trachea, at the lowest part of the neck, and then drawing them upward, making pressure at the same time. At the post-mortem examination I saw that most of the subcutaneous tissue over the trachea had disappeared, and that there were deep cavities at the side of the windpipe at the lowest part of the neck, corresponding to the position from which I used to expel matter, as above stated.

"'The larynx, with a portion of the trachea, was removed from the body, and the lungs were also removed, but the heart and lowest part of the trachea were left intact and were not examined.

"'(Signed) T. MARK HOVELL.

"'*October 18, 1888.*'"

**The Health of Kansas City, Mo.**—For the week ending Saturday, November 10th, according to the city physician's report, there were 42 deaths, including 1 from cholera infantum, 1 from croup, 3 from diphtheria, 5 from typhoid fever, 1 from typho-malarial fever, and 1 from marasmus. The death-rate was 12·1 in a thousand of the population.

**The University of the City of New York.**—Dr. J. Williston Wright has resigned the professorship of surgery, and we understand that Dr. Lewis A. Stimson has been appointed to succeed him.

**The Health of Michigan.**—According to the returns received by the State Board of Health for the month of October (five weeks ending November 3d), diphtheria was present at 36 places, scarlet fever at 32, typhoid fever at 43, and measles at 7.

**The New York Academy of Medicine.**—At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 19th inst., Dr. Joseph A. Andrews will read a paper on "Enucleation of the Eyeball in Purulent Panophthalmitis."

At the next meeting of the Section in Theory and Practice of Medicine, on Tuesday evening, the 20th inst., Dr. Debout d'Estrees, of Contrexeville, France, will read a paper on "Oxaluria, especially in its Relations to Uric Acid" (the discussion to be opened by Dr. E. L. Keyes, Dr. T. H. Burchard, and Dr. G. B. Fowler), and Dr. W. W. Van Valzah will read a paper on "The Treatment of Functional and Catarrhal Diseases of the Stomach and Intestines."

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 22d inst., Dr. A. H. Buckmaster will show "An Inexpensive Cell for Electrolysis"; Dr. R. G. Wiener will report a case of placenta prævia and show a specimen; Dr. J. R. Goffe will report a case of hysterectomy for fibroid tumor and show the specimen; and Dr. A. P. Dudley will read a paper on "A New Method of Operation for the Restoration of the Lacerated Perinæum."

At the next meeting of the Section in Laryngology and Rhinology, on Tuesday evening, the 27th inst., Dr. S. O. Vander Poel will read a paper on "Pharyngeal Mycosis."

At the next meeting of the Section in Pædiatrics, on Wednesday evening, the 28th inst., Dr. August Seibert will read a paper entitled "Stomach-washing in Infants, with a Demonstration on the Living Subject," and Dr. M. Allen Starr will read a paper on "Tumors of the Brain in Children."

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending November 9th:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending October 20th corresponded to an annual rate of 21 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Leicester, viz., 16, and the highest in Blackburn, viz., 29·8 in a thousand. Diphtheria caused 6 deaths in Manchester.

*London.*—One thousand six hundred and forty-one deaths were registered during the week, including measles, 80; scarlet fever, 33; diphtheria, 36; whooping-cough, 12; enteric fever, 19; diarrhœa and dysentery, 42. The deaths from all causes corresponded to an annual rate of 20 in a thousand. In greater London 2,004 deaths were registered, corresponding to an annual rate of 18·9 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 10; diphtheria, 8; measles, 5; whooping-cough, 5.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending October 20th in the sixteen principal town districts of Ireland was 23·3 in a thousand of the population. The lowest rate was recorded in Lurgan, viz., 5·1, and the highest in Limerick, viz., 32·4 in a thousand. In Dublin 164 deaths were registered, including measles, 1; scarlet fever, 1; diarrhœa, 5; whooping-cough, 6; diphtheria, 1; enteric fever, 6; typhus, 1; and dysentery, 2.

*Scotland.*—The deaths registered in eight principal towns during the week ending October 20th corresponded to an annual rate of 20·4 in a thousand of the population, which is estimated at 1,314,274. The lowest mortality was recorded in Leith, viz., 12·6, and the highest in Paisley, viz., 43·8 in a thousand. The aggregate number of deaths registered from all causes was 517, including measles, 24; scarlet fever, 10; diphtheria, 8; whooping-cough, 16; fever, 7; and diarrhœa, 27.

*Gibraltar.*—The secretary of the Board of Health reports under date of October 13th as follows:

At a meeting of the Board of Health this day it was decided that vessels arriving at this port with pilgrims on board should be refused admission to pratique.

*Catania, Italy.*—Three hundred and seventy-five deaths are reported for the month of August, 1888, including small-pox, 120, and enteric fever, 17.

*Martinique.*—The United States consul in his dispatch dated October 17, 1888, states that "in the fortnight preceding this date there have been 11 cases of small-pox, and 4 deaths from the same disease.

"Some sporadic cases of yellow fever have manifested themselves here, but I can not give reliable particulars, as the Government seems reluctant to furnish any information on the subject."

In a dispatch of same date the consul states that "in the 'Moniteur' it is officially announced that a quarantine of twenty-three days, time of voyage included, has been imposed by Martinique against Florida."

*Callao.*—United States consular report for week ending October 6th states: "Measles still epidemic; mortality among children."

*Demerara.*—The United States consul, in his report dated September 30th, states that "there have been no infectious or contagious diseases reported within this consular district during the past month."

*San Juan, P. R.*—The United States consul reports as follows:

Week ending October 6th, yellow fever, 2 cases; week ending October 13th, yellow fever, 1 case; week ending October 19th, yellow fever, 1 case.

"At Ponce there has been a good deal of small-pox—not officially reported."

*Havana.*—Four hundred and sixty-eight deaths were registered during the month of October, 1888, including yellow fever, 48; enteric fever, 9; pernicious fever, 19.

Eighteen of the deaths from yellow fever occurred in the military hospital.

The sanitary inspector, Dr. D. M. Burgess, states that—

Two or three American vessels have had the misfortune, after entering the port and anchoring in the bay, to become surrounded by infected vessels, fresh in their pollution after discharging at infected wharves for many days, and have consequently been invaded by yellow fever. Conspicuously the ship Portland Lloyds and bark Nereid.

Small-pox, which for over fifteen months reigned here in an active epidemic form, seems to have nearly or quite disappeared for the present from Havana, its suburbs, and the province of that name, as there has not been a death from it for the last fifty days or more; however, in some of the outlying towns, as Matanzas, Guines, and Manzanillo, it still exists.

The weather still continues hot, and no decided "norther" has refreshed us as yet this season.

Mortality Table, Foreign Cities.

| CITIES. | Week ending— | Estimated population. | Total deaths from all causes. | DEATHS FROM— | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever | Diphtheria. | Measles. | Whooping-cough. |
| Glasgow | Oct. 20. | 545,678 | 215 | .. | .. | .. | .. | 5 | 6 | 3 | .. | .. |
| Warsaw | Oct. 13. | 444,814 | 259 | .. | .. | 8 | .. | .. | 15 | 10 | .. | .. |
| Calcutta | Sept. 15. | 433,219 | 174 | 7 | .. | 2 | .. | .. | .. | 3 | .. | .. |
| Amsterdam | Oct. 20. | 389,916 | 143 | .. | .. | .. | .. | 3 | .. | 3 | .. | .. |
| Rome | Sept. 1. | 300,467 | 139 | .. | .. | .. | .. | 3 | .. | 1 | .. | .. |
| Rome | Sept. 8. | 300,467 | 149 | .. | .. | .. | .. | 8 | 1 | 1 | .. | .. |
| Munich | Oct. 6. | 275,000 | 168 | .. | .. | .. | .. | .. | 3 | 4 | .. | .. |
| Munich | Oct. 13. | 275,000 | 154 | .. | .. | .. | .. | 1 | 3 | 4 | .. | .. |
| Belfast | Oct. 20. | 227,022 | 97 | .. | .. | .. | 2 | 4 | 2 | .. | .. | .. |
| Bristol | Oct. 20. | 226,510 | 82 | .. | .. | .. | .. | 1 | 1 | .. | .. | .. |
| Trieste | Oct. 13. | 154,500 | 62 | .. | .. | 7 | .. | .. | .. | 3 | .. | .. |
| Toronto | Oct. 27. | 130,000 | 28 | .. | .. | .. | .. | .. | 1 | 2 | .. | .. |
| Stuttgart | Oct. 20. | 125,510 | 34 | .. | .. | .. | .. | .. | 1 | 1 | .. | .. |
| Bremen | Oct. 13. | 122,000 | 40 | .. | .. | .. | .. | .. | 1 | .. | 1 | .. |
| Havre | Oct. 13. | 112,074 | 80 | .. | .. | 2 | 14 | .. | 1 | .. | .. | .. |
| Mayence | Oct. 13. | 65,802 | 27 | .. | .. | .. | .. | .. | 2 | .. | .. | .. |
| Curaçoa | Oct. 13. | 25,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Vera Cruz | Oct. 25. | 23,800 | 24 | .. | .. | 2 | .. | .. | .. | .. | .. | .. |
| Gibraltar | Oct. 14. | 23,631 | 13 | .. | .. | .. | .. | .. | .. | .. | .. | .. |

UNITED STATES.

*San Francisco, Cal.*—The secretary of the Board of Health reports eight cases of small-pox for the week ending October 26, 1888. Six of these cases were discovered in the city and county hospital. The patients were immediately removed to the small-pox hospital, the ward vacated and fumigated, and the inmates vaccinated.

*Tampa, Fla.*—Dr. J. P. Wall, president Board of Health, reported under date of October 31, 1888, as follows: "For the week ending to-day there have been about 12 new cases of the fever, generally of a mild type. Seven of these cases I have seen, and the other 5 I know of from heresay, but have little doubt of their character. No deaths. The patient with the parotid abscess is recovering, though not able to leave bed yet, four weeks from beginning of illness.

"Plant City continues free from fever, though the cordon had better be continued for a while longer. No yellow fever in the county outside of Tampa."

*Uptonville, Ga.*—Surgeon W. H. H. Hutton reported under date of October 27th as follows:

I telegraphed you this morning relative to a case of fever at Uptonville, Ga. This place is 12 miles north on the S. F. & W. R. R.

On one of my trips from Waycross to Camp Perry, just previous to assuming charge, about September 5th or 6th, I found Mr. Upton on the train bound for Jacksonville, and ascertained that he had been into and out of Jacksonville several times.

I called the attention of the conductor that he was prohibited from bringing passengers from Jacksonville. The conductor said Upton had a special pass. I told him to take Upton to Jacksonville, and if he allowed any more passengers on his train from Jacksonville I would report him; I then saw Upton, who said his business required him to go to Jacksonville; he cared nothing for yellow fever, etc., whereupon I told him to go on to Jacksonville, and if found on the road again he would be arrested. He said he would go out to Baldwin.

Nothing more was heard of him till the 24th, when, as I was on my way from Palatka to Camp, and by missing connection was obliged to go to Waycross and return, I heard that Upton was sick at Uptonville. That evening I sent Dr. Guitéras and Dr. Posey on the Government train to see him.

They found Upton had returned to Uptonville from Baldwin in a buggy on the 22d. He had no fever. Next morning they again visited him, and while he had no fever, he presented every indication of convalescence from yellow fever, and as a precaution against the spread of the disease brought him to Camp, where the diagnosis was confirmed. This morning Dr. Guitéras again went to Uptonville, and found Mr. Simmons, who lives about sixty feet from Mr. Upton, sick, and brought him to Camp also. Both Mr. Upton's and Simmons's houses have been fumigated; trains are not allowed to stop at that point, and every precaution will be taken to control the disease.

If any further developments take place I will depopulate the place and bring such as can not do otherwise to Camp; which we did with Callahan, which measures have so far aborted the disease at that point.

*Punta Gorda, Fla.*—Dr. J. F. Hartigan, Sanitary Inspector, reported under date of October 31st as follows:

Punta Gorda, De Soto County, the terminus of Florida Southern Railway, is 250 miles south of Jacksonville. It is situated on a projection of land at the junction of Charlotte Harbor Bay with Peace River, and was incorporated December 3, 1887. As laid out on the map, it is four miles square. The soil is a sandy loam. Population, 200. Fishing, main industry. The town gradually slopes from the bay, rising about eight feet in a mile; where necessary, ditching is resorted to for drainage.

There is no history of dengue or yellow fever; malarial fever is sometimes seen, but it is easily amenable to treatment. Ordinances exist against nuisances of all kinds, and, although a small community, rigid quarantine has been maintained all summer.

The sentiment of the citizens of the place, on account of its exposed situation, is that a quarantine station be established at Boca Grande Pass, and at Punta Rossa; also that there should be a general patrol of the coast for the purpose of protecting them against the introduction of yellow fever, and to prevent smuggling. All boats coming up the bay, they suggest, should be quarantined the usual time, and be provided with a certificate of health from the proper officer. This would create a feeling of security, and tend to invite business and population at this desirable health resort and important situation.

Cistern water is the principal supply. A small number of the inhabitants use surface wells. An artesian well with sulphur taste and odor belongs to the hotel; its depth is about 400 feet. The sewer-pipe connected, however, is not of the best construction, nor is it carried out sufficiently into the bay to insure against evil consequences.

The water-closets of the town are constructed generally as follows: Under the opening the closet is supplied with a tray lined with tin or zinc raised from the ground, and having perforations for the urine to pass into the sand below; letting the urine escape in this way, it is claimed, renders the odor less unpleasant. According to an ordinance, the solid matter is required to be removed outside the corporate limits every four days, and in a large measure it is converted into a fertilizer. There is no cemetery.

Mayor, W. H. Simmons; physician, Dr. W. H. Burland.

*Port Huron, Mich.*—Dr. Farnum telegraphs as follows:

November 3, 1888: "I have made investigation of small-pox in Sarnia, Canada; 3 cases; perfectly isolated; strict quarantine. No danger of contagion."

*Jacksonville, Fla.*—Dr. Joseph Y. Porter telegraphs as follows:

November 1st: "New cases, 56; deaths, 2; total cases, 4,210; deaths, 356. Patients, St. Luke's, 11; Sand Hills, 4."

November 2: "New cases, 28; deaths, 3; total cases reported, 4,238; deaths, 359. Patients, St. Luke's, 9; Sand Hills, 2."

November 3d: "New cases, 25; deaths, 2; total cases, 4,263; deaths, 361. Patients, St. Luke's, 9; Sand Hills, 2."

November 4th: "New cases, 11; deaths, 3; total cases, 4,274; deaths, 364. Patients, St. Luke's, 10; Sand Hills, 2."

November 5th: "New cases, 39; deaths, 2; total cases, 4,313; deaths, 366. Patients, St. Luke's, 12; Sand Hills, 2."

November 6th: "New cases, 42; deaths, 1; total cases, 4,355; deaths, 367. Patients, St. Luke's, 10; Sand Hills, 2."

November 7th: "New cases, 34; deaths, 3; total cases, 4,389; deaths, 370. Patients, St. Luke's, 12; Sand Hills, 2."

November 8th: "New cases, 25; deaths, 3; total cases, 4,414; deaths, 373. Patients, St. Luke's, 14; Sand Hills, 2."

November 9th: "New cases, 20; deaths, 6; total cases, 4,434; deaths, 379. Patients, St. Luke's, 14; Sand Hills, 2."

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

November 2d: "Morning report. Present: Officers, 4; guards, 11; employees, 40; refugees arrived, 3; discharged, 11; died, 1; remaining, 124."

November 3d: "Morning report. Present: Officers, 4; guards, 11; employees, 39; refugees arrived, 2; discharged, 9; remaining, 117. Fever camp, 4.

November 4th: "Morning report. Present: Officers, 4; guards, 11; employees, 39; refugees arrived, 12; discharged, 8; remaining, 131. Fever camp, 4—3 convalescent and 1 critical."

November 5th: "Morning report. Present: Officers, 5; guards, 11; employees, 33; refugees arrived, 1; discharged, 37; remaining, 85. Fever camp, 3."

November 6th: "Morning report. Present: Officers, 5; guards, 11; employees, 32; refugees arrived, 12; discharged, 11; died, 1; remaining, 85. Mrs. Simmons, from Uptonville, died. Fever camp, none. Conductor Hubbard has the fever this morning."

November 7th: "Morning report. Present: Officers, 5; guards, 11; employees, 31; refugees arrived, 7; discharged, 26; remaining, 66. Fever camp, 1—Hubbard, who is doing well."

November 8th: "Morning report. Present: Officers, 5; guards, 11; employees, 30; refugees arrived, 10; discharged, 2; remaining, 74. Fever camp, 1."

*Gainesville, Fla.*—Assistant Surgeon Martin telegraphs as follows:

November 2d: "Three colored and one white, new cases."

November 3d: "One death, J. M. Graham, should have been included in yesterday's report."

November 4th: "Three new cases, colored."

November 5th: "Six new cases, two colored and four whites. Sixteen colored and seven whites under treatment."

November 6th: "Two new cases, one death."

November 7th: "Two new cases, colored."

November 8th: "Three white and three colored, new cases."

November 9th: "One new case, one death."

*Enterprise, Fla.*—Dr. J. F. Hartigan telegraphs as follows:

November 2d: "Two new cases. All others doing well. Disease apparently under control."

November 3d: "No new cases. All others convalescing and well. Made two autopsies."

*Live Oak, Fla.*—Passed Assistant Surgeon Urquhart telegraphs as follows:

November 4th: "Dr. Hankins reports two suspicious cases this morning."

November 5th: "Dr. Hankins reports 4 cases here."

Assistant Surgeon Geddings telegraphs as follows:

November 6th: "Arrived here to-day. Total number cases to-date, 7. 1 death, 1 case under treatment, very sick. Town almost depopulated and in bad sanitary condition."

November 8th: "No new cases. Last case eight days old, and progressing favorably. Am having town cleaned and disinfected."

*Palmetto, Fla.*—M. B. Harrison telegraphs as follows:

November 6th: "For week ending 5 P. M., Monday, November 5th, at Palmetto, Fla., there were two new cases of yellow fever; deaths, 1. Total number cases to date, 84; total number deaths to date, 9."

Mortality Table, Cities of the United States.

| Cities. | Week ending | Estimated population. | Total deaths from all causes. | Deaths from: Cerebro-spinal fever. | Typhoid fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|
| New York, N. Y. | Nov. 3. | 1,541,652 | 630 | 6 | 21 | 39 | 7 | | 8 |
| Philadelphia, Pa. | Oct. 27. | 1,016,758 | 336 | 11 | 8 | 7 | | | |
| Chicago, Ill. | Nov. 3. | 800,000 | 231 | 12 | 6 | 21 | 2 | | |
| St. Louis, Mo. | Oct. 30. | 440,000 | 150 | 3 | 1 | 7 | | | 1 |
| Baltimore, Md. | Nov. 3. | 434,879 | 152 | 4 | | 5 | | | 2 |
| Boston, Mass. | Nov. 3. | 445,000 | 182 | 8 | | 7 | | | |
| San Francisco, Cal. | Oct. 26. | 330,000 | 107 | 1 | 1 | 2 | | | |
| New Orleans, La. | Oct. 27. | 248,000 | 140 | | | 10 | | | |
| Detroit, Mich. | Oct. 27. | 220,000 | 62 | 4 | | 1 | 2 | | 1 |
| Louisville, Ky. | Nov. 3. | 200,000 | 44 | | 2 | | | | |
| Milwaukee, Wis. | Nov. 3. | 195,000 | 37 | | | 1 | | | |
| Kansas City, Mo. | Nov. 3. | 180,000 | 35 | 4 | | 2 | | | |
| Minneapolis, Minn. | Oct. 27. | 180,000 | 47 | 9 | 1 | 6 | | | |
| St. Paul, Minn. | Oct. 27. | 175,000 | 47 | 6 | | 6 | | | |
| Newark, N. J. | Oct. 30. | 174,954 | 80 | 4 | | 10 | | | 1 |
| Rochester, N. Y. | Nov. 3. | 120,000 | 30 | 1 | | 1 | | | |
| Richmond, Va. | Oct. 29. | 100,000 | 36 | 3 | | | | | |
| Denver, Col. | Nov. 2. | 96,000 | 39 | 6 | 1 | | | | |
| Columbus, Ohio | Nov. 3. | 93,000 | 26 | 2 | | 1 | | | |
| Toledo, Ohio | Nov. 2. | 80,000 | 17 | 1 | | | | | |
| Nashville, Tenn. | Nov. 3. | 65,153 | 19 | 1 | | | | | |
| Fall River, Mass. | Nov. 3. | 65,000 | 27 | | | 1 | 1 | | |
| Charleston, S. C. | Oct. 27. | 60,145 | 35 | 1 | | 1 | 1 | | |
| Evansville, Ind. | Nov. 3. | 53,000 | 7 | 2 | | | | | |
| Manchester, N. H. | Oct. 27. | 41,000 | 17 | | | 1 | | | |
| Galveston, Texas | Oct 26. | 40,000 | 12 | | | | | | |
| Mobile, Ala. | Nov. 3. | 40,000 | 14 | | | | | | |
| Portland, Me. | Nov. 3. | 40,000 | 11 | | | | | | |
| E. Saginaw, Mich. | Nov. 3. | 33,000 | 4 | | | | | | |
| Burlington, Ia. | Oct. 31. | 30,166 | 4 | | | | | | |
| Davenport, Ia. | Oct. 27. | 30,084 | 9 | | | | 5 | | |
| New Albany, Ind. | Nov. 3. | 30,000 | 5 | | | | | | |
| Altoona, Pa. | Oct. 27. | 29,546 | 4 | | | | 1 | | |
| New Bedford, Mass | Nov. 3. | 26,845 | 9 | | | | 2 | | |
| Haverhill, Mass. | Nov. 3. | 25,000 | 6 | | | | | | |
| Jackson, Mich. | Nov. 3. | 22,500 | 2 | | | | | | |
| Newton, Mass. | Nov. 3. | 21,105 | 7 | 2 | | | | | |
| Newport, R. I. | Nov. 1. | 20,466 | 1 | | | | | | |

## THERAPEUTICAL NOTES.

**Antipyrine as a Uterine Sedative.**—Windelschmid ("Allg. med. Ctrl.-Ztg."; "Union méd.") prescribes enemata of thirty grains of antipyrine before or during menstruation in cases of dysmenorrhœa. In two obstinate cases he has known this treatment to prove particularly satisfactory, three doses being given (at intervals of twelve hours between the first and second, and of twenty-four hours between the second and third). He notes profuse sweating and slight ischuria as among the inconveniences of the method, and adds that it has sometimes been necessary to give a glass of wine or milk to avert imminent collapse. Rivière ("Gaz. hebdom. des. sci. méd. de Bordeaux"; "Union méd.") has found the same drug very efficient in allaying after-pains, in doses of fifteen grains by the mouth. A single dose proved enough in twelve out of twenty-eight cases, and two doses, at an hour's interval, in twenty out of thirty-eight cases. When it fails, he says, retention of placental débris or the like is to be suspected. He states that the drug is not eliminated by the milk.

**Iodide of Potassium in Broncho-pneumonia.**—Zinis, of Athens ("Bull. gén. de thérap."; "Arch. f. Kinderheilk."), recommends the administration of from seven to twenty grains of iodide of potassium daily in cases of broncho-pneumonia in strong children over five years old in whom the disease occurs otherwise than as an accompaniment of measles or whooping-cough. If it does not prove efficient within the first two or three days, he says, the treatment should not be continued.

**Parenchymatous Injections of Carbolic Acid in Angina Ludovici** have been employed in seven cases by Skibnewskji ("Med. Obse."; "Ctrlbl. f. Chir."), a solution of from two to three per cent. being injected four or five times a day, and the swelling treated by massage for ten minutes after each injection. In every instance the inflammation subsided speedily and the patient made a rapid recovery.

**Oil of Turpentine in the Treatment of Epistaxis.**—Ernyei ("Pester med.-chir. Presse"; "Ctrlbl. f. klin. Med.") recommends tamponing the nasal passages with oil of turpentine, having found it efficacious in three cases in which other measures had failed. The only objection to it, he says, is its irritant effect on the mucous membrane.

## ANSWERS TO CORRESPONDENTS.

*No. 238.*—He must deposit with the county clerk a copy of his diploma, paying that officer a fee of ten cents.

*No. 239.*—We do not know that the term has ever been applied to other ligatures than those made of rubber, but it might properly be given to a form of ligature that has been used in cases of varicocele, the source of the elasticity being a piece of whalebone. Rubber ligatures are to be had of the instrument-makers.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Lectures and Addresses.

### THE MEANS OF EFFECTING THE UNITY OF THE MEDICAL PROFESSION.

BEING A PORTION OF THE ANNIVERSARY DISCOURSE DELIVERED BEFORE THE NEW YORK ACADEMY OF MEDICINE, *Thursday Evening, November 15, 1888.*

BY D. B. ST. JOHN ROOSA, M. D., LL. D.

[AFTER a brief sketch of the Academy's career and a statement of the circumstances that had led to the present unsatisfactory status of the medical profession of the State of New York as a body in the esteem of the public, the speaker proceeded as follows :]

It is of unity of a higher, or rather of a broader, character than that between specialism and general medicine that I would now speak. It is of a unity once existing, which allows all those who in any way by their work in life, in studying either the structure of the human frame or the causation and nature of disease, are contributing to the mitigation or cure of physical suffering, to unite as members of the medical profession under the common name of physicians. In discussing the means for securing this unity, I shall consider only this State of New York. In studying its medical history and reasoning from it, I think we may find ample ground for the subject of this evening.

Although we may justly complain that we do not now possess the power that comes from union, and that we are thus made inferior to the profession in other countries, there is one advantage that we enjoy in America. Social position the American doctor may have. If he does not, it is clearly a fault of his own, for our American system confers no degrees of nobility except such as are the spontaneous gift of the people. The exceptions to this rule are not numerous. Sometimes great riches give undue and unmerited prominence in society ; but even in this case, unless the money is honestly earned or worthily inherited and used with liberality and friendliness to those less fortunate, riches confer no permanent prominence in any respectable circle in this country. The American doctor, like any other American citizen, however humble his origin, may enter any circle, where his abilities and character give him the right, as an equal.

The situation in some other countries is painfully different, and notably so in England, which in so many respects represents the highest type of our civilization, and yet where sometimes the stamp of the guinea is not on pure gold. A younger son of an English peer became enamored of medicine, and, pursuing his studies, obtained a qualification to practice. His family insisted that he must not practice in England, on the ground that an occupation of that kind was beneath his rank ; but they consented that he should pursue his profession in a neighboring capital. Successful there, he enjoyed a large practice. But it was observed that his assistant always attended the family of his country's legation, and that he never personally prescribed for any of them. He himself gave as a reason for this, to an American medical friend, that were he to do so he would so lower his social position that he could not be invited to dine with his exalted countrymen. Were it necessary, incidents known to many of us could be told to corroborate the truth of this particular narration, which would illustrate the correctness of this view of the social position of a doctor in medicine in England. Many of us have heard a distinguished English surgeon express his surprise at the high position taken by American physicians in the society of their own country. It is certainly true that a practitioner of medicine in England, unless under exceptional circumstances, when the disability is in part removed by knighthood, does not rank as what they are pleased to call a gentleman. He even ranks below the lawyers, and meekly takes up the position assigned to him, and, like the rest of the commonalty of that country, dearly loves a lord. Yet the position of the profession in England, on a scientific basis, is one of the most honored in the world. Many believe that, on the whole, it best represents the rank of our profession in the world, both by the reputation of its present members for scientific attainment and by its illustrious history. My object in this allusion is simply to show that there exists no obstacle in our country that can prevent us from securing any position as a body that our merits will justify. There are no lines of caste here that prevent us from obtaining all our rights and privileges as a learned and philanthropic body. But, as things are now, it becomes evident upon the most casual observation, and it has been repeatedly shown, that the medical profession as a body has no sufficient power or influence in many matters which should be absolutely under their control as in war campaigns, once entered upon, are under the direction of the commanding general. Only experts run engines by land or by sea. Bank presidents are not made of men unlearned in finance. Only scholars are professors of Latin or Greek. And yet private and public sanitary affairs, the prevention of epidemics, the government of hospitals are very often directed, in whole or in part, by men of very good business, military, or mechanical training, but with no knowledge of medical matters, but sometimes with professed skill in dealing with a recalcitrant and impracticable medical man. Boards of education, boards of health, sanitary legislation, are often conducted with but a feeble representation of medical men. When a doctor is appointed to a strictly medical position, requiring the highest type of medical learning and skill and experience, it is often because he is a man of attainments of a high order in petty politics, while his medical qualities are correspondingly low. This condition of things obtains because the people as a whole actually believe that the profession, as a profession, knows but little, if any, more about general sanitary matters or medical legislation than a level-headed and successful banker or railroad man or a scientific plumber. We are divided into so many parties, each crying its shibboleth, that the public at large have at last come to think that, however skilled a doctor may be in the management of a sick person or the direction of affairs in a house threatened or invaded by disease, he needs a good deal of lay oversight and repression when he assists in the management of matters pertaining to public hygiene or health. Fortunately, the United States army

and navy have been trained to think differently; and, from reasons which may be easily explained in a later stage of this discussion, no such opinions are held there.

For this state of things I, for one, have no fan't to find with the sovereign people. Neither am I bringing any accusation against the press of our country—a power that does so much in leading public opinion. It is generally on our side in any matter where we represent the best interests of the country. The blame should fall in part upon the rapidly changing condition of things in our country, and in part upon ourselves. The fact is, that we have for some years demanded very little more of the State than that we should be let alone. We have not until lately asked to have our laboratories or colleges endowed, even by individuals. We have assumed that our colleges are private institutions, in which no one but the students who attended them and the professors who owned them were at all interested. More than all, we have acquiesced in the taking away from us of privileges which formerly were conceded to us.

This brings me to the kernel of what I have to say. Our lack of unity depends not upon any want of social position, nor upon the estimate of us that the public have voluntarily assumed, but one that our own bickerings and quarrels have forced them to take. For many years the profession in this State has been practically detached from the governing power. It has submitted to this, and, instead of forming a part of the political commonwealth, it has chosen another way—one which has produced, and is producing, a pernicious state of things, harmful not only to the unity and honor of the profession which this Academy represents, but, what is far more important, to the community whom it serves.

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Any one who can get a degree from a rigid or a lax medical school, or who can get a diploma, which he has brought from some other county or State, indorsed by a college here, is allowed to practice medicine. In the earlier days we had censors chosen by the profession, who controlled the examination, and there was at least one standard made by independent men. These censors acted through the county societies or the three or four medical colleges of the State. To this system, but with much larger liberty of opinion, with absolute freedom of action in therapeutics and theories of the action of remedies, we must return. The State must concern itself, through its properly chosen agents, to know that those who are licensed to practice medicine shall know both the structure and action of the different parts of the human body, the methods for saving life and restoring functions by surgical operations, and the antidotes for active poisons. It must ascertain that those whom it allows to prescribe for the sick have availed themselves of opportunities for studying disease. Beyond this, the State may certainly allow complete freedom. There are those who look forward to a day when the standard shall be much higher than this. They lay great stress upon what is called an academic education, such as is indicated by having a degree of bachelor of arts from an American college. With this view I have no sympathy. Whether or not the college system of our country needs great modification for those who study theology or law, or who become journalists, may be an open question. But the present system, even when modified by elective courses, is not fitted for future doctors in medicine. It is a great waste of time, in my opinion, to cause a young man who proposes to study medicine to spend four years in an undergraduate college in the studies in which the ordinary college student is engaged. Two years, bringing the student up to the junior year, are important and sufficient for him. Then his university life should begin. Some day our colleges, instead of expanding into so-called universities, will take what are only apparently backward steps and become colleges, and let their young men out with two years less of Greek and Latin and then send them to real universities. The alumni and professors in undergraduate colleges are still as a body unprepared to accept this view. They consider those who hold it as enemies of sound learning. But finally President Barnard will have many followers. Our small college will become like the German gymnasia carrying a student through the essential part of classical training and mathematics, while the great colleges like Columbia, Princeton, Yale, and Harvard will be universities, where young men may enter directly upon professional and post-graduate studies. Students now enter our colleges too late and stay too long, if the profession of medicine is their goal. Until these reforms are brought, those who wish to study medicine should either enter scientific schools as soon as their preparatory studies are over, or leave the colleges as now constituted at the end of the second year. But this is an incidental subject, for the introduction of which I almost beg your pardon.

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But what is the remedy for the present diseased condition of our profession in this State? This remedy is to be found in making a common standard for the license to practice medicine—not a common standard for the degree of doctor in medicine. That should be conferred, as now, by each college according to its own ideas as to what constitutes a sufficient education for the honor. But the liberty to practice medicine should no longer be left in the hands of bodies, however respectable and however distinguished, which are actually only responsible to themselves. During the past few years, after a most thorough discussion, carried through several sessions, the principle of this statement has twice in succession been unanimously approved by the oldest medical society of this State. The last president of this society, Dr. Loomis, in his inaugural address, advised the Committee on Legislation to urge the passage of a law for a State board of examiners on the late Legislature, and, if unsuccessful, upon succeeding Legislatures "until it shall become law of the State." Only lately the member of the bar who of all others * has given by far the most attention to medical legislation has announced himself in an address as an advocate of such an examining board. There is only a single authority on medical education in our State who, so far as I know, openly opposes such a law. Dr. Austin Flint says on this subject: "State medical boards, appointed to determine by actual examination the qualifications of ap-

* W. A. Purrington.

plicants for license to practice medicine, can never be of any great practical benefit so long as it is deemed necessary to recognize in their organization certain so-called systems of practice, such as homœopathy and eclecticism." *

There are homœopaths and eclectics in Canada and in Virginia and Alabama, where such a system as the State Society of New York advocates is in full action, and yet no practical difficulty, but the greatest benefit, has been found in the operation of the law. There is no longer any opposition to the system on the part of our profession in our State, but the proposed law gets no further in the Legislature than to be sent to a committee, when a dispute occurs as to the ratio of representation on this proposed board, or some other minor point. This discussion gives our lawmakers an opportunity, of which they are not slow to avail themselves, to lay the whole subject on the table until the doctors can agree.

In the course of some remarks upon this subject in the State society some years ago, the president of this Academy predicted that the people themselves would some day demand the establishment of such a system, and then we should have it. It is with a view of informing some of the influential and conscientious members of the community in this State as to the needs of the profession, and through them the public, on this subject that this discourse has been written. Not many years since the people demanded that the privilege of entering the legal profession directly from a law school, without an examination by the courts, should be abolished, and it was abolished. The law schools of the State are only two in number, they are irreproachable in reputation, and no glaring improprieties, perhaps none at all, existed in their management. But the legal profession, and through them the public at large, grew jealous of any liberty to enter the profession other than that granted by an examination by an independent board constituted by the court. This kind of an examination the professors of a law school, however ably conducted, however endowed by individuals or corporations, could not furnish. As I have already said, in the State of New York, if a man or woman receives a degree of doctor in medicine in one of the regular chartered medical colleges of the State, he or she may practice medicine here without further leave or license. Those who come from other countries and other States must have a diploma from some regularly chartered college, and this must be indorsed by one of the colleges of this State. The number of men who acquired the right to practice medicine as they may by passing the examination of the Regents of the University and by license from the censors of County Medical Societies is so small that they may be left entirely out of consideration.

It is thus seen that the colleges, and one college equally with another, has the power of determining who shall practice medicine. The standard of attainment required by these various colleges in this State varies exceedingly. Not one of them, moreover, separates the matter of granting degrees entirely from the instruction. With this I have no quarrel. Those who have instructed the men are, on the whole, altogether the most suitable persons to determine their qualifications for a degree. But after they have determined this to their satisfaction and conferred the degree, the State should step in and say: "In behalf of the people, we will now decide whether the possession of this degree gives you the general knowledge required by the standard which the State thinks requisite for a license to practice. If the army and navy, if the hospitals, will not accept the fact of the possession of degree as sufficient, neither will we." Certainly the physical welfare of the men and women and children of the State requires as much supervision and solicitude as that of the soldiers and sailors and the inmates of hospitals. These medical colleges of this State, as everybody knows, are, for the greater part, of the most respectable kind. The education that may be obtained in them is of the highest quality. The ablest men in the profession are in the faculties. Until within a few years an excessively large proportion of the scientific work of the profession—work that is always of ultimate value to the patient—was done by the professors and instructors in these institutions. The well-substantiated renown of American medicine—a renown that causes its literature to be translated into every civilized tongue, and its great workers to be everywhere recognized—is to be ascribed to these colleges. Even now, when professional activity is much more widely diffused and better organized outside of the colleges that grant the degree of M. D. than ever before, these institutions continue to do their work as well or better than ever; and yet but very few large hospitals will give one of their graduates an opportunity to practice in them, even in a subordinate way, without first subjecting him to a more or less rigorous examination, conducted by the medical officers of the hospitals. I have known one instance at least when three candidates for one vacancy were rejected, and the hospital sent out for other candidates. Not one of these young graduates is allowed to practice among the soldiers of the United States army, or the sailors of the United States navy, until he has passed another examination by the medical officers of the army and navy; and, as a matter of fact, a large proportion of those who attempt to pass this latter examination are found incapable.

Yet the State of New York gives this doctor in medicine the right to practice without further question. It says, by inference, "although many of you are not qualified to enter a civil hospital and treat the patients there, even when your work is carefully supervised by men of experience; although very many of you are not fit to have the care of sick or wounded soldiers or sailors, yet all of you may go wherever you can find an opportunity in our borders without any independent supervision." It is willingly conceded that in some departments of medical practice no such high grade of qualifications is required as should be among the picked medical officers of the army or navy. But investigation shows that these graduates of medical colleges are not rejected by army and navy medical boards because they are deficient in the highest departments and the non-essentials of medical knowledge, but because they do not know the antidotes for poisons, because they do not

* "College and Clinical Record," May and June, 1888.

know how to set a broken arm or leg, how to tie an artery or dress a wound, how to rescue a person from drowning—above all, how to recognize a common disease. Certainly the State should restrain mad dogs from running at large and regulate the storage of gunpowder. The State may certainly not concern itself to know whether a doctor knows the French language or the fundamentals of geology; but it should know whether a licensed practitioner can really practice whatever would be everywhere conceded as the essentials of his art. Such a board would not create a revolution. But it would do something to protect the community from the dangers of ignorance in the essentials of the practice of medicine on the part of those who assume to take care of their health. As things are now, most of those who receive the degree of M. D. would easily pass the State examination. But a dangerous few would be thrown out. Such a system once established, and sects in medicine would soon be practically destroyed. There would be a common standard of fitness based upon a knowledge of the structure of the body and the recognition of disease. Differences in the modes of treatment might safely be left to themselves were we once assured that all practitioners were qualified in essentials. One of the medical orators and a vice-president of this Academy, Dr. W. H. Draper, at the opening of the new College of Physicians and Surgeons, lately said: "It is a melancholy but indubitable fact that the standard of medical education in this country is far below that of England and the Continent of Europe."

I do not believe that this lowering of the standard of what may be called the general average of medical attainment in this country is due to the fact that many of our doctors—more than half of them—are not alumni of undergraduate colleges, and deficient in Latin and Greek, but because many of the medical colleges have not sufficiently instructed them in anatomy and physiology, in medicine and surgery, and in good habits of observation. It is not altogether in the preliminary but also in the professional training that care has not been taken—and great defects have occurred. The terms have been too short, and in many instances the degrees have been too readily granted. I am not aware of a civilized country but our own where irresponsible medical schools are allowed to determine the right to practice medicine. It is to this condition of things that they owe their general superiority to us in the qualification of the average doctor in medicine. When a medical congress meets in Amsterdam, or Copenhagen, or Brussels, there is no difficulty in the enrollment of physicians. If a man has a qualification, he is enrolled. But when one meets in Philadelphia or Washington, how different! A great many things must be inquired into, until assurance is had that the degree represents what it assumes to. Where is the college that grants it? How long is its course? Are its candidates properly examined? In short, to say that a man possesses a degree from a regularly incorporated college in this country by no means determines that he is deemed a fit associate in a learned body devoted to the consideration of medical subjects. It is true that considerations of belief in so-called dogmas are sometimes made grounds for exclusion here; but the fact remains that the American standard is far from being uniform, and is generally too low, and that for this reason much more and closer scrutiny of what is technically called a medical qualification must be made here than in a European state. It conveys no such assurance when found in the hands of a medical man in this country as it does abroad that we are dealing with a reasonably well-informed doctor in medicine. Now that it has been practically settled by the voice of the profession that they desire the protection of the community by a change in our laws—such a change as will cause all who in future desire to practice medicine in our State to pass a common examination and come up to a common standard—I have taken the opportunity afforded me by the invitation to this discourse, which is, by a by-law of the society, devoted to the laity as well as to my brethren, to attempt to influence the public at large to unite with us in securing a law constituting a board of examiners for the license to practice medicine. I believe, with our president, that without your sympathetic and active co-operation the accomplishment of such a reform will be impossible. But when you see your way clear to demand it of our legislators they will comply, and that speedily.

Such a law will in time effect the unity of the medical profession, and greatly increase its beneficent power. This latter effect is certainly desired by every citizen. If it can be demonstrated to you that under a new system of admission to the practice of medicine increased confidence in the average medical adviser will arise, and that you will be actually safer in limb and health, no further argument will be needed. To those who believe in gifts of healing in the nineteenth century, and in the power of the seventh son of the seventh son, no argument can be effectual. But to those who believe that the possession of a certain number of the facts in what is called medicine is a necessary prerequisite to a right to practice, that a man should know the anatomy of the human stomach, for example, before he puts drugs into it, the situation of a blood-vessel before he tries to tie it, that he shall be able to distinguish pneumonia from peritonitis, I confidently appeal for a law that shall allow no one to practice until a proper and independent authority has determined that such facts have been learned by the candidate.

As I have intimated, as a minor but not unimportant consideration, such a law will break up the odious scandal that has so long been so abhorrent to many outside of our profession, of so-called different schools in the treatment and care of the sick, standing apart from each other, or retreating in the face of a common enemy. Let us educate all medical men up to a common standard, and then all difficulties in the way of relations with each other over the patient will vanish. This proposed law will also cause a more general interest in seeing that the proper facilities for the study of medicine are amply furnished. Our colleges, our laboratories, our centers of instruction will become not isolated, but general objects for private benevolence and philanthropy. There is really no subject in which the community at large has a more vital interest than the quality of its medical men. Every one, except an occasional railer at

our impotence, who mourns that we can not compass the infinite and cause men and women to avoid the awful but irrevocable truth, "What a man soweth, that shall he also reap," realizes that physicians are important as individuals to the general public, but it is for our recognition as a great factor in the various parts that make up the edifice that we call the State that I plead. Through such a recognition, with its accompanying supervision, although not in the absolute and paternal way of unrepublican, or rather of unconstitutionally governed, countries, your safety and care as individuals will be better assured.

In one of the first months of the War of the Great Rebellion a squadron of United States cavalry was galloping at night through the lanes of northern Virginia. A young medical officer rode beside the captain in command. Suddenly, as evidence of a hostile force in ambush came to the trained eye or ear of the officer in command, a man whose experience had been long among the Indians of the frontier, there was the order, "Halt!" After some hurried direction to the orderly sergeant, he concluded: "Put the doctor in the center; we may need him." So I ask you, while the physician shares with you the perils and vicissitudes of life, care for him and his class, put them in the center, safe from needless injury and unwarranted peril, and where they may, to their capacity and in the proper time, help to maintain and preserve the commonwealth.

## Original Communications.

### CEREBRAL ABSCESS
#### AS A SEQUEL OF COMPOUND FRACTURE OF THE SKULL.*

By FRANK W. ROCKWELL, M. D.,
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On the 5th of December, 1887, I was asked by Dr. Oswald Joërgh to see a boy of six who had been injured five weeks previously, and obtained the following history:

While crossing a railway, he had been struck by the locomotive, and picked up unconscious. He lay in this condition for a few hours and was then seen by his physician, who found a depressed compound fracture of the right temporal bone, involving the adjacent portions of the sphenoid and parietal bones, and extending in the latter up to the temporal ridge. Another fracture, without depression, was located in the mastoid portion of the parietal. The tip of the ear had been cut smoothly off, and a large flap of skin, which had been lifted up, allowed easy access to the bony surfaces beneath.

Several fragments of bone were removed, but, as the boy had recovered his consciousness, the larger fragments were left undisturbed, the wound thoroughly irrigated with the mercuric bichloride, and a gauze dressing with iodoform applied, the flaps having been previously united with catgut sutures and a rubber drain introduced. On the third day the sutures were removed, as the boy was delirious and a severe headache had developed. The temperature was 104° F. and the pulse 144. Respiration 32. No vomiting. The wound was found to be suppurating freely, and the symptoms subsided rapidly. On the following day, November 1st, the temperature had dropped to 99·5°, and the boy was perfectly conscious.

Two more fragments of bone were removed November 3d, and from this time on the boy remained perfectly well with the exception of a high pulse-rate, which ranged from 100 to 144. There was no vomiting or headache and the temperature was normal. The wound healed, with the exception of a slight fistula over the anterior fracture.

*December 3d.*—The thirty-seventh day after the injury the patient was seized in the night with severe convulsions limited to the left arm and leg, intense headache on the injured side, and high fever. His mind remained unaffected, however, except during the convulsive seizures or for a few hours after.

*5th.*—Two days after this I saw him, and, detecting dead bone through the fistulous tract, urged his removal to a hospital with the view of exploring for suspected abscess. This, however, his family would not consent to, and for the next week he had no symptoms but occasional flurries of high temperature and a continuously rapid pulse.

*13th.*—He was seized with rigors and convulsions, for the first time accompanied by vomiting. The mind, however, remained clear and the temperature normal, except after the convulsions, when it became slightly elevated.

*18th.*—Five days afterward he had another rigor, accompanied by severe headache and convulsions, and operation was again urged by the attending physician.

*20th.*—Permission having been finally granted, chloroform was administered and the fistula exposed by a curvilinear incision over the anterior parietal region. The greater part of the squamous portion of the temporal bone was depressed as a whole (as if from a hammer-blow), and fragments of the sphenoid and parietal were firmly interlocked with it. No spicula or loose fragments were found. The dura was thickened and inflamed, and bulged into the wound without pulsation. A small incision, including a quadrilateral flap, was made, and the membrane lifted up, when the brain beneath protruded through the opening; it was dark, granular, and did not pulsate. An exploring needle found pus at the depth of an inch, and about three ounces of yellow laudable pus were evacuated with dressing forceps passed by its side. A probe demonstrated a cavity as large as a hen's egg; this was irrigated with mercuric-biniodide solution (1 to 2,000), and then the dural edges were sutured with fine catgut, a drain of the same material having been led from the bottom of the abscess to the posterior angle of the wound. The skin flaps were closed with a continuous catgut suture except at the exit for drainage, and the wound was dressed with iodoform and paper wool. In a few hours the temperature fell to the normal and the pulse to 86. The wound healed except at the drainage outlet in a few days, and pus was discharged for a week. After this the convalescence was uninterrupted, and on the thirteenth day after the operation the boy was about the house. On the thirty-first day he was discharged well.

*June 8, 1888.*—I saw him at my office six months after in perfect health. The father states that when he is angry a pulsating swelling can be seen at the site of the operation. This is filled with a firm but elastic connective tissue, and is of some surgical interest as illustrating, so far as it goes, the correctness of Horsley's views as regards the very early withdrawal of drainage apparatus and the immediate suturing of the skin flap in operations upon the skull, with the purpose of both preventing hernia of the brain and obtaining a certain amount of compensatory pressure from accumulated wound secretions. In this case the catgut drain was removed and the wound left to close on the fourth day, as the amount of pus discharged was so slight.

* Read before the New York Surgical Society, October 10, 1888.

In looking over the literature of the subject I can find but seven similar cases in which recovery followed operative relief, although successful explorations for intracranial suppuration, due to other causes—such as otitis, fevers, blows, etc., or in which the accumulation of pus was between the cranium and the dura mater—have been done with increasing frequency during the last few years.

Case I.—Elcan* reports the case of a boy of five who sustained a fracture of the left parietal bone from the kick of a horse. Brain matter exuded from the wound, but there was no apparent depression. The patient did well until the seventeenth day, when symptoms of compression appeared, with impairment of speech, hemiplegia, and a gradually increasing coma. On the twenty-sixth day the skull was trephined and depressed bone found and elevated. Cold-water dressings were used. Hernia cerebri followed, and, although the boy's intelligence remained perfect, complete aphasia gradually developed. On the sixty-second day intense headache, accompanied by a serous discharge from the wound, developed and increased for the next twelve days, at the end of which the ununited fragments of bone left at the former operation were removed, leaving an opening two inches and a half by an inch and a quarter wide. An abscess was now discovered, and about half a pint of thin, white pus removed, leaving a cavity at the bottom of which the base of the skull could be felt. The cavity was stuffed with lint, saturated with a solution of carbolic acid. At the end of two days the walls of the cavity had so completely collapsed that the brain was again seen protruding from the wound. At the end of a year and a half complete recovery had been attained.

Case II.—W. O. Maher† had under his care a girl of four years and a half, with a compound fracture of the right frontal bone, necessitating the removal of necrosed bone some weeks after the accident. This case also was complicated by hernia cerebri, and as a result a sinus remained, when, three months after the accident, convulsions limited to the left arm and face, pain in the head, and symptoms of an alarming character suddenly developed. The sinus was opened up, and a director passed through its deeper angle downward and backward into the right frontal lobe; pus was evacuated, provision made for thorough drainage of the abscess cavity with rubber tubing, and irrigation with carbolic acid (2½ per cent.) made. At the end of a fortnight the drain was removed, and an excellent recovery followed.

Case III.—Petit‡ trephined a child of nine years for a compound fracture of the frontal bone, elevating depressed fragments. On the fifth day fever and headache came on, and upon the following day the dura mater was found bulging into the trephine opening. It was incised and about half an ounce of fœtid dark-brown fluid evacuated. The symptoms, however, continued unrelieved until the eleventh day, when rapid improvement occurred, and the dressings were found saturated with pus. Recovery ensued in two months.

Case IV.—P. H. Watson* operated on a girl who, a few months previously, had been struck on the head by a piece of metal, sustaining a compound fracture of the frontal bone without depression. The wound healed slowly under water dressings, but a fistulous tract remained through which a probe could be passed three inches and a half into the brain; through this opening pus was constantly discharged. The patient was in good general health, and complained of no pain or headache. Six months after the injury the fistula was laid open and the bone beneath trephined; the dura was adherent, and incised crucially, when a wineglassful of pus escaped in "pulsatory waves." No drainage, and simple water dressings constituted the treatment. Slight convulsions followed the operation, but rapidly subsided, the patient improving steadily until the eighth week, when the wound became obstructed and the patient at once passed into a state of somnolence accompanied by severe convulsions. Rapid subsidence of the symptoms followed the reopening of the wound, and recovery ensued in six months.

Case V.—Ercilza* had under his care a man wounded by a stone, which produced a compound depressed fracture "at the root of the nose." No head symptoms of any kind were present, and the wound was treated antiseptically, but on the twelfth day a pulsating tumor appeared, from which, when incised, pus escaped in jets. The man's mental condition was perfect, but a trephine was applied at the side of the depressed bone, and, after elevating it, the operator removed a fragment of bone from the first left convolution in which it lay surrounded by an abscess, which emptied itself through the incision. Another abscess was found between the brain and the skull, so large as to admit the passage of a thick drainage-tube five centimetres. Irrigation with the mercuric solution and a Lister dressing were applied. As the wound was in an awkward position for drainage, the patient was required to stoop over when being dressed, and "one could see the brain fall in the same direction, expelling the pus mixed with cerebral fluid." In two months the patient was discharged cured.

Case VI.—Holden† had a case of compound fracture of the left parietal involving the frontal in a boy of eighteen, injured by a bursting bottle. Brain matter escaped through the wound, but the patient was discharged in six weeks with no symptom but deafness on left side. No paralysis or mental disturbance was manifested at any time. For some months small fragments of dead bone came away, but the boy resumed his work in a few months and continued at it until a year after his injury, when he fell, sustaining a severe concussion of the brain, followed for three weeks by convulsions limited to the left leg and arm. He was then free from the convulsions for five months, when they returned at intervals for two weeks, accompanied by vertigo. He was now examined and pus was found exuding from the site of the old injury, where a fistula remained. A month later severe headache and rapidly deepening coma developed, in which condition he was operated upon without an anæsthetic. Trephining was done over the fistula, the dura was divided and turned back, and five ounces of fœtid pus were evacuated. The patient at once became conscious, the pulse fell from 160 to 80, and the patient recovered in four months.

Case VII.—A case similar to my own was reported to this society by the late Dr. Little,‡ a child of seven having developed symptoms of abscess a month after a compound fracture of the right parietal. Coma and convulsions, which were present, rapidly disappeared after the removal of some undepressed fragments of bone, and the evacuation of a drachm of pus by simple puncture. Recovery, complicated by hernia cerebri, followed.

These eight cases are the only ones of recovery from operation for abscess following compound fracture which I have been able to find. In three cases operated upon by

* "Am. Jour. of the Med. Sciences," 1880, p. 426.
† "Australian Med. Gazette," December, 1885.
‡ "Int. Encyclopædia of Surgery," vol. v, p. 82.
* "Edin. Med. Jour.," 1870, 16.

* "Provincial Med. Jour.," 1887, p. 179.
† "St. Barthol. Hosp. Reports," 1873, 96.
‡ "Annals of Surgery," 1883, p. 137.

Hulke,* Kinloch,† and Noyes‡ a fatal result ensued, but from causes not attributable to the operation.

Seven cases of abscess complicating compound fracture are on record in which from various causes no operation was done, or the pus not evacuated, although within easy reach; or where obstruction of the opening already made was allowed to go unrelieved. These cases all terminated fatally, and were reported by J. Pancoast ("Treatise on Op. Surg.," p. 106), Morton ("Phil. Med. Times," Oct., 1874), Lucas ("Lancet," 1884, vol. ii, p. 998), Post ("Annals of Surg.," 1883, p. 138), De la Peyronie ("Mém. de l'Académie royale de chir.," tome i, p. 319, Paris, 1743), Ashhurst ("Trans. of the Path. Soc.," Phil., 1876, p. 2), and Le Moyne (Phil. "M. and S. Rep.," 1883, vol. xlviii, p. 629).

The latter case possesses some features of special interest, as the boy, who was conscious on admission to the hospital, and gave no signs of cerebral mischief except pain during dressing and sighing respiration, died suddenly in his sleep during the night of the sixth day, the autopsy revealing an abscess of the size of a chestnut in the fissure between the lobes of the cerebellum, which, lying under the arachnoid, had caused death by pressure on the fourth ventricle and respiratory centers.

Besides the classical case of Dupuytren,# the first recorded success, the following cases of compound fracture, caused by penetrating injuries, were also successfully operated upon for consecutive abscess:

A policeman received a comminuted fracture of the left frontal bone opening into the sinus. Loss of vision in the left eye, headache, and vomiting led to exploration of the wound, evacuation of pus from the orbit, and thorough drainage of the wound. By the third week sight was returning, and the patient was able to go out by the thirty-third. This indiscretion was followed by serious head symptoms, and at the end of a week profound coma and involuntary evacuations. A trephine was now applied to the site of the injury and the brain explored in various directions, until at the depth of six centimetres and a half pus was detected and evacuated by dressing forceps, and a drainage-tube applied. The patient was conscious, and conversed three hours after the operation, and four months later was able to resume his duties.‖

A man under Mr. Rivington's^ care, who had received a punctured wound of the right parietal bone from a falling file, was trephined a month after for head symptoms, which had begun on the third day after the injury, and pus evacuated from beneath the dura. In two months he was discharged as cured. In nine months he was again operated on for left hemiplegia, convulsions, and a tender and contracted cicatrix at site of injury. This was incised, and his symptoms rapidly disappeared.

Seven months after, the convulsions again appeared, accompanied by severe headache and impairment of speech and vision. A small piece of necrosed bone was removed, but with no improvement. Four months later he was again operated upon while still suffering from hemiplegia and double optic neuritis. The trephine hole was enlarged, a bit of dead bone removed, and the dura punctured. Large amounts of pus escaped for a day or two, and the patient recovered perfectly in two months.*

A soldier, several weeks after a gunshot fracture of the skull, which had left a fistulous opening from which pus, blood, and broken-down brain substance escaped, was trephined by Watson,† and a portion of a ball lying in an abscess cavity was picked out with a dressing forceps from the left hemisphere. The lad, who had previously been in a state of extreme exhaustion, rapidly recovered.

Weed‡ operated successfully on a case in which a pistol-shot wound of the forehead was followed by convulsions, aphasia, and coma. Recovery followed the evacuation of half an ounce of offensive pus.

Thomas,# of Kentucky, had a case in which a cow's horn penetrated the inner canthus of the left eye, and, ranging upward, tore off the whole frontal bone, leaving it hanging by the skin of the temple like a door upon its hinge. All loose bone was removed, the periosteum and flap put back in place, and drainage made with silk threads. Recovery, with reproduction of frontal bone, occurred under simple water dressings.

This case, occurring in 1875, is probably the first in which drainage was practiced in this country. It is doubtful, however, if it was a true case of abscess, though so reported. Of the cases operated upon for abscess following penetrating injuries of the skull, four have proved fatal; they were the cases of Noyes ("Am. Jour. of the Med. Sci.," 1882, p. 45), Heustis ("Alabama Med. Assoc. Trans.," 1881, p. 506), von Bergmann ("Wiener med. Presse," 1886), and Nancrede ("Int. Encyc. of Surg.," vol. v, 1883), while many cases are scattered through the literature of the past twenty years, in which, as in the group of seven mentioned in the "Surgical History of the War" (vol. i, p. 184), the patients were allowed to die unrelieved, although, as the autopsies proved, operative measures would have been easy of performance, and probably successful in most of them. A summary of the twenty-six cases of cerebral abscess now reported shows that, out of twenty cases operated upon, fourteen were successful; that, out of the six fatal cases, life was prolonged and the cerebral symptoms were entirely or greatly relieved in four; while a comparison of the cases in arbitrary groups shows that, with two exceptions (in a boy of eighteen and an adult), the eight recoveries from compound fractures occurred in children under ten, while, with one exception (in a boy, age not stated), the six recoveries from perforating injuries were adults. The six fatal cases were all in adults.

The number of recoveries, therefore, is nearly twenty per cent. higher in operations for cerebral abscess complicating open wounds of the cranium than in those done for abscess arising from all causes, so far as we can judge from the meager statistics at present available, and stated by Nancrede as fifty per cent. If the present surgical tenets in regard to free drainage of suppurating cavities and actively inflamed tissues are correct, the reason for this fact is not far to seek. The tolerance of the brain to operative interference when conducted on these principles certainly needs no demonstration, while recoveries from the most extensive

* "Int. Ency. of Surg.," vol. v, p. 85.
† Phil. "Med. News," 1882, pp. 41, 121.
‡ "Am. Jour. of the Med. Sci.," 1882, p. 45.
# "Leçons orales," 2d ed., tome vi, p. 146.
‖ "Am. Jour. of the Med. Sci.," July, 1884, p. 17.
^ "Brain," 1882, vol. iv, p. 41.

* "Brain," iv, 13.
† "Edin. Med. Jour.," 1870.
‡ "Int. Encyc. Surg.," vol. v, p. 82.
# "Med. News," Feb., 14, 1885.

cranial fractures no longer excite more than a passing interest.

This fact that free drainage is at once provided for in injuries of this description, combined with the improved methods of treating such wounds, would seem to account for the extremely rare appearance of abscess as a sequel to them.

The converse of this proposition would seem to point to the same conclusion, since glancing blows upon the skull, where the skin is unbroken, and gunshot wounds whose external orifices are soon closed by inflammatory processes or shreds of tissue, are among the most frequent causes of traumatic cerebral abscess.

Of course, in both these classes of injury the splintering of the inner table adds a fresh element of danger, if left unrelieved, abscess from this source having been the most common cause of death in gunshot wounds of the skull during our civil war, under the expectant treatment of that day.

So far as diagnosis is concerned, the most constant symptoms present in the cases reported were headache or tenderness on pressure upon the affected side, with suddenly developed convulsive seizures, terminating in paresis and coma. Rigors, giddiness, and vomiting were seldom noted, while subnormal temperatures, to which some importance has been attached by Nancrede, were rarely seen; on the other hand, rapid variations from nearly normal to higher temperatures were oftener recorded. Optic neuritis, when looked for, was seen in very few cases, and then at a late period of the disease. When found, however, at the onset of the acute symptoms, with no general disease as a cause, it is, according to Gowers ("Diseases of Brain," p. 231), of great diagnostic value. So far as their bearing upon our present knowledge of cerebral localization is concerned, these cases, as well as many others which I have looked over in connection with them, bear out the conclusions of Starr,* that abscess of the frontal lobe is accompanied, as a rule, by neither paralysis, aphasia, loss of sensation, nor sensory phenomena, the prevailing disturbance being one of reason or judgment, while large accumulations of pus may be present in the temporo-sphenoidal lobe with no subjective symptoms other than deafness in the opposite ear, or loss of smell; and, finally, hemianopsia or visual hallucinations point with fair probability to abscess of the occipital lobe. P. S. Connor† mentions a case in which paralysis of the arm (and no other) accompanied a punctured fracture of the foot of the first frontal convolution, the rest of the motor area being healthy. And a few similar exceptions to what are at present accepted as laws have been noted; the exceptions, however, are apparent rather than real, and are being rendered less frequent as more exact knowledge of the functions of the cortex is acquired. More especially is this true since the discovery by Duret‡ that motor disturbances of a given limb or region may be due to irritation of the dura mater, a fact which would probably explain the exception just noted, as well as some of the cases in which spasm or contractures of muscles have occurred on the same side as the abscess or injury.

Generally, however, in abscess following compound fracture, the site of the external injury, taken in conjunction with the nervous disturbances, offers clear indications as to the seat of the suppurative process. When, however, the location of that area as determined by the nervous phenomena is remote from the fracture, the surgeon as a rule is justified in disregarding the latter, and exploring directly over the region indicated by the former, as has been successfully done by Macewen and others.

While it seems to be the plain duty of the surgeon, in the light of modern researches, to treat all localized intracranial suppuration as he would similar affections in other parts of the body, and by incision, irrigation, and drainage to avert the possibilities of diffused inflammatory conditions or rupture into the intracranial cavities, it would seem still more incumbent upon him to prevent the inception of these processes by early removal of their exciting causes.

In the case of punctured and gunshot wounds and of compound fracture attended by depression of the fragments, or even with comminution without depression, I believe it is now a generally accepted axiom among surgeons that early removal of the loose or depressed fragments is not only justifiable but advisable, even where no brain symptoms are present, the operation being viewed as a purely preventive measure. With regard, however, to simple undepressed fractures or simple depressed fractures without accompanying brain symptoms, or even compound fractures where no depression or comminution exists and brain symptoms are absent, a wide variety of opinion still exists. In looking over the literature of cranial injuries, one can not but be impressed with the large number of fatal cases of abscess following slight injuries to the head and accompanied by fracture of the inner table of the skull with little or no external sign beyond a fissure. The case-books of hospitals and the experience of every surgeon afford proof of their frequency. Twenty cases of fracture of the inner table without injury of the outer are reported as having occurred from glancing gunshot wounds of the scalp during the late war,* all of which, with one exception, proved fatal, the solitary survivor recovering after several months with the loss of a large piece of the occiput from necrosis. Of the nineteen others, I find that thirteen proved fatal from cerebral abscess, while of the remaining six no mention is made of the autopsy in four, though one patient had marked symptoms of abscess before death, and the two others are described as having died from encephalitis. As a matter of fact, this class of fractures is the most common cause of traumatic abscess in civil as in military practice, and as such should be logically treated by early exploratory incision of the scalp and trephining the bone if fissure be found or brain symptoms have developed. It is certainly far less dangerous to the patient to have a simple fracture converted into a compound one under antiseptic precautions than to leave him subjected to the uncertainties of his position, especially as

* "Am. Jour. of the Med. Sci.," April, 1884.

† "Annals of Surgery," 1885, vol. i, p. 380.

‡ "Brain," 1878, vol. i, p. 29.

* "Med. and Surg. Hist. of the War of the Rebellion," Part I, p. 150.

the tolerance of the brain to properly conducted explorations is now so well known. I can not bring this paper to a more fitting close than to quote the very recent remarks of one of the most practical and conservative of English surgeons, Mr. Bryant:

"Under all circumstances it is the surgeon's duty to remove whatever source of trouble the presence of a depressed fracture may bring to an already serious case of cerebral injury."

"Should any symptom appear or persist which even suggests any intracranial complication, the operation of trephining should be at once had recourse to."

"The cerebral injury needs the surgeon's care, and not the fracture, which will take care of itself."*

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## CHRONIC PURULENT INFLAMMATION OF THE TYMPANIC ATTIC (RECESSUS EPITYMPANICUS).

*BASED ON THE OBSERVATION OF TEN CASES ADDITIONAL TO TEN CASES ALREADY REPORTED ELSEWHERE.*†

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My first communications on this important aural disease were made in a "Treatise on the Ear," in 1877, which were further continued as a report of ten cases, with their treatment, in the "American Journal of Otology" in 1881. Again, in 1884, in a second edition of "A Treatise on the Ear," I published further considerations, especially upon the treatment of this disease.

Since the latter date I have collated the notes of ten cases observed by me, and now lay them before this meeting.

This subject has been most ably written upon in this country, since between 1874 and 1883, by Dr. J. Orne Green,‡ Dr. Clarence J. Blake,# Dr. Horace G. Miller,‖ and Dr. Albert H. Buck,△ and subsequently by Dr. Samuel Sexton ◊ and Dr. H. N. Spencer.‡ In Germany, Politzer wrote of this disease as early as 1870.↕

Subsequently in Germany, Morpurgo,‡‡ Hessler,** Düsterwald,†† Paul Wirtz,‡‡ Kretschmann,## and Walb‖‖ have published articles on this subject, and incidentally this disease has been mentioned by von Tröltsch (1881), Bezold (1883), and Schwartze (1885). Aside from these two sources, I know of no other publications on this subject in any other country. This I feel must be due to the fact that the form of the purulent disease has not been recognized, for that it exists elsewhere than in America and in Germany we all feel very sure. I feel quite sure I have overlooked this particular lesion myself in some cases of chronic purulent otorrhœa which I have not been able to observe often. The cases which I now briefly present are numbered from XI to XX, as they are really a second series of ten cases additional to those already presented elsewhere, as referred to, and make a total of twenty cases I have reported.

Case XI.—George G., aged forty-two, presented himself for the removal of a plug of cerumen. After the auditory canal was cleared a small ulceration and perforation of the membrana flaccida was discovered. This was evidently due to erosion and pressure of the wax plug, and may be classed among those of traumatic origin. There was no pain, and the ulceration and perforation healed rapidly upon removal of the cause of irritation—viz., the pressure from the mass of cerumen.

Case XII.—The Rev. D. K., aged sixty-five, presented a perforation in the right membrana flaccida, with copious and offensive purulent discharge. Under the use of instillations of a solution composed of sulphate of zinc, gr. j; salicylic acid, gr. j; and water, f ʒ j, the discharge became less and the hearing improved greatly. In this case there was shown a tendency to the formation of a leathery scale of pus over the perforation, as is often shown in cases of this form of aural disease. The case had been very chronic, but had never suffered pain from subacute attacks.

Case XIII.—Miss H. T., aged twenty-eight, stated that a few months previous to the first consultation she had first observed a discharge from her left ear, without any preceding pain. On examination, there was found a large polypus blocking the fundus of the canal, obscuring the membrana tympani. The polypus was snared off, and the pedicle treated by touching with chromic acid. When the latter was finally entirely removed, a large perforation, embracing the entire flaccid membrane, was discovered. The discharge was checked by the use of instillations of alcohol and water.

Case XIV.—Miss Margaret X. Y., aged thirty, had scarlatina at the age of three years, which was followed by otorrhœa, and some years later polypi were discovered and removed. Her hearing was very bad while a school-girl. Symptoms of phthisis set in in early womanhood, and the patient had a hard struggle to reach thirty. Chronic otorrhœa continued in both ears, but chiefly in the right ear. Travel in Europe and California relieved the phthisical symptoms to a great extent, and the ears became less troublesome. The first examination revealed a perforation in the membrana flaccida of *each* ear. In the right ear there were granulations and considerable suppuration; in the left ear no granulations, and only a slight purulency. The hearing was best on the left side. Treatment had the effect of checking the discharge on the left side, and lessening it on the right side, in the course of a month. In the autumn of this same year—*i. e.*, four months later—there was a return of discharge from both membranæ flaccidæ, attended with eczema of both external auditory canals. The cachexia of this patient prevented entire cure. She died abroad this summer.

Case XV.—Mr. E. R. D., aged twenty-five. This case had been under treatment for chronic aural catarrh ten years previous to the beginning of his purulent disease. He stated that two years before this consultation, October 12, 1882, he had had

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* Bryant, "Lancet," September, 1888.

† Read at a special meeting of the American Otological Society, at Washington, September 18, 1888.

‡ "Boston Medical and Surgical Journal," March, 1874.

# "Transactions of the American Otological Society," 1874.

‖ "Transactions of the American Otological Society," 1878.

△ "Diagnosis and Treatment of Ear Diseases," New York, 1880.

◊ "Transactions of the American Otological Society," 1885.

‡ 1887.

↕ "Wiener med. Wochenschrift."

‡‡ "Archiv für Ohrenheilkunde," 1883.

** *Ibid.*, 1884, Bd. 19 and 20.

†† "Thesis," 1884, mentioned by Walb, "Archiv für Ohrenheilkunde," Bd. 26, 1888.

‡‡ "Thesis," 1886, mentioned by Walb, "Archiv für Ohrenheilkunde," Bd. 26, 1888.

## "Archiv für Ohrenheilkunde," Bd. 25, 1887.

‖‖ "Archiv für Ohrenheilkunde," Bd. 26, 1888.

an abscess in the left ear, the precise nature of which I could not determine. He now sought relief from an offensive discharge. There was found upon inspection a tense membrana tympani, immovable under the Siegel speculum, thick and white in appearance, and thrown into strie. The luster, however, was good. There was a perforation in the anterior part of the membrana flaccida, from which there came a thick, offensive, scanty discharge which clung to the upper wall of the auditory canal. The patient complained of tinnitus and great hardness of hearing in this ear. Voice heard six inches. The right membrana tympani was also rigid and red at the periphery. Luster good. No purulent disease or any cicatrix in the membrana flaccida of the right side. H. = voice, three feet. By January 12th, no discharge. In a month it returned, matter not flowing over the membrana vibrans. Under boric-acid insufflations chiefly the discharge ceased in a week and remained checked for a month. About this time there occurred an acute attack in the other ear, April 26, 1883, with pain, perforation in the membrana flaccida, and discharge, which was treated with boric-acid powder. A slight discharge, however, continued into summer, while not under observation. In August a polyp was found in the right ear protruding from the membrana flaccida. The polyp was extracted and the running ear treated by insufflations of powdered boric acid. The discharge ceased under this treatment in a week. During this time the left ear was treated by instillations of a solution of sulphate of copper, gr. v to f ℥ j of water, under which the discharge ceased and the hearing became nearly normal.

Resuming the history of the left ear, it must be said that on April 6th the patient observed a bad odor coming from this ear. An examination revealed a large, tough scale of epidermis and pus over the region of the membrana flaccida and the upper wall of the canal, near the membrana tympani. A very slight, thick discharge continued now until November 8th, when, without any warning, the discharge became very profuse, and the perforation was found to have become much larger. Pus welled from the perforation when the membrana vibrans was pressed. Into the attic cavity a solution of sulphate of copper was injected for some days and the discharge decreased. I then injected a solution of nitrate of silver. Some intense pain followed for a few moments and some dizziness. The weather was very inclement at this time and the patient was exposed. He took cold and had earache, and was in bed for some weeks with otitis externa near the membrana tympani. After this the perforation was seen as a distinct hole in the wall of the canal near the membrana flaccida, coalescing with the latter. Persistent, slight purulent discharge continued, not checked by anything. Discharge, however, gradually diminished in the course of three weeks, and several days elapsed without any. Then the middle ear (attic) seemed to fill up and overflow through the membrana flaccida. Syringing by tympanic syringe removed scales of epithelium. Microscopic examination (January, 1884) of scales from tympanic cavity showed them to be cholesteatomatous. The ear was now under injections of Dobell's solution chiefly, by tympanic syringe. Very little discharge now came from the attic. Still it did discharge, and the neck of the malleus could be seen running across the perforation. The patient used alcohol at home until April, when he went to Europe for three months. Very little discharge during absence. Had used syringing and alcohol now and then while abroad. Perforation unchanged in appearance. Lead injections now used for some weeks. Syringe-nozzle can be inserted behind or before neck of malleus. No denuded bone can be felt. A probe ran in half an inch. Copper solutions used a little while. Nearly a year elapses, during which the ear is slightly running, but the use of instillations of alcohol at home controls the discharge.

*February 1, 1886.*—Another acute process in the right ear. Membrana flaccida perforated posteriorly. Granulations apparently from attic and a boggy mass in anterior region of membrana tympani. Touching this caused some dull pain in the frontal region. Finally I removed a large slough from the region of the membrana flaccida and revealed a large perforation. This was treated with insufflations of boric acid tinctured with hydrastin, and was soon healed.

Treatment of the *left* ear begun again March 1, 1886, by means of injections of peroxide of hydrogen and three-per-cent. solution of carbolic acid, and continued frequently till July 31st; then again in the fall. By September less discharge than there ever has been. The patient has used alcohol drops at home three times weekly. The membrana vibrans was dry and shining. Now and then patient says gushes of discharge seem to come into the ear. It may be supposed they are overflows and demand better drainage, which would also mean a better chance for treatment.

Case XVI.—Miss W., aged sixty, states that six months ago she noted tinnitus in the right ear. This ear had been deaf for many years and a polypus is said to have been removed from it ten years previous. After the tinnitus set in the hearing function failed and some nausea and dizziness were felt, with a sense of pressure in the ear. Facial paralysis was present six or seven years ago, perhaps about the time the polypus was formed. When first examined by me, there was found a whitish pultaceous mass over the region of the membrana flaccida. Attempts at removing this with a probe caused nausea and vomiting. After soaking the rest of the mass with a solution of bicarbonate of soda, glycerin, and water, the remnant was removed, and an ulceration in the membrana flaccida with a polypus attached to it was seen. The polypus was removed and the discharge checked by touching with nitrate of silver on cotton and then insufflations of boric-acid powder.

Case XVII.—Dr. K., aged thirty. This was originally an aspergillus case. After the aspergillus was cured, I discovered a cicatrized perforation in the membrana flaccida. The patient was a subject of hypertrophic nasal catarrh, and gave the history of a former purulent discharge from the ear.

Case XVIII.—Mr. R. M. C., aged thirty-four, first consulted me in 1876 for chronic purulent otorrhœa on both sides. On the eft side there was a large perforation extending over the membrana flaccida, and comprising also the margo tympanicus of the upper wall of the auditory canal. The discharge was checked on this side and has remained so to the present, with a slight relapse in June, 1883.

Case XIX.—Mr. H. F. W., aged thirty-five, first consulted me on December 10, 1883, for chronic purulent otorrhœa, left side, with a perforation in the membrana vibrans. This was relieved and the patient was not seen for nearly eighteen months, when he presented himself with a perforation and granulations in the membrana flaccida. The perforation in the membrana vibrans was still present and the mucous membrane discharging. Probably the perforation in the membrana flaccida was from maceration and erosion, as pus would hardly force its way through this when a large perforation was already in the membrana vibrans. The granulations were touched with chromic acid and soon disappeared. The speedy cure is another evidence that the attic was not the seat of much, if any, disease.

Case XX.—July 14, 1888, Miss M., aged twenty-three, now under treatment. In childhood her tonsils were large; excision of these was followed by some earache and dullness of hearing at the time, but soon passed off and was forgotten, excepting that she thinks the right ear, the now diseased one, has never heard sharply. Six years ago, suddenly, without any pain or warning of any kind, the right ear felt stopped. Examination made by her physician then revealed a polypus. Since then,

off and on, there has been a slight offensive discharge; hardly enough to run from the ear. Numerous polypi have been removed, probably from the membrana flaccida perforation. I found the membrana vibrans intact, retracted, white, dry, and shiny, and a large perforation in the membrana flaccida, with the neck of the malleus visible, and a very scanty discharge, not very offensive. I syringed the attic with peroxide of hydrogen and then with a two-per-cent. solution of carbolic acid, by means of the tympanic syringe. At the second syringing I brought to view a small polyp, evidently attached to the inner edge of the perforation and concealed in the attic. I removed it by slender forceps. After this the discharge was less. During the past summer the patient wiped out the fundus of the canal with absorbent cotton every second day, and sometimes mopped out the ear with two-and-a-half-per-cent. carbolic-acid solution. When seen September 1st there was found to be the very minimum of discharge, some days none. No pus apparently present, as peroxide of hydrogen fails to make a foam. A small granulation was found attached to the lower posterior edge of the perforation, and removed by means of slender forceps. The attic was syringed with a three-per-cent. solution of carbolic acid by means of the tympanic syringe.

Synopsis of the ten cases herewith presented:

Sex. { Men, 6. / Women, 4. }

Position. { Anterior, 0. / Posterior, 2. / Central, 6. / Entire destruction of the flaccid membrane, 2. }

Ear. { Right, 4. / Left, 4. / Both ears, 2. }

Cause. { External, traumatic, 2. / Internal, tympanic, 8. }

*Polypi* were found in seven cases—in both ears, in both the cases in which the perforation was in both ears.

*Aspergillus* was found in two cases—viz., in Case XVII and in one of the cicatrized cases. A simultaneous perforation in the membrana vibrans was found in only one case in the entire twenty—viz., in Case No. XIX, reported in this paper. It may be of interest to compare this synopsis with the synopsis of the ten cases previously reported elsewhere.

Sex. { Men, 7. / Women, 3. }

Position of perforation. { Anterior, 2. / Posterior, 3. / Central, 3. / Entire destruction of the membrana flaccida, 2. }

Ear. { Right, 4. / Left, 3. / Unrecorded, 1. / Both ears, 2. }

Cause. { External, traumatic, 3. / Internal, tympanic, 7. }

Polypi were found in four instances in this series (first ten), and the perforation was in both ears in two instances. In this series one of the cases, recorded in the "American Journal of Otology" as in the right ear, should have been placed under "both ears."

In addition to this synopsis we learn from the notes of the cases that in many instances this disease of the ear comes on without pain, and may be said to be chronic from the outset. Children are not liable to this form of chronic ear disease (one in twenty), though some observers state that acute inflammation of the attic, with perforation of the membrana flaccida, is frequent in children. The chronic form occurs in 1 per cent. of all cases, according to my experience, about the same as Bezold's (1¼ per cent.). The hearing is greatly impaired in the chronic form of this disease, though it often improves temporarily after the attic is washed out. The discharge, as a rule, is scanty, thick, and very offensive. Being scanty, it rarely flows over the membrana vibrans, and the observer is often surprised to find the latter dry and shining in an ear which is the seat of a discharge. The latter usually clings to the upper wall of the auditory canal, forming gradually into a tough pellicle, darkened by exposure to the air. This may extend along the upper wall to the external meatus, underneath it being a thin layer of fluid pus. Upon the removal of this pellicle the perforation in the membrana flaccida can be seen. A scanty discharge of this kind may go on for years without being copious and fluid enough to flow down over the membrana vibrans, which, as stated, may misguide the inexperienced observer.

The absence of the "perforation whistle" in these cases has often been noted by writers on this subject. I think this is due to the fact that the perforation in the membrana flaccida is not often anterior and therefore not in communication with that part of the attic nearest the tympanic mouth of the Eustachian tube.

When the perforation is anterior, as in a case of a boy given in my first series of ten cases, the perforation whistle may be very marked. In the case alluded to the flaccid membrane of each ear was perforated anteriorly, and in both ears the "perforation whistle" was easily produced. As I have never observed it where the perforation was not anterior, I have concluded that the ossicles and the swollen and secreting mucous membrane about them interfere with the passage of air through a perforation beyond or behind them, and hence the perforation whistle is not heard in posterior or central perforations.* That the perforation whistle was not heard in the cases I have tabulated as entire destruction of the membrana flaccida must have been due to the fact that the Eustachian entrance into the tympanic cavity was in some way obstructed.

*Treatment.*—The chronic form of purulent inflammation in the attic of the tympanum is difficult to cure, especially when the attic has been the starting point of the disease, while those cases originating from without the drum cavity (the traumatic) are easily managed.

The cases of tympanic origin most easily cured or benefited are those in which the perforation in the membrana flaccida is large, and in which, of course, medication and drainage are most complete. Of the various forms of treatment, the most successful are cleansing and antiseptic, as, for example, that by means of peroxide of hydrogen and carbolic acid.

The only way of directly washing out the attic and of medicating it is by means of the tympanic syringe of Dr. C. J. Blake.

The best applications have just been named, but alcohol and aqueous solutions of zinc, bicarbonate of sodium, chloride of sodium, lead, copper, etc., may be applied. Pow-

* Kretschmann (*loc. cit.*) gives two cases, both of them in boys under thirteen years of age, with anterior perforations, in whom the "perforation whistle" was observed.

dered applications are impotent in these cases, as the perforation is too small to permit their entrance into the diseased cavity. They might even do harm by blocking the small outlet for the pus, and thus aiding in forming a nidus for systemic purulent infection.

All forms of escharotic or cauterant treatment, like that by strong solutions of nitrate of silver, are not borne by the attic when in a condition of chronic purulency, chiefly, I think, because the swelling of the edges of the perforation induced by such treatment closes it, drainage is interrupted, the pus undergoes decomposition, and a dangerous inflammation in the region of the tegmen tympani may be set up, as has once happened in the experience of the writer.

So important is drainage in these cases that it has been suggested to obtain it by surgical interference, either by enlarging the hole in the membrana flaccida by continuing it up into the bone in the segment of Rivinus—*i. e.*, by cutting into the edge of the margo tympanicus of the inner edge of the upper wall of the external auditory canal,* or by excision of the membrana tympani and the malleus and incus.† One or both of these bones may be found necrotic. In fact, denuded bone can often be felt in these cases by means of a slender probe passed through the perforation.

This dead bone can be scraped if the perforation is enlarged by excision of the ossicles, or by removal of some of the margo tympanicus. Thorough cleansing of the attic is demanded in these cases if a cure is to be accomplished, and this washing out must be kept up after the attic is exposed by either the enlarging of the perforation in the flaccid membrane or removal of the malleus and incus.

A cure, more or less speedy, follows in such cases, according to Schwartze, Sexton, and others (*loc. cit.*).

Although I have not yet performed such an operation for the cure of this disease, I feel sure that hereafter I can obtain a radical cure most surely by this means—and perhaps not at all by any other—and am prepared to thus inform my patients, as this form of purulency of the middle ear, from its proximity to the brain, is the most threatening to life and demands a careful consideration of every means for its radical cure.

* Kretschmann, *loc. cit.*

† Schwartze, "Lehrbuch," p. 287, 1885; Sexton, *loc. cit.*, 1885. Düsterwald, 1884, according to Walb, *loc. cit.*

## A CASE OF STRANGULATED HERNIA REDUCED BY FARADIZATION.

By FRED. M. BAUER, M. D.

M. Leroy having suggested the use of electricity in strangulated hernia, and the matter being referred to MM. Emery, Clocquet, and Dubois, they reported in the session of the French Academy of the 25th of May, 1826, that their experimentation on animals led them to recommend his suggestion.

Althaus in 1873 and Bartholow in 1887 cite the only cases of strangulated hernia relieved by electricity. The former mentions a case of strangulated femoral hernia so reduced by M. Delaux, of Toulouse. Electricity was tried in this case because taxis and all other means had proved useless, and because the patient would not give her consent to an operation. Campbell, Beard and Rockwell, and others speak of this same case.

Professor Bartholow, in his "Medical Electricity," mentions three cases as follows: "Dr. Suprunenko reports a case of right inguinal hernia cured by the faradaic current when strangulated and unrelieved by taxis; Dr. Bronstein also publishes an account of a case of incarcerated scrotal hernia in which taxis, anæsthesia, and the warm bath failed, but in which all the symptoms disappeared in a few minutes after faradization; and Dr. Rosenhart gives still another case relieved in a few minutes by the same means."

To these four cases I would add my own:

Mrs. E., widow, aged sixty-four years, private patient, had had a reducible inguinal hernia for twenty-six years, but had never worn a truss. It had frequently appeared to the size of a goose-egg, but she could always reduce it herself.

On the 29th of September, while attending to her household duties, she noticed that the rupture had bulged out farther than usual and that it was painful on pressure. As she could not replace it, she put on some ice for a while and then tried again without success. Meanwhile the tumor became more and more painful and seemed to increase in size. Soon nausea and biliary vomiting set in, followed by persistent eructation of foul gases.

The patient was seen an hour and a half after the symptoms appeared. She had been having agonizing pain in the left inguinal region and had been crying lustily for help. Now she seemed in an extremely collapsed condition; anxious countenance, clammy skin, cold extremities, constant eructation of gases, pulse very small, feeble, and frequent. In the left inguinal region was found an ovoid, partly bisected tumor, measuring five inches by four inches by two inches and a half, hard and tense; flatness on percussion; no impulse on coughing; abdomen soft and relaxed. The hernia being of the indirect type, taxis was applied in an outward, backward, and upward direction. Anæsthesia was not needed, for the patient was in a collapsed condition. Taxis was entirely useless, although it was applied for about ten minutes. The swelling would neither soften nor diminish. The symptoms were becoming more and more urgent and something else had to be done quickly. Operation seemed to give the only hope. Electricity had been used in just such cases, and I determined to give it a trial. A faradaic battery (the "Phœnix") was quickly obtained; the strong secondary current was applied by means of sponge electrodes, one pole on the neck of the sac and the other pole on the lowest portion of the sac. The patient was now so collapsed that she scarcely felt the current, although it was strong enough to give the operator a severe shock when his fingers accidentally received it. In about a minute the swelling began to soften and yield somewhat to the electrodes; in about three minutes it was of half its former size and was considerably softened, and in about four minutes the electrodes were laid aside and reduction was speedily accomplished by means of gently applied taxis—the final disappearance giving the welcome gurgling sound. After the reduction the external abdominal ring admitted the end of the index finger.

Pain ceased almost immediately, but some soreness in the abdomen and the region of the ring remained. Morphine was administered hypodermatically at once, and internally at intervals afterward; hot bottles were applied to the extremities and an ice-bag to the abdomen. Three hours afterward there was normal reaction from shock; temperature, 99·5° F. There was some soreness in the abdomen and ring. On the third day she had a castor-oil stool; patient entirely well. She now wears a truss.

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## THE MORPHOLOGICAL CHANGES IN THE BLOOD DURING COAGULATION, AND THE CAUSES OF COAGULATION.

HAYCRAFT and Carlier, from the physiological laboratory of the University of Edinburgh, have reported in a recent number of the "British Medical Journal" some important observations on the morphological changes that occur in human blood during coagulation, and on the causes of coagulation. These are especially interesting in view of the numerous investigations recently made regarding the process of thrombosis and the relation of the blood-plates and white blood-corpuscles to coagulation of the blood. Löwit has lately shown that the blood-plates do not exist in the normal circulating blood, but are composed of a morphologically and chemically altered globulin, and result from some slight changes in the normal condition of the blood or blood-current. Their formation probably marks the first stage in the process of coagulation. Haycraft and Carlier show that the white blood-corpuscles while within the circulation show an amœboid movement, and that this only appears when diapedesis begins. It is a result of an irritation of the protoplasm composing the corpuscles. Soon after the amœboid movement begins, some of the white blood-corpuscles lose their granules, and they become clear and flattened, but do not disappear. While this is going on, threads of fibrin begin to form.

It seems probable, then, that some metabolic changes associated with the formation of fibrin occur in the globulin and the white blood-corpuscles, so that they both contribute to the production of fibrin. The first stage in this process, perhaps, is the formation of the blood-plates. Both the amœboid movement in the white blood corpuscles and coagulation, according to the experiments of Haycraft and Carlier, appear to result from the changes induced by the action of chemically inert solid bodies—such as glass, porcelain, etc.—and these authors further show, by an ingenious series of experiments, that by carefully protecting shed blood from contact with such matters and by surrounding it with a fluid of a surface tension different from its own, and with which it does not mix, it may be kept in a fluid condition for a long time. This observation rather refutes the theory of Sir Astley Cooper that the fluidity of the blood within the body is due to the vitality of the vessels, and tends to confirm the view long ago supported by Lister that coagulation was due to the action of solids upon the blood.

Professor Haycraft found that by allowing blood to drop through a layer of liquid paraffin on to greased mica-plates, he could keep the drops liquid for some time. The blood, however, could not be allowed to come in contact with any foreign body, the cut end of the vein being everted over a glass tube so that the blood escaped directly into the paraffin. Other methods similar in principle were also used, but for human blood the following means were employed: A drop of blood was received from a carefully greased finger into a straight cylindrical glass vessel, a foot long and an inch and a half in diameter, that had been carefully filled with castor-oil. The blood is introduced in the following manner: The finger is rendered turgid with a bandage, is well smeared with some oil, plunged into the vessel, and then pricked beneath the surface of the oil. Several drops of blood may be obtained in this way. The blood in its escape comes in contact only with the tissues along the line of puncture, neither the surface of the skin nor the air coming in contact with it. After the drops of blood are gently detached from the finger by shaking it, the finger is withdrawn, and the drops begin to descend in the oil. The vessel is then filled to the brim with oil and a glass plate slipped over it, care being taken not to include any bubbles of air. It will be noted that the larger drops of blood fall more rapidly than the smaller. When the largest drop has nearly reached the bottom of the vessel, the tube should be inverted, and the drops will again begin to fall. It was found possible to keep the blood fluid for nearly an hour in this manner. The blood was finally examined by removing the drops with a well-oiled spoon and placing them upon a glass slide. Haycraft and Carlier say: "It will be found, on drawing a needle through the drop, that it is perfectly fluid. It is probable that, owing to the blood coming in contact with the tissues in the wound, an infinitesimal amount of ferment is set free, which will eventually cause clotting even though the blood is surrounded by oil."

Careful microscopical observations were also made upon the amœboid movement of the white blood-corpuscles in blood that was surrounded by vaseline. It was then found that the amœboid movement began in from one to ten minutes after the removal of the blood from the circulation, according to the temperature. The movement in some cases lasted for hours. In other cases the cells changed in from a quarter of an hour to two hours, becoming pale, indistinct granular masses, with thin nuclei still visible and capable of being stained. If the temperature is below 65° F., no movement appears. During the process of coagulation none or few of the corpuscles disappear. This observation is contrary to the generally accepted theory of A. Schmidt, who maintains that there are two kinds of colorless corpuscles—one kind breaking down during coagulation, and the other persisting, coagulation itself being the direct result of the death of the white blood-corpuscles, which, dying, yield a ferment that, acting on the blood-plasma, produces fibrin.

Haycraft and Carlier conclude that: 1. Solid matter mechanically stimulates the white corpuscles of the blood, leading to amœboid movements, if the blood is not cooled. In any case some metabolic change associated with the formation of fibrin occurs in the white corpuscles whereby they are led to contribute to the production of fibrin. 2. Coagulation of the

blood outside of the body is due to the action of some chemically inert solid body, such as glass or porcelain. 3. The action of an inert solid is much the same on the blood-plates as on the white corpuscles; it causes them to become sticky, run together, lose their contour, and change their shape.

These experiments do not determine the part played by the white blood-corpuscles or so-called blood-plates in the chemistry of coagulation, although they suggest that, so far as these bodies are concerned, coagulation is the result of living metabolism rather than of death and disintegration.

### THE COMPARATIVE BEHAVIOR OF DISEASES AND REMEDIES IN CHILDREN AND ADULTS.

Dr. W. H. Dickinson, one of the consulting physicians to the London Hospital for Sick Children, chose this subject as that of a recent introductory lecture at the institution mentioned. The lecture, which has been published in the "Lancet," seems to have been intended largely as an argument in support of the plan of providing separate hospitals for children, and it is certainly a cogent one; but it is of interest chiefly as embodying a parallel between children and adults in their behavior under disease and under the action of drugs. It contains little of anything that is new, but it is a convenient summary of the leading facts known of the subject.

It can not always be said of a sick person that his youth is in his favor; on the contrary, it is sometimes to his advantage that he is not young. "We may be old, battered, gouty, and atheromatous," says Dr. Dickinson, "every part about us blasted with antiquity; our arteries are apt to break, and that suddenly; but we get slow, and some of our disorders partake of our disposition." Owing to the activity of nutrition in the young, it may be said in general terms that diseases involving new growths make more rapid progress than the same affections in adults, a notable example of which is seen in cases of sarcoma of the kidney. The same is true of the overgrowth of normal tissues; cirrhosis of the liver, although rare in childhood, runs a rapid course, and so does interstitial nephritis. Loss of blood and of other fluids is proportionately ill borne by children, and exhaustion is prone to occur early and suddenly in diseases that are slow in bringing grown persons to a grave condition; hence the numerous deaths of young children from mere diarrhœa while all the organs are still but little if at all impaired anatomically. Although the almost complete restriction of rickets to early childhood is well known, it is perhaps not so generally known, says the author, that a defective diet is apt to cause scurvy in infants. Sore gums, purpura, and hæmorrhages, especially by way of the kidneys, he has always been able to trace to deprivation of fresh milk of good quality, condensed milk not possessing enough of the antiscorbutic property of fresh milk.

Rheumatism is relatively infrequent in young children, but in them it is particularly prone to attack the heart. Diabetes mellitus runs so rapid a course that it may cause death in a child in as few months as it sometimes takes years to produce the same result in adults. Among inflammations, it is to those of the brain that children are peculiarly liable, and meningitis that is not tubercular occurs more frequently than was formerly supposed. This is attributed to the exceptional activity of cerebral nutrition and development in the young. The mortality of children from pneumonia is to be imputed rather to the greater frequency with which they are attacked by it than to its proving fatal in a disproportionate number of instances. They are more liable to purulent pleurisy than adults, but a greater number of them may be cured by simple aspiration. Typhus is rarely seen in childhood, and when it does occur it is less dangerous than in grown persons. Typhoid fever varies less in the two classes of patients; it is seldom seen in infants, but Murchison once found evidence of it in a post-mortem examination of a child six months old.

Among the drugs to the excessive action of which children are particularly susceptible are opium and alcohol; among those of which they are remarkably tolerant is belladonna, as shown in a case cited in which seventy grains of the pharmacopœial extract were given daily to a girl ten years old. In regard to mercury, children with congenital syphilis seem to thrive on its use, but in other diseases it often produces injurious effects; the author has seen not a few instances of salivation, and two in which the cheek was perforated. In general, children respond to treatment, as they often succumb to disease, more readily than older patients, so that with them the physician's responsibility is the greater.

## *MINOR PARAGRAPHS.*

### RESECTION OF THE STYLOID PROCESS FOR PAINFUL DEGLUTITION.

In the "Internationale klinische Rundschau" Dr. L. Réthie gives an account of the case of a man, twenty-eight years old, who in childhood had often suffered with inflammatory affections of the throat. Two years before he came under the author's observation, according to a summary given in the "Centralblatt für Chirurgie," he began to have pain in swallowing. After a long course of topical treatment, the author discovered a hard substance lying deep in the tonsil; apparently, it was either a calcified muscle or an abnormally long styloid process. It was from this that the pain proceeded. After unsuccessful attempts to break off the projection by pressure, the author cut into the tonsil, and carefully dissected down to the resisting material and succeeded in removing a piece about a third of an inch long. Microscopical examination showed it to be true bone and therefore a portion of the styloid process. The dysphagia ceased permanently.

### THE ERADICATION OF YELLOW FEVER IN THE SOUTH.

Now that the yellow fever in the South is likely to cease with the appearance of frost, the serious problem arises of how to deal with the infected bedding. The disease was introduced into Florida by means of bedding brought by refugees from Havana. That which has been used during the epidemic is a source of danger, and, unless it is completely destroyed by burning, there is much chance of a revival of the fever in the South at no remote period. The matter is of interest to the people of the North also, for bedding may be brought here and give rise to an outbreak, the disease having been known to break out in

Florida after the occurrence of frost. Although the destruction of the bedding in question seems so obvious a necessity, when we reflect that the people of the plague-stricken district have lost almost all they possessed, it is not to be wondered at that they are unwilling to burn the beds on which they sleep. As all authorities agree that complete burning of the bedding is a *sine qua non* to the extermination of the fever, it is extremely important that such action should be taken, and it ought to be taken on one basis only, that of a fair compensation to the unfortunate people for the loss of their household effects. The expenditure of a portion of the relief appropriation made by Congress would enable this to be done, and thus every objection to the complete destruction of the bedding would be removed, and its owners would themselves gladly assist in the work. If Surgeon-General Hamilton, whose services during the epidemic have made the whole country his debtor, could conscientiously recommend such a course, the removal of every vestige of the fever would soon be accomplished, and its removal can not be made certain in any other way.

### THE SUBUNGUAL CAPILLARY PULSE.

M. Millot-Carpentier contributes to the "Union médicale" a short account of a review of the subject of the subungual pulse by Dr. Mario Sacchi, in the "Riforma medica." It seems that it was first studied by Professor Grocco, who wrote about it in 1885, in the "Gazzetta medica italiana-lombardia." It was afterward studied by Quincke, Ruault, Dauchez, Hüter, Senator, and others. Observation shows that it is proper to speak of the subungual pulse as arterio-capillary and venoso-capillary. Cases of the occurrence of this circulatory anomaly are rare; Grocco recorded one example, and now Sacchi has added another. Sacchi's case was that of a woman, sixty years old, who came under treatment for anasarca. There was general cyanosis, with a low temperature; the pulse was very frequent and irregular; a systolic souffle was heard at the situation of the tricuspid valve, together with a rough and prolonged systolic souffle at the apex; the urine was diminished in amount and of low specific gravity. After two months' treatment with digitalis and sparteine, together with inhalations of oxygen for dyspepsia, the patient was apparently cured. A few months afterward, however, her troubles returned in an aggravated form, and it was then that the subungual pulse was observed in a little reddish zone formed on raising the nail slightly. It disappeared on compression of the radial and ulnar arteries, and was not retarded; it disappeared also on compression of the wrist at the level of the radio-carpal articulation. It was held to be due to a systolic reflux of blood into the veins on account of relative insufficiency of the tricuspid valve.

### EMPYEMA FOLLOWING CROUPOUS PNEUMONIA.

In the "Memorie della reale accademia delle scienze dell' istituto di Bolagna" Dr. Luigi Mazzotti publishes an article on this subject, an abstract of which we find in the "Centralblatt für klinische Medicin." In three cases, in robust men thirty-four or thirty-five years old, the empyema declared itself in two days after the defervescence of the pneumonia. In all of them the pus broke through into the bronchial tubes without the occurrence of pneumothorax, and perfect recovery took place, within a comparatively short period—from three to four months after the beginning of the pneumonia. Another case, in a broken-down man sixty-two years old, ended fatally. In ordinary purulent pleurisy, according to the author, there is very high fever, usually with chills, while in that consequent on pneumonia the temperature is not very high, and there are no chills; in the former the general condition is profoundly affected, with headache, debility, and loss of appetite, while in the latter the general condition is comparatively good; in the former there are intense pain in the chest and dyspnœa, while in the latter there is no thoracic pain and but little dyspnœa; in the former there is cutaneous œdema of the affected side, while in the latter there is none; and in the former the pus is liquid, grayish, and fœtid, while in the latter it is creamy greenish, and odorless.

### THE SOUTHERN SURGICAL AND GYNÆCOLOGICAL ASSOCIATION.

Elsewhere in this issue we publish the programme of the association's annual meeting, to be held early in December. It contains, as will be seen, the titles of papers by a great number of excellent men, and the subjects on which they are to read are among those of the greatest interest to surgeons and gynæcologists at the present time. The occasion may fairly be expected to bring out much matter of great value to the profession at large as well as to the members of the association.

### DIPHTHERIA FROM CATS.

The "British Medical Journal" mentions a report made to the Central Board of Health of Melbourne, Australia, describing an outbreak of diphtheria in which the cases occurred almost simultaneously in the neighborhood of Daylesford. The local health officer's report presents strong *prima-facie* evidence that the children contracted the disease from cats, numbers of which animals were dying in the neighborhood.

### THE INFLUENCE OF MENSTRUATION ON THE PULSE AND TEMPERATURE.

This subject has been studied by Dr. Repreff, who publishes an account of his observations in "Vratch." According to a summary given in the "Revue générale de clinique et de thérapeutique," in health the temperature and the pulse fall a day or two before menstruation, and immediately after the cessation of the flow the temperature rises, but without attaining a febrile height. In women with chronic uterine disease there is a rise of temperature during menstruation, but with a fall on the first and last days of the flow. In cases of oophoritis or salpingitis there is a febrile temperature before and after the flow, without any fall below the normal point. In certain diseases there are irregular changes of the pulse and temperature.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 20, 1888:

| DISEASES. | Week ending Nov. 13. | | Week ending Nov. 20. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 20 | 11 | 21 | 9 |
| Scarlet fever | 139 | 28 | 130 | 20 |
| Cerebro-spinal meningitis | 2 | 2 | 0 | 0 |
| Measles | 136 | 11 | 221 | 7 |
| Diphtheria | 66 | 24 | 92 | 28 |
| Small-pox | 0 | 1 | 0 | 0 |

**The Woman's Hospital.**—We learn that Dr. Henry D. Nicoll has been appointed as one of the surgeons to the hospital, to succeed Dr. T. Gaillard Thomas, resigned.

**The "Journal of the American Medical Association."**—It is announced that Dr. John B. Hamilton, the Surgeon General of the Marine Hospital Service, has been appointed to succeed Dr. N. S. Davis as editor of the "Journal."

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 11 to November 17, 1888:*

Baily, Elisha I., Colonel and Surgeon. Under the provisions of the Act of Congress, approved June 30, 1882, the retirement from active service this date, by operation of law, is announced by direction of the Secretary of War. Colonel Baily will repair to his home. Par. 1, S. O. 226, A. G. O., Washington, November 14, 1888.

Norris, Basil, Lieutenant-Colonel and Surgeon, and Tilton, Henry R., Major and Surgeon, are, by direction of the President, detailed as members of the Army Retiring Board appointed to meet at San Francisco, Cal., by the War Department order dated October 27, 1888, published in S. O. No. 253, October 30, 1888, from Headquarters of the Army, *vice* Colonel Elisha I. Baily, Surgeon, and Captain John J. Cochran, Assistant Surgeon, hereby relieved. Par. 13, S. O. 261, A. G. O., Washington, November 8, 1888.

McClellan, Ely, Major and Surgeon, is relieved from duty at Jefferson Barracks, Mo., and will report for duty at Chicago, Ill., as Attending Surgeon and Examiner of Recruits. Par. 15, S. O. 261, A. G. O., Washington, November 8, 1888.

Bartholf, John H., Major and Surgeon, is relieved from further duty in the Department of Texas, and will report to the commanding officer at Plattsburgh Barracks, N. Y. Par. 15, S. O. 261, A. G. O., Washington, November 8, 1888.

Waters, William E., Surgeon, Vancouver Barracks, is granted leave of absence for one month, to take effect on or about the 1st proximo, with permission to apply for an extension of one month. Par. 1, S. O. 129, Headquarters Department of the Columbia, November 9, 1888.

Arthur, W. H., Assistant Surgeon, upon being relieved by Acting Assistant Surgeon J. L. Ord, will proceed to comply with Par. 21, S. O. No. 250, c. s, Headquarters of the Army. Par. 5, S. O. 123, Headquarters Department of Arizona, Los Angeles, Cal., November 5, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the two weeks ending November 17, 1888:*

Dickinson, D., Surgeon. Ordered to the Naval Hospital, Mare Island, Cal.

Bradley, G. P., Surgeon. Detached from the Naval Hospital, New York, and ordered to the Iroquois.

Persons, R. C., Surgeon. Detached from the Army and Navy Hospital, Hot Springs, Ark., and ordered to the Naval Hospital, New York.

Norfleet, Ernest, Passed Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Trenton.

Harris, H. N. T., Assistant Surgeon. Detached from the Naval Hospital, Mare Island, Cal., and ordered to the Kearsarge.

Sayre, J. S., Assistant Surgeon. Ordered to examination for promotion.

Beyer, H. G., Passed Assistant Surgeon. Detached from the Trenton and granted six months' leave, with permission to leave the United States.

Bryant, Patrick H., and von Wedekind, Luther L., commissioned Assistant Surgeons, U. S. Navy.

Swan, Robert, Passed Assistant Surgeon. Ordered before the Retiring Board on the 19th inst.

**Society Meetings for the Coming Week:**

Monday, *November 26th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *November 27th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Boston Society of Medical Sciences (private).

Wednesday, *November 28th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of Albany; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

Thursday, *November 29th:* Cumberland, Me., County Medical Society (annual—Portland).

Saturday, *December 1st:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

## Obituaries.

**Henry Berton Sands, M. D.,** died suddenly on Sunday, the 18th inst., at the age of fifty-six. For two or three years his health had been somewhat impaired, and he had gradually divested himself of his college and hospital work, but at the time of his death he was actively engaged in private practice; indeed, he died in his carriage, on his way home from a professional visit in company with Dr. A. A. Smith. The fatal attack, which was at first supposed to have been apoplectic, was ascertained by autopsy to have been one of sudden heart failure.

For many years Dr. Sands had been generally recognized as the leading surgeon of New York, astute in diagnosis, sound in judgment, and dexterous as an operator. From a very early period in his professional career until within a few months of the time of his death he occupied positions that made him widely known to his fellows—as demonstrator of anatomy, then professor in that branch and afterward of surgery, in the College of Physicians and Surgeons, and as a surgeon to several of the large hospitals. In all these offices his energy and brilliancy were appreciated, and his services as a consultant were constantly sought for by his professional brethren. At the outset of his career as a practitioner he was associated with the late Dr. Willard Parker, a man of unerring judgment in his estimate of men, and that fact alone would have marked him as destined to take a high rank; but he exceeded his senior's expectations and rapidly became one of the foremost surgeons of the country.

Dr. Sands's most striking characteristic was the lightning-like rapidity and invariable accuracy of his thought and speech. His talk was rapid, but never diffuse; it was rather epigrammatic. To persons who knew him only slightly he seemed cold, but his intimates were well aware of the depth of feeling of which he was capable. He was not a man of merely scientific attributes; his appreciation of art, especially of music, was keen, and his taste was of the highest. As a writer he was singularly clear and correct, and it is to be regretted that he did not oftener contribute to the literature of the profession. We may feel sure that it was his intention to do so when he had got rid of the public appointments that made such inroads

on his time, but he had barely accomplished this when death suddenly overtook him. It is not easy to estimate the loss to medicine entailed by the death of such a man.

# Proceedings of Societies.

## NEW YORK ACADEMY OF MEDICINE.

*Meeting of October 4, 1888.*

The President, Dr. A. Jacobi, in the Chair.

A paper giving the conclusions reached at the recent congress at Paris for the study of tuberculosis was read by Dr. R. C. M. Page.

The President read a report on the last meeting of the British Medical Association. Many of the very valuable papers which were read before that body, he said, had already been published and were familiar to American physicians, but he wished to commend to those present for a careful perusal the address read by the president of the association. He thought the value of such general meetings of all orders of physicians should not be lost sight of. It was of advantage that men highest in the profession should meet in special societies of their own. There were other advantages connected with the association of the very best with the quite good men.

**Remarks on the Diagnosis of Diseases of the Liver and the Fever accompanying Biliary Obstruction.**—Dr. E. G. Janeway read a paper with this title (to be published hereafter).

Dr. Alfred L. Loomis said that in his own experience fever was always present with multiple abscess, but chronic simple abscesses might run their course without fever.

The President, reviewing Dr. Janeway's points about the size of the liver as bearing on diagnosis, spoke of conditions in which the liver was only apparently increased or decreased in size. Could we say always that a rhachitic child had an enlarged spleen or liver from mere palpation? Grave mistakes were often thus made, and in several ways this happened. First it must be remembered that the spleen and liver were proportionately large in children. In the next place, they might sometimes be enlarged owing to defect in heart power, with very low blood-pressure, or to relatively large arteries and a small heart, producing lowered pressure. In either case passive congestion would cause a swelling in the glandular structures. As a third cause of apparent enlargement there might be an abnormal formation of the chest, such as the falling in of the lower border of the ribs, which made the liver bulge downward and appear larger. Other causes were a misplaced liver where its lower border was an unnatural distance below or above the free margin of the ribs; an inflation of the intestines, lifting the liver out of place; the pressure of a tumor from behind, causing it to bulge; and rarely a dislocation.

He also proposed the question: "How often is it impossible to make a diagnosis when cirrhosis of the liver is present by simply finding the liver contracted?" or rather, "How often does hæmorrhage or hæmatemesis occur from cirrhosis when as yet no shrinkage of the liver has occurred?" He thought it occurred in cases where hæmorrhage took place early. The changes in the liver might be far advanced and lead to hæmatemesis before the organ began to contract and before ascites appeared. He was in doubt as to whether early hæmorrhages ever interfered with the enlargement of the liver and spleen.

Dr. Janeway replied that according to his experience large hæmorrhages might occur when the liver was enlarged or of medium size, but that, as the patient was apt to die soon after, the relation of the hæmorrhage to the subsequent size of the liver could not be followed. Still, he had noticed that many small hæmorrhages, or a single large one, sometimes kept the spleen from enlarging.

Dr. Loomis remarked on the great breadth of the subject. One fact had always impressed him, since great mistakes had occurred through not keeping it in mind—namely, that things outside the liver told as much of its condition as direct examination of that viscus. Thus, multiple abscess had general signs, when neither size, contour, nor the exploring needle revealed anything. As to determination of size, great experience, care, and many examinations were needed to make it correctly. Often at autopsies displacements were found where an external examination would have led one to suppose the organ greatly diminished in size. Then the ætiology should be made out as nearly as possible, and the history of the patient studied from the beginning. It should be ascertained to what extent alcohol had been used, whether there had been exposure to malaria, and whether syphilis or fatty liver was likely to be present, from a consideration of the patient's general habits. He had seen hæmatemesis reduce the size of the liver and spleen.

The President then invited discussion as to the relative frequency of abscesses in the right and in the left lobes of the liver.

Dr. Janeway was of the opinion that four fifths or more of the single abscesses were in the right lobe.

Dr. Loomis had found most by far in the right lobe.

The President had seen but very few in the left lobe.

Dr. Janeway said he had had two cases of abscess in the left lobe under observation at the same time. They did sometimes occur.

Dr. Loomis, referring to the occurrence of catarrh of the bile-ducts with obstruction and fever, said it was not uncommon. He had always considered the fever independent of the other symptoms, while the jaundice and obstruction were comparatively accidental. The fever rather ushered in and perhaps led to the biliary symptoms.

Members were notified that at the next meeting a resolution would be offered looking to the purchase of a site for a larger building in the near future, as opportunities in that direction became scarcer each year.

## MEDICAL SOCIETY OF VIRGINIA.

*Nineteenth Annual Meeting, held at Norfolk, on Tuesday, Wednesday, Thursday, and Friday, October 23, 24, 25, and 26, 1888.*

The President, Dr. Benjamin Blackford, of Lynchburg, in the Chair;
Dr. Landon B. Edwards, of Richmond, Recording Secretary.

The session was opened with prayer by the Rev. Dr. Tudor, of Norfolk.

**The Address of Welcome** was delivered by Dr. H. M. Nash, of Norfolk, who welcomed the society on behalf of the "Twin Cities" of Norfolk and Portsmouth.

**Moses and other Doctors** was the subject of the annual address to the public and the profession, by Dr. William T. Walker, of Lynchburg, which went to show that preventive medicine was not only the medicine of the future, as was being maintained, but had been the medicine of the past.

**Changes in Membership.**—The recording secretary reported that during the year just ended thirteen fellows of the society had died, and two had resigned fellowship because of removal of residences to distant States.

**The Medical Examining Board.**—Dr. W. W. Parker, of Richmond, chairman of the executive committee, reported that Dr. James Parrish, of Portsmouth, had been duly appointed by the Governor to fill the vacancy caused by the resignation of Dr. L. Lankford, now of Norfolk, Va.

**Amendments to the Constitution.**—The constitution of the society was so amended as to permit those who had received certificates of satisfactory examination, etc., by the Medical Examining Board of Virginia to become fellows of the society, whether graduates of colleges or not—always implying that the applicants for fellowship were of the white race.

**Report of the Committee appointed by the Joint Committees of the Medical Examining Board of Virginia and the Medical Society of Virginia during its Last Annual Session to Petition the Legislature of Virginia to Amend the then Existing Law.**—Dr. Thomas J. Moore, of Richmond, presented the report. The committee had succeeded in securing amendments in the two important particulars as follows:

1. All applicants for license to practice medicine in Virginia were now required to stand satisfactory examinations before the Medical Examining Board of Virginia *in session;* or,

2. In exceptional instances, for sufficient reasons to be decided upon as such by the president of the board, applicants might be granted permission to stand examinations before a committee of three members of the board—the committee to hold the examinations *only in a session*, and not individually as formerly.

**The President's Address.**—The President announced as his subject "The Progress of Medical Education and the Importance of the Study of the Physical Sciences in Relation thereto during School Life."

**Atypical Forms of Typhoid Fever** was the subject for general discussion, which was opened by Dr. William C. Dabney, of the University of Virginia. He took the ground that the disease had become distinctly milder of late years, and that the symptoms, such as diarrhœa, eruption, and the *gradual* rise of temperature, which were formerly considered characteristic, were now often absent. That these cases were genuine typhoid fever he considered proved by the following well-established facts: 1. The cases usually presented some of the peculiar characteristics of the disease. 2. Hæmorrhage from the bowels occasionally occurred in these cases. 3. The intestinal lesions characteristic of typhoid fever had been found on post-mortem examination. 4. These mild cases were capable of originating epidemics of typical character. The conclusions at which he arrived were as follows: 1. That the disease in this country was gradually becoming milder, and that symptoms which were formerly thought to be characteristic and almost invariable were now much less frequently present. 2. That the diagnosis of the disease was often attended with extreme difficulty, and in the early stages was impossible. 3. That in those cases which were apparently extremely mild dangerous symptoms might arise suddenly, and a fatal issue might ensue from errors in diet or other imprudence. 4. That in all doubtful cases precautions should be taken to prevent the spread of the infective principle or germ, and to guard the patient against dangers from imprudence. 5. That the dangers to be especially apprehended in these cases were exhausting diarrhœa, hæmorrhage, and perforation of the bowel. 6. That, in view of this danger, patients should be placed upon liquid diet, should be confined to bed, and constipation, when present, should be relieved by enemata, and not by purgatives, even of the mildest character.

Dr. John H. Claiborne, of Petersburg, had prepared a paper to be read in the discussion, of which the following is an abstract: The title of the subject under discussion presupposed, of course, that there was a *typical* or representative form of typhoid fever. Such a case should show, some time during its course, symptoms of stupor, or at least dullness of intellect or hebetude, a muttering or passive rather than an active delirium; there should be a certain form of diarrhœa, a peculiar but pathognomonic rose-colored eruption on or about the fourteenth day, and epistaxis, ordinarily slight. The fever was, to a certain extent, self-limited, and was perhaps mildly infectious; it generally attacked adolescents of both sexes, had its own recognized microbe, and, above all, a post-mortem should disclose, unquestionably and distinctly, infiltration or ulceration of the glands of Peyer. To these general symptoms might perhaps be added slight bronchitis, headache, anorexia, flushing of the cheeks, and a temperature progressively rising and subsiding.

The question now arose, How many and which of these pathognomonic symptoms or lesions could be eliminated from a typical case to leave an unquestionable case of atypical typhoid fever—a recognizable entity? Or, if we were not in danger of multiplying words, were we not in danger of multiplying diseases to the confusion of diagnosis?

There was a summer and autumnal fever common to many sections which it had become fashionable to note as *typho-malarial fever*—a term originated by the late Dr. J. J. Woodward, of the United States Army, during the late war. Ten years later, however, he had confessed himself mistaken as to his original idea that it was a substantive fever having its own symptoms and its own pathological lesions; yet the name had never perished, and there was no special objection to its use so long as the facts connected with its history were remembered. Wherever there was malaria (which seemed to be ubiquitous) there was typho-malarial fever. Dr. Cutter had published, in parallel columns, the diagnostic marks of typhoid fever and the so-called typho-malarial fever, which threw good light on the present question, and placed the atypical form of typhoid fever where it of right belonged—namely, in the class of ordinary bilious remittent fever. Remittent or any other fever might assume, under certain unsanitary or depressing influences, a typhoid character; but that did not constitute it the peculiar intestinal, or enteric, or typhoid fever of Louis, of Gerhardt, or of Wood; nor was there any blending of the two forms—any swapping or coincident or concurrent cultivation of the microbes peculiar to each. Besides, the early, honest, and judicious administration (but not in pill nor in capsule form) of quinine usually cut short an attack of typho-malarial fever, which it did not do in typhoid fever. A mild mercurial every night, guarded or not with opium, according to the condition of the bowels, and from a scruple to half a drachm of quinine sulphate at the period of remission, with fifteen grains of acetanilide or twice as much antipyrine, in three doses, at the period of exacerbation, would ordinarily cut short the hybrid fever in from five to ten days.

Dr. W. G. Rogers, of Charlottesville, presented a paper tending to strengthen existing evidence that drinking polluted water was a common cause of typhoid fever. Since the establishment of the Charlottesville Water-works, supplied by pure mountain streams, the disease had almost entirely disappeared from his city; and the cause of the few cases that had lately occurred could be easily traced to the drinking of water of wells dug at points where they necessarily received the percolations of surface sewerage, etc. Among these few cases he detailed reports of several *atypical* cases of typhoid fever. A boy ten years old had all the usual signs and symptoms except fever itself, the temperature being even subnormal—from 96° to 98°—and his pulse varied from 48 to 50 only for three weeks, and then became normal in frequency, as he got well in about six weeks. He had two other slow-pulse cases in sisters twelve

and fourteen years old, and no other symptoms, the diagnosis being made by the occurrence of typical cases in the same house at the same time, due to drinking polluted well-water. Another girl, aged seventeen years, had her highest temperature (106°) in the morning, the evening showing only about 104°. He also reported a case of typhoid fever with marked uræmic symptoms, which was relieved by jaborandi.

Dr. S. K. Jackson, of Norfolk, commenced his paper by reminding the society that about fifteen years ago he had presented a paper entitled "Some Points in the Pathology of Typhoid Fever which furnish Indications of Treatment," in which he proposed a new treatment differing entirely from the usual line of treatment. As the society was likely to feel some interest in a suggestion first made on this floor, he thought it due to them to be kept informed of its history, its growth, and the changes it had undergone. His object was now to fulfill this obligation, and also to comment upon a modification which had been proposed by Dr. J. R. Barnett, of Wisconsin—viz., the substitution of ammonium salicylate for those salts of that base which he had used satisfactorily for a number of years. He denounced the professors of the medical colleges for not pronouncing upon so revolutionary a treatment as to whether it contained anything of value or whether it was worthless and should be condemned. He maintained that the carbon compounds were only efficacious in fevers of malarial origin, and were of value in these in direct proportion to the number of carbon atoms they severally contained; and he still insisted that typhoid fever required the ammoniacal salts to repair the nitrogeneous waste. But at the same time he acknowledged the value of ammonium salicylate (which might be called a hybrid salt) in that hybrid form of fever which he called "typho-malarial."

Dr. Lewis G. Pedigo, of Roanoke, stated that he had found great difficulty in diagnosticating some cases of fever recently occurring in his section; but they were finally recognized as atypical forms of typhoid fever, the peculiarity consisting chiefly in the high temperature from the very commencement of the attack. It was the form of cardiac typhoid fever spoken of in some of the books, in which there was early failure of the heart. There was great difficulty in controlling the temperature throughout the attack, especially during the latter stages, and the disease ran a very rapid and generally fatal course. The difficulty of diagnosis was chiefly between cardiac typhoid fever and a type of continued malarial fever occurring in some localities, mostly about the mountain regions. Even in these malarial types, as also in typhoid fever, quinine did harm. It certainly should not be given in larger quantities than about five grains in twenty-four hours. From the onset to the decadence of the fever, hydrochloric acid should be given in repeated doses each day. Antipyrine was also useful, and when he associated the acid with antipyrine he thought he had made the best therapeutic combination.

Dr. John H. Neff, of Harrisonburg, said that he could confirm what had been so well expressed by Dr. Dabney, though their fields of observation were different. During the past summer he had seen many cases of atypical typhoid fever, like those described by Dr. Dabney. There was some difference of opinion expressed in his vicinity as to the nature of these cases, one observer holding that they were malarial. He did not believe there was a malarial miasm in Harrisonburg. Early recognition of these cases was very important. Treatment consisted in absolute rest and diet, individualizing each case. He thought typho-malarial fever a misnomer. We might as well say "pneumonia malarial," "dysentery-malarial," etc. Environment modified all diseases. He could not indorse Dr. Jackson's ammonia treatment, and he did not believe in any specific for the disease. In answer to a question by Dr. S. K. Jackson, Dr. Neff stated that he had been using the nitrate-of-ammonium treatment, etc., advocated by Dr. Jackson, for a few months, sufficiently long to persuade him not to depend upon it in the future.

Dr. C. T. Lewis, of Clifton Forge, read a paper devoted principally to a new treatment of typhoid fever. He thought if he could keep the secretion of bile anywhere near its normal quantity and condition, the disease would run a mild and favorable course, because the bile would destroy or prevent the germs of typhoid fever from finding lodgment in the intestinal canal, or would remove or destroy them if reached. Mercury, in some form, was about the best and most commonly used cholagogue. Mercuric chloride was especially recommended on the ground that it neutralized the toxic product of the disease-germs without destroying the animals themselves, and acted most decidedly upon the liver as a cholagogue. The bile flowed into the bowel and acted as a germicide and antiseptic. But, after a while, the continuous use of mercury brought out its own poisonous effects upon the human system, depressing especially the nervous forces, so as finally to bring about a typhoidal condition. It might even cause diphtheritic ulcerations of the intestines, upon which podophyllin, rhubarb, jalap, euonymin, etc., produced a uniform bile secretion, but they irritated the bowels; they were purgatives as well as cholagogues. Ox-bile —theoretically suggested as the correct drug—had been practically tried, but failed to accomplish what was wanted of it. After careful consideration of all the facts, the author now adopted the following plan of treatment: At intervals of two hours give three doses, but not more, of a powder composed of two grains of calomel and one of rhubarb. After this, throughout the whole course of the disease, night and day, give ten drops of dilute nitro-hydrochloric acid in a wineglass of water every two hours. Also give a quarter glass of fresh milk every three hours, night and day. If the acid and milk come at the same hour, give the acid first, as it gets out of the stomach sooner than the milk. If the patient becomes restless at night, give two grains of Dover's powder every two hours, beginning about two o'clock in the afternoon, until four doses and no more are administered. If the fever rises above 103°, bathe the shoulders, upper part of the chest, neck, and arms in cold water every twenty minutes, with a basin of cold water by each side of the patient for his hands to play in, and cloths wet with the same cold water are laid around the neck and bowels. The result of this plan was that, of one hundred and eighty cases so treated by the speaker, only four deaths had occurred, and these deaths had been the results of preventable causes by the patients themselves. Solid food should not be allowed until the patient was well convalescent.

Dr. Alban S. Payne, of Markham, differed totally with Dr. Lewis. The old treatment of Dr. George B. Wood was the best. If Peyer's patches were ulcerated, nitro-hydrochloric acid would do them injury as an irritant in such a fever.

Dr. George T. Walker, of Vinton, asked if it was a sufficient length of time to allow two days after the fever left before letting the patient take any solid food? Dr. Lewis replied that two days was ordinarily long enough. Then he began by giving a small Irish potato and a little light bread.

Dr. William W. Parker, of Richmond, gave a little chicken soup as soon as possible. It was easily digested, was nutritious, and was not irritant to the inflamed ileo-cæcal region of the bowels.

In reply to a question by Dr. Wiley, of Abingdon, Dr. Lewis stated that he had not used antipyretics during the course of the disease, except such as the cold-water bathing, to which he had referred.

Dr. Neff said that he had no faith in any routine treatment

of typhoid fever. Early diagnosis was the most important thing. In many cases absolute rest, both mental and physical, absolute diet, proper hygienic surroundings, with good nursing, etc., would lead to recovery. Each case must be individualized, and treated according to its symptoms. Some patients could not take milk; in such cases give chicken and beef soup. Antipyrine, acetanilide, quinine, etc., often ameliorated the symptoms. Morphine often acted well in inducing sleep, easing pain, and lowering temperature. Observation showed that quinine was a good antipyretic, especially during the afternoon, and in many cases it did not irritate the stomach or depress the system, like antipyrine and antifebrine. Opium was also often an excellent antipyretic; but often-repeated sponging the body with cold water allowed us generally to dispense with antipyretics. Aperients were not indicated in any stage. Use enemata to relieve constipation. When hæmorrhage from the bowels occurred, give opium and enjoin perfect rest.

Dr. Henry M. Patterson, of Staunton, described some cases of atypical typhoid fever which started off with high fever and headache. In such cases we must give some such remedy as antipyrine; quinine also acted well. If, however, the sudden high fever and headache were followed by a chill, the case was not one of typhoid fever, but a continued fever of another kind. In typical typhoid fever he had had good results from aconite as an antipyretic.

Dr. William L. Robinson, of Danville, remarked that typhoid fever differed in its manifestations in different sections, being modified by malaria and hygienic surroundings. An uncomplicated case of typhoid fever, commencing with general malaise, moderate fever, dry tongue, quick, corded pulse, gradually increasing temperature, reaching its acme at the end of the second or third week, subsultus, tympanites, tenderness in the right iliac region, hot, dry skin, etc., required conservative management, such as moderate quantities of liquid diet, avoiding that excess which failed of digestion and produced fermentation and diarrhœa. Turpentine was a diffusible stimulant and antifermentative, like carbolic acid, in connection with tincture of iodine. High temperature produced changes in the blood and parenchymatous degenerations, which weakened the muscular power of the heart. Antipyrine, in moderate doses, quieted the nervous system, reduced temperature, and did much less harm than continued high temperature. The rectal use of digitalis, opium, and whisky well sustained the flagging circulation. The use of alcohols in fevers, recommended by Flint in his paper before the International Medical Congress, was fully indorsed. He believed in guarding the stomach, and guiding the patient through the attack. He could not concur with Dr. Lewis in using ten drops of nitro-hydrochloric acid every two hours, and a quarter of a glass of milk as often, because in such quantities it would produce irritation of the alimentary canal, coagulate the milk, and cause fermentation and gas. While it might be admitted that nitro-hydrochloric acid, in proper proportions, aided the digestion of milk, yet, in the quantities named by Dr. Lewis, it would produce the results referred to. The pathological condition of the alimentary canal in typhoid fever implied ulcerative and inflammatory conditions, and it was a well-known fact that, even in ordinary ulceration of the stomach, an absolute alkaline condition offered the only redress. Such an amount of acid as was suggested, he therefore thought, was irrational. Be slow in accepting a limited number of cases as proof of the efficacy of any line of treatment, said the speaker, for the epidemic may have been of a mild type. He believed that ten drops of nitro-hydrochloric acid every two hours, and a quarter-glass of sweet milk as often, would, if persistently used, put a healthy man in bed in twenty-four hours. He was convinced that the form of fever which presented excessively high temperature in the beginning, with a clean tongue, a pulse not exceeding 100 in a minute, good digestion, no diarrhœa, no tympanites, etc., would be materially modified by quinine, because malaria was the complication.

Dr. Hugh T. Nelson, of Charlottesville, said he had received his medical education in Piedmont, Virginia. At that time typhoid fever had been considered the fever of that section. When he had settled in another part, where malarial diseases were common, he had frequently thought he saw cases of typhoid or enteric fever. Subsequently, on removal to Charlottesville, he had seen a good many cases of continued fever, some of which had resembled the cases he had seen in the lower country, while other cases had differed from them in many particulars. The important point was to decide, in any given case, whether or not the continued fever present had its starting-point in irritation and subsequent inflammation of the intestinal glands. Unless this point could be determined, there was no certainty that we had a case of typhoid fever. Hæmorrhage from the bowels occurred by passive congestion in cases of fever in which, though the intestinal glands showed congestion also, there was no ulceration, and no actually acute inflammatory condition. In another class of cases of continued fever the hæmorrhage, when occurring, occurred by an acute inflammatory process, which destroyed the previously much enlarged intestinal glands and the blood-vessels supplying them, the general mucous surface of the bowel remaining intact, or else only showing slight active congestion, evidently secondary to that occurring in the glands. He believed this to be the characteristic form of hæmorrhage in typhoid fever. Many cases were no doubt put into the category of typical cases of this typhoid fever that did not properly belong there. The importance of diagnosis could not be overestimated in the study of continued fevers, so that proper treatment might be adopted.

Dr. Pedigo objected to certain doctrines laid down by Dr. Robinson. The great effort now being made to arrive at a specific treatment of typhoid fever would finally bring about a tangible result. The trend of medical thought and medical practice in this connection was toward the chlorine group. He believed that the proper use of some member of this group of germicides would ultimately furnish the key to the solution of the great problem. He criticised Dr. Robinson's objection to the acid treatment by suggesting that hydrochloric acid was an important agent in the process of digestion, and, so far from aggravating the already existing irritation of the alimentary canal, had a tendency to relieve such irritation by preventing fermentation, which produced the irritating agents.

Dr. C. T. Lewis did not believe that nitric acid prevented putrefaction.

Dr. L. B. Anderson, of Norfolk, remarked that all the speakers had seemed to assume that bacteria were pathological factors, whereas they never had been and could never be such. They were of vegetable and not of animal origin. He had never seen any signs of life in any vegetable or animal matter, or laudable pus from anthrax, furuncle, abscess, or gonorrhœa until it had been exposed to the air under suitable temperature—until, in short, fermentation or putrefaction had developed. Bacteria, therefore, were a product and not a cause of fermentation or putrefaction. We should rather look upon bacteria as the best friends the doctor had for preserving health.

**Prostatic Enlargement.**—In response to calls from the members of the society, Dr. Hunter McGuire, of Richmond, made some impromptu remarks on this subject. He spoke at length on the pathology, causes, and symptoms of the condition for the relief of which he had devised a new operation which was very similar to suprapubic cystotomy for stone. The only difference was that he made the opening into the bladder as low

down on its anterior wall as possible, and left the opening in the skin at the upper end of the incision. A drainage-tube was kept in for a short time. The result was that the patient passed his urine through the artificial urethra thus formed. The speaker had been led to perform this operation by a study of the mechanism of urination. The artificial urethra did not leak nor did urine dribble away, no matter what the position of the man's body. The urine was retained for several hours, often from four to six, and then passed in a steady stream thrown several feet from the body, the last coming in jets as from the natural outlet. The improvement in the patients upon whom he had done this operation had been very wonderful. The artificial urethra, or fistula, had the same relation to the bladder that the spout of a coffee-pot had to the pot.

**Report of the Secretary of the Medical Examining Board.**—Dr. Hugh T. Nelson, of Charlottesville, presented his report covering the period from the organization of the board, on November 15, 1884, to October 9, 1888. This board (which was proving so invaluable in Virginia in lifting the standard of medical education and by direct reflex elevating the standard of graduation of medical colleges who sent their graduates to Virginia) was composed of thirty-two members of the regular profession—three from each of the ten Congressional Districts of the State and two from the State at large—nominated to the Governor for a term of four years. The Governor could not appoint any one of these thirty-two unless he was nominated by the Medical Society of Virginia, except when the society failed for ninety days to make a nomination. Hence this part of the board was selected by the regular profession of the State, regardless of political complexion or personal favoritism of an appointing officer, and it was therefore composed of representative *doctors*—not politicians—who had solely professional interests at stake. In addition, by enactment of the Legislature, in 1886, five homœopathic practitioners, nominated by the Old Dominion Hahnemann Society, were added to the board—making a total of thirty-seven members.

The board, having full power to direct its own plan of examinations, etc., was divided into eight sections, as follows: Chemistry, anatomy, hygiene and medical jurisprudence, physiology, materia medica and therapeutics, obstetrics—including diseases of women and children—practice of medicine, and surgery. Four different members of the thirty-two representatives of the regular profession were assigned to take charge of each of these sections, and the five homœopaths were assigned, respectively, one to each of the following five sections: hygiene and medical jurisprudence, materia medica and therapeutics, obstetrics, etc., practice of medicine, and surgery.

Each committee prepared and reported the questions selected for its section to the board in session just prior to the examinations, and they were not made known to any of the candidates for examination until the examination began. Each question reported by the section to the board in session was investigated by the board and approved or disapproved—those questions disapproved being remanded back to the appropriate committee for revision or substitution. Written examinations were required, and the necessary standard for each applicant to attain was 75 per cent. on all eight—taken as a whole; but if any one fell below 33⅓ per cent. on any one section, although he might aggregate enough on all other examinations to attain an average of 75 per cent., that applicant was not granted a certificate. This provision was demonstrated to be a necessity by the fact that some candidates scarcely made an effort to answer the questions of one or the other section—trusting to aggregate 75 per cent. on the remaining seven branches.

Every applicant for license to practice medicine, etc., in Virginia, since January 1, 1885, who had not previously been licensed, had had to pass a satisfactory examination before this board *in session* before he could practice in this State; nor was the examination a formality. A so-called resident physician—but a resident of another State—at one of the Virginia springs during the past summer was now under bond to appear before the October term of the Shenandoah County Court for presuming that it was a formality, and asking by letter for some special arrangement to be made for him to continue practice at the springs, instead of submitting to the examination before the board. There was no reason why physicians from other States should be granted exemptions from the operations of the Virginia law not accorded to citizens of the State. Steps were being taken to bring to justice two other doctors practicing medicine in Virginia without having yet presented themselves for examination by the State Board—one in Powhatan County and the other in Goochland County.

Two candidates rejected by the board as not passing satisfactory examinations had entered on professional work in their respective counties in defiance of the law. Both had been duly indicted and punished by their courts. One of the cases had been carried to the Court of Appeals of Virginia, which court had sustained the board in every point in which its constitutionality had been attacked by the defendants.

The following is a tabular statement of work done by the Medical Examining Board of Virginia from the date the law went into operation (January 1, 1885) through the date of the foregoing report (October 9, 1888):

| Institutions represented before the Medical Examining Board of Virginia. | Total number of applicants from each. | Total rejections from each. | Certificates issued by Med. Exam. Bd. of Va. | No. rejections making second applications. | Second rejections. | Certificates issued on second application. | Incomplete exams. by withdrawl or otherwise |
|---|---|---|---|---|---|---|---|
| Medical College of Virginia | 57 | 8 | 48 | 3 | ... | 3 | 1 |
| University of Virginia, Med. Department | 33 | 1 | 32 | | | | |
| College of Physicians & Surg., Balt., Md. | 34 | 10 | 24 | 6 | 2 | 4 | |
| University of Maryland, Med. Dep., Balto. | 34 | 9 | 25 | 3 | 1 | 2 | |
| Jefferson Medical College, Phila., Pa. | 12 | 3 | 9 | 2 | ... | 2 | |
| University of Pennsylvania, Phila., Pa. | 2 | ... | 2 | | | | |
| Bellevue Hospital Medical College, N. Y. | 6 | 1 | 5 | 1 | ... | 1 | |
| Univ. of City of New York, Med. Dept. | 7 | 2 | 5 | 1 | 1 | | |
| College of Physicians and Surgeons, N. Y. | 3 | ... | 3 | | | | |
| Louisville Medical College, Ky | 2 | 1 | 1 | | | | |
| Hospital Medical College, Louisville, Ky. | 3 | ... | 3 | | | | |
| Kentucky School of Medicine, Louisville. | 2 | ... | 2 | | | | |
| University of Louisville, Ky | 1 | ... | 1 | | | | |
| Med. Dept., Univ. of Tennessee, Nashville | 1 | ... | 1 | | | | |
| Vanderbilt University, Med. Dept., Tenn. | 3 | 1 | 2 | 1 | .. | 1 | |
| Detroit Medical College, Mich. | 2 | 1 | 1 | 1 | ... | 1 | |
| University of Michigan, Ann Arbor | 1 | ... | 1 | | | | |
| St. Louis Medical College, Mo. | 1 | ... | 1 | | | | |
| Columbus Medical College, Ohio. | 3 | 2 | 1 | 1 | ... | 1 | |
| Cincinnati Medical College, Ohio. | 1 | 1 | | | | | |
| Med. Dept., Howard Univ., Wash'ton, D. C. | 7 | 6 | 1 | 4 | 4 | | |
| Leonard Medical College, Raleigh, N. C. | 3 | 1 | 2 | | | | |
| Med. Dept., University, Georgetown, D. C. | 1 | ... | 1 | | | | |
| Hahnemann Homœop. Med. Coll., Phila. | 2 | ... | 2 | | | | |
| Medico-chirurgical College, Phila., Pa. | 3 | 3 | ... | 2 | 2 | | |
| Geneva Medical College, New York | 1 | ... | 1 | | | | |
| Heidelberg, Germany | 1 | ... | 1 | | | | |
| Baltimore Medical College, Md. | 1 | ... | ... | ... | ... | ... | 1 |
| Colleges unknown | 4 | ... | 3 | ... | ... | ... | 1 |
| Non-graduates | 11 | 4 | 5 | ... | ... | ... | 2 |
| Cleveland Homœopathic Hosp. Coll., Ohio. | 1 | ... | 1 | | | | |
| Total number of examinations* | 240 | 54 | 181 | 25 | 10 | 15 | 5 |

No. of applicants examined by—

(*a*) Individual examiners out of session, 117.

(*b*) Board in session, 123.

* The first and third columns add up 243 and 184, respectively; but three of the applicants each gave two colleges of graduation.

**Officers for the Ensuing Year.**—The following officers were elected by ballot: President, Dr. E. W. Row, of Orange Court-house; vice-presidents, Dr. William C. Christian, of Urbanna, Dr. George S. Luck, of Roanoke, and Dr. L. Ashton, of Falmouth; recording secretary, Dr. Landon B. Edwards, of Richmond; corresponding secretary, Dr. J. F. Winn, of Richmond; treasurer, Dr. Richard T. Styll, of Hollins, Roanoke County. Committee on applications for fellowship at annual session, 1889, Dr. William D. Turner, of Fergusson's Wharf, Dr. R. M. Slaughter, of Theological Seminary, Dr. I. S. Stone, of Lincoln, Dr. Alfred S. Rixey, of Culpeper, and Dr. John Clopton, of Williamsburg. Executive committee, Dr. William W. Parker, of Richmond, Hon. Fellow Dr. J. Herbert Claiborne, of Petersburg, Dr. Jacob Michaux, of Richmond, Dr. L. Lankford, of Norfolk, and Hon. Fellow Dr. Hunter McGuire, of Richmond. The recording secretary and the treasurer are *ex-officio* members. Committee on publications, Dr. C. W. P. Brock, Dr. George Ross, and Dr. Hugh M. Taylor, each of Richmond, Va. The recording secretary and treasurer are *ex-officio* members. Necrological committee, Hon. Fellow Dr. J. Edgar Chancellor, of University of Virginia, chairman. To deliver the annual address to the public and profession, session 1889, Dr. Thomas J. Moore, of Richmond. Croupous pneumonia was named as the subject for general discussion at the annual session, 1889; Dr. B. L. Winston, of Hanover Court-house, was chosen to open the discussion.

The next meeting will be held at Roanoke about September 3d, the exact day to be definitely fixed and announced by the executive committee some months hence.

The next order of business being the nomination to the Governor of members of the medical examining board of Virginia to serve for the regular term of four years, beginning January 1, 1889, Hon. Fellow Dr. J. Edgar Chancellor, of the University of Virginia, introduced the following resolution:

*Resolved*, That the Medical Society of Virginia, desirous of showing its appreciation of the work performed by the Medical Examining Board of Virginia for the term of four years, to terminate December 31, 1888, nominate each of the thirty-two regular physicians now representing this society on that board, and recommend to the Governor of Virginia to issue commissions in due form to each of those so nominated to serve for the regular term of four years, beginning January 1, 1889, as members of that board.

The resolution was unanimously adopted. Hence the following are the thirty-two gentlemen of the regular profession who are to compose the Board of Medical Examiners of Virginia for the term of four years, beginning January 1, 1889:

*State at Large.*—Dr. T. J. Moore, Richmond; Dr. I. S. Stone, Lincoln.

*First Congressional District.*—Dr. S. W. Carmichael, Fredericksburg; Dr. O. B. Finney, Onancock; Dr. W. W. Douglas, Warsaw.

*Second Congressional District.*—Dr. Jesse H. Peek, Hampton; Dr. Herbert M. Nash, Norfolk; Dr. James Parrish, Portsmouth.

*Third Congressional District.*—Dr. R. A. Lewis, Richmond; Dr. C. R. Cullen, Richmond; Dr. Hugh M. Taylor, Richmond.

*Fourth Congressional District.*—Dr. J. Herbert Claiborne, Petersburg; Dr. W. J. Harris, Blackstone; Dr. Hugh Stockdell, Petersburg.

*Fifth Congressional District.*—Dr. Rawley W. Martin, Chatham; Dr. W. L. Robinson, Danville; Dr. T. B. Greer, Rocky Mount.

*Sixth Congressional District.*—Dr. H. Grey Latham, Lynchburg; Dr. A. Trent Clarke, South Boston; Dr. Oscar Wiley, Salem.

*Seventh Congressional District.*—Dr. William P. McGuire, Winchester; Dr. J. H. Neff, Harrisonburg; Dr. Hugh T. Nelson, Charlottesville.

*Eighth Congressional District.*—Dr. C. C. Conway, Rapidan; Dr. Alexander Harris, Jeffersonton; Dr. Bedford Brown, Alexandria.

*Ninth Congressional District.*—Dr. Robert J. Preston, Marion; Dr. R. W. Huffard, Chatham Hill; Dr. S. W. Dickinson, Marion.

*Tenth Congressional District.*—Dr. Z. J. Walker, Brownsburg; Dr. H. M. Patterson, Staunton; Dr. G. D. Meriwether, Green Forest.

**The Revision of the United States Pharmacopœia.**—The corresponding secretary, Dr. John F. Winn, of Richmond, presented a circular letter from the publishing committee having charge of the revision of the United States Pharmacopœia, requesting this society, in common with every other regular State medical organization, to appoint a committee of three to act with the publication committee of the American Pharmaceutical Association in perfecting the revision of the volume to be issued in 1890.

Dr. R. M. Slaughter, of Theological Seminary, moved that the committee of three be appointed as requested. Carried. The president appointed Dr. R. M. Slaughter, Dr. William B. Towles, of the University of Virginia, and Dr. John W. Upshur, of Richmond.

**Report of the Treasurer.**—The treasurer, Dr. Richard T. Styll, of Hollins, presented his report for the year just ended, showing a balance on hand of $229.18.

**Pathogenic Germs or Microbes, and Some Conditions Relating to Infection.**—Instead of a formal "Report on Advances in Surgery," to which task Dr. William Edward McGuire, of Richmond, had been assigned, he read a paper on this subject. He said that the "pathogenic micrococci" of chief interest to the surgeon were those of open wounds, such, for instance, as the micrococcus of syphilis, gonorrhœa, acute infectious osteomyelitis, progressive necrosis, etc. The "pathogenic bacilli" were those of syphilis, tubercle, tetanus, anthrax, ulcerative stomatitis, etc. The baneful influences exerted by these organisms on living bodies had been explained in four ways: (1) Acting as an invading army, they destroyed the raw food of the weaker inhabitants (the tissue-cells), which required more complex bodies for their assimilation; or (2) they interfered with the due performance of the depurating organ, and produced disease by preventing the elimination of urea and other final products of repressive metamorphosis; or (3) as microbes, along with all living beings, produced excretion, and this excretion was discharged into the body of the animal in which the microbes lived, it would produce deleterious effects as certainly as if the animal's excretion had been retained; or (4), as was most generally accepted, the injurious effects produced by microbes was not due to what they took or excreted, but to what they left; and this was associated with the demand they made for the oxygen of the tissues. Living and multiplying without direct exposure to air, they obtained their required oxygen from the tissues by which they were surrounded; and when oxygen was withdrawn from such complex chemical compounds as our tissues were composed of, the elements entered into new and abnormal combinations (ptomaines) which were believed to be the really poisonous agents. Depression of vitality of the part attacked was an important factor in the process of infection. An essential condition in the production of local depression was inflammation. Practically, the micro-organisms entered the body in the first stage of inflammation. Much depended on the part of the body exposed to infection—some micro-organisms infecting only one part of the body, and others

another part. Pettenkofer believed that everything that increased the amount of water in the blood predisposed the individual to infectious diseases.

**Reports in Anatomy and Physiology.**—Dr. T. W. Simmons, chairman, of Union Hall, stated that he had nothing in anatomy to report. But in *physiology*, Dr. Charles M. Blackford (who had removed to New York city) reported a *new corpuscle* which appeared in preparations of blood that had been allowed to stand for some time. This was smaller and more irregular in shape than the ordinary corpuscles and was thought to be fragments of leucocytes. Nothing of importance had recently come to view with regard to coagulation. The view now held was that the fibrin was formed by an action of a fibrin-forming ferment on fibrinogen without the addition of fibrinoplastin. Professor Osler held that the ferment might be furnished by the hæmatoblasts of Hayem. Ranvier stated that the red blood-corpuscles were developed from vaso-formative cells which he described and which he had studied in the omentum of a young rat. Under the head of digestion, Dr. Blackford gave the result of some researches of Dr. Sternberg's on the action of bacteria found in the mouth and of Pasteur on the same subject. He quoted Roger, of Paris, as saying that the liver destroyed the ptomaines formed by these bacteria and others found in other parts of the alimentary tract, and voiced an opinion of Lauder Brunton that the effects of jaundice might be due to the persistence of these ptomaines. A brief sketch was given of the protective mechanism of the digestive organs. The stomach was protected from self-digestion by the alkalinity of the blood, the pancreas by the fact that trypsin was not secreted as such by the pancreas, but as zymogen which became trypsin by union with oxygen when the small intestine was reached. The intestine was protected by the creamy layer of precipitated peptones bathing its villi. Under *neurology* the cerebral lesions were stated which gave rise to the singular condition of "soul-deafness," as it was called by Munk. A lesion in the first and second temporo-sphenoidal convolutions of the left side would destroy all power of understanding spoken language though it be heard. Words sounded like confused noises to patients so affected. A similar state affecting sight might be produced by a lesion in the cortex of the occipital lobe, as shown by Dr. Henry Hun, of Albany. Goltz, however, had failed to demonstrate the psycho-optic center in a dog, the same results following cortical injury in either the posterior or anterior portions. Details of experiments were given.

**Reports in Chemistry, Pharmacy, Materia Medica, and Therapeutics.**—The chairman, Dr. R. A. Lewis, of Richmond, presented the report on chemistry, prepared by Dr. Joseph M. Whitfield, who had just removed from Virginia to New York. He stated that incompatibilities should be better known by physicians. Thus, iodol was incompatible with yellow oxide of mercury, and yet such a prescription for an ointment was often written. In a week's time the neat-looking, homogeneous ointment changed to a dirty-grayish mixture; the excess of iodine in the iodol was given off and decomposed the yellow mercuric oxide. Saccharin, or saccharinic acid, the sweetest of all known substances, belonged to the group of coal-tar products, and was antiseptic. It was maintained, also, that it acted directly on the fourth ventricle, and thereby diminished the amount of sugar produced in the system. It was a boon to diabetics having the proverbial "sweet tooth." It was dispensed in half-grain and one-grain tablets. One grain would make a cup of coffee too sweet for most persons. It combined readily with most alkaloids, such as quinine, morphine, cocaine, etc. As it prevented fermentation, it was used in gastric and intestinal disorders. Cocaine saccharinate was of about four fifths the strength of cocaine hydrochloride, but had no bitter taste. Antipyrine and acetanilide were derived from anilide. Antipyrine was a proprietary drug, and cases of poisoning had resulted from its use, but no case had as yet occurred from acetanilide; nor did it interfere with the digestive tract, like antipyrine. Besides, its effects in smaller doses lasted longer, it stimulated rather than depressed the vaso-motor and muscular systems, it had no after-effects, and it was very much cheaper. Antipyrine was strongly recommended as a prompt hæmostatic, leaving the wound clean. Phthalates were salts formed by the action of the organic acid—phthalic acid—on vegetable alkaloids. The special advantages alleged for these salts were their great solubility and stability. Sulphonal, an oxidation product of ethyl-mercaptan with acetone, was tasteless and colorless, and crystallized in large tablets; it was easily soluble in two parts of water. It was hypnotic in doses of from gr. xx–xxx. Amylene hydrate, or dimethlethylcarbinal, was a tertiary amylic alcohol, a clear liquid, having an ethereal odor and a camphor-like taste. It ranked between chloral and paraldehyde as a hypnotic. It was safer than chloral, as it did not depress the heart or respiratory centers, and had not the nauseous taste, nor did it cause the disagreeable eructations of paraldehyde. Urethane, or ethylurethane, produced sleep like normal sleep, left no headache or gastric disturbance, and only slightly slowed the pulse. It was soluble in water, and its taste was not unpleasant. Dose for infants from twelve to eighteen months old, about four grains. Menthol, or peppermint camphor, was a soluble crystalline substance looking like Epsom salts, deposited when Chinese oil of peppermint was exposed to cold, forming stearoptene of peppermint oil. It equaled thymol as an antiseptic, and hence its use in diphtheria, typhoid and scarlet fevers, etc.

After some notes about cocaine, jambul-seed was mentioned as a new remedy for diabetes mellitus. Dose of the fluid extract of the seed, from five to ten minims. Succinimide of mercury for hypodermic purposes seemed to be a valuable preparation. It was a white, silky powder, prepared by heating together ammonia and succinic anhydride, and then adding mercuric oxide. It was very soluble in water, and the solution was a permanent one. It was cheap.

Dr. H. Rolfe Dupuy, of Norfolk, read the "Report on Advances in Materia Medica and Therapeutics." In reviewing the literature on his subject during the past year, he called special attention to the two great antipyretics—antipyrine and acetanilide—showing their uses and abuses and the particular indications for each, maintaining for the latter the greatest and most varied use. Strophanthus was urged as the great heart tonic, particularly when used in connection with ether, and also with nux vomica. Attention was called to the great value of ichthyol in skin diseases and rheumatic pains. The literature about salicylate of ammonium was reviewed *in extenso* in connection with the treatment of typhoid and remittent fevers. Salol, sulphonal, sparteine, pichi, jambul, and other new remedies or preparations came in for their appropriate share of attention. In conclusion, he condemned the use by physicians of proprietary preparations which did not have attached to the description a working formula for the guidance of the pharmacist.

**Ætiology of Pyrexia from the Standpoint of Modern Physics.**—Dr. R. C. Powell, of Alexandria, read a paper on this subject. He remarked that no theory based wholly on demonstrated science had yet been offered to explain the high temperature in pyrexial diseases. Any attempt to explain the phenomenon by a theory not in harmony with the laws of conservation of energy or correlation of forces was not worth consideration. After a full discussion of numerous theories, he presented the following as his conclusions: 1. The matter of the human body was identical with that of the world around

us, and the forces of the human body were the same as those of inorganic nature. This body, as a piece of mechanism, was more perfect than any other apparatus for the transformation and distribution of energy, with which it was supplied, but possessed no creative power. 2. The relation between combustion and heat was coincidental, and not causal. If heat was the result of collision between carbon atoms and oxygen atoms, this collision must precede that intimate union of such atoms which was termed combustion; and, as the effect could never precede the cause, heat could not possibly be the effect of combustion. 3. The oxidation of tissues *could not* be exaggerated by the presence of micro-organisms whose very existence was maintained by the *absorption* of oxygen from these tissues. 4. In all *essential fevers* the pyrexia was probably due to increased molecular motion. 5. The rapid waste of fatty tissue in fever was not so intimately connected with the production of heat as with the production of energy, some of which was manifested in the accelerated action of respiration and circulation. 6. In sympathetic pyrexia, heat was a form of energy, which, by reason of traumatic lesions of the nervous system, was prohibited from expending itself in functional activity or motion, and was therefore transmuted into heat, which was the form most frequently assumed by transmutable energy. 7. The only rational way to treat an essential fever was to destroy the cause of it; but for agents to accomplish this destruction, no enthusiastic search would be made until we repudiated the idea that the great object in the treatment of fever was to place the system in the most favorable condition for recuperation after the disease should have run its course.

**Antagonism between Amyl Nitrite and Prussic Acid.**—Dr. Lewis G. Pedigo, of Roanoke city, read a paper thus entitled. After certain preliminaries he gave an account of three representative experiments, out of a series that he had performed on lower animals, illustrating the use of amyl nitrite by inhalation as a treatment for prussic-acid poisoning. The experiments consisted in administering the poison in large doses, hypodermically, and beginning the use of the antidote at once by inhalation. Collateral experiments were reviewed in which the poison was given in equal or smaller doses, and the antidote withheld. The effects were observed and compared, always showing a remarkably heavy balance in favor of the remedy. In one of these experiments a dog's life was saved by the use of the nitrite of amyl from the action of the same dose which had just killed a similar dog in five minutes and fifteen seconds without treatment. In commenting on the experiments, a theory was evolved to explain the action and antagonism of the two drugs. The convulsions and arterial spasm of prussic-acid poisoning were attributed to paralysis of inhibitory nerve centers. The relief of these symptoms by nitrite of amyl was accounted for on the supposition that this drug stimulated those centers. The two drugs were shown to antagonize each other in six distinct physiological items, thus proving the amyl to be a more nearly perfect physiological antidote to Prussic acid than was known for any other poison. He suggested the use of the same remedy in cases of poisoning by other cardiac depressants, and enumerated aconite, veratrum viride, and gelsemium.

(*To be concluded.*)

## NEW YORK SURGICAL SOCIETY.

*Meeting of October 10, 1888.*

The President, Dr. Lewis A. Stimson, in the Chair.

**Colo-colostomy for Cancerous Stricture of the Ascending Colon.**—Dr. Willy Meyer presented a patient with the following history: The patient was a woman, aged thirty-three, who had borne three children. In January she had a miscarriage, a few weeks after which she was suddenly attacked with pain in the abdomen, accompanied with constipation and vomiting. Other similar attacks followed. She entered the medical division of the German Hospital on March 28th, where she was treated for chronic intestinal catarrh, and improved. She left the hospital the middle of May feeling somewhat better, but two days later she had another attack of abdominal pain, and showed evidences of intestinal obstruction (ileus), and also had a bloody stool. She re-entered the hospital and improved, but continued to lose flesh. She was examined under ether, and a hard, uneven mass was felt in the right hypogastric region, from which a firm cord could be traced, extending downward parallel with Poupart's ligament. The patient was transferred to the surgical division, and laparotomy was performed July 2d. An incision was made to the right side of and parallel with the linea alba, and after opening the abdomen a cancerous mass, situated at a point a little above the hepatic flexure of the colon, was easily pulled in front of the abdominal wall. There were many secondary growths in the ascending portion. As it was impossible to resect the whole diseased portion of the gut, the question arose whether to make an artificial anus at the lowest portion of the ileum, or to do entero- or colo-colostomy. The speaker decided to perform the latter operation. Two portions of the colon—one above (the ascending colon), the other below the tumor (the transverse colon)—were surrounded by temporary ligatures, the isolated portions having been emptied of their contents before by squeezing them with the fingers. Then longitudinal incisions were made in them, and the two openings united by sutures. The parts then were reduced and the abdominal cavity was closed. The patient lost but little blood during the operation, and the shock was slight. The temperature did not rise above 100·2° F., and pain was not severe. On the second day icterus developed and persisted for two weeks. There was no evidence of hepatic trouble, so that the icterus was probably of the rare hæmatogenous form. There was a great amount of bloody serum in the abdominal cavity that was not sponged out, in order to save time. The same phenomenon had been observed by Leisrink after gastro-enterostomy, and had been attributed to the same cause. The bowels moved on the eighth day. The patient was up on the twenty-third day, and left the hospital at the end of eight weeks. She had gained forty pounds during the three months that had elapsed since the operation, her bowels moved every day without help, and she could eat anything. Although the disease was still present, she felt so well that she was anxious to resume her former occupation of stewardess on an ocean steamer. So far as the speaker was aware, this was the first successful case in which two portions of the colon had been united in this manner.

**Tuberculous Tumor compressing the Spinal Cord; Complete Paraplegia; Operation; Recovery.**—Dr. R. Abbe presented a patient having the following history: N. P., aged twenty-one, a Swede, was admitted into St. Luke's Hospital March 6, 1888. He gave no history of either syphilis or tuberculosis and had never had any acute or chronic illness. Since the 1st of January, 1888, he had had slight pain in his back. On examination, nothing abnormal was found except a slight fullness of the soft parts over the ninth and tenth dorsal vertebræ, where there was some pain on pressure, as well as on motion. The patient came under the care of Dr. Kinnicutt at St. Luke's Hospital, who diagnosticated tumor of the spinal canal. He was examined by Dr. Ridlon, who did not believe that Pott's disease was present, because the tenderness was confined to the spinous and right transverse processes rather than to the vertebral bodies or intervertebral discs. The patient was put under treatment with iodide of potassium, and the pain in the back was relieved

by blisters. Four weeks later the swelling alongside of the tenth spinous process had increased in size so as to form an indurated mass, measuring two inches and a half by three inches. Disturbed tactile sensibility was noted in both lower extremities, and a line of hyperæsthesia could be traced extending across the lower part of the abdomen from one anterior superior spine to the other, below which line the normal sensibility was diminished. The patellar and plantar reflexes were marked. The muscular power in both legs was notably diminished. On April 27th the patient moved his legs with difficulty and could not stand without swaying and almost falling. Ankle-clonus was present. The patient complained of twitching of the legs, and they became cyanotic when allowed to hang over the edge of the bed. There were no bladder or rectal symptoms. On May 4th the patient complained of rapidly increasing weakness, with severe pain in the spine on moving in bed. The entire spine was rigid. Pressure on the ribs caused pain. There was entire loss of sensation in the right leg, with tenderness and hyperæsthesia over the abdomen.



On May 10th the patient was much weaker and had hectic. He complained of constant intercostal and girdle-pains. There was severe muscular twitching. Urine and fæces were retained with difficulty. On May 25th the patient was seen in consultation by Dr. Seguin, Dr. Bull, Dr. Kinnicutt, Dr. Weir, Dr. Murray, Dr. Shaffer, Dr. Ridlon, Dr. Peters, and the speaker. A needle was introduced deep into the tumor and pus was withdrawn. Operative interference was advised.

*May 29th.*—The patient was etherized and an incision six inches in length was made on the left side of and half an inch from the spine, commencing opposite the sixth dorsal vertebra and terminating at the twelfth. The tissue was divided down to the lamella, and about two ounces of cheesy pus were evacuated. The lamellæ and spinous processes of the eighth, ninth, and tenth dorsal vertebræ, being carious, were removed with a rongeur forceps, revealing a mass of dense connective tissue and broken-down material which occupied nearly the entire diameter of the canal for two inches and a half and pressed the cord tightly against the anterior wall. This was thoroughly cleared away with Volkmann's spoon. The bodies of the vertebræ were found to be covered with healthy periosteum, although pus had made its way around to the front of the vertebræ and along the tenth rib. The cavity was packed with iodoform gauze, a counter-opening having been made on either side of the spinal column and two rubber drains introduced. After thorough irrigation with bichloride solution (1 to 1,000) an antiseptic dressing was applied, and over this a plaster jacket. The wound healed rapidly, and by June 8th sensation had begun to return in the lower limbs. On the 25th the patient could move his left leg and the toes of the right foot. He had gained in weight and was free from pain. A month later he could move both legs, the flexors responding more quickly than the extensors.

*August 5th.*—The patient could go about the ward in a rolling chair. The wound had almost entirely healed. In the course of another month he was able to walk on crutches. At the present date he was making steady improvement; his general condition was excellent, he had no fever, was free from pain, could move his limbs, and stand, and walk with the support of a chair.

**Fracture of the Coronoid Process and of the Head of the Radius.**—The PRESIDENT presented a male patient who, three months before, had been brought to the hospital with an injury of the left elbow, the cause of which was unknown. There were considerable swelling and tenderness. The head of the radius projected externally and there was crepitus on rotation. On supination of the forearm the radius projected still farther laterally. With the elbow at a right angle the forearm could be moved backward and forward about a quarter of an inch; these symptoms seemed to indicate that there must be a fracture of the coronoid process, with or without rupture or avulsion of the orbicular ligament, in consequence of which the head of the radius was freed from its usual connections. The arm was flexed at a right angle and put up in plaster, which was removed at the end of three weeks, when it was found that there was no improvement. The president decided to perform arthrotomy. An incision was made on the outer aspect of the elbow, the joint was opened, and the head and neck of the radius were excised. The following condition was present: The coronoid process was broken off at its base; the head of the radius was split antero-posteriorly, and the inner half was broken into two pieces, one of which was displaced forward and lodged in the anterior ligament. The neck was crushed in such a way that the upper surface of the head formed an oblique angle with the shaft. The patient made a rapid recovery and the plaster splint had just been removed. He had a range of motion of about a right angle. Pronation was complete, but supination was limited. Fracture of the coronoid process was of very rare occurrence, and was commonly associated with a similar fracture of the head of the radius, as in the case reported. There were only about twelve cases on record. In this instance the forearm had probably been driven forcibly against the front of the humerus, and thus the coronoid process broken and the head of the radius smashed.

**Radical Cure of Hernia.**—The PRESIDENT presented a patient illustrating the result of an operation for the radical cure of hernia. The canal was occupied by a large, firm, cicatricial plug. The president's practice was to split open the external oblique, to isolate the sac, to ligate it and excise the redundant portion, and finally to narrow the canal by sutures over a drainage-tube which was left *in situ* for two weeks, as it seemed to promote the formation of a large cicatricial mass. He usually opened the sac before ligating it, in order to be sure that no intestine or omentum would be included in the ligature.

Dr. ABBE thought that the cicatricial plug in the patient presented was mostly outside of the external ring. It was important to plug the canal itself.

**Cerebral Abscess as a Sequel of Compound Fracture of the Skull.**—Dr. FRANK W. ROCKWELL read a paper thus entitled (see page 565).

Dr. ABBE said that one of the chief difficulties in these cases was that when the patient had fever and convulsions it was difficult to say whether he had encephalitis or abscess. He cited cases in which the symptoms had seemed to point to encephalitis, but in which, when the dura was punctured, no pus had been found, and the autopsy had shown only encephalitis.

Dr. C. K. BRIDDON said that he had frequently seen cases of compound fracture of the skull in which symptoms of encephalitis existed; paralyses were rare. He had often sought for

pus, and had been unable to find it, even at the autopsy. He cited a case in which after a contusion of the skull the patient had rigors, fever, and delirium, terminating in coma. After death an abscess was found in the brain, distant two or three inches from the seat of injury. In another instance a small quantity of pus was evacuated by puncture of the dura, but it proved to be simply a case of general purulent meningitis. The speaker thought that if cases of compound fracture were treated antiseptically from the beginning suppuration would be of rare occurrence.

The President said that cerebral abscess after fracture had often been attributed directly to persistent depression, but he thought the sounder opinion now was that it was due either to contusion of the brain or to subsequent suppuration of the scalp-wound. Abscess of the brain might follow scalp-wounds, inflammation of the middle ear, or even ulcers of the nose. The infection appeared to be carried by the veins. Fracture confined to the inner table of the skull was rare, and was nearly always caused by glancing gunshot wounds. It had never been satisfactorily demonstrated that cerebral abscess was due to fracture of the inner table in such cases; it seemed more rational to attribute it to suppuration of the accompanying scalp-wound. He quoted Mr. Hutchinson's statement that there was but one recorded case in which depression of a fragment of the skull had in itself been the cause of symptoms of compression. While we must all admit the safety afforded by the use of antiseptics, he did not believe in trephining unless there was a definite reason for thinking that it would be of service. He would not interfere in these cases without having some definite indication. Of course, when there was a compound fracture the wound should be explored, but the scalp when unbroken offered the best safeguard against cerebral suppuration. He cited a case to illustrate how an abscess might form as the result of prolonged suppuration involving the skull.

**A Spiral Steel Catheter broken off in the Bladder.**—Dr. Abbe showed the fragments of such an instrument which had been used by one of his patients for six months. One morning, while the man was trying to withdraw it, it broke into three pieces. He was brought to St. Luke's Hospital, where Dr. Parker, the house-surgeon, removed a long fragment which had broken off in the grasp of a deep urethral stricture, and subsequently, after performing cystotomy, he removed the third fragment, which had plowed its way beneath the mucous membrane of the bladder. The spiral steel of the instrument had become rusty at the two weak points.

## New Inventions, etc.

### THE CAPIAT.

By J. S. Poynor, M. D.,
Davilla, Texas.

During a quarter of a century of general practice the writer has had, perhaps, an average experience with uterine troubles. To cause the expulsion or remove the products of conception in many miscarriages, and sometimes after full-term pregnancies, has often been a most perplexing problem; and in these days of antisepsis we are no longer permitted to trust to nature to expel or dispose of substances that may become most mischievous or poisonous if permitted to linger *in utero*. The placental forceps, blunt hook, wire loop, curette, etc., are all uncertain and unsatisfactory instruments in most hands. And the finger, notwithstanding its intelligence, is but little if any better. In not more than one case in a thousand do we find the comprehensive finger, the shallow pelvis, the thin and relaxed abdominal walls, where it is possible to successfully use the conjoined manipulations so beautifully illustrated in the books and so graphically described by professors.

The great body of general practitioners, after the most patient and conscientious efforts with these instruments, are often compelled to cease their efforts, dissatisfied with the results, if not actually chagrined and mortified at the useless if not injurious hooking, scraping, and gouging. To overcome in some measure the difficulties above indicated, the instrument hereinafter described has been devised by the writer and made for him by Messrs. Tiemann & Co., of New York, in their usual excellent manner.

The writer may be permitted to say here, and once for all, that in the foregoing and what is to follow no dogmatic assertion is intended, but he merely wishes to state his views without circumlocution. The figures will, it is hoped, give a clear idea of the capiat. (The signification or appropriateness of the name can be readily determined by those concerned or curious about such matters.)

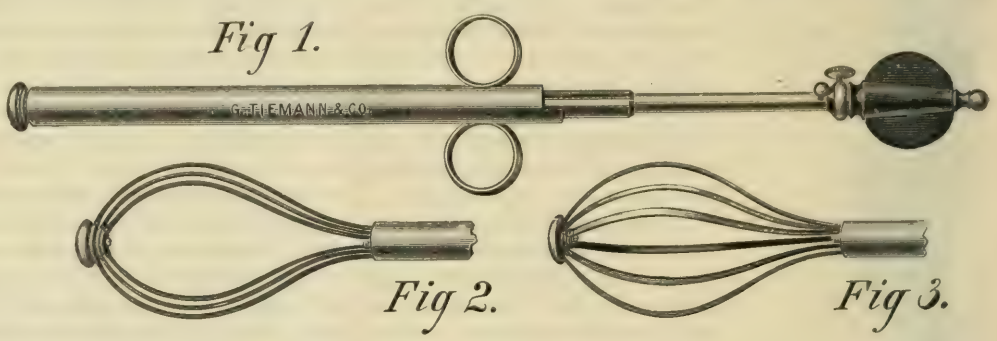



*Fig 1.*

*Fig 2.*

*Fig 3.*

This instrument, designed for intra-uterine use, consists of a tube nine or ten inches long, half an inch in diameter, as seen in Fig. 1, with rings near one end, extending to the head at the left. Through the tube extends a rod, the handle seen on the right of the figure, and having a set of springs at the distal end terminating in a rounded head seen at the left.

Fig. 2 shows the same distal end of the instrument, the rod having been pushed forward or the tube retracted by means of the handle and rings, freeing the springs, which are all lying in the same plane and which expand into an elliptical or oval form about four inches and a half by three inches in its long and transverse axes, unless the cavity in which they act should be of less capacity; in that case the expansion will be limited by the walls of such cavity.

Fig. 3 represents the same after having rotated the rod from left to right, or the tube from right to left, or both simultaneously in these opposite directions, until the tube and the rod have made one third of a complete rotation in relation to each other, when the six springs will be found at equal distances from each other, forming a basket which will have inclosed any substance that may be in the cavity.

The springs may be made of any size, number, strength, or capacity that may be desired, but a capacity up to the size of a turkey-egg or a little larger, with six springs, is deemed sufficient for most cases where such an instrument will be desired. This will inclose an ovum up to the third or fourth month. After that period an ovum rarely comes away entire, and the decidua which often remains and is so prolific in breeding trouble—hæmorrhage, subinvolution, sepsis, etc.—may be readily removed with this instrument.

To use the capiat: It should be thoroughly clean and oiled with carbolized oil, and the various movements made repeatedly to see that

it works perfectly. Having the patient in proper position—it does not matter much which, so that the thighs are drawn up—a finger is passed into the vagina to the os, the cervix being dilated to at least half an inch (no intra-uterine manipulations should ever be attempted with less dilatation than this). The instrument closed, as seen in Fig. 1, is then passed along the finger to the os, in and through the cervix along the posterior wall of the uterus well up to the fundus, which may be determined both by the distance and by the resistance to the broad, rounded head. It is well, after the instrument is in the uterus, to place one hand above the symphysis on the fundus to steady it and assist the judgment as to the proper introduction. The head of the instrument having reached the fundus, the rod is held stationary while the tube is retracted, freeing the springs and allowing them to expand in the antero-posterior plane. If any attachments are apprehended, the tube and rod-handle may be firmly grasped with one hand while with the other the fundus is steadied and the entire instrument gently rotated half round, by which the whole uterine wall will have been swept, except a very small patch directly above the head. If it is desired to sweep that, a slight change in the direction of the long axis of the instrument and a gentle turn will accomplish it. Then distribute the springs—form the basket.

If the uterus is not steadied above the pubes while distributing the springs, it is better to turn the tube and rod simultaneously in opposite directions to avoid the possibility of twisting the cervix or straining the uterine attachments.

After performing the above-described movements, any detached or easily detachable substance that may be in the uterus will be inclosed in the basket of springs. The rod may then be held steady and the tube pushed up, compressing the springs and sinking them into the soft contained mass, or the transverse diameter of the basket of springs reduced to that of the tube if nothing is inclosed. The dull and easily compressible springs would hurt nothing if withdrawn without compression. In either case the basket and contents may be withdrawn at discretion, the finger of one hand being held against the os to make sure that there is no dragging down of the uterus, which should never be drawn down if it is possible to avoid it. Practitioners will find the capiat, when rationally used, sure in action, removing with certainty all detached or easily detachable substances from the uterus or any other cavity not beyond its capacity, and without possibility of harm. There is not an angle, edge, or point about it that can come in contact with the tissues, hence there can be no lacerations.

No considerable force is ever to be used with the capiat, either in working or working with it. It is abundantly strong for every purpose for which it is designed. Used cautiously and gently, it is harmless, painless, and effective.

By taking out the thumb-screws at the handle of the rod, the rod and springs may be pushed through and out of the tube; then, by taking out a screw in the head, the parts are all separated, and may and should be thoroughly cleaned. But it is hardly worth while to say a word about antiseptic precautions at this late day. Instruments must be *clean*.

The mucous membrane of the uterus (if it may be so called) being firmly attached to the muscular layer, without any intervening submucous or areolar tissue, there is no danger in passing over its surface a dull and easily compressible spring—no danger of lacerating or removing anything that should not come away. Indeed, if desired, a pair of the springs might be sharpened and used instead of the sharp curette. They would do a much better operation than the curette in the hands of any except the most practiced and skillful operators, and much more expeditiously.

At slight expense a joint with a slide may be made in the rod, which will shorten the instrument to little more than the length of the tube, thus making it more compact and convenient to those who do not habitually carry an obstetrical case.

Different sets and sizes of springs may be made to work with the same rod and tube, if desired.

To recapitulate. The capiat will save the great army of general practitioners throughout the country from many weary, anxious hours of waiting and temporizing with drugs, tampons, and repeated gougings with uncertain and often painful and dangerous instruments, to say nothing of the tortures and perils that helpless patients will escape, which, after all, is the great matter.

A much more elaborate article might be written, but it would be useless, if not impertinent, to an enlightened profession, to whose judgment the capiat is most respectfully submitted.

*November 1, 1888.*

## AN ATTACHMENT FOR AGNEW'S BIDENT.

By Joseph A. Andrews, M. D.




From time to time during the past two years the writer has been solicited by correspondents to furnish them with a description of his modification of the bident* invented by the late Dr. Cornelius R. Agnew for the purpose of facilitating the removal of a lens dislocated into the anterior chamber or vitreous chamber.

The writer simply designed a holder for the bident which is somewhat more convenient than the needle-holder originally employed by Dr. Agnew. The handle of the holder is 12 centimetres long, a trifle stouter than the handle of a cataract knife, and, like the latter, is made of ivory. The needles of the bident are two centimetres, or about $\frac{3}{4}$ of an inch, in length, 3·05 mm. apart, and of the same breadth and shape as the ordinary cataract needle. The projection at which the proximal ends of the needles are united is round (instead of flat, as in the original design), with a small hole to receive the spring catch in the holder, by means of which the bident is firmly grasped in the holder. When the eye has been transfixed with the needles, the latter should be detached from the holder before the anterior chamber is opened, this detachment being readily effected by simply depressing the spring in the holder and then gently withdrawing the latter.

The instrument is made by W. F. Ford, of Hazard, Hazard, & Co., New York.

39 West Thirty-second Street.

# Miscellany.

**The Southern Surgical and Gynæcological Association** will hold its annual meeting in Birmingham, Ala., on the 4th, 5th, and 6th of December. An address will be delivered by the president, Dr. W. D. Haggard, of Nashville, Tenn., and an oration by Dr. W. F. Hyer, of Meridian, Miss. Papers are announced as follows: "Gastrostomy," by Dr. W. B. Rogers, of Memphis, Tenn.; "Superinvolution of the Uterus following Trachelorrhaphy," by Dr. Virgil O. Hardon, of Atlanta, Ga.; "Indications for Operative Interference in Cerebral Troubles," by Dr. T. O. Summers, of Jacksonville, Fla.; "A Case of Tubal Pregnancy presenting Interesting Medico-legal Relations," by Dr. E. P. Sale, of Memphis, Tenn.; "The Extravagances and Impracticable Requirements of Modern Antiseptic Surgery, so far as the Country Practitioner is concerned," by Dr. J. M. Taylor, of Corinth, Miss.; "Antiseptics in Surgery and Gynæcology," by Dr. F. T. Meriwether, of Asheville, N. C.; "My Antiseptic Bags, or Practical Antiseptic Surgery," by Dr. J. W. Long, of Randleman, N. C.; "Floating Kidney with Vicarious Menstruation," by Dr. De Saussure Ford, of Augusta, Ga.; "New Treatment of Intra-uterine Fibroids," by Dr. E. J. Beall, of Fort Worth, Tex.; "The Medical Treatment of Fibroid Tumors of the Uterus," by Dr. Bedford Brown, of Alexandria, Va.; "Alexander's Operation," by Dr. W. L. Nichol, of Nashville, Tenn.; "The Present Status of Electro-

* For directions as to use of the bident, see Dr. Agnew's article, "Transactions of the American Ophthalmological Society," 1885.

therapeutics in Gynæcology," by Dr. J. R. Buist, of Nashville, Tenn.; "Hysterectomy in Cancer of the Uterus," by Dr. W. H. Wathen, of Louisville, Ky.; "Fractures of the Forearm," by Dr. John Brownrigg, of Columbus, Miss.; "The Treatment of Fractures with Plaster-of-Paris Splints," by Dr. W. F. Westmoreland, Jr., of Atlanta, Ga.; "Interesting Cases of Surgery," by Dr. R. M. Cunningham, of Pratt Mines, Ala.; "The New Departure in Uterine Therapeutics—the Dry Method," by Dr. T. A. Means, of Montgomery, Ala.; "A Study of the Various Methods of Treatment of Laceration of the Perinæum and Rectocele," by Dr. J. H. Blanks, of Meridian, Miss.; "Perineal Lacerations," by Dr. M. C. Baldridge, of Huntsville, Ala.; "Cystoscopic Exploration," by Dr. A. V. L. Brokaw, of St. Louis, Mo.; "Shock of Injury and its Effects," by Dr. John R. Page, of Birmingham, Ala.; "Some Practical Thoughts in Surgery and Gynæcology," by Dr. James Guild, of Tuscaloosa, Ala.; "The Field and Limitation of Laparotomy," by Dr. I. S. Stone, of Lincoln, Va.; "Operative Procedures in Traumatic Epilepsy," by Dr. J. T. Wilson, of Sherman, Tex.; "Surgical Tuberculosis," by Dr. W. Locke Chew, of Birmingham, Ala.; "The Treatment of Certain Forms of Menorrhagia," by Dr. W. D. Bizzell, of Atlanta, Ga.; "Electrolysis in the Treatment of Urethral Strictures," by Dr. S. M. Hogan, of Union Springs, Ala.; "Operative Procedures in Hypertrophy of the Prostate," by Dr. R. D. Webb, of Birmingham, Ala.; "Electrolysis in Morbid Alterations produced in the Prostate by Gonorrhœa of the Urethra," by Dr. J. D. S. Davis, of Birmingham, Ala.; and "Dermoid Cysts of the Coccygeal Region," by Dr. E. J. Beall, of Fort Worth, Tex. There will also be a discussion on "Abdominal Surgery."

**Fish Poisoning.**—According to the "Union médicale," a prize of 5,000 roubles is to be awarded in Russia for the best essay on the nature of the poison which develops in raw salted fish. The points to be considered are: The precise physical and chemical nature of the poison, as shown by experiments; its action on the heart, the circulation, the digestive organs, and the nervous system, as shown by experiments on animals; the rapidity with which it is absorbed from the alimentary canal; the signs by which contaminated fish may be distinguished from those that are sound; the means of preventing the development of the poison; and the antidotal and other medical treatment of persons suffering from the effects of the poison. Competing essays must reach the *Ministère des domaines* before January 1, 1893.

**An Association of Acting Assistant Surgeons of the United States Army,** past and present, has been formed "for the purpose of securing, so far as possible, a correct history of those who have served in this capacity, and also for mutual protection and benefit." Communications may be addressed to Dr. W. T. Parker, Newport, R. I.

**The Health of Connecticut.**—According to the "Monthly Bulletin of the Connecticut State Board of Health," for the month of September, in 162 towns there were 959 deaths, including 9 from scarlet fever, 13 from cerebro-spinal fever, 58 from diphtheria and croup, 4 from whooping-cough, 62 from typhoid fever, 15 from malarial fever, 9 from typho-malarial fever, 46 from diarrhœa, 128 from consumption, 56 from pneumonia, and 25 from bronchitis.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality" for the month of October, the whole number of deaths was 460, including 1 from cerebro-spinal meningitis, 11 from cholera infantum, 1 from cholera morbus, 10 from croup and diphtheria, 3 from dysentery, 7 from diarrhœa, 13 from typhoid fever, 3 from malarial fever, 1 from typho-malarial fever, 3 from pyæmia, 2 from whooping-cough, 1 from scarlet fever, 1 from septicæmia, and 2 from small-pox.

## THERAPEUTICAL NOTES.

**The Glycerin Treatment of Constipation,** enemata of from forty to fifty grains being used, has been tried by L. Novotny (Pester med.-chir. Presse") in two hundred cases representing the most varied forms of disease. In almost all of them defecation took place after one or two minutes, but in four or five cases from two to three hours elapsed before the effect occurred. No unpleasant action was observed. In about a third of the cases there was first a solid movement, followed in an hour by a second that was soft or liquid. Reisinger ("Prager med. Wochenschrift") also reports satisfactory results from the treatment. Both articles are summarized in the "Centralblatt für klinische Medicin."

**Rectal Saline Injections in Post-partum Hæmorrhage.**—Mr. R. F. Gill ("Lancet") recommends rectal injections of saline solutions as a substitute for transfusion where the latter is impracticable. He would inject three or four ounces at a time, and repeat the injection every ten or fifteen minutes, using a tepid solution. He speaks of a case in which he thinks life would have been lost but for recourse to this measure.

**Antipyrine in Hæmorrhoidal Ulcers.**—J. Schreiber ("Therap. Monatsh."; "Memorabil.") reports a case of obstinate hæmorrhoidal ulceration in which the itching was promptly stopped and healing soon produced by insufflations of finely powdered antipyrine.

## ANSWERS TO CORRESPONDENTS.

*No. 240.*—Nine volumes have been published. The work gives the names of authors and the titles of books and journal articles. You can obtain it of the Public Printer, Washington, D. C. We do not know the price.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# THE ELECTROLYTIC DECOMPOSITION OF ORGANIC TISSUES.*

BY GEORGE H. ROHÉ, M. D.,
PROFESSOR OF DERMATOLOGY AND HYGIENE IN THE COLLEGE OF PHYSICIANS AND SURGEONS, BALTIMORE.

MANY compounds existing in the fluid state, whether fused or in solution, may be decomposed by passing through the liquid a current of electricity of sufficient strength to overcome the chemical affinity between the component molecules. This process of electrical decomposition was discovered by Nicholson and Carlisle in 1800, and was afterward very thoroughly studied by Faraday, to whose accurate researches we owe most of the definite knowledge upon the subject.

The nomenclature used in discussions of this subject is sufficiently technical and unfamiliar to warrant some brief definitions before proceeding.

A compound which is decomposable by an electric current is called an *electrolyte*, and the process of decomposition itself is called electrolysis.

The battery terminals immersed in the liquid thus decomposed are called *electrodes;* the one connected to the positive pole is the *anode*, that connected to the negative pole is the *cathode.*

The bodies (elementary or compound) resulting from the decomposition of an electrolyte are called *ions;* those collecting at the anode are *anions*, those at the cathode, *cations.*

Electro-motive force, or, as it is often termed, difference of potential, is that power by virtue of which electric force overcomes resistance. Its unit of measurement is the volt, which is nearly equivalent to the potential difference of a standard cell of Daniell's battery.

Resistance is the obstruction offered by a circuit to the passage of electric force. Its unit of measurement is the ohm, which is nearly equivalent to a copper wire one twentieth of an inch in diameter and two hundred and fifty feet long. The reciprocal of resistance is conductivity; the best conductors offer least resistance to the passage of a current, and *vice versa.*

Current strength practically represents the working power of a definite electric force in a circuit. Its unit is the ampère. Current is absolutely measured by the rate of chemical decomposition going on in a voltameter introduced into a circuit, or by the decomposition in the battery itself. It is said to be proportional to the electro-motive force of the battery divided by the resistance of the circuit. In electro-therapeutics the ampère is rarely or never used to designate current-strength, the unit generally employed being the thousandth part of an ampère, called a milliampère. It may not be improper to adopt the milliampère as the electro-therapeutic unit, as suggested, I believe, by Sir Spencer Wells.

The coulomb is the unit of quantity. It is equal to one unit of current (ampère) passing in one unit of time (one second). In other words, a current of one ampère in a circuit will produce one coulomb to the second. This unit has not been much employed in recording electro-therapeutic observations, but it, or a subdivision of it corresponding to the milliampère (millicoulomb), would enable observations in electrolysis to be compared with much greater accuracy and definiteness than heretofore. For example, to say that a current of ten milliampères was used in a given case gives no definite notion of the amount of electric energy brought into requisition unless the exact time during which such a current was acting is also stated. The statement that six coulombs were employed would at once indicate the exact amount of electrical decomposition produced. It must be borne in mind that the ampère and coulomb, representing definite results of electrical activity, have much more meaning than the volt and ohm, which are mere arbitrary standards.

The coulomb is that quantity of electricity which will liberate ·0104 milligramme of hydrogen when passed through a decomposition cell or voltameter. Faraday demonstrated that the quantity of electricity necessary for the decomposition of electrolytes has a definite relation to the chemical equivalents of the elements entering into the composition of the electrolyte. Hence the quantity of electricity (in coulombs) needed to decompose any compound susceptible of electrolysis can easily be ascertained by multiplying its chemical equivalent by the electro-chemical equivalent for hydrogen—*i. e.*, ·0104. For example, the chemical equivalent of zinc is 32·5, hydrogen being 1. One coulomb of electricity will liberate ·0104 milligramme of the latter from any of its compounds. By multiplying 32·5, the chemical equivalent of zinc, by ·0104, the electro-chemical equivalent of hydrogen, we find $32{\cdot}5 \times {\cdot}0104 = {\cdot}3380$, which is the electro-chemical equivalent of zinc, or the number of milligrammes of this element liberated by one coulomb of electricity from any of its compounds in solution.

If, on the other hand, the quantity of zinc which has been liberated or deposited is known, the quantity of electricity in coulombs required for its liberation can easily be calculated.

A number of laws governing electrolysis have been established by the labors of Faraday and other investigators. The following are among the more important of these laws: An elementary body can not be an electrolyte. Electrolysis does not take place in solids. Bodies must be in a state of fusion or solution before electrolytic decomposition can take place in them. Electrolytic decomposition occurs only at the surface of the electrodes immersed in the electrolyte.*

Electro-positive elements appear at the negative electrode; electro-negative elements at the positive electrode.

* Read before the American Dermatological Association at its twelfth annual meeting.

* It is not altogether certain that this law holds good for all electrolytic decompositions. There are reasons for believing that in organic and other unstable compounds the electrolytic field is not so definitely limited.

The following table gives the electric polarity of a number of elements:

| *Electro-positive Elements.* | *Electro-negative Elements.* |
|---|---|
| Hydrogen. | Oxygen. |
| Potassium. | Chlorine. |
| Sodium. | Iodine. |
| Gold. | Bromine. |
| Silver. | Nitrogen. |
| Copper. | Sulphur. |
| Mercury. | Fluorine. |
| Tin. | Phosphorus. |
| Iron. | Carbon. |
| Nickel. | |
| Zinc. | |
| Lead. | |
| Manganese. | |
| Magnesium. | |
| Calcium. | |

It must not be assumed, however, that the positions assigned to the various elements in these columns are definite. Electro-negative elements may acquire positive polarity, and *vice versa*. The polarity of the elements depends upon their relations to other elements in a compound rather than upon any intrinsic property.

Ions do not always appear at the electrodes in the form of elements, but sometimes as compounds. Thus, in the decomposition of sodium sulphate, sulphuric acid appears at the anode and soda (sodium oxide) at the cathode. It is generally stated that these compounds are the results of immediate recombinations between elements set free at the electrodes, but there are serious difficulties in the way of accepting this theory, unless we assume these newly formed compounds to be particularly unstable and subject to immediate redecomposition under the influence of the current.

Whenever an electrolyte is decomposed by a current of electricity, the resolved ions have a tendency to reunite, thus setting up an opposing electro-motive force to the decomposing current. This tendency to reunite is commonly termed "chemical affinity." The electro-motive force of the decomposing current must therefore be greater than that due to the chemical affinity of the resolved ions. For example, when water is decomposed by a current of electricity into its constituent ions—oxygen and hydrogen—the opposing electro-motive force due to the chemical affinity of these two gases is about 1·5 volts; therefore, to decompose water, a battery having a higher electro-motive force than 1·5 volts is necessary. Inattention to this fact may account for the contradictory results obtained in some cases where electrolysis is employed for therapeutic purposes.

The quantity of the substance which is decomposed is proportional to the quantity of electricity passing through the electrolyte, and is independent of the size of the electrodes and of the time during which the current is passing.

The quantity of an ion liberated at an electrode in a second is equal to the strength of the current multiplied by the electro-chemical equivalent of the ion. Reciprocally, the quantity of electricity in coulombs which has passed through the electrolyte is equal to the weight of the ion which has been liberated divided by the electro-chemical equivalent of the ion.

The electro-chemical equivalent of an ion is the quantity of the ion liberated by the passage of one coulomb of electricity.

The amount of electro-chemical action is equal at all points of the circuit. This law seems to contradict that stated above—that decomposition takes place only at the surface of the electrodes. This entire subject is, however, still in such an indefinite state that both propositions must be accepted with some reservation. Unfortunately, physicists are not yet in entire agreement as to the normal condition of the molecular aggregations of matter in liquids. Professor Clerk Maxwell seems inclined to accept the theory of Clausius, which, indeed, assists us materially in understanding the action of electrolysis in organic tissues. This theory is as follows:

"Every molecule of a fluid moves about in an exceedingly irregular manner, being driven first one way and then another by the impacts of other molecules, which are also in a state of agitation.

"This molecular agitation goes on at all times independently of the action of electro-motive force. The diffusion of one fluid through another is brought about by this molecular agitation, which increases in velocity as the temperature rises. The agitation being exceedingly irregular, the encounters of the molecules take place with varying degrees of violence, and it is probable that even at low temperatures some of the encounters are so violent that one or both of the compound molecules are split up into their constituents. Each of these constituent molecules then knocks about among the rest till it meets with another molecule of the opposite kind, and unites with it to form a new molecule of the compound. In every compound, therefore, a certain proportion of the molecules at any instant are broken up into their constituent atoms.

"Now, Clausius supposes that it is on the constituent molecules in their intervals of freedom that the electro-motive force acts, deflecting them slightly from the paths they would otherwise have followed, and causing the positive constituents to travel, on the whole, more in the positive than in the negative direction, and the negative constituents more in the negative direction than in the positive. The electro-motive force, therefore, does not produce the disruptions and reunions of the molecules, but, finding these disruptions and reunions already going on, it influences the motion of the constituents during their intervals of freedom. The amount of this influence is proportional to the electro-motive force when the temperature is given. The higher the temperature, however, the greater the molecular agitation, and the more numerous are the free constituents. Hence the conductivity of electrolytes increases as the temperature rises."*

There is no actual transfer of ions from one electrode to the other. The passage of the current through an electrolyte is supposed to take place by polarization of the molecules, by which the electro-positive element is turned toward the cathode and the electro-negative element toward the anode.

The terminal element at each end of the series is then torn loose from its combination with its fellow and given off at the electrode, combined with the latter or with other free molecules in the vicinity, or diffused in the liquid.

* J. Clerk Maxwell, "An Elementary Treatise on Electricity," Oxford, 1881, p. 104.

This theory was first propounded by Grotthüs, and has been generally accepted by electricians. The theory of Clausius, however, seems to solve the problem much more satisfactorily. This point will be again adverted to presently.

Pure water is said not to be an electrolyte, inasmuch as it is a non-conductor, and all electrolytes are conductors. Yet water, slightly acidulated with sulphuric acid, is used as the electrolyte in voltameters, and most of the laws of electrolytic decomposition have been deduced from observations upon this medium. There is no question that water, holding either acid or a salt in solution, is decomposable by an electric current of sufficient potential difference. Whether the electrolytic action in this case is the result simply of the higher conductivity of the water, or whether the acid or salt perform some other part in the process, is not known. It seems probable that the additions to the water promote electrolysis by increasing the conductivity. There is reason to believe, however, that even absolutely pure water is not entirely resistant to the electrolytic current.

According to one of the laws of electrolysis above quoted, there is no actual transference of ions through the electrolyte. But there must be some molecular change going on between the ions, otherwise no conduction of current could occur. Visible decomposition, however, occurs only at the electrodes. It is not yet satisfactorily established whether the molecules of compounds are all in a state of stable combination, or whether Clausius's theory of free molecules in a compound may be invoked in explanation. If the latter is the case, we may represent to ourselves the free molecules being brought into line by the current and advancing toward the electrodes in opposite directions, the electro-positive elements, or ions, going with the current, or "down hill," as Dr. Lodge has cleverly suggested, while the electro-negative elements travel against the current, or "up hill."

It seems to have been clearly established by numerous experiments that galvanic conduction through liquids is always electrolytic; in other words, that there can be no conduction of an electric current through a liquid without that molecular rearrangement in the field through which the current passes, and that molecular disintegration at the surfaces of the electrodes which we know as electrolysis.

If this is true, and there is no reason to doubt that it is, many of the current notions of the physiological action of the galvanic current upon organic tissues require modification. We shall be obliged to assume that every time we use the constant galvanic current for therapeutic purposes—whether to relieve pain in a nerve, to stimulate nutrition in muscle or other tissue, or to perform what we are now accustomed to call an electrolytic operation—we are performing electrolysis in all cases, for the human body may be regarded as a large and exceedingly composite electrolyte. Upon this hypothesis distinct and very marked advances may be expected in our applications of the galvanic current in the treatment of disease. The various processes supposed to go on in the body under the influence of an electric current, and termed by different authors electrical absorption, electrical osmosis, and electro-catalysis, will properly be ranged under the single conception of electrolysis. It must be evident at first thought how much such a conception will simplify and render explicit a subject upon which there is at present much loose thinking and vague writing.

With this preliminary discussion of the physical facts and principles of electrolysis, we are prepared to enter upon the study of this process as applicable for the decomposition, destruction, or modification of normal and pathological organic tissues.

Organic tissue is an electrolytic conductor—*i. e.*, a current can pass through it only by electrolytic decomposition of its compounds, in accordance with the law that "the electricity does not flow *through* but *with* the atoms of matter which travel along and convey their charge."* This does not mean necessarily that the atoms travel throughout the entire distance from one electrode to the other, but that they give off their charge to the next in series, and so on to be passed along to the end of the electrolytic circuit, where the electricity is either given up to the electrode or converted into another form of energy by a combination of the carrying atom with others.

Hitherto the human body has been measured electrically merely as a conductor or as a resistance, but the more rational proceeding would seem to me to consider it as an electrolyte.

In electrolysis of organic tissues there are probably several processes to take into account. In the first place, it is extremely likely that the water of the tissues with certain salts, acids, and other compounds in solution yields to the disruptive power of the current, and hydrogen with other electro-positive ions are set free or recombined at the negative electrode, while oxygen and negative ions are separated at the anode.

But while this liberation of atoms and molecules takes place at the terminals of the battery, what is going on in the track of the contrary processions of ions between the electrodes? In other words, is there any interpolar action of the current, and in what does it consist? In my opinion, there is of necessity a loosening or shaking up of the interpolar compounds which results variously according to the vitality of the tissues. If the current is of moderate strength and the tissues have the normal degree of vital resistance, the molecular disturbance will probably result merely in an improvement of nutrition, in accordance with the general biological law that moderate stimulation produces increase in nutrition. If the current is of excessive strength, there will probably be some breaking up of compounds which may affect nutrition unfavorably. I think every one who has used electricity much and observantly must be able to recall cases where this explanation would be at least a plausible one.

Actually, we know really nothing of the interpolar effects of electric currents in organic tissues. In inorganic compounds, with their simple and stable organization, the electric current may not produce any interpolar change, although the theory of Clausius rather favors the view that interpolar decomposition occurs; but in organic compounds,

* Lodge, "Nature," 1887.

with their more complex and unstable composition, we can readily understand that the continual rearrangement of molecules under the influence of electrolytic conduction may so disturb the harmonious relations of the molecules as to render decomposition more easy. If the tissues are normal, recovery and repair of slight defects may promptly follow, but in the case of pathological products—inflammatory infiltrations, new growths, serous effusions, etc.—it stands to reason that a molecular disturbance of some extent or continued for some time may produce such a modification of nutrition in the tissue as to promote its regressive metamorphosis. That this actually takes place I firmly believe, although I am unable to give an exact demonstration of the process. I am also strongly of opinion that in many pathological products or tissues a retrogressive change begun under the influence of an electrolytic current is kept up after the immediate action of the current has been discontinued. I need only refer here to the numerous examples of cure of new growths, inflammatory deposits, and serous collections on record. A brief reference to one case under my own observation may not be out of place here. In 1886 I gave a partial report of a case of goître treated by electrolysis. The tumor grew smaller under the applications, but the diminution in size did not cease with the discontinuance of the treatment. The regressive tendency set up continued until at present the tumor has almost, if not quite, disappeared. Similar results are alleged by gynæcologists who have properly used the electrolytic method in fibroid tumors of the uterus according to the method of Apostoli. My friend Professor Hardaway has reported analogous results with cases of keloid and hypertrophic scars, and my own experience with such growths as fibromata, vascular nævi, epithelial and papillary neoplasms is strongly corroborative. At first I was disposed to attribute this continued effect of the electrolytic applications to a condensation of connective tissue robbed of part of its nutrition, but further study has led me to ascribe a share of the result to the continuous modification of vital activity impressed upon the tissue by the electrolytic current. The progressive disappearance of serous collections (hydroceles, arthritic effusions, cysts of various kinds) and of inflammatory infiltrations after interruption of the electrolytic séances must, I think, be attributed to a similar action. On no other hypothesis known to me can these results be so rationally explained.

In the electrolytic action most frequently made use of in dermatological practice—namely, extirpation of superfluous hairs—we have normal tissue to act upon—one, in addition, which is very resistant to external impressions, and readily regenerated. Here we need strong currents, because the tissues have normal chemical and vital stability, and we must produce complete destruction of the papilla if the hair shall not be renewed. It is not improbable in this case that the electrolytic action may continue after the cessation of the operation, although I am inclined to attribute little effect to this.

For the destruction of new formations, the more succulent and of lower vital resistance require less current strength than those composed of the more resisting tissues, such as fibroids and vascular growths. Fibro-pigmentary growths (pigmented nævi) are usually very resistant to electrolytic destruction, and require strong currents and thorough application to the whole affected surface if good results are expected.

In stricture of the urethra we have pathological conditions which should react favorably to the electrolytic current. Excluding strictures due to traumatism or to ulceration of the mucous membrane, the pathological condition consists in an inflammatory new formation in the submucous tissue. The removal of this infiltration by absorption is rationally indicated and striven after in most methods of treatment of stricture. The method of gradual dilatation by means of sounds can only be justified and explained on the score of causing absorption of the submucous infiltration. The very uncertainty of this method shows that it fails to bring about this absorption in so large a proportion of cases. The method of cure by internal urethrotomy seeks to produce such a change in nutrition that the inflammatory neoplasm will be absorbed and the normal caliber restored. Those who hope to widen a strictured urethra by a cutting operation with a view of inducing nature to insert a strip of cicatricial tissue between the borders of the incision, have such a childlike notion of pathological anatomy that no time need be wasted in paying attention to their opinions. All surgeons who study pathology practically, and not transcendentally, will agree that the only possible way to cure a stricture is to cause absorption of the submucous inflammatory deposit. No method promises theoretically to accomplish this so safely, promptly, and thoroughly as electrolysis.

Upon the principles stated in the foregoing pages, this method seems the most rationally indicated one. The electrolytic current promotes absorption by causing a chemical resolution of the inflammatory infiltration. And this chemical resolution of the pathological tissue I believe possible without unfavorable influence upon the mucous membrane covering it. Of course, the strength of the current must be properly graded to secure this most desirable result. The statement sometimes made that electrolysis in stricture can result only in the formation of a scar, and consequent contractility of this tissue, is based upon a misapprehension of what takes place.

When Fessenden N. Otis, nearly twenty years ago, brought to the attention of the profession the results of his inquiries into the caliber of the urethra and of improved methods of treating stricture, he was subjected to much ridicule. To-day the views of Otis are accepted by genito-urinary surgeons the world over. The urethrometer eliminated the personal equation and rendered the detection and measurement of a stricture a matter of almost mathematical exactness. Until lately the advocates of electrolysis, whether applied for the relief of stricture or fibroid tumors of the uterus, or other pathological conditions, have likewise been derided, ridiculed, or flatly accused of lying. These weapons, first used with effect by writers and teachers of prominence, have now been picked up by a number of youthful imitators, who, by reporting one or two unsuccessful cases and incidentally exhibiting their crass igno-

rance of the agent they are handling, endeavor to throw discredit upon a procedure which they show that they do not understand.

At a recent discussion of the merits of electrolysis in the treatment of uterine fibroids an English surgeon, who has attained enviable distinction as an ovariotomist, declared his unwillingness to try the method because he was "a surgeon," and evidently thought it beneath his dignity to meddle with batteries, needles, and milliampèremeters. His impertinence received a sudden check, however, when the two greatest living abdominal surgeons in the world, Sir Spencer Wells and Thomas Keith, asserted their belief in the efficacy of electrolysis and their intention of giving it preference over the knife in all suitable cases in their practice. The bumptiousness of this Englishman is exactly paralleled by that of an American surgeon of my acquaintance who rejects electrolysis even in cases where its effects are unquestioned, on the same grounds.

The study of the electrolytic decomposition of organic tissues has hardly been begun. No clear conception of the process can be obtained until the principles of electrolysis in inorganic fluids are first thoroughly studied. Careful experimental and clinical research is demanded. In face of honest, thorough work, based upon exact knowledge, criticism of the nature of that which has been aimed at electrolysis during the past two or three years will bear its own condemnation.

The present development of the practical applications of electrolysis in medicine and surgery is so largely due to the intelligent and persistent labors of American dermatologists that I considered this association the body best qualified to judge of the worth of the remarks I have submitted. I trust that I have not deviated too far from the subjects that may properly be brought to your attention.

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## FEMORAL OSTEOTOMY

### FOR THE CORRECTION OF DEFORMITY RESULTING FROM HIP-JOINT DISEASE.*

By AP MORGAN VANCE, M. D.,
LOUISVILLE, KY.

In the part of the country from which I come we have to deal with more of the different deformities resulting from neglected cases of hip and knee joint diseases than are met with in the larger cities, where greater attention has been given to the treatment of this class of troubles in the earlier stages.

It has been my fortune to treat a number of these unfortunates, and it is to relate my experience in a clinical way that I am here to-day. There are one or two points I wish to emphasize. While in New York, a little over a year ago, I spoke to a distinguished surgical friend concerning subcutaneous osteotomy, and was astonished at his saying he had never mustered sufficient courage to do this operation; that he always made a large open wound, so that he could see what he was doing. This was a new idea to me, as I could not see any reason for the additional work. I have broken a number of bones subcutaneously, and have never had a feeling of any doubt of exactly what was being done, and have never had a single mishap, every case in its progress being practically a simple fracture.

I freely confess that I will break a man's femur subcutaneously with as little misgiving as to the outcome as I would divide his tendo Achillis.

The procedure will be described during the relation of some eight cases of femoral osteotomy, all the patients having practically reached adult life, the justifiability of the operation having been proved by the results.

Of the eight cases to be reported, five were operated upon for deformity the result of hip disease, and the remaining three for deformity following disease at the knee.

The latter cases have proved to me how much better it is to correct, by a bone section, deformity existing at the knee along with slight motion and the patella fixed, than it is to interfere with the formerly diseased joint in an effort to better the condition.

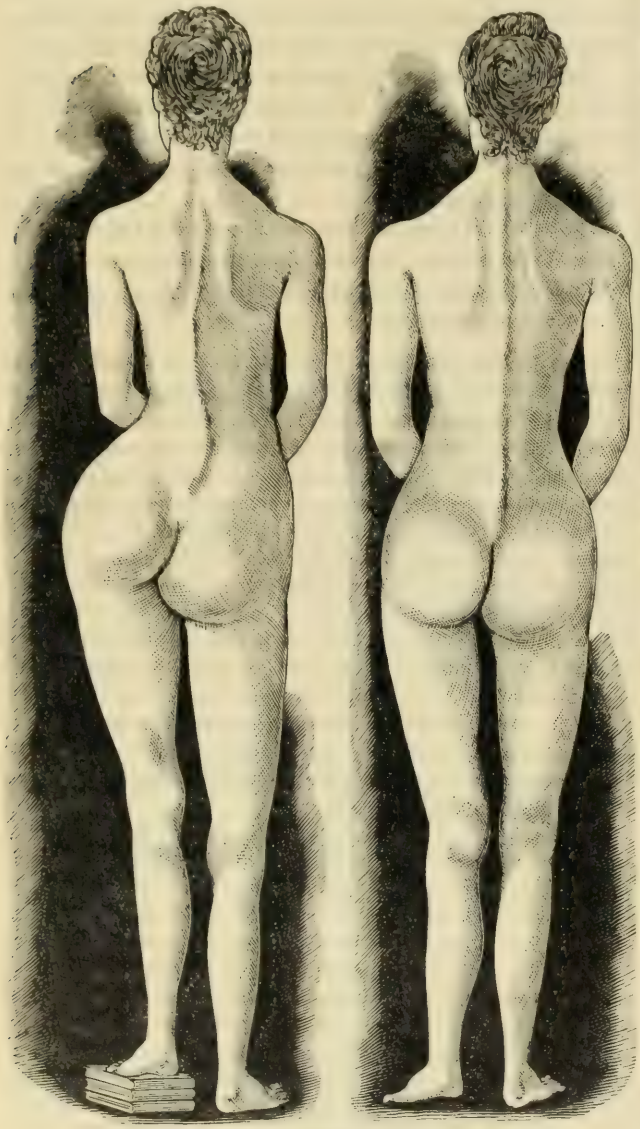
Cases Nos. II and VI have been reported before in the "New York Medical Journal," but, to complete a series, I will refer to them again, as illustrating the advantage of subcutaneous osteotomy.

Case I. *Subtrochanteric Osteotomy (?) in a Young Woman aged Sixteen.*—Carrie H. came under my observation first in the spring of 1883, giving this history: Two years before she had been attacked with acute pain and evidences of inflammation about the left hip. She was under the care of skillful surgeons in the town where she lived, in a northwestern territory, who repeatedly aspirated a large abscess which formed, the sac being located on the outer side of the thigh. The abscess finally healed, and, under tonic and constructive treatment, the child gradually recovered, being confined in bed for nearly a year, with weight and pulley attached to the limb, and sand-bags also used to keep the limb in the best position and the joint at rest. Notwithstanding their extreme care, the hip became stiff, as is often the case in extreme adduction; so, when she began walking, there was a practical shortening of four inches and a half or five inches, and, of course, a very marked lateral curvature of spine and obliquity of pelvis.

For the relief of this deformity the parents brought their daughter East, and, after a thorough examination, I advised non-interference, but told them, as they were going further east to New York and Boston, to see surgeons at each place. They did see Dr. Sayre and some Boston surgeon, who agreed with me that there was bony ankylosis at the hip, and the result was too good to be interfered with. But, after three years had passed and the girl had reached womanhood, the deformities grieved the parents very much, and, after communicating with me, who had hinted at bone-breaking as the only chance of correction, they came East again, and on April 16, 1886, the bone section (?) below the trochanter was done as follows: A firm, well-padded block of marble was pressed against the inner side of the thigh as high up as the perinæum would allow. A very sharp, narrow chisel was pushed through the soft parts, the blade in the axis of the limb, the skin at the same time being drawn forward. When the bone was reached, the chisel, being turned, was driven through until the hard substance on the opposite side was reached; this was partially divided; the chisel was then slightly withdrawn and directed posteriorly

* Read before the American Orthopædic Association at its second annual meeting.

and then anteriorly. Without withdrawing the instrument, an effort was made to complete the fracture by using the block for a fulcrum and the femur as a lever, an assistant fixing the pelvis firmly to the table, the patient being on the right side. This failed, even after great force had been applied, for the reason that the adduction was so great the fulcrum could not be placed opposite the weakened point, but below. Further work with the chisel was then done. The instrument became very firmly fixed, a loud snap being produced when it was moved. All present believed it had been broken, but, on withdrawing it, to our relief all of it appeared. The effort to fracture was repeated, and the bone gave toward further adduction; then very easily, when force was applied, toward abduction. The deformity was completely overcome, and the limb was incased in plaster of Paris. Not a bad symptom arose during the after-treatment.



Case I.

She was able to be up in a rolling-chair by the fourteenth day and walked on crutches by the eighteenth, when a lighter tar board splint, reaching only to the knee, was substituted for the heavy plaster of Paris. At the end of the sixth week she was allowed to walk without crutches, the limb being restored to a position which let the foot reach the floor; at the same time the pelvis was horizontal. After she had walked very well for a week, using a cane when on the street, the mother noticed a tendency toward the old position when she was tired. Upon examination, to our utter astonishment, we found considerable motion at the hip joint on this side, which allowed the limb, from prolonged habit, to drop into adduction. The question arises, Were we deceived in thinking the bone was broken, or was the marked deformity corrected entirely by the renewal of motion of what was undoubtedly a fibrous ankylosis, or did I break both the bone and the ankylosis? I lean to the latter opinion, not believing that the deformity could be so easily overcome without a fracture. The fact that the chisel was withdrawn destroyed my guide to what took place at the site of its introduction. As the result is, the patient is much better off, being relieved of the short limb and lateral curvature, with a movable instead of a stiff hip.

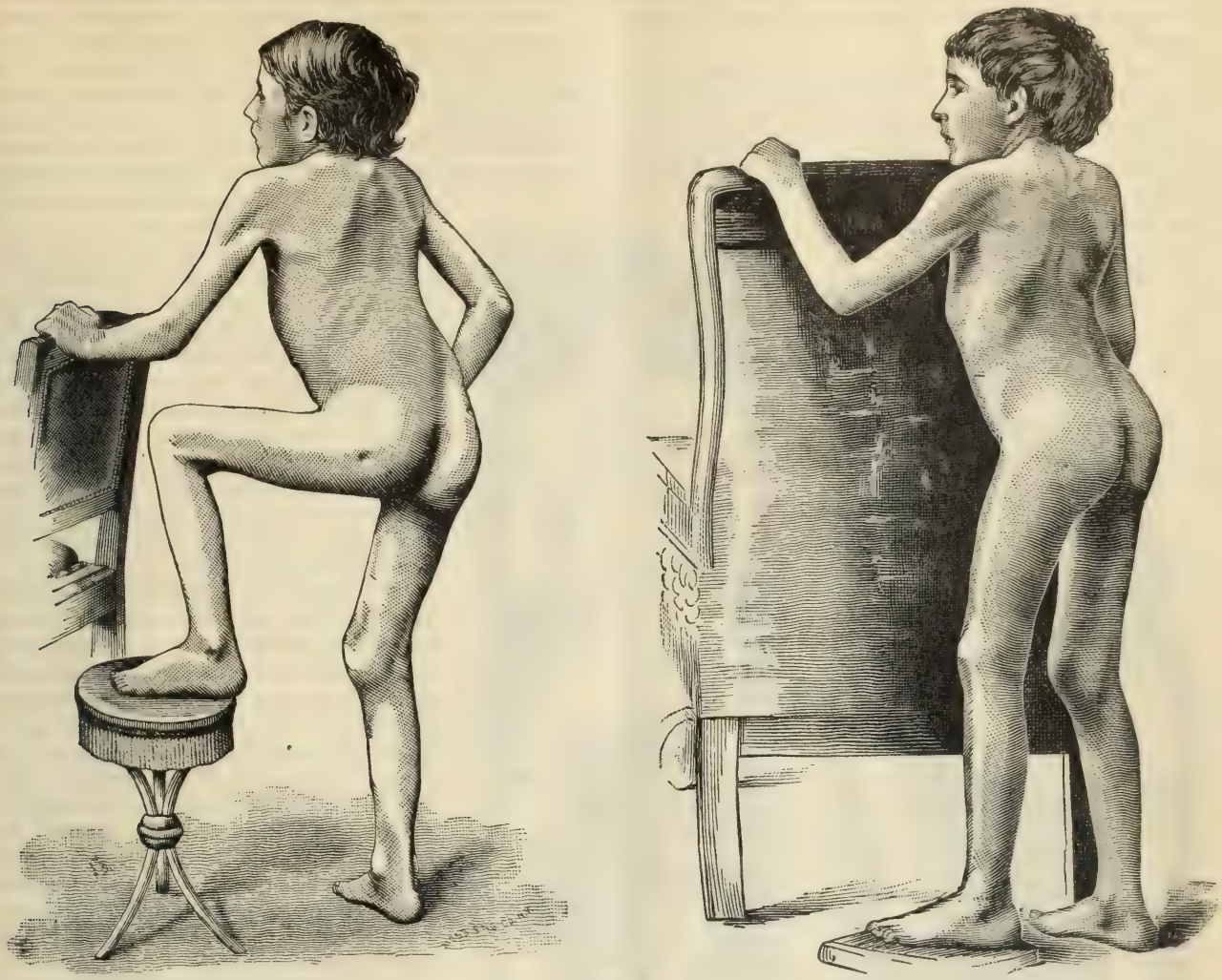
Case II.—June 11, 1884, H. C., aged nine years, the subject of spinal caries and true hip disease, both long since spontaneously cured, the hip being ankylosed by bone at an angle of less than 90° with the pelvis, the deformity resulting being greater because of the spinal disease in high dorsal region, which took up most of the power of compensation in the lumbar spine.

This boy could stand with difficulty by holding on to his left knee and right hip, but could not walk, his mode of locomotion being on all-fours. The patient was an inmate of the Methodist Orphans' Home, and ready consent to the operation was obtained; and, on the date mentioned, it was performed in the presence of the visiting physicians of the institution and several other professional friends. The patient was anæsthetized by Dr. Senteny, and the operation was performed just as in Case I, except that tenotomy of the muscles going to the anterior superior spinous process of the ilium was done in addition, when, without much difficulty, the limb was brought down and fixed in plaster of Paris, 90° of deformity being overcome. The wounds were dressed with compresses of absorbent cotton and the case was treated as one of simple fracture, going on to conclusion without a bad symptom, the boy being able to walk at the end of five weeks. He walks any distance without difficulty, using an elevated shoe to compensate for about an inch and a half shortening of the affected limb.

*April 3, 1888.*—This boy is seen and examined. He has discarded the high shoe and can walk remarkably well. He has developed in a general way very much, having attended school regularly since the operation, four years ago, and takes part in the different sports of the other boys without any difficulty with his limb.

Case III.—April 6, 1888, Nick M., aged fourteen years and a half, from near Versailles, Ky. A case of old hip disease which had been cured for six or seven years—in malposition. The left thigh was flexed to about 90° with the pelvis and adducted very much, making this limb practically four inches and a half short, including an inch and a half real shortening from a pathological dislocation. There was very slight motion between the femur and the pelvis. The boy walked by aid of a cane with marked limp, and became very tired when he undertook to go any distance. There had been an abscess, and a deep cicatrix was present below the trochanter.

Osteotomy was performed just as in the preceding cases, and tenotomies were done of all the muscles resisting abduction and extension. The limb was placed in a plaster-of-Paris splint in a position of abduction, so that the inch and a half real shortening would be compensated for by the obliquity of the pelvis resulting when the limb would become vertical in walking. There was no mishap during the after-treatment, and the patient returned to his home at the end of four weeks with a protective splint of leather, which was worn for a week longer and then discarded.



CASE II.

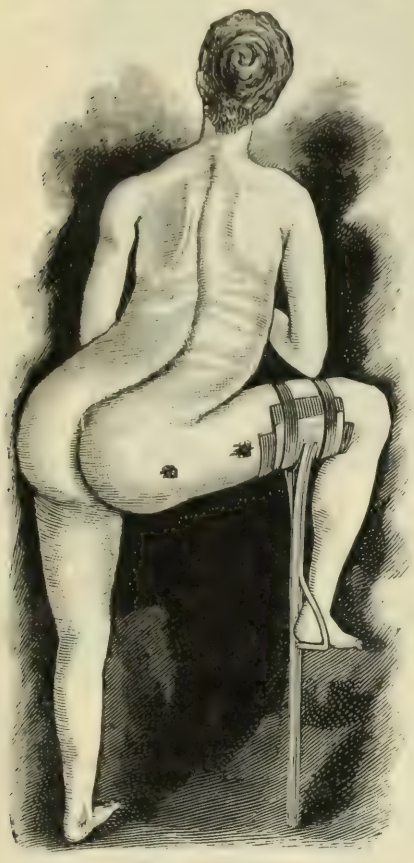
*September 7, 1888.*—Boy examined again. He walks with remarkable ease and comparatively little limp. When standing, he rests his weight on this limb. Has three quarters of an inch added to his shoe. The motion at the joint has allowed the abduction to be almost overcome, and the pelvis is nearly horizontal. The whole limb has been greatly developed in the five months since the operation, and the patient is in much better general condition. This is the first case of deformity of the hip with motion remaining that I have corrected by osteotomy. As I stated in the opening of this paper, I should prefer this to interfering with the formerly diseased joint.

CASE IV.—Jennie H., aged fifteen, came under observation on July 1, 1885, in the female surgical ward of Louisville City Hospital, where she had been operated upon for a supposed fistula in ano. Soon after this I was asked by Dr. Douglass Morton to treat the case for a deformity the result of an old hip disease. The left limb was found greatly deformed, the girl being unable to get the foot to the ground. The femur was flexed to an angle of 90° with the pelvis and completely adducted. There were a number of old scars about the trochanteric region, and the examination under chloroform proved the joint to be ankylosed by bone. There was a sinus along the left side of the rectum, and the ordinary operation by incision had been done without any good resulting. On careful examination, it was discovered that the source of the discharge was an old fistulous tract through the buttock toward the joint site. I considered there must be dead bone at the bottom of this, though none was discovered. By Nélaton's test the thigh was estimated to be an inch and a half short. I determined to correct the angle of deformity despite the existence of the discharging sinus, as the patient was in excellent general condition, and I felt sure I could break the femur below the trochanter without disturbing the old joint. On July 20, 1885, in the presence of several of the attending staff, I did the operation just as described in Case I, except the fulcrum, instead of being placed opposite the point of entrance of the chisel, on account of the extreme adduction, had to be placed posteriorly in the region of the gluteal fold, and consequently the difficulty of applying force was greater and the fracture harder to complete. This was done, however, without very great trouble, and the limb brought into the best position for future use, after tenotomy of all the muscles in the adductor region which showed any resistance; also the muscles going to the anterior superior spinous process of the ilium which became tense when extension was made.

The limb was then fixed in plaster of Paris from the toes to the umbilicus. There was no bad symptom, and the patient returned to her home on the fourteenth day, after the application of a lighter splint, which was removed two weeks later, and moderate use of the limb commenced July 30, 1888. The patient has rounded off into complete womanhood; gives a history of having had no trouble with the limb; can walk any distance without difficulty. The sinus still discharges watery fluid in small quantities. She wears an elevated shoe of an inch and a half; little or no limp. I advised her to have the

sinus laid open and scraped before getting married, which is contemplated.

Case V.—June 7, 1886, Miss T. H., tailoress, aged thirty-two. This woman had been the subject of true hip disease when eight years of age. At the same time there was disease of the right wrist and the shoulder of the same side, small pieces of bone being exfoliated. The right hip was the one affected, as will be seen by referring to the sketch. It was about the worst-looking deformity of the kind I had ever seen; the femur was flexed to the last degree and completely abducted; the knee could not be extended beyond a right angle, adaptation of the flexors having taken place during the twenty-two years. She had walked on a popliteal crutch. The pelvis was obliqued to the right, and the spine greatly curved.



Case V.—Before operation.



Case V.—After operation.

This patient had been an eye-sore to me for years on the streets, and finally was referred to me by Mr. Mathews, an artificial-limb maker, to whom she had applied for the repair of her crutch. On the above-mentioned date I divided the right femur below the trochanter, and restored the limb to a position to be used to the best advantage under all the circumstances in walking after the fashion of other people. Both hamstrings were divided, and the muscles attached to the anterior superior spinous process of the ilium also, great force being necessary to bring the limb down; the skin on the anterior aspect of the thigh looked glazed, it was put so much on the stretch. A plaster splint was applied, as in the other cases. Convalescence was uninterrupted so far as the firm union of the bone was concerned, but there was a tendency to swelling of the leg, together with anæsthesia of the parts supplied by the anterior crural nerve for six months or more.

Examined September 7, 1888: She is in better health than ever before, and can walk long distances without using a cane. Has no trouble of any kind with the limb. She wore for a while a shoe on the right foot of an inch elevation against my advice. She now wears an ordinary shoe. The limb was left in sufficient abduction to compensate for the actual shortening and part of the obliquity of the pelvis. The charcoal sketches before and after the operation give a very perfect representation of this case.

Case VI.—A. B., aged seventeen years, came under observation in November, 1884, for treatment. There were the history and the evidence locally of an old inflammation of the left knee joint, dating back to early childhood. The limb was greatly deformed, and he walked with painful inconvenience. The knee was found with very little motion, flexed at an angle of 135°, the leg being very much rotated in its relationship to the thigh; there was combined with this marked genu valgum. The compensating deformity of the foot was quite great and walking painful.

The procedure of dividing the bone was exactly as in the preceding cases, the final steps being much more difficult because of the limited motion at the knee, and the fear that it might be further damaged if too much strained by the use of the leg as a lever; but I succeeded by having the upper part of the bone fixed by a very strong assistant, then, grasping the condyles in both hands, with the application of sudden force downward, using the same fulcrum as before, the fracture was completed and the deformity overcome, after tenotomy of the external ham-string tendon. The limb was dressed in plaster, and went on to firm union as a simple fracture.

The young man now walks anywhere without difficulty, and is the possessor, comparatively speaking, of a comely limb, a compensation of an inch and a half being added to the shoe.

Case VII.—Mr. N., clergyman, aged thirty-two, had been the subject of inflammation of the right knee when a child, resulting in a permanent deformity, very much like that described in Case VI—flexion, combined with rotation of the leg on the thigh, and knock-knee. He came, he said, to consult me in regard to the possibility of having the deformity overcome, as it was particularly awkward in a public speaker. I proposed bone-breaking as a possible remedy, and after some discussion he consented. His consent was more difficult to obtain because he had consulted with an eminent surgeon in Virginia, who had warned him against letting anybody meddle with his knee. On May 10, 1886, the operation was commenced just as in the preceding case, the bone being completely sectioned, however, without the use of manual force. Hardly had two strokes of the mallet been given before a complete fracture was produced. I anticipated a retardation in the process of repair, but no trouble was experienced, and in the usual time he was able to use the limb.

I saw him on the street in April last, and he walked with little limp, and if it had not been for this, one would not notice anything the matter with him. While he is standing there is no reason to suppose him at all lame. His limb gives him no trouble.

Case VIII.—April 15, 1888, John S., aged fifteen, telegraph

operator, Hopkinsville, Ky. The deformity, a repetition of that in the two preceding cases, was the result of an inflammation of the right knee of only three years' standing. The procedure was carried out as in Cases VI and VII with the same result. He returned to his home on the sixteenth day wearing a posterior leather splint. There has not been sufficient time passed since the operation to determine the result in this case, but I expect just as useful a limb as in the other cases.

Cases VI, VII, and VIII illustrate how much good can be done by a bone section in a class of cases that, in my hands, have been very unsatisfactorily treated in any other way unless excision is done. You have a knee in which the patella is fixed, with flexion, rotation of the leg on thigh, and genu valgum, without the saving clause of bony ankylosis of the tibia to femur, but with limited motion, with no control of that motion. The history of these patients as to the utility of the affected limb is always the same—constantly recurring pain and disabling at the least misstep or stumping of the toe. Any movement which puts a strain on the crippled joint brings about the same result, calling for a return to the cane or more often to the crutch.

By a bone section and the substitution of an angle above for those at the knee, and at the same time rotating the leg, we place the tibia and fibula in the same axis with the femur and restore the foot to a position much better suited for walking. By the improved relationship the intermittent strains are prevented and adaptation of the ligamentous structures allowed to take place, a firmer and much better joint being the result.

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## RETROJECTION IN GONORRHŒA.*

By E. R. PALMER, M. D.,
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The treatment of urethritis by continuous irrigation has been occasionally suggested since 1862. On the 22d of March, 1887, Dr. George E. Brewer read a paper on this subject before the New York Dermatological Society, in which paper the present status of retrojection and irrigation was so thoroughly and clearly brought to the notice of the profession that but little remains for me to do beyond a recital of experience in its use, and deductions from such experience. I shall therefore be exceedingly brief in what I have to say, furnishing, as it were, a short chapter on retrojection in the make-up of the gonorrhœal entity, whose construction our assiduous secretary has mapped out as our work for the first day.

It was my pleasure to hear Dr. Brewer's paper read, and afterward to see retrojection carried out at the Roosevelt. As my own experience in the matter has been wholly related to cases in private practice, I wish to especially call attention to Dr. Brewer's statement regarding retrojection in this field. He says: "I have been able to collect thirty cases, all of undoubted acute gonorrhœal urethritis, in the secretions from which gonococci were found. In all of these the recovery took place within two weeks, the average date of recovery in the thirty cases being in $7\frac{27}{30}$ days."

Elsewhere Dr. Brewer, in speaking of his dispensary work, says: "Of the twenty-three cases of acute specific urethritis treated by irrigation with bichloride of mercury, marked improvement was earliest noticed on the first, and latest on the eighth day. Sixteen of these continued *until all purulent discharge ceased and were practically well.*" * At the annual meeting of the Kentucky State Medical Society in July last, Dr. E. M. Wiley read a paper on the abortive treatment of gonorrhœa by strong (1 to 6,000, 1 to 4,000) hot retrojections of mercuric bichloride, subsequent pain being assuaged by injections of cocaine. Dr. Wiley reported eight cases in which cures by this treatment had been effected in from a few days to less than two weeks. His paper contains the suggestive statement that "in several, however, a thin gleety discharge remained that was generally treated by bismuth injections."

At the same meeting, in my general report on progress in matters genito-urinary, I made the statement in reference to gonorrhœa that "it seems more and more firmly established that, be the treatment what it may, a cure in six weeks is a good result, and that a discharge from the urethra that yields to any treatment in two or four days is a bastard gonorrhœa that, in all probability, would have got well itself if let alone." This declaration, coming as it did in the face of my known practice and advocacy of retrojection and irrigation, was taken by many as a back-down on my part. I hope to-day to handle this form of treatment impartially, and to place it where it justly belongs among the curative agencies at our command. My conclusions are drawn from the observation of one hundred and twenty-seven cases of recent urethritis in private practice seen during the fifteen months ending July 1, 1888. In practice and in phraseology I distinguish *retrojection* performed with a Jacque catheter from *irrigation* accomplished with a Kiefer nozzle. In each instance the treatment is based on the doctrine of microbian origin, and the agents used are hot water and some germicide, generally the bichloride of mercury. The details of application are already public property. Their recital may be found in the "Journal of Cutaneous and Genito-urinary Diseases" for May, 1887, or in Taylor's "Clinical Atlas." The experiences of Dr. Brewer and his *confrères*, Vanderpoel, Curtis, Halstead, and others, as recounted in the journal above referred to, are considerably more favorable than my own have been, and yet I must say that the methods that they have brought into notice have served to lessen to a remarkable degree that lack of self-confidence with which I was formerly wont to take charge of new cases of gonorrhœa. The methods under discussion may be briefly stated as the twice daily washing of the urethra with a quart of, say, a 1-to-10,000 solution of corrosive sublimate at, in round numbers, a temperature of 100° F. In the discussion that followed the reading of Dr. Brewer's paper, Dr. Halstead incidentally remarked that "in the near future gonorrhœa would cease to be a malady for the physician to treat, as the men about town

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting.

* Italics mine.

would secure a retrojection outfit and readily cure themselves." I fear his adumbration will never become a reality. Something more is called for in the full cure of specific urethritis than the brilliant and beneficial results that so speedily follow hot mercuric retrojections, and I am quite sure, judging from my own experience, that, had the cases collated from private practice by Dr. Brewer and those reported by Dr. Wiley been kept somewhat longer under observation, not a few relapses would have been found cropping out in each field of observation. The question here of prime importance is, "When is a genuine clap genuinely cured?" Many a patient treated by any method has, after an ordinary superficial inspection, been declared well and discharged, only to have a relapse and return to the doctor, or perhaps, with greater probability, go elsewhere for further treatment. In the latter instance, of course, the case stands on the surgeon's record-book as cured.

To come to my own cases and conclusions. Of the one hundred and twenty-seven cases observed, less than the fraction twenty-seven received during treatment two washings daily. This was due not to any fault on the part of myself or my assistants, one of us being always at post, but because of the fact that in four cases out of five a man with gonorrhœa, or indeed any other malady that permits of pursuit of vocation, can not or will not go twice daily and at stated hours to the doctor's for treatment. I should of course mention that in the digest of my cases I do not include those few cases in which the patients presented once, perhaps twice, and then, breaking appointment, disappeared. Of all patients regularly treated, considerably less than 50 per cent. got *one* daily irrigation for six weeks. In my records I find that almost invariably, or at least in a large majority of cases, two or three breaks occur, due of course to the inevitable in the life of every busy man. Of all cases, of those that never missed and of the more or less irregular, I find records of but two cures within eight days. Among what I may term my good cases are: One cured in four days, one in six, one in eleven, one in fourteen, one in twenty, two in thirty, and one in thirty-one.

Among what may be denominated my bad cases are: One not cured in forty days, one not cured in forty-five, two not cured in sixty, one cured in ninety, one cured in one hundred and fifty, and one, in which the patient was put to bed in my infirmary and irrigated twice a day, with additional treatment, that got well in a little under six weeks. In all of my cases, except those few that got well rapidly, the "mixed treatment," to be referred to further on, was used.

What are the true place and value of hot mercuric retrojection? When should it be employed? And what is its status in relation to such complications as cystitis, epididymitis, and stricture? Corrosive mercury occupies in the treatment of gonorrhœa the identical position that it occupies in antiseptic surgery generally, as the antagonist of suppuration. It furnishes to the surgeon a sure and safe means by which the copious purulency of a typical gonorrhœa may be aborted in a few days, sometimes in a few hours. By its use, and with this action as just stated, there may result now and then absolute and speedy cure. In the majority of instances cases, while not cured, are made so nearly well, are so vastly improved, as to possibly mislead both the doctor and his patient into the delusive belief that all trouble is over. It is in the management of these latter cases that I would suggest a modification in modern treatment—a modification that may be termed here, like a justly popular mode of treating syphilis, "the mixed treatment."

I do not refer to internal treatment with sandal oil or Lafayette mixture, etc. This Dr. Brewer advocates—I mean a mixed *local* treatment. I have found that after the morning washout, or between the two daily retrojections, a cure is much facilitated, so soon as the acute stage subsides, by the use on the part of the patient of some one of the standard injections. I have also learned to think well of having him bring his bottle and syringe to the office that he may follow the hot irrigation with the astringent.

After trying many medicinal agents in this mode of treatment I have limited myself to three—the corrosive chloride of mercury, carbolic acid, and boric acid; the first, which is also chiefest, to be used in water always as hot as can be borne.

In the matter of strength, the varying sensitiveness of different urethræ, and indeed of the same canal at different times, calls for solutions that in this respect differ widely. To meet this I employ tablet triturates containing a quarter of a grain each. One of these to the pint represents a solution of about 1 to 30,000. Two, three, sometimes as high as six, may be used at once. In preparing each pint of wash there may be added six ounces of 1-to-100 carbolic-acid solution, partly on general antiseptic principles, but chiefly that by its local anæsthetic action the pain produced by the chloride may be materially lessened. The boric solution, saturated, is best used in the stage of decline, cold, with or without the addition of the carbolic-acid solution and with the Kiefer nozzle. A pint of solution will, with a Kiefer nozzle, balloon the average penile urethra fifty times in twice as many seconds. Toward the end of the irrigation the exit-pipe may be kept closed by the finger for a moment or two, and thus the full action of the drug be exerted upon the entire cleansed and distended surface. Tannin, sulphate of zinc, and very many of the new coal-tar derivatives have been tried with negative results. The hot bichloride solution is pre-eminently *the* agent for this mode of treatment. It does not produce epididymitis, or cystitis, or stricture. Indeed, observing the rule of immediately previous urination, it may be used in this respect with absolute safety either in the height of the acute stage or during the decline. So used, it may be relied upon to speedily reduce the discharge to that minimum that requires Ultzmann's bottle test for shreds for its detection. This done, except to prevent or correct relapse, it is my belief that mercuric retrojection or irrigation has accomplished its mission, and that other and older means of treatment, both general and local, are called for to complete the absolute cure.

721 West Jefferson Street, Louisville, Ky.

*September 14, 1888.*

# Correspondence.

## LETTER FROM WASHINGTON.

*The Dissecting-room of the Georgetown Medical College.—The Government Hospital for the Insane.*

WASHINGTON, *November 22, 1888.*

MEDICAL matters here are not very lively this winter, but with the establishment of Dr. Hammond's new hospital and the war on the Georgetown Medical College dissecting-room, we manage to keep up interest.

The dissecting-room war originated in this way: The college was built in the old residence part of the city, a portion of the capital that is gradually being given up to business, but a few old residents refuse to move out to the new northwest section, and viewed with dismay the erection of the new college among them. They were not able to do anything in the matter until this year, when one of those trying warm spells came on, and, a new janitor being employed, the wretch forgot the appliances for ventilation. The consequence was that the subjects "smelled to heaven," and then the grievance of the neighbors had an open field to work upon. They have employed counsel, and propose to drive the college dissecting-room out of town by means of a presentment by the Grand Jury. Whether they will also move on the dissecting-room attached to the Columbian Medical College, which is on the same street, and even nearer the fashionable quarter, the counsel has not divulged.

The superintendent of the Government Hospital for the Insane, Dr. W. W. Godding, has issued his annual report to the Secretary of the Interior, and it shows a steady increase in the number of inmates at that institution. There remained 1,361 patients at the close of the year. Dr. Godding speaks with approval of the regular employment of a medical officer for night service, which has been practiced for the past year. An important feature of the report is the portion furnished by the pathologist, Dr. Blackburn. When that officer was appointed he was the first incumbent of the office, and it was hoped by the Board of Visitors that much important information would be gained from the establishment of the pathological laboratory. The careful report of some post-mortem examinations of the kidneys of the insane gives the following summary:

"Of the 269 cases given in the table, examination of the kidneys was made in 263; in the others complete autopsy was not permitted, but there was no reason to suspect renal disease. The organs were in all cases examined separately, but where the appearances were similar they are described as one in the table. The hardening of the specimens was uniformly done in Müller's fluid and completed in alcohol, and the subsequent preparation for the microscope was by the usual infiltration methods; but in all doubtful and interesting cases other hardening agents and methods of preparation were used in conjunction to eliminate, if possible, any source of error. In the table are recorded the appearances of the organs, both normal and abnormal, and though at first sight it would seem that an unusual proportion of the cases were abnormal, it will be found that in a large number the deviation from the perfect standard is slight and unimportant. A slight increase in the amount of connective tissue in an otherwise normal kidney is no more important, and certainly not more frequently found in autopsies, than chronic pleuritic adhesions; and the changes in the epithelium are in a great number of cases equally trivial, being simply the result of post-mortem change or accident. In regard to the frequency of post-mortem change in the renal epithelium, my experience has been in accord with that of Dickinson and others, that the cortical cells are remarkably susceptible to it; but, as the bodies were in all cases placed in a refrigerated chamber as soon as possible after death, the minimum of change has been assured. There are, however, many cases in which the early post-mortem change is dependent upon some antecedent condition of the epithelium predisposing to rapid disintegration both before and after death. Of these conditions the most important are cloudy swelling and fatty degeneration, its later stage. In pneumonia, pulmonary tuberculosis, febrile diseases, and primary irritative affections of the kidneys, this state of the epithelium is frequently observed, and several such cases appear in the table. The cases in which the state of the kidneys was probably dependent upon or associated with other diseases, age, occupation, etc., have not been separately designated, as these agencies have been given with this object in view. Special diseases of the kidneys have received separate mention. A synopsis of the table is appended:

| | |
|---|---|
| "Cases in which the elements were normal | 49 |
| "Cases showing post-mortem or accidental change in the epithelium, but otherwise normal | 51 |
| "Number in which the deviation from the normal was sufficient to constitute disease, including cases of *senile atrophy* of pathological degree | 43 |
| "Unimportant increase of connective tissue, etc | 104 |
| "Cloudy swelling and primary epithelial degeneration | 2 |
| "Cloudy swelling, secondary, at least | 8 |
| "Miliary tubercle, secondary | 3 |
| "Tubercular pyelonephritis | 1 |
| "Adenoma | 1 |
| "Hydronephrosis | 1" |

**Medicated Wines and Temperance Beverages.**—The "Thirty-first Report of the Commissioners of Her Majesty's Inland Revenue" contains a variety of interesting information, covering the net receipts from excise, stamps, land tax, inhabited house duty, and income tax. While the report is largely concerned with financial details, clearly arranged in tabular form, the report by the principal of the laboratory in the appendix exhibits in small space the results of considerable labor extended over a wide range of subjects. The increasing difficulty of keeping the sale of liquids containing alcohol in legitimate channels is illustrated by reference to the so-called medicated wines, which are said to be quite suitable for use as beverages. Two liquids of semi-medical names are mentioned as only possessing "their respective prefixes to distinguish them from champagnes of ordinary quality." It has long been well known that many temperance drinks contain varying proportions of alcohol. In this report it is stated that the sample of elderberry syrup examined contained 8·7 per cent. of proof spirit, that of "non-alcoholic ginger cordial" 10·8 per cent., that of "unfermented sherry" 17 per cent., and that of "cowslip wine" (which looks oddly in this class) no less than 28·9 per cent. "Temperance" beverages have always been regarded with suspicion; but the medicated wines have been attracting the attention of the revenue officers by their flavor, and by the size and frequency of the dose recommended. Whether habits of intemperance are likely to be fostered by them is a question beyond the scope of the report, which is confined simply to the statement that an alcoholic liquid employed as a beverage of necessity becomes subject to revenue dues.—*Lancet.*

**Tetanus after Hypodermic Injection.**—"A child six years old suffering from miliary fever," says the "Lancet," "was treated first with quinine administered in pilules and by inunction, and then by a subcutaneous injection of the alkaloid. One month later the fever had disappeared, but the child complained of pains in the left arm and at the point of injection; trismus supervened in three days, tetanus developed, and death occurred on the sixth day. If this was really a case of traumatic tetanus, the period of incubation was rather longer than the usual seven to fourteen days."

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## AIR TREATMENT AND WATER TREATMENT.

Hydrotherapeutics comes in for its share of recognition or disdain, like every other special method of therapeutics, according to the standpoint of its critics. Differences of opinion arise not from knowledge, but from ignorance. Orthodoxy and heterodoxy exist even in medicine, and the laws governing them are just what they always have been. Air treatment and water treatment fare no worse than other special measures. The humorist whose acquaintance numbers many physicians seldom finds his occupation gone, or even going, and learns by frequent experience that there is a time to laugh. Specialists have a way now and then of viewing the professional world at large from a height, and criticising the scenery with dispassionate coolness most beautiful to behold. According to the kaleidoscopic standpoint, the surgeons have all gone mad, the gynæcologists ought to be murdered, neurologists are quite beyond belief, a plaster jacket is the deadliest of infernal machines, there is nothing in electricity, systematized mechanical exercises savor strongly of quackery—and more indefinitely of this same judicial pattern. A literal interpretation of the doleful presentment almost prompts the retentive listener to agree henceforth and forever with the cheerless Oxford student that nothing is worth while and it does not much matter. The humorist laughs last and best, rejoicing that truth is not a monopoly, but exists at the top—where there is always room for more of it—at the bottom, and all the way up and down the medical profession.

The laity also has its prejudices. Systematized hygiene in an appropriate locality, as a means of cure, does not appeal to every sufferer. This age affords such rare opportunities for æsthetic invalidism that getting well off in a corner, so to speak, seems to the professional invalid a waste of valuable material.

The average patient finds taking something far more attractive than working for his health. It is such a bore to do things, even when a prophet does command it. Yet a life of rule and discipline in a new environment, early rising and early going to bed, regular and sufficient open-air exercise under a watchful and ever-present eye, away from the interruptions, duties, cares, and habits of home surroundings, is the kind of existence best suited to a large class of those who suffer from various degrees of invalidism. There are many chronic diseases differing in kind, but having this in common, that, either from the constitutional state or from the nature of the malady, drugs alone are little better than useless. For these, bold yet skillful treatment of an entirely different kind will avail. To break up the tiresome old vault of heaven into new forms is the first essential. The patient must go into another business—that of getting well. He must live for a time almost exclusively for self, that years of self-forgetfulness may be the reward of this personal sacrifice. A mountain region with its dry, bracing air, and pure water, to say nothing of restful vistas for the eye, presents the most favorable external conditions to bring about this end. The chronic dyspeptic is a good example of a class that not all the skill of the general practitioner can materially aid with the ordinary means at his command. These are cases for the specialist in hydrotherapeutics—a physician who undertakes to treat a certain class of patients in a way that the general practitioner knows to be best, but has not himself the means of carrying out. This is the hydrotherapeutist's chief province, and, if honestly held to, is a very useful one. The chronic dyspeptic complains that he can not eat; a tonic in this instance is but a spur to a lame horse. He can not sleep; opiates but mask the mischief. He is told what he needs—a complete change of life and for a sufficient length of time, fresh air, regular dieting, and a system of baths, which, by acting on the skin, will relieve the organs of digestion, and, by acting on the nerves, will give those same organs a good start for a better running. A break-down from years of overstrain is not an affair of trying something for a week or two, whether that something is special treatment at a sanitarium or anything special at home. Time, the great restorer, is a factor of importance. The man about town, with a good frame to start with, may get the better of his troubles and keep himself in trim by a month's asceticism in the course of each year. There is another sort of nervous dyspeptic who is the product of work, worry, and waste. It is not unreasonable to ask for two or three months to restore this blighted being. Where is the error first, in the nerves or in the digestive organs? As the student answered that celebrated question: "Does the sun go round the earth, or the earth go round the sun?" the facts of the case reply: "Sometimes the one, and sometimes the other." Frequently nervous symptoms disappear as the digestion improves. But when the earth goes round the sun, so to speak, the process is slow and scarcely to be noted. It is not that the wheels are clogged, but that they never ran true.

The "Practitioner" for July, 1888, contains a paper on hydrotherapeutics and its place in medical science. The authors state quite frankly that the success of water applications depends mainly, not on the ingredients of the waters drank or bathed in, not on the temperature of the baths, their time of application, or the length of cure, but upon the precision with which the treatment is conducted, the skill with which it is adapted to the characteristics of the patient, and the watchfulness with which complications are foreseen, met, and averted. A discriminating medical man can accomplish more with an inert water than the routinist can with a most potent and appropriate spring. Baths, packs, fomentations, etc., must be mixed as the artist mixed his colors, "With brains, sir!" Imagine that our friend, the nineteenth-century dyspeptic, arrives at an institution where this excellent practice prevails—

weary, jaded, without appetite, sleepless, and not too happy in the matter of temper. In the morning he is introduced to the sheet or towel pack, then soused in a cold or tepid bath according to the season or his own reactive power, this last point being of great importance and one that requires the nicest discrimination. A walk of some ten minutes or so afterward, enough for reaction but not for fatigue, finds him the surprised possessor of a good appetite for breakfast; if not to-day, then shortly. The Turkish bath, or its modified form, the lamp bath, is a veritable skin-compeller, making the outside of us do a little hard work for an overburdened interior. Cold or tepid sitz-baths and divers kinds of spinal rubbings—especially with mustard, an agent of far greater value than its simplicity suggests—are some of the chief forms of water application relied upon in ordinary cases. Air, exercise, rest, and recreation also play an important part. That they are not enough in themselves is proved by the experience of patients who have tried them alone, and afterward in conjunction with special treatment.

Though chronic diseases—digestive and nervous disorders, skin troubles, the syphilitic taint, etc.—are those most benefited by the hygienic measures included in the term hydrotherapeutics, simple water applications are of much service in acute cases, such as fevers, pneumonia, and peritonitis. Take, for instance, that compound of flannel and water, the fomentation, so useful in bronchitis or pneumonia. It must be properly applied or it is only a source of added worry. A thick pad of flannel carefully sewed together — not loose folded flannel— wrung out dry from hot water at a temperature just bearable, is applied to the chest and a blanket wrapped round, all being done with the greatest speed to avoid exposure, and the application renewed every ten minutes. After an hour's application, the surface of the skin is rubbed with a cold or tepid towel, and then with dry flannel. The fomentation as a counter-irritant is quite as effective as a mustard plaster or a turpentine stupe, never frays the skin, may be repeated as often as required, and is soothing and sleep-producing. This same fomentation over the abdomen combats insomnia successfully. A cold-water compress at night, well covered with flannel, has again and again dispersed what promised to be sore throat; and hot and cold water in headache are remedies almost too trite to mention.

In what waters shall we wash and be clean? In the springs at home whenever possible, and abroad whenever necessary. The iodine and bromine waters of Kreuznach and Soden are adapted to chronic disease of the scrofulous type, while the sulphur waters found at Eaux-Bonnes, Bagnères de Bigorre, and Luchon exercise their special virtues in recurring catarrhal disorders of the pulmonary or digestive tract, and are of marked benefit when herpetic affections exist. The waters of Mont Dore, Bourboule, and Royat are of service in virtue of the arsenic they contain, and still more owing to their mode of application. For neurasthenics and dyspeptics, the dry, bracing air, pure water, and easily obtained hill exercise of such places as Tunbridge Wells, Buxton, and Malvern can not be excelled if their natural advantages are supplemented by a course of rational hydrotherapeutics. The Delaware Water Gap region rivals the English resorts; and the sanitarium at Experiment Mills, Pennsylvania, three miles back of the Gap proper, is said to unite all the requirements of situation, beauty of scenery, and sensible management. More accessible than Bagnères de Bigorre and of the same class are the Rock Alum and Rockbridge Alum Springs. The water of Eaux-Bonnes is somewhat like that of the Greenbrier White Springs of West Virginia. It is almost always possible to find on this side of the Atlantic springs and localities as useful as European resorts. But the extra-medicinal factors, the mechanics of the situation, are too often in a crude state. This is not always so. As Dr. Coan says, when we come to have more of such admirably appointed establishments as the sanitarium at Dansville, New York, foreign travelers will frequent our waters as we do theirs at the present time. For the overstrained inhabitants of large cities, jarring their brains and spinal cords by the continual treading of stone and brick on an almost uninterrupted level, wearied by incessant noise and the absence of any wide range for the eye, with nothing in particular for the arms to do at any time, and the consequent lessened chest expansion, air treatment and water treatment hold a unique place as restorative measures. Such a hygienic course as has been indicated is entitled to a recognized place in the list of scientific methods.

## *MINOR PARAGRAPHS.*

### THE NERVOUS TROUBLES OF OLD SOLDIERS.

Dr. Horace P. Porter, of Oneida, Kansas, who was a medical officer in two Connecticut regiments during the War of the Rebellion, lately read a paper on this subject before the Northern Kansas Medical Society. The defects to which he alludes betray themselves for the most part by muscular unsteadiness, so-called rheumatic pains, and premature senility, all of which he traces to the privations and insalubrious surroundings incident to military service. We regret to learn that "a tendency to mendacity" is one of the manifestations, but are consoled to read that it is "one of the rare and extreme forms." Dr. Porter suggests, doubtless with much justice, that the nervous debility engendered by the hardships of war often renders the old soldier an easy prey to acute disease that he might otherwise survive, and he thinks that this consideration ought to be taken into account by the family physician in its bearing upon the title to a pension.

### PRIMARY ERYSIPELAS OF THE LARYNX.

The "Centralblatt für Chirurgie" publishes an abstract, by Dr. Riedel, of Jena, of an article on this subject, by Dr. A. Bergmann, in the "St. Petersburger medicinische Wochenschrift." The author cites Parter's case, which, he says, was the first one reported, and gives an interesting summary of Massei's account of the clinical history of the affection. In his own case a boy three years old was attacked, during an elder brother's convalescence from erysipelas, with high fever, decided swelling of the epiglottis, the arytæno-epiglottic folds, and the arytænoid region, great tenderness of the cervical glands, and slight stenotic breathing. Tracheotomy was done on the evening of the first day, and on the following day the

patient's general condition was good, but there was a transitory erysipelatous reddening of both upper arms. The boy recovered. The author lays stress on the rapidity with which laryngeal stenosis may take place, and on the consequent need of being prepared to perform tracheotomy at any moment.

### BLINDNESS DUE TO WHOOPING-COUGH.

In the "Deutsche medicinische Wochenschrift," Dr. Alexander, of Aachen, contributes to the scanty literature of this subject the histories of two cases. In one of them, that of a boy three years old, the blindness came on suddenly, the pupillary reaction being preserved and the fundus oculi presenting a normal appearance. The trouble was imputed to cerebral œdema situated between the region of the corpora quadrigemina and that of the occiput, which subsequently spread and proved fatal. In the second case, that of a girl twelve years old, the loss of sight was preceded by brain symptoms and was attributed to optic neuritis *ex meningitide*. The pupillary reaction, which had been lost, returned with the absorption of the meningitic exudate, and visual power was gradually regained. An abstract of the article is to be found in the "Centralblatt für klinische Medicin."

### SCARLET FEVER INDEPENDENT OF INFECTION.

Surgeon-Major R. D. Murray, of the British East Indian Service, states, in an article published in the "Lancet," that scarlet fever is extremely rare in India. He then proceeds to give an account of a case in which the disease seemed to him to develop *de novo*, and which he regards as "a refutation of the theory of the bacillary origin" of scarlet fever. In the history given we see no convincing evidence that the case was remarkable in any other way than as an example of the transmission of infection by unknown channels, a matter of not very uncommon occurrence.

### THE REPRESSION OF MENSTRUATION AS A CURATIVE MEASURE.

The November number of the "American Journal of Obstetrics and Diseases of Women and Children" contains an article by Dr. Eugene C. Gehrung, of St. Louis, in which, after mentioning certain considerations tending to show that menstrual loss of blood was not originally physiological, but is "a product of civilization," he asks how much blood it was Nature's intention to waste in the process, and answers: "Little in the strong and healthy; little or none in the weak and anæmic." In women of the present time, he thinks, the flow is usually "greatly in excess of the actual want," and he would moderate it by means of vaginal tampons, which, he says, not only lessen the loss of blood, but diminish the duration of menstruation. He has not observed any unpleasant results from the practice, but he regards Löwenthal's measures for accomplishing the same purpose—chiefly by the use of injections, sometimes of iced water—as of doubtful propriety because of their uncertainty and dangerous character.

### PAGET'S DISEASE OF THE SCROTUM.

At a recent meeting of the Pathological Society of London, reported in the "British Medical Journal," Dr. Radcliffe Crocker gave the history of a case that he regarded as one of Paget's disease affecting the scrotum. In a man sixty years old, there was superficial ulceration on the anterior part of the scrotum and the lower surface of the penis, somewhat resembling an eczematous excoriation, but deeper and more sharply defined. After rather more than a year of ineffectual treatment, both internal and topical, two firm nodules were found to have formed. At that time the malignant nature of the disease was apparent, and its similarity to Paget's disease of the nipple was recognized. The whole diseased area was cut out, and six months later there had been no recurrence. The microscope showed an alveolar structure, the stroma being here scanty and there abundant, and the alveoli containing aggregations of small epithelioid cells, suggestive in many respects of the structure of rodent ulcer. The process seemed to have originated in the sweat glands.

### THE MEDICAL COLLEGE OF VIRGINIA.

Dr. J. N. Upshur, professor of materia medica, etc., in the Medical College of Virginia, reminds us that, in our report of the proceedings of the recent meeting of the Medical Society of Virginia, we omitted to mention, on page 582 of our last issue, that Dr. Chancellor's resolution renominating the present members of the Medical Examining Board of the State was seconded by Professor J. S. D. Cullen, dean of the faculty of the Medical College of Virginia, who at some length refuted certain charges and misrepresentations as to the attitude of that faculty toward the State Examining Board, and showed that the faculty was in thorough accord with the board in its efforts to raise the standard of medical education. Our omission to mention this action on the part of Dr. Cullen was wholly due to inadvertence, and we are glad now to give the substance of Dr. Upshur's communication.

### ANTISEPTIC IRRIGATION OF THE LARYNX.

In a "Thèse de Paris," a notice of which appears in the "Progrès médical," Dr. W. P. Davis describes a method of treating laryngeal diphtheria by antiseptic irrigation of the larynx. Tracheotomy is performed, a tube with a shield of somewhat peculiar construction being employed. Above the opening of the tube there is a hole in the shield, through which a spray-producer is passed into the larynx. Below the delivery openings of the spray-producer there is a rubber bag which, on being inflated, acts as an obturator preventing the downward flow of the liquid. Various modifications of the instrument are described and figured. It is said that this method of spraying the larynx does not give rise to distress.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending November 27, 1888:

| DISEASES. | Week ending Nov. 20. | | Week ending Nov. 27 | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 21 | 9 | 15 | 5 |
| Scarlet fever | 130 | 2 | 148 | 28 |
| Cerebro-spinal meningitis | 0 | 0 | 2 | 0 |
| Measles | 221 | 7 | 263 | 8 |
| Diphtheria | 92 | 28 | 121 | 41 |
| Small-pox | 0 | 0 | 1 | 0 |

**The Health of Kansas City, Mo.**—For the two weeks ending Saturday, November 24th, according to the city physician's report, there were 84 deaths, including 1 from cholera infantum, 2 from croup, 1 from diarrhœa, 1 from diphtheria, 2 from dysentery, 6 from malarial fever, 3 from typhoid fever, 4 from typho-malarial fever, 2 from marasmus, and 1 from meningitis. The death-rate for each week was 12·1 in a thousand of the population.

**Visiting Lists for the Coming Year.**—Two of these publications have reached us, both from Philadelphia. They are Messrs. P. Blakiston, Son, & Co.'s and the "Medical News" Visiting List, issued by Messrs. Lea Brothers & Co. Both present the neat appearance and convenient arrangement noticeable in the past, and will doubtless continue to prove very serviceable to physicians.

**The Death of Professor Heinrich von Bamberger, of Vienna,** is announced in the "Internationale klinische Rundschau." The deceased was born in Prague, in 1822.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 18 to November 24, 1888:*

Smith, Joseph R., Lieutenant-Colonel and Surgeon, after being relieved by Lieutenant-Colonel Alden, will report in person to the commanding officer, Department of Arizona, for duty as medical director of that department, relieving Lieutenant-Colonel Richard H. Alexander. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

Alexander, Richard H., Lieutenant-Colonel and Surgeon, by direction of the Secretary of War, is granted leave of absence for four months, to take effect from the date of his relief from duty as medical director, Department of Arizona, by Lieutenant-Colonel and Surgeon Joseph R. Smith. Par. 11, S. O. 268, A. G. O., Washington, November 16, 1888.

Alden, Charles H., Lieutenant-Colonel and Surgeon, is relieved from further duty at the U. S. Military Academy, West Point, New York, and will report in person to the commanding general, Department of Dakota, for duty as medical director of that department, relieving Lieutenant-Colonel and Surgeon Joseph R. Smith. Par. 10, S. O. 268, A. G. O., Washington, November 16, 1888.

Smart, Charles, Major and Surgeon, by direction of the Secretary of War, will proceed to Milwaukee, Wis., to represent the Medical Department of the Army at the meeting of the American Public Health Association in that city, November 20 to 23, 1888, and, upon the adjournment of the association, will return to his proper station. Par. 2, S. O. 268, A. G. O., Washington, November 16, 1888.

Newton, Richard C., Captain and Assistant Surgeon, by direction of the Secretary of War, is granted leave of absence for four months. Par. 16, S. O. 272, A. G. O., Washington, November 21, 1888.

Wood, Marshall W., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in Special Orders No. 257, November 3, 1888, from this office, is extended ten days. Par. 12, S. O. 270, A. G. O., Washington, November 19, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending November 24, 1888:*

Heffinger, A. C., Passed Assistant Surgeon. Ordered to the U. S. S. Kearsarge.

Bryant, Patrick H., Assistant Surgeon. Ordered to the Naval Hospital, Brooklyn, N. Y.

McMurtrie, Daniel, Surgeon. Ordered to the U. S. Receiving-ship Vermont.

Drennan, M. C., Surgeon. Detached from the Vermont and ordered to the Atlanta.

Winslow, G. F., Surgeon. Detached from the Atlanta and placed on waiting orders.

McClurg, W. A., Passed Assistant Surgeon. Detached from the Tallapoosa and ordered to the Kearsarge.

Von Wedekind, L. L., Assistant Surgeon. Ordered to the New Hampshire.

Heffinger, A. C., Passed Assistant Surgeon. Detached from the Kearsarge and ordered to the Tallapoosa.

Stephenson, B. F., Surgeon. Detached from the Navy-yard, Boston, and ordered to the Wabash.

Oberly, A. S., Medical Director. Ordered to the U. S. S. Richmond.

Jones, W. H., Surgeon. Detached from the U. S. S. Richmond and to wait orders.

**Society Meetings for the Coming Week:**

Monday, *December 3d:* New York Academy of Sciences (Section in Biology); Medico-chirurgical Society of German Physicians (annual); Morrisania Medical Society (private); Brooklyn Anatomical and Surgical Society (private); Utica Medical Library Association; Boston Society for Medical Observation; St. Albans, Vt., Medical Association; Providence, R. I., Medical Association; Chicago Medical Society.

Tuesday, *December 4th:* New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Medical Societies of the Counties of Herkimer (semi-annual—Herkimer) and Saratoga (Ballston Spa), N. Y.; Hudson, N. J., County Medical Society (Jersey City); Androscoggin, Me., County Medical Association (Lewiston); Baltimore Academy of Medicine; Southern Surgical and Gynæcological Association (first day, Birmingham, Ala.).

Wednesday, *December 5th:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of the City of Brooklyn; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Southern Surgical and Gynæcological Association (second day).

Thursday, *December 6th:* New York Academy of Medicine; Society of Physicians of the Village of Canandaigua, N. Y.; Boston Medico-psychological Association; Obstetrical Society of Philadelphia; United States Naval Medical Society (Washington); Southern Surgical and Gynæcological Association (third day).

Friday, *December 7th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

Saturday, *December 8th:* Obstetrical Society of Boston (private).

OBITUARY NOTES.

**William J. Simon, M. D.,** of the navy, surgeon of the steamship Boston, died on Monday, the 26th ult., of yellow fever. The deceased, who was a native of Pennsylvania, was appointed an assistant surgeon in the navy in 1864, promoted to be a passed assistant surgeon in 1867, and made a surgeon in 1875.

## Letters to the Editor.

AMERICAN INSTRUMENTS AND MEDICINES ABROAD.

New York, *November 14, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: Now that the question of a protective tariff appears to have been settled for the present, I should like to ask attention to the following extracts from English sources as bearing upon

the proposition lately made by a Southern medical society that surgical instruments should be freed from customs duties to enable physicians to obtain cheaper and better appliances of this character. The first relates more particularly to this topic, and the second is of interest in the same connection.

During the latter part of the year 1886 the London "Daily Telegraph" published an extensive correspondence upon the commerce of Great Britain and its colonies, in the course of which an Australian wrote as follows: "At the Melbourne Club, one evening, an eminent medical man told me that the surgical instruments with which he was supplied from England were utterly useless to him, and that he was obliged to send to New York for instruments that were really serviceable. Another and more unseemly device practiced at home is to send out boxes and cases, and boxes of lozenges, pills, and jujubes, only three quarters filled."

In an interview with Mr. Alfred Felton, of the Australian firm of Felton, Grimwalde, & Co., of Melbourne, by a representative of the "British and Colonial Druggist," the reporter remarked that "in the matter of the sale of pharmaceutical preparations in the colonies it is sometimes said that America is getting ahead of us," to which Mr. Felton replied:

"Well, at the antipodes there is an equal field for all comers, such as it is. There is a preference for English goods, and England at present undoubtedly has the market. Not only English and American pharmaceutical specialties, but German and French also have been introduced into Australia. Some of them succeed on their merits, and others owing to the way in which they are advertised. Now, our American friends are great in this latter department, and this, in conjunction with the admirable way they get their goods up, materially assists them in obtaining a very good position with the public. The English producers, therefore, although they command the market now, will have to bestir themselves and use all their intelligence to thoroughly adapt their goods to the colonial requirements, or they will lose ground." F. A. Castle.

## BOILED SILKWORM-GUT SUTURES.

Columbia Hospital, Washington, *November 15, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: From articles lately published in the leading journals of America and Europe, I am led to the conclusion that, in spite of the demand for a reliable aseptic animal suture, the properties of silkworm-gut are not generally known; and I wish to call attention to the following facts which, in my opinion, render it the nearest approach to perfection of any animal suture now known:

1. It is not injured or changed by prolonged boiling nor by long immersion in aqueous antiseptic solutions, and may therefore be easily sterilized by boiling, and kept aseptic in wide-mouthed phials of sublimate or carbolic-acid solution.

2. It is as strong as silk and, after soaking, nearly as pliable, is freer from twisting and kinking, and easier to pass through the needle's eye than either silk or catgut.

3. It resists absorption longer than other animal tissues.

4. It is easy to tie, and the knots, if well tied, never slip. Every fisherman knows that a knot well tied in gut is tied to stay.

5. It may be split into fine threads for delicate work, and is obtainable when desired in lengths of eighteen or twenty inches.

It has been used with great satisfaction in this hospital for perinæorrhaphy, trachelorrhaphy, and other operations, the gut used having been boiled by myself for an hour, and the union in every case having been perfect and entirely without suppuration. W. P. Carr.

# Proceedings of Societies.

## AMERICAN DERMATOLOGICAL ASSOCIATION.

*Twelfth Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, Dr. I. E. Atkinson, of Baltimore, in the Chair.

**The President's Address.**—In his address the President said that the student owed to Hebra the beginnings of a classification of diseases in dermatology based on the foundation of pathology, and it was only by following on in this line that we could hope to make the greatest progress. But simple enumeration of pathological changes was not definite enough for our purposes, for we often found examples of similar effects which were the result of very different causes, and, on the other hand, the same cause might produce at different times, and under different circumstances, results which seemed quite unlike. It was, then, to ætiology, as the soul of pathology, that we must turn our attention.

The first proposition was illustrated in the diphtheritic membrane which was seen during the course of diphtheria, and the membrane which was seen in scarlatina, and which could not be distinguished from the former. A nephritis might be set up by the poison of scarlatina, of small-pox, of malaria, or by the action of certain drugs, the resulting lesion being very similar in all the cases, since Nature used the same weapons against enemies which came under different standards. Witness also the alopecia of tropho-neurotic origin and that resulting from syphilis; the herpes of pneumonia and that resulting in malarial fever; the eruption of German measles and that of the ordinary form of measles.

It had been supposed that micro-organisms were the direct cause of pus-formation, but further researches seemed to show that not the organisms themselves but their products—the ptomaines—were the active element in the suppuration, for these products were able to produce the pus without the micrococci themselves, while the micrococci alone were inert. It had been found that the *Staphylococcus pyogenes aureus* produced ammonia, and it might be that this was the active agent in the formation of pus, since a sterilized solution of ammonia would cause suppuration. In all suppurations of the skin the ætiological factor became of prime importance. Bockhart had found that the suppuration of impetigo, furunculosis, and sycosis was due to the action of the *Staphylococcus pyogenes aureus* and *albus*. These bacteria were found also in the secondary results of specific action. In the pustules of variola, for instance, the *Staphylococcus aureus* was found, and to this was ascribed the pus-formation, though not the contagion. So it was probable that there were many so-called skin diseases where the lesions were but the local manifestation of a general disease, where the local poison obtained a foothold in a tissue already weakened by some specific agent. In such a class, perhaps, might be classed dermatitis exfoliativa, pemphigus, dermatitis herpetiformis, and others of that sort. In the dermatitis herpetiformis of Duhring there had generally been found lesions connected with the cerebro-spinal system, or tuberculosis; but as yet there had not been found any constancy of lesions which would enable them to be called a well-defined pathological group. If it was true that the eruption was a secondary lesion, due to nervous or vascular irritation, then the disease deserved a place in our text-books only as we admitted purpura and other disorders which we recognized as largely symptomatic. It was the task of pathology to discover the relation between the general disease and the secondary manifestations; but until our knowledge became

more definite we could not hope that our classification of disease would prove more than tentative; and until that time came we should have to treat diseases for what they appeared to be rather than for what they were.

**The Electrolytic Decomposition of Organic Tissues.**—Dr. G. H. Rohé, of Baltimore, read a paper on this subject. (See page 589.)

Dr. Heitzman, of New York, spoke of the favorable results reported by Dr. Hardaway, of St. Louis, in the treatment of keloid. Althaus, of London, had first introduced the treatment, some twenty-five years ago, but when he was here last year he had told the speaker that he had given up the use of the treatment, as he considered it of no value. The speaker had tried it in one case, but without result. He would like the experience of others in the same cases.

Dr. R. B. Morrison, of Baltimore, had had good results sometimes in the growths that came in the scars of operations. In one case a scar that had been raised half an inch had been rendered flat and white, and the superficial veins had been cut off. In one case of keloid in the negro he had had a good result.

Dr. G. H. Fox, of New York, had tried the treatment in four or five cases of true keloid, and also in hypertrophic scars, but had been able to get only a temporary benefit resulting from the cutting off of the superficial vessels. In one case where he had treated tumors, and had expected to get good results, the effect had seemed to be an increase in the size of the larger tumors and the formation of smaller ones.

Dr. Rohé said, in conclusion, that he had had no opportunity of trying the current on the true keloid, but he had been able to reduce the size of the hypertrophic scars. Since the report of Dr. Hardaway's first publication Dr. Broeck, of Paris, had used electrolysis in keloid, and reported at length a number of cases in which it had been used successfully.

**The Value of Salicylic Acid in Dermatology.**—Dr. C. Heitzman, of New York, read a paper on this subject, in which he said that he had been using the remedy for the last three years, in conjunction with his son. It had two well-marked properties. The first was the peculiarity of acting on the horny layers of the epidermis. There was no agent so active in softening, and at last destroying, the epidermal formations as was salicylic acid. Its other action was as a parasiticide. These two properties opened a large field for research. We should be careful not to include cases where we had merely impressions as to its value; but there were many cases in which there could be no question as to its utility, and in some of these it had never been used before. The remedy might be used as a powder, as a plaster, or in the alcoholic solution. It had the advantages that it did not discolor the skin or linen, and had no odor. It was used in twenty-four kinds of cases. In hyperidrosis its action was well known. The German soldiers used it in a one-per-cent. salve of tallow, applied to the feet when upon the march. In seborrhœa, especially when combined with acne, it had given brilliant results. One per cent. of the acid with six to eight per cent. of sulphur was an excellent application for dandruff. A prescription with tar the reader liked better, but it was less agreeable to the patients. In urticaria it was an excellent means of allaying the itching. In furunculosis an ointment of six to ten per cent. had prevented an outbreak and checked the disease. But, to be sure of results, the quality of the acid must be guaranteed. In two cases, where the prescription had been filled at random, there had been no good result, but when Scheering's salicylic had been substituted the effect had been immediate.

In one case of dermatitis herpetiformis a lotion of the acid had proved the best thing the patient had tried, although it had not been capable of smothering the disease or preventing recurrences. In psoriasis, after the chrysarobin and tar, it was the very thing to be applied, though the peeling off of the scales was not so rapid as with other remedies. In lichen planus salicylic acid was far superior to carbolic acid or corrosive sublimate. It could also be applied over a larger area with safety. It allayed the itching, removed the scales, and flattened down the papules. The author had prescribed three-per-cent. solutions, which were to be diluted at the beginning of treatment. Six cases were treated, and all did uniformly well without the administration of arsenic.

In all varieties of eczema the results had been satisfactory. Ninety-six cases had been treated, generally by the use of one per cent. of the acid, with equal parts of zinc-powder and starch, in two parts of ointment. If it was eczema madidans, one half per cent. was better. Sometimes it might be used as high as ten per cent. where there was great thickening in the very chronic cases. As the acid did not attack the connective tissue, there could be no caustic effect. In acne a three-per-cent. solution would remove pigment patches, assist in removing comedones, and render the skin soft. In acne rosacea the results were good, but in sycosis less good. The remedy did not seem to penetrate deep enough between the furrows. In impetigo contagiosa it was the remedy which would cure the disease in ten or twelve days. If combined with the liquor gutta-perchæ and some oil to make an emulsion, it would adhere to the skin. In keratitis senilis, callosity, clavus, and verruca its action in removing the thickened portions was well known. In ichthyosis it was easy to remove the scales, but they would return. In lupus erythematosus and lupus vulgaris the results had been brilliant at first, the excrescences flattening down rapidly at first, but not a case had been cured. For pruritus, in the shape of a lotion, it was excellent. In tinea the solution with gutta-percha was better than Taylor's remedy. But generally the disease would not be cured by any one remedy, and we were only too glad to have more than one. In tinea versicolor a one-per-cent. solution was effective.

Dr. Pye Smith, of London, spoke of his use of the remedy in the hypertrophic inflammations in the soles of the feet and the palms of the hands where there were fissures; here the effects of the remedy were wonderful. He could corroborate what Dr. Heitzman had said in reference to the use of the remedy in furunculosis, especially as it occurred in youths or school-boys sometimes for months together. He believed that the contagion was carried from one point to another in the dressing. In the treatment of the individual pustules he always hardened the surrounding skin by bathing it in lead lotion, thus giving less opportunity for the invasion of the micro-organisms than did the old method of poulticing, which made the skin sodden and readily permeable. In lichen planus he had tried the salicylic acid with some success, but had found it difficult to follow the cases closely enough to be sure of his ground. He would prefer to wait till more material had been collected. In general, he felt that there were not enough cases to warrant definite conclusions. The speaker expressed his gratification at the reception he had received, and at the progress which dermatology had been making in this country within the past few years, and he felt that that progress was small compared with what would be accomplished in the years to come.

Dr. L. D. Bulkley, of New York, had used the remedy largely in many of the cases referred to, and would mention particularly hyperidrosis of the axilla in ladies. He used with great confidence a ten-per-cent. powder, with one drachm of oxide of zinc and the rest starch. In eczema he thought that we must be careful. He had seen acute attacks started up by it. He would also mention favus of the scalp, in which he considered it very valuable in the form of a strong lotion. He had several cases now under observation for several months,

and it had not yet returned. It was good in seborrhœa, but, if it was too strong, even when mixed with oil, the patients would come back and say it was too drying.

Dr. Fox had used it a good deal in cases of general eczema and psoriasis when he wished to soften the skin and remove the scales.

Dr. A. Van Harlingen, of Philadelphia, used it in the treatment of chronic eczema of the legs in a paste with glycerin and zinc oxide, made into a paste with five per cent. of the acid. If it was carefully applied, the patients would go for from three days to a week without redressing.

Dr. E. B. Bronson, of New York, thought that in most cases we used the remedy as a preliminary measure, as it prepared the surface for other remedies. This was true especially where there was an enormous accumulation of the epidermis, as in cases of seborrhœa. In these cases he had generally been obliged to resort afterward to some other remedies. As to the manner in which the acid performed its work, he did not think we yet knew its whole action, and he quoted Unna as saying that it would demand further research. At present he thought its curative properties were limited to the cases in which it exerted its germicidal action.

Dr. Heitzman said that the field of the remedy in hyperidrosis would extend to any portion of the body which was affected, instancing especially the folds of the groin and the genital regions.

**Anthrarobin.**—Dr. Bronson read a paper on a new remedy which he said was manufactured by Liebermann, a Berlin chemist, and was first employed on theoretical grounds, on account of its resemblance to other remedies of known value. Alizarine belonged to the same class, and from this anthrarobin was formed by a simple process of reduction. It was a powerful oxidizing agent, one gramme taking up 120 c. c. of oxygen. It was a yellowish-white, granular powder, sparingly soluble in chloroform and ether, readily soluble in alcohol and weak alkaline solutions. It mixed readily with fats in the formation of salves. The presence of an alkali increased the reducing effect. The author had treated cases of psoriasis at the Charity Hospital, applying anthrarobin on the right side of the body and chrysarobin on the left side. It was used in a ten-per-cent. mixture with vaseline, and once a day an alkaline bath was given before the application. Out of the eight cases treated, the first five had been somewhat surprising. Improvement had begun sooner and gone on more rapidly on the right side, but after the applications had been stopped there had been more recurrences on the right side. In the three other cases the alkaline baths had been omitted, and the improvement had been more marked on the left side; but as soon as the baths had been commenced the right side had begun to improve more rapidly. The staining was of a dark-brown, and deeper than with chrysarobin, but it was limited to the area to which it was applied. In only one case, and when a twenty-per-cent. application had been made, had it been irritating. In a very marked case of eczema seborrhœicum the effect had been very marked. It had no antipruritic effect. In diseases in which the indication was for a purely keratoplastic agent, or in such conditions as obtained in the old stages of eczema, there was reason to hope that the new remedy might render considerable service.

Dr. Heitzman had seen its effects in a case where it had been applied carelessly, and had made up his mind he would not use it. It was less powerful than chrysarobin, and just as nasty as pyrogallic acid.

Dr. P. A. Morrow, of New York, had seen the patients treated by Dr. Bronson, and could confirm his statements of the value of the remedy. Anthrarobin was less irritating and less curative than chrysarobin. He thought the remedy would be used in a good many cases of psoriasis where the skin was delicate, where the stronger remedy would not be tolerated, either from its irritating action or from some idiosyncrasy.

Dr. Bronson pointed out that, while the new remedy was less likely to irritate than chrysarobin, and seemed of less curative action than that drug, yet it was to be borne in mind that it might set up a dermatitis.

**Personal Observations on Skin Diseases in the Negro.**—Dr. R. B. Morrison, of Baltimore, read a paper on this subject in which he said that the negro seemed less liable than the white to diseases of a severe type. The skin was coarser in all its elements, and was less sensitive to poisons, to nervous lesions, or to constitutional or general influences. The difference in the blackness of the pigment granule determined the shade, there being no difference in thickness of the pigment layer in the black and the mulatto. Five hundred cases of skin diseases had been tabulated. In general, the nearer the color approached to white the less difference there was in the character and frequency of the diseases. Acne was very rarely seen; more frequently in the mulatto. In chancre the induration was more marked. Chilblain was less frequent and less troublesome than in the white. Chloasma showed itself as whitish spots, and the treatment was reversed, for we must produce pigment. Erythema multiforme had been seen in two cases where the hands had been used in scrubbing; there had been burning and itching, but no redness. In erythema nodosum there was less pain but more itching. It was seen on the legs. Acute eczema showed 19 per cent. as compared with the 30 per cent. of whites. It occurred in spots, and looked like dust on a black coat. It was more amenable to treatment than in the white. Cases of chronic eczema were seen in the men who worked at oyster-shucking. Nothing but a change of occupation would cure it. Favus was rare, as also was furunculosis. Herpes facialis was common in the babies, as the result of the sugar-tit, which was a piece of bacon dipped in molasses and wrapped in a piece of linen. Zoster produced less pain and ran a shorter course; keloid sometimes followed. In impetigo contagiosa there was more itching, and the crusts were more yellow. It might be confounded with herpes in the diagnosis.

Keloid was more common. Two cases had occurred after small-pox. In the mulatto it was almost as uncommon as in the white race. Lupus was rare, which seemed peculiar, in view of the bad habits of the negro. Keloid had followed in the case of the one noted. When the tubercles healed they left a white spot. Lymphadenitis was very common; suppuration was slow, and absorption seldom successful. Pediculi were less common on account of the short hair. Pruritus was exceedingly common, and apparently some diseases appeared only in this form. Patients spoke of an "itching in the blood," and all that could be found was a dry, hard skin. Psoriasis occurred, and when the scales were removed there might be a bleeding surface. A white spot was left after a cure. Scabies was uncommon and less troublesome. Seborrhœa capitis was seen in fifty per cent. of the black women, due to their lack of cleanliness. In syphilis the chancre occurred sooner after the exposure, and there was more induration. The inguinal glands became much enlarged, and were prone to suppuration. The secondary eruption might easily be overlooked, as there was no redness. Itching was also likely to be present. The mucous membrane of the mouth and throat was generally diseased. The tertiary stage was more likely to follow.

Tinea was less troublesome, and the treatment satisfactory. Urticaria was common, and accompanied by some burning and itching. Dermatitis venenata was very uncommon. Sometimes the itching seemed to be the only evidence of poisoning in this way. It seemed to the author probable that the pigmentation of the skin was the primary factor which caused the difference

in the various diseases. Whether any difference in treatment was to be recommended must be left to future investigation to decide.

Dr. HEITZMAN did not think the term chloasma should be applied to a condition where there was a loss of the pigment of the skin. The fact that there was itching in the eruption of syphilis seemed to him remarkable, since it was so uncommon in the white.

Dr. BULKLEY had seen a number of cases of chloasma in negroes, and also some cases of vitiligo. He was especially interested in the itching eruptions in the race, and was sometimes compelled to put down the diagnosis of pruritus. He was rather surprised that there were two cases of chancre upon the upper lip.

Dr. S. SHERWELL, of Brooklyn, remarked the absence of any case of lupus in the five hundred cases. Generally there was about one per cent.

Dr. FOX noted that there had been no mention of the exanthemata. He had been asked to give an opinion in cases where scarlatina was suspected. In the first stages one had to depend on the fever and the examination of the throat. In the stage of desquamation he had been struck with a peculiar "peppered" appearance of the skin, the smooth luster having been lost.

Dr. FREDERICK had seen more cases of elephantiasis Arabum. He had had one case of double elephantiasis. He had seen many cases of syphilis, but did not remember any case of extra-genital syphilis.

Dr. A. R. ROBINSON, of New York, would criticise the drawing of such distinct conclusions from so small a number of cases. The character of the observations was of great interest, but we needed more of them.

The PRESIDENT had long felt that a chapter in the history of skin diseases was wanting, and hoped that statistics would be kept for a longer time. Though he had found acne uncommon in the negro, yet there was a very common condition of the face of young colored men who were heavily bearded and who shaved frequently, which seemed to be a peculiar follicular inflammation. Each pustule was penetrated by a hair, and on incision a drop of pus escaped. It was very persistent, and usually gave no trouble. He had seen the large masses of glands in the groin in syphilis, and had observed that they usually pointed in several places, the circumglandular tissues being involved more than the glands themselves. Chloasma he had found very common, especially in those of mixed blood. A pigmentation would often follow the application of a mustard plaster. He had been especially struck with the frequency and size of the keloid growths, particularly those occurring after scars; but he considered that these frequently became resolved of themselves. Pediculi capitis might not be common, but the body louse was frequently seen. Pruritus he generally attributed to some form of parasite. He could confirm the observation as to the itching in syphilis. The papillary syphiloderm was also very common with them, and it resembled the lesion of ring-worm at a certain stage, when it had an iris-like margin. Vitiligo was probably not more common than among the whites, but the contrast in color made it more prominent.

Dr. MORRISON asked if there was any good treatment for follicular inflammation of the bearded part of the face; and he would inquire why the president considered the pigment the element which made the difference in the character of the diseases; why might it not be in the lymphatic system, which was different, and would carry off the products of inflammation at a different rate?

The PRESIDENT had usually observed the follicular inflammation accidentally, and when he had been called upon to treat it he had not met with very good success. It usually caused no unpleasant symptoms.

Dr. MORRISON said that the diagnosis of chloasma had been made from the general symptoms rather than from the spot. It was not leucoderma, and he supposed it was what was called uterine chloasma. He had been taught that itching was not present in the eruption of syphilis, but in the negro it was not true. He would agree with Dr. Morrow that the number of cases was too small to more than point the way toward further study. As to the influence of the pigment, that was only a suggestion, and not a settled conviction.

**The Relations of Papilloma to Syphilis and Tuberculosis of the Skin, with Report of a Case.**—Dr. MORROW read a paper on this subject in which he said that the term papilloma was used in a general way to include a great variety of lesions, such as the warty formations developing as primary processes; the specific products of certain zymotic diseases; growths the sequel of pathological lesions, such as ulcers of the leg. We might have growths of scrofulous, syphilitic, or lupous origin, the verrucous papilloma or the carcinomatous papilloma, papilloma neuroticum, dermatitis papillomatosa capillitii, zymotic papilloma, verruca necrogenica, lupus papillaris, tuberculosis verrucosa cutis, eczema verrucosum, pompholyx vegetans, syphilis vegetans, etc. Papillary outgrowths, from the pathological side, were not specific products, but rather accidental results. It was probable that the papillary proliferations which followed a chronic inflammation of the corium were more or less closely allied to the giant granulations which developed in connection with the cicatrization of wounds or ulcers. They might be considered as a deviation from the normal process of granulation, in which the papillary hypertrophy had, under the influence of long-continued inflammation or from structural peculiarities of the skin, taken up an exaggerated development. Practically, it was often impossible to determine, from the aspects of the tumor, whether it was a primary or secondary process. The author reported the history of a case occurring in an Italian, thirty years of age, who had been first seen in February, 1888. Two years and a half before his left wrist had become inflamed, and the hand had been subsequently amputated. Otherwise he had been and was in good health. A large portion of the face was covered with crusts, under which were found papillary growths, everywhere uniform, suggesting the cauliflower. Pus escaped from fissures between the masses. The vegetations were found to rise directly from a sound skin. The papillomata were soft and fleshy, but soon dried, and were accompanied with much heat and pain. There was a chain of glands in the right side of the neck.

Syphilis had been ruled out by the lack of initial symptoms, the sluggish development, the absence of concomitant symptoms, the failure of treatment, and especially the absence of the hard brownish-red margins which were almost pathognomonic of the vegetating syphilide. Lupus verrucosa and tuberculosis verrucosa cutis had been suggested. The author here went into a discussion as to the identity of lupus and tuberculosis. To him a strong proof was the large number (seventy per cent.) who had tuberculosis elsewhere in the body. It seemed most likely that the disease was a tuberculosis. Some of the papillary growths had been removed and submitted to Dr. Elliot, and the bacilli of tuberculosis had been found. In accounting for the origin of the disease the author considered it likely that the previous disease of the wrist was a tuberculous osteitis, and that the bacilli were in some way transferred from that point.

Dr. FOX thought that frambœsia occurred not only in the pustular form of syphilis, but in the ordinary tuberculous form of the disease. He believed that a true eczema might be ingrafted upon a syphilitic patch. But he did not remember having seen a disease modified by the existence of syphilis; this he

considered a fault in diagnosis. He called attention especially to what was termed eczematous frambœsia, which occurred on the surface of these syphilitic patches.

Dr. Morrow asked why they were called eczematous.

Dr. Fox replied that they had the characters of acute eczema, and were limited to the syphilitic patches.

Dr. Morrow asked whether Dr. Fox would regard the papillary outgrowths which occurred in the other forms of chronic inflammations of the skin, such as lupous and scrofulous ulcers, as also eczematous.

Dr. Fox made no such statement. He simply spoke of the eczematous outgrowths as one form of the papilloma.

Dr. Bronson had had the care of the patient for a time, and was much interested in the case. He had at first supposed the disease to be syphilitic, and had treated it accordingly. Under the application of a solution of corrosive sublimate there had been improvement for a time. He considered the diagnosis of tuberculosis as good as any that could now be arrived at. It was surprising that after so long a time there were no signs of tuberculosis elsewhere.

Dr. Sherwell would take issue with Dr. Fox in regard to the influence of syphilis upon other diseases, such as eczema. He considered that such an influence was sometimes seen.

Dr. Heitzman called attention to the progress that had been made in the study of these affections in the last forty years. He regarded this case as settled from the moment the tubercle bacillus was discovered.

Dr. Morrow asked an expression of opinion as to the identity of lupus and tuberculosis.

The President reminded Dr. Morrow of the paper by Dr. Morrison.

Dr. Morrow had understood that Dr. Morrison had changed his views since the publication of that paper.

Dr. Heitzman was convinced that lupus and tuberculosis were identical, and said that the vast majority of dermatologists subscribed to the same view. Kaposi did not agree.

Dr. Bulkley considered the presence of the tubercle bacilli as proof of the identity of the diseases.

Dr. Fox spoke of the allegation that had been made that there was a difference between ordinary tuberculosis and lupus vulgaris.

Dr. Sherwell, from clinical data, thought there might still be room for doubt. In his experience there were many cases in which there was no evidence of tuberculosis elsewhere.

Dr. Robinson did not think the question solved with any positiveness. It was true that bacilli had almost always been found, but they had generally been very few in number. Cultivations had been made, and tuberculosis had been produced, but the objection had been that no one had yet produced lupus vulgaris by the inoculation of the tubercle bacillus.

**Dermatitis Herpetiformis.**—Dr. J. E. Graham, of Toronto, Canada, read a report of three cases. The first two had been in men with a history of two and five years' standing. In each there had been many recurrent attacks, with extension from the face over the whole surface of the body. There had been erythematous patches, papules, vesicles, and brown discolorations. The second patient had been first attacked while overheated. The third case had appeared in a strong, healthy woman, twenty-three years old, who had had one miscarriage. On several occasions in early life she had had eruptions on the face of a vesicular and bullous character. Just after the birth of the second child, which had been a healthy infant, bullæ had appeared at the corner of each eye. Then they had formed on the face, and the disease had gradually extended over the body. She had failed gradually, and died after many months of ineffectual treatment. There had been no autopsy.

After the rupture of a bulla there might be: (*a*) Scab formation, with healing and brown discoloration; (*b*) a new bleb formed on the site of the old one, which usually would contain pus; at the same time vesicles formed round the edges, producing extension; (*c*) a raw surface left; (*d*) extension taking place by simple lessening of the epidermis without any formation of serum beneath. The distinction from pemphigus was made by the herpetiform arrangement of the lesions and by the peculiar method of extension.

**Dermatitis Herpetiformis, with Notes of Three Cases.**—Dr. H. W. Stelwagon, of Philadelphia, then read a paper on this subject in which he said that the first case at one time had resembled pemphigus; at another, herpes iris; and at still another, erythema multiforme. Many attacks had occurred, and the patient could tell of their approach by a peculiar itching of the skin. In the second case the conjunctiva and the mucous membrane of the mouth and trachea had been affected. After he had been nearly well of one attack, another had come on immediately after a bath. Arsenic had been given in each case with good results. In the third case, that of a female, there had been a tendency to umbilication, but not to rupture. It had been treated by a saturated solution of boric acid locally.

Dr. F. E. Hyde, of Chicago, thought we had come to the point where we must separate impetigo herpetiformis and some of the exfoliative disorders from the group of cases that had been so admirably described by Duhring. He would not necessarily associate Dr. Graham's third case with this group simply on the ground of repeated attacks. The previous outbreaks, he thought, might have been of a different character. The speaker reported at length a case occurring in a man, with symptoms and eruptions precisely like those of the third case of Dr. Graham's, where eventually the whole area of the body had been affected, and there had been very extensive separation of the skin. The continuous water-bath of Hebra had been used, but death had occurred after three months. It had only differed from the case of Dr. Graham's in the absence of previous attacks.

Dr. Bulkley referred to the address of the president in relation to the need of greater knowledge of the ætiology of these affections, and the similarity of lesions which might result from widely diverse causes. He had shown at the New York Dermatological Society a typical case of this disease, in which the patient had afterward died, and internal sarcoma had been found at the autopsy. Dr. Stelwagon's third case seemed a typical one, and he had learned of the patient's death a month ago of some brain trouble. While she was under his care she had been taken with acute congestion of the brain, but became better. He thought the dermatitis was an illustration of the acute brain lesion. He would class the third case of Dr. Graham's with pompholyx, and would widen the definition of the latter affection to include the earlier and varied forms which resembled the disease which Duhring had described.

Dr. Fox had treated one of the cases reported, and it had shaken his belief in the identity of the various diseases. It illustrated how from time to time a disease might pass through different phases of development and appear as different diseases to different men. He had seen the case between the outbreaks of vesicles, and there had been a diffuse erythema. In this case arsenic had not had a good effect. He had seen one very severe case of bullous eruption get well with no internal medication, and if arsenic had been exhibited the result would have been attributed to it.

Dr. Heitzman had been slow in accepting the classification of Duhring, but, so far as his own experience went, he would agree with him. He had seen but one case which he was sure

belonged to the class. He would not include the impetigo herpetiformis of Hebra.

Dr. SHERWELL had found diabetes in two cases of the disease. The patients had been relieved by diet. But there were others who had no such trouble.

Dr. GRAHAM had examined the urine in all the cases, and neither sugar nor albumin had been found. He believed that the third case had arisen from a different cause from that of the others, but we had not yet reached a point to distinguish them.

Dr. STELWAGON believed it best to put these various affections under one head, for we at present had no place to put them. His doubtful case might have been classed as hydroa, but that was a still more ambiguous term. He did not believe that diseases should be separated because they had different ætiological factors. Acne was acne, though it might be produced in different ways. It would lead to useless multiplication of terms, but we must keep in mind that it might be produced in these different ways.

The PRESIDENT recognized the fact that there was a strong pathological chain binding together this series of cases, but we classified disease according to pathological or clinical expressions simply because data were lacking for an ætiological classification.

Dr. ROBINSON thought that there were great limitations to a classification from an ætiological standpoint; it could never be complete, and therefore not desirable.

**Note of a Case of Filaria Medinensis.**—Dr. VAN HARLINGEN read a paper with this title. The patient worked in the Customhouse, and opened invoices from different countries. Last September he had noticed a small red papule under the skin on the back of the hand, accompanied with itching, but not with pain. This had pushed along under the skin, and had shown a sinuous red coil. It had crossed round into the palm. It was cut down upon, but was not found, and asafœtida was administered in three-grain pills, three four times a day. At the end of four days there was but a trace of the line. He had remained entirely well. But two other cases had been reported in this country in persons who had not been in tropical lands. The method of propagation was not known. The author said that generally too much stress was laid on the furuncle at the site of the parasite. In the countries where it abounded they cut down on it and drew the filaria out. Care must be taken not to rupture the mature worm, as it was a female filled with young. Electricity had been used, and injections of carbolic acid. Iodide of potassium had been given internally.

**Note relative to the Condylomaform Lesions induced by Ingestion of some of the Iodine Compounds.**—Dr. HYDE read a paper with this title. The patient, a girl of eighteen, who had never menstruated, had injured her right elbow joint when fourteen years old. Ankylosis had followed, and she had entered the hospital for the removal of a spicule of necrosed bone that was protruding. There had been no history of syphilis. She had been given one grain of iodine and one grain of the iodide of potassium. Within three days she had "caught cold," but the use of the drug had been continued. Very soon tubercles had appeared on the face, and extended well over the forehead and down to the neck. It had looked something like a case of mycosis fungoidea, the growths being covered with a yellowish discharge. The patient all the time had remained in the best of general health, and it had been decided to try the effect of omitting all medicines. The effect had been surprising, for all trace of the lesions had rapidly disappeared. As a matter of proof, the iodide had been given again for a few days, and the lesions had promptly returned.

In a second case there had been almost a confluent eruption of the face and forearms. There had been roundish or oval flattened tubercles, tending to become umbilicated. There had been a peculiar dark color, like that in "black measles." The patient was well three weeks after the discontinuance of the medicine. The following conclusions were arrived at:

1. When iodine compounds, irrespective of the size of the dose, had been administered to well-nourished infants, children, and persons whose skins were in a condition usually found at these ages, a quasi-bullous rash might occasionally appear, whose elements differed from the blebs which sometimes formed when the drug had been administered to older persons, syphilitic, cachectic, or in grave conditions of prostration.

2. The interest attaching to the recognition of the value of the eruption was partly due to the fact that in the class named it might be superimposed upon an eczematous or seborrhœic condition for which the iodine had been administered.

3. The regions involved were almost exclusively the scalp, face, neck, upper chest, forearm, and hand.

4. The subjective symptoms were comparatively insignificant. The disproportion between the severity of the lesions and the condition of the patient was of high diagnostic value.

5. Involution commonly progressed rapidly after the discontinuance of the drug, and rarely there were left small atrophic patches.

Dr. HEITZMAN said that he thought it wiser to omit the term "vegetative" in the title. He had seen a case where a general eruption of blebs over the body had been at once relieved on the discontinuance of an iodide which the patient had been taking. He had seen tubercles similar to those described by the reader following the use of bromide of potassium. He would explain the action by the attempt of the drugs to leave the skin by way of the glands.

Dr. MORRISON had seen somewhat similar eruptions follow the ingestion of small doses of the permanganate of potassium.

Dr. MORROW had seen similar cases, and had reported last year a case in which there had been vegetative lesions following a bullous eruption, and which had been so severe that several medical gentlemen would not believe it was caused by the drug. But they had quickly disappeared when the drug was omitted. The peculiar localization of the eruption was of interest to him, and he was not ready to accept the view that the cause was the elimination of the drug by the glands, for the drug had not been found in the lesions, even when it had been given in very large doses.

Dr. STELWAGON reported a case that he had recently seen, where the lesions had been small vesicles, soon becoming pustules, and then spreading in size. The patient had improved under simple treatment, but afterward had died of cardiac disease.

The PRESIDENT reported a case where there had been a follicular eruption. Ulceration had taken place, but on withdrawing the iodide the recovery had been rapid. He considered the eruption to be of nervous origin.

**Molluscum Contagiosum; a Preliminary Report.**—Dr. STELWAGON read a paper on this subject in which he stated that English writers said the disease was contagious, while the Germans, French, and Americans took the opposite view. The author had seen thirty-two cases in four groups, containing respectively four, thirteen, three, and twelve cases. All the cases in each group had appeared in the same institution or the same family. Various attempts at inoculation had been made, but without success; at least no characteristic lesions had been produced. He concluded:

1. The disease generally was seen upon exposed parts, or parts that came in contact with the hands, such as the genitals.

2. It occurred generally in children, and among the poorer classes.

3. It was very common to find the affection in groups or series.

4. In admitting its contagious nature, it must be admitted that it possessed this quality to an extremely slight degree.

Dr. Hyde had been much interested in the history of some twin sisters who had come to his clinic. On the first day one had some lesions of molluscum, which, under treatment with the monochloride of mercury, had disappeared at the second visit. But at this time the second sister had become affected just as the first one had been before. There had been such an absence of symptoms that he inoculated himself on the arm from a typical lesion on the face of the twin. On the third day there had been a vesicle-pustule. On the fourth day it had formed a crust, and with that he had inoculated two medical students, and there had been abortive lesions formed.

Dr. Stelwagon wished to state that only two or three inoculations out of a series of a dozen or more had taken. The effects had been similar to those caused by inoculation from impetigo contagiosa pustules.

Dr. Hyde had been struck with the relative rarity of the cases.

Dr. Morrow, from his experience, had supposed that the growths came from direct inoculation. He thought there was a certain relation between molluscum contagiosum and warts, as Dr. Fox had intimated some years before. He had seen a boy almost covered with typical lesions of the kind under discussion, in whom they had all disappeared in the course of a few months, though only a few of them were treated.

Dr. Sherwell had been impressed with the rarity of the disease during the last few years. He had seen one series of cases in an institution where the indications had been that it was contagious. Before seeing these cases he had not believed in the contagiousness of it, but had been led to change his opinion at that time.

Dr. Robinson believed in the contagious character of the disease, though it was entirely upon theoretical grounds and the evidence of others.

Dr. Fox some time before had made repeated inoculations on himself and others, but all the results had been negative. The only successful inoculation that he knew of was the one related by Retzius. The disease generally occurred in those who were in poor surroundings or in poor health, but had been seen in those who were in robust health. He had no doubt that the ordinary dry warts that were seen on children's hands were contagious.

Dr. Morrison was of the opinion that it was a parasitic disease which might be carried from one to another.

Dr. Heitzman called attention to an article by Neisser in the last number of the "Vierteljahresschrift für Dermatologie," in which it was positively maintained that there were peculiar corpuscles which were the parasite.

Dr. C. W. Allen, of New York, on invitation of the president, said that he had seen in the Baretta Museum of the St. Louis Hospital in Paris, the past summer, a wax model of a typical lesion in the arm of a child which had been produced by inoculation, and this to his mind would be positive proof of the contagiousness of the growth. The inoculation had been done under Fournier's direction.

Dr. Stelwagon, in his cases, had never seen any connection between the warts and the tumors. The inoculations had been made in the children who had the disease.

**The Non-identity of Lichen Planus and Lichen Ruber.**—Dr. G. H. Fox read a paper on this subject. He reported five cases of true lichen ruber that he had seen, which he considered a large number, considering the rarity of the disease.

Case I.—A woman of thirty-five. The disease began in childhood, and was characterized by papular lesions, accompanied with slight itching. The nails were notably affected. She died three years after she was shown.

Case II was at first considered one of a peculiar form of ichthyosis. When first seen it affected the elbows, hands, and feet. This case afterward took on the characteristic appearances, and went on to a fatal termination.

Case III was in a German saloon-keeper who had been affected for fifteen years. He had exacerbations about twice a year.

Case IV was in a patient now fourteen years old. It came on a few months after birth, and occurred on the limbs and about the ankles, mostly on the extensor surfaces. The scalp was dry and powdery, but the hair was not affected. Under treatment with oil the skin became softer, but water made it worse.

Case V.—A man of thirty-two. The lesions here were bead-like in appearance.

From his study of these cases, the author would believe in the essential difference of the two affections.

**The Question of Relationship between Lichen Ruber (Hebra) and Lichen Planus (Wilson).**—Dr. Robinson read a paper on this subject. He compared at length the clinical symptoms, histology, prognosis, and results of treatment of the two affections, and showed that in none of their attributes did they appear alike. He reached the following conclusions:

1. Lichen planus and lichen ruber, in doubtful cases especially, were to be diagnosticated not by the form of the lesion alone, but also by all the symptoms and the course of the eruption.

2. Lesions resembling those of lichen ruber and lichen planus existed in other diseases.

3. In the lesions described by Unna his division was an incorrect one.

4. The same was true of Boech's cases.

5. No cases had been reported that showed absolutely, or even with probability, that lichen planus and lichen ruber were but two forms of the same disease.

6. If an identity of ætiology existed, such cases would long ago have been reported, as lichen planus was a rather frequent disease.

7. Finally, in the absence of proof by the transformation of the lesion, or difference in symptoms, course, prognosis, histology, and effects of drugs, in the two forms of the eruption, we found no grounds for considering lichen planus and lichen ruber identical diseases.

**Lichen Ruber as observed in America, and its Differentiation from Lichen Planus.**—Dr. R. W. Taylor, of New York, read a paper on this subject. (It will be published hereafter.)

Dr. Sherwell considered it the most important subject that had been brought before the society for a long time. There seemed to be a very general consensus of opinion among American dermatologists as to the difference of the forms. He had seen three cases which had been identical with the form described by Hebra, showing that that form did occur here, and it was certainly different from our common lichen planus. Within a month he had had two cases of lichen planus in persons who were otherwise entirely healthy. He believed he had seen about 2 per cent. of lichen on going over his whole dermatological life. Basing his opinion entirely on clinical studies, he was sure of the non-identity of the diseases.

Dr. Bronson agreed that the pathological anatomy of the lesions was different, and yet, if it had been similar, that would be a trifling argument in the face of the mass of clinical evidence.

Dr. BULKLEY thought there were cases of lichen simplex that Unna had mixed up with lichen ruber. We saw these cases again and again. He was particularly impressed with the statement that in lichen planus sometimes patches would form and not progress for a long time. He had known such a patch on the back to persist for months and then extend.

The PRESIDENT thoroughly agreed with the preceding speakers.

Dr. HEITZMAN thought the trouble had arisen from the fact that all the cases of these affections had formerly been called chronic eczema.

Dr. ROBINSON did not think that the histological examination was of importance, though it showed the difference in the two diseases. He would base his diagnosis upon the sum of all the facts entering into the case. There had been shown no tendency for one disease to become changed into the other. The different behavior under treatment was also an important element.

Dr. TAYLOR, in summing up the case, could only reiterate his statement as to his hearty belief in the difference between the diseases.

**Kraurosis of the Vulva (Breisky).**—Dr. HEITZMAN read a paper on this subject. He had been shown the case by Dr. Mundé. It was in a woman of thirty-five, who complained of fearful itching in the vulva. It was found that Breisky, of Vienna, had seen nine cases and had not been able to cure any of them. Dr. Weir had described a similar case some years before. There was in these cases a profuse mucopurulent elytritis, with whitish, thickened patches scattered over the mucous membrane. The patch might be a good deal raised, and felt like parchment. The important subjective symptom was the intense itching. Mental affections sometimes followed. The author considered it nothing more than a chronic eczema of the vulva, and found that the cases were curable, though somewhat slowly at times. It might be mistaken for psoriasis, but that would not be confined to the mucous membrane so long. There was in two cases a uric-acid diathesis, and in one oxaluria. The elytritis seemed to be secondary, for it ceased when the local trouble was relieved. The treatment consisted in curetting the lesions, and if they could not be easily reached in this way, nitric acid might be applied. A solution of cocaine might be used to dull the pain. Salicylic acid would remove the thickened epidermis. In the case reported by Dr. Weir the final result had been the formation of cancer.

Dr. BRONSON was not sure that he had ever seen such a case as the author had described. He asked whether the growths were papillomatous in character.

Dr. HEITZMANN replied that they were flat.

Dr. BRONSON had seen in a man a papillary growth that reminded him of the cases reported by Dr. Heitzmann. They were exceedingly persistent.

Dr. SHERWELL referred to an article he had lately seen in the "Gazette des hôpitaux," where five cases of apparently a similar character were reported, though only one was in the vulva, the rest being in the oral cavity. The author preferred the name leucoplasia, rather than kraurosis. The patients were curetted, and relief was afforded. If left alone the parts took on an epitheliomatous formation. In one case this had happened after forty years.

Dr. GRAHAM asked if the itching had preceded the local lesion.

Dr. HEITZMAN replied that it had not. To his knowledge the disease had not returned.

Dr. HYDE asked if Breisky did not refer to an atrophic condition of the labia minora—a condition which he remembered to have seen in one of his cases.

Dr. HEITZMAN replied in the affirmative.

Dr. HYDE's case had been in a widow of forty, and there had been present the intense itching, and also the marked atrophy.

Dr. HEITZMAN was surprised that so few cases had been met with. The condition had nothing in common with leucoplakia of the tongue. The ætiology was utterly in the dark. It was surprising how the women who were affected with this affection were pulled down by it.

**Dermatitis Tuberosa—the so-called Iodic Form.**—Dr. TAYLOR read a paper on this subject. (See page 477.)

Dr. HEITZMAN would ask the author if he had formed any idea as to how the iodine preparations caused such troubles.

Dr. TAYLOR thought that the trouble was angeio-neurotic; the action was carried back to the nervous system, and by that to the blood-vessels. He did not think there was any action on the glands at all.

Dr. ROBINSON would object to the use of the term dermatitis, as it was applied to so many conditions, and meant so little.

Dr. HYDE agreed with Dr. Taylor in regard to the ætiology of the affection. He called attention to the fact that iodic purpura always occurred in the lower extremities.

Dr. MORROW had seen some cases of iodic purpura on the upper extremities. These patients generally had syphilis. He agreed that it was within the sphere of the nervous system that we must look for the explanation of the cause of the eruption.

The PRESIDENT believed that the action started in the follicles, although the absence of the iodine at the tests would tend to prove that it was not done by irritation during elimination.

Dr. TAYLOR upheld the use of the term dermatitis whenever there was an inflammation of the skin, as giving an exact idea of what was taking place.

**Dermatitis Plantaris and Palmaris.**—Dr. BULKLEY read a paper on this subject. He had applied the terms advisedly to signify an affection which consisted of a general exfoliation of the hands and feet, especially of the palmar and plantar surfaces, which was recurrent in its nature. He gave in some detail the history of three cases. In the first it had occurred many times, and the man could predict when an attack was about to occur by a peculiar burning and itching of the parts. Each attack had lasted about a week, the nails being always attacked. Sometimes a slight rash had appeared over the abdomen, but this had been the only lesion outside the extremities. The second case was much like the first, though less severe; and the third, which was in a woman, was really but one attack, which lasted for several months and then resolved very slowly. It was necessary to distinguish the first case from dermatitis exfoliativa, which could easily be done by the limited area of the invasion and the clinical history. It was probable that the cause of the disease must be sought in the nervous system. Treatment was both internal and external, the former directed to the nervous element. The first patient had been helped by the long-continued use of arsenic. Emollients had aided in the recovery. In one of the cases a lotion of borax and glycerin in rose-water had kept the skin soft and prevented scaling.

Dr. HEITZMAN asked if perspiration had been a marked feature, and was assured that it had not. He had seen a case of the exfoliation where there had been excessive perspiration at the same time. At the time he had recorded in his case-book the diagnosis "Dermatitis exfoliativa plantaris or palmaris." He was surprised that Dr. Robinson did not like the term dermatitis. He did not know what term could be used in its place.

Dr. ROBINSON would prefer the name herpes zoster to the name "vesicular dermatitis"; in the same way he would prefer a better name for these affections.

Dr. HYDE had seen a case where there had been a complete

glove of skin peeled off. The recurrence of these symptoms was a significant feature.

Dr. Graham did not believe in multiplying terms, and would use dermatitis.

## Book Notices

*A Manual of the Minor Gynæcological Operations.* By J. Halliday Croom, M. D., F. R. C. P. E., F. R. C. S. E., etc. First American from the Second Edinburgh Edition. Revised and enlarged. By Lewis S. McMurtry, A. M., M. D., etc. With numerous Illustrations. Philadelphia: Records, McMullin, & Co., 1888. Pp. 228.

The American editor of this little book is actuated by the commendable purpose of supplying a real need of practitioners in this country, but it must be confessed that, in view of the present status of post-graduate instruction in gynæcology, he has hardly attained his object by putting forward Dr. Croom's elementary work. Without boasting, it may be said that we have outgrown it. Granting that "this little manual has a mission peculiarly its own," it must be confessed that it is more suitable for the student than for the practitioner. But we must not condemn it unheard.

The work is divided into two parts, the first, including seventy-three pages, being devoted to diagnosis, and the second to therapeusis. It is certainly a serious blemish in such a condensed manual that one third of it should be devoted to anatomy and gynæcological examination, subjects which are exhausted in every treatise on diseases of women, and with which the student is supposed to be familiar before he aspires to become an operator. This criticism was urged against Doran's "Gynæcological Operations," a more elaborate and otherwise excellent book. The suspicion is hardly avoidable that much of the material in the first eight chapters must be regarded as "padding," although it is very good in itself. Part II consists of five chapters, the first treating of operations on the vulva, the second of those on the vagina, the third on those of the urinary tract, and the fourth and fifth of those on the cervix and body of the uterus, respectively. Chapter I would be extremely meager without the American editor's description of posterior colporrhaphy, which is copied from Emmet. Chapter II is supposed to treat of operations on the vagina, under which are included vaginal injections, the use of the tampon, and pessaries (!). This singular limitation of the word "operations" apparently receives the full approval of the editor. The surgery of the urethra and bladder is described in a fairly satisfactory manner. Chapter IV is entitled "Cervical Applications," an evident error in proof-reading, since it includes operations on the cervix. The description of such an important operation as trachelorrhaphy takes up a little over a page. We are recommended to remove the sutures on the seventh day, a procedure generally calculated to insure failure. Chapter V is on "Intra-uterine Applications," by which the author understands such slight manipulations as enucleation of an interstitial fibroid, a somewhat difficult operation for the beginner, and reduction of the inverted uterus. The American editor adds a chapter on laparotomy, with the unnecessary and rather confusing apology that a few years since abdominal section could not be regarded as a minor gynæcological operation, "and even now it must be conceded to be a serious operative procedure." For the benefit of the public it should be stated that the Kibbee cot has been banished to the garret with the spinning-wheel.

We must give the editor the credit of making the best out of imperfect material. His additions are, with a few exceptions, the only portions which are of interest to the American reader. Aside from these, we can hardly discover the *raison d'être* of the book.

*Hygiene of the Nursery.* By Louis Starr, M. D., Clinical Professor of Diseases of Children in the Hospital of the University of Pennsylvania, etc. With Twenty-one Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. viii–17 to 212. [Price, $1.50.]

This small, well-written book contains a series of hygienic rules which, if applied, can not fail to reduce the death-rate. Dr. Starr first gives an account of the features of health and their variations in disease. Minute instructions follow as to how health may be preserved and the highest physical development secured. Great stress is laid upon the choice of nurseries —one for occupation by night, the other by day. "Any room in the house will not do for a day nursery. Rather, on the contrary, must the best room be selected. It should have a southwest exposure, and be, if possible, so situated in the building as to allow of at least two broad windows—one in the southern end and one in the western side." Neither day nor night nursery should communicate with a bath-room having sewer connections.

Dr. Starr forcibly urges the necessity of cleanliness in every form, the removal from the nursery of dust and of food not required for immediate use, the disinfection of waste-pipes, ventilation, and frequent, regular bathing and changes of linen.

Babies' clothes should be warm and loose in order to maintain an equal temperature all over the body, and at the same time allow of freedom of action. While waging war against the absurd fashion of "bare knees," Dr. Starr might have satirized "Kate Greenaway" dresses for children. If the former mode is too short, the latter is too long.

Although Dr. Starr recommends close proximity between nurseries and parents' sleeping apartments, he evidently thinks it expedient to place the nurse in full charge day and night. We feel inclined to dispute the point. Ideal nurse-maids, such as are portrayed in Chapter III, are, unfortunately, not plentiful. Far from lightly alluding to the counter-claims of domestic and social duties, Dr. Starr should have made it clear not only that mothers are legally the guardians of the physical and moral welfare of their children, but that they ought to be so in fact.

The general rules for the nutrition of infants from birth until the tenth month, based upon Rotch's paper on the capacity of the stomach, tend to correct the ruinous and wide-spread error of constant feeding.

We hope that the author, encouraged by the favorable reception of his book, will decide to write another with special reference to the conditions of tenement-house life.

### BOOKS AND PAMPHLETS RECEIVED.

How far can Legislation Aid in Maintaining a Proper Standard of Medical Education? (A Paper read before the American Social Science Association at the Annual Meeting, held at Saratoga, September 5, 1888.) By W. A. Purrington, Counsel of the Medical Society of the County of New York.

Hot Water in the Management of Eye Diseases. Some Suggestions. By Leartus Connor, A. M., M. D., etc. (Read before the Ophthalmological Section of the Ninth International Medical Congress.)

Puerperal Fever a Preventable Disease. A Plea for the more General Adoption of Antiseptics in Midwifery Practice. An Address introductory to the Session of 1888–'89, delivered at St. Thomas's Hospital, October 1, 1888. By Charles J. Cullingworth, M. D., F. R. C. P., etc. London: J. & A. Churchill, 1888.

The Palatal Rugæ in Man. By Harrison Allen, M. D. [From the "Proceedings of the Academy of Natural Sciences."]

Ueber Natur und Behandlung des Furunkels besonders im "äusseren Ohre," von Dr. B. Loewenberg, in Paris. [Separatabdruck aus der "Deutschen medicinischen Wochenschrift."]

List of Pharmacists and Assistant Pharmacists registered by the Board of Pharmacy of the City of New York, 1872–1888.

The Preferable Climate for Phthisis; or, the Comparative Importance of Different Climatic Attributes in the Arrest of Chronic Pulmonary Diseases. By Charles Denison, A. M., M. D., etc. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

New Series of Metric Test-letters and Words for determining the Amount and Range of Accommodation. By Charles A. Oliver, M. D., of Philadelphia. [Reprinted from the "Transactions of the American Ophthalmological Society."]

A Treatise on Headache and Neuralgia, including Spinal Irritation, and a Disquisition on Normal and Morbid Sleep. By J. Leonard Corning, M. A., M. D., Consultant in Nervous Diseases to St. Francis Hospital, etc. Illustrated. New York: E. B. Treat, 1888. Pp. 10–15 to 231. [Price, $2.75.]

The Diagnostic Significance of the Mitral Presystolic Murmur. By Frank Donaldson, M. D., etc. [Reprinted from the "Medical News."]

Prolapse of the Inverted Lower Portion of the Right Ureter through the Urethra in a Child Two Weeks Old. By Augustus Caillé, M. D., etc. [Reprinted from the "American Journal of the Medical Sciences."]

Sterilized Milk. A Report of Some Experiments made to Determine the Proper Manner of Boiling and Preserving Milk for the Use of Infants. By Augustus Caillé, M. D., etc.

The Failure of Dr. J. B. Thomas's Treatment of Urethral Stricture by Electrolysis. By Robert Newman, M. D., of New York. [Reprinted from the "Journal of the American Medical Association."]

A Method of Prophylaxis in Diphtheria. By Augustus Caillé, M. D. [Reprinted from the "Medical Record."]

Tests for Diabetes Mellitus. By Palmer C. Cole, A. M., M. D. New York. [Read before the Northwestern Medical and Surgical Society of New York.]

The Western Pennsylvania Medical College, Pittsburgh. Sessions of 1888–1889.

The Sheltering Arms. Twenty-fourth Annual Report. New York. 1888.

# Miscellany.

**The Registration of Births, Marriages, and Deaths in New York.**—The Board of Health has issued the following circular:

"At a meeting of the Board of Health of the Health Department of the City of New York, held on the 18th day of October, 1888, at said office, the following resolution was adopted:

"*Resolved*, That the attention of 'clergymen, magistrates, and other persons who perform the marriage ceremony in the city of New York,' and also of physicians and midwives who attend on births in the city of New York, is respectfully called to the following sections of the laws relating to the Health Department of the City of New York:

"*New York City Consolidation Act of 1882.*—SECTION 602. It shall be the duty of the clergymen, magistrates, and other persons who perform the marriage ceremony in the city of New York, to keep a registry of the marriages celebrated by them, which shall contain, as near as the same can be ascertained, the name and surname of the parties married; the residence, age, and condition of each; whether single or widowed.

"SEC. 603. It shall be the duty of the parents of any child born in said city (and if there be no parent alive that has made such report, then of the next of kin of such child born), and of every person present at such birth, within five days after such birth, to report to said board in writing, so far as known, the date, ward, and street number of said birth, and the sex and color of such child born, and the names of the parents. It shall also be the duty of physicians and professional midwives to keep a registry of the several births in which they have assisted professionally, which shall contain, as near as the same can be ascertained, the time of such birth, name, sex, and color of the child, the names and residence of the parents, and to report the same, on or before the first Monday of each and every month, to the Board of Health.

"SEC. 605. For every omission of any person to make and keep the registry of marriages and births required by the preceding sections, and for every omission to report a written copy of the same to said board within ten days after any birth or marriage provided to be registered; and for every omission by any person to make the report of any death or birth, with the particulars as herein required, any person guilty of such omission shall be liable to pay a fine of ten dollars, which may be sued for and recovered in the name of such department for the benefit of said department. But no person shall be liable for such fine for not making the report herein required, if he or she shall prove that such report has been made to the board by some other person before suit brought for such penalty, or that he or she was ignorant of such birth or death.

"The frequent failures of the aforesaid persons to properly report marriages and births, due to ignorance of the law or to thoughtlessness, invalidates the value of such returns for statistical purposes, and not infrequently is of injury to those who are directly interested in such births and marriages. The Sanitary Code, in sections 160, 161, and 162, prescribes the same duty, and regulates the manner and time of such reports to be made to the Sanitary Bureau of the Health Department. Violations of the Sanitary Code may be punished as misdemeanors, and in civil suits for a penalty of fifty dollars. The Commissioners of the Health Department desire to impress on all persons who are responsible for such neglect, that the public good demands a faithful and prompt compliance with the requirements of these sections, and that a failure to properly comply with these legal requirements will subject the offender to the penalty of the law."

**Government Health Reports.**—By direction of the Secretary of the Treasury, Dr. John B. Hamilton, Surgeon-General of the Marine-Hospital Service, has issued the following abstract of sanitary reports received during the week ending November 23d:

(Published in accordance with Section 4, act approved April 29, 1878.)

*England and Wales.*—The deaths registered in twenty-eight great towns of England and Wales during the week ending November 3d corresponded to an annual rate of 19·6 in a thousand of the aggregate population, which is estimated at 9,398,273. The lowest rate was recorded in Birkenhead, viz., 11·5, and the highest in Newcastle-upon-Tyne, viz., 29·9 in a thousand. Diphtheria caused 2 deaths in Manchester, 2 in Birmingham, 3 in Salford, and 4 in Newcastle-upon-Tyne.

*London.*—One thousand six hundred and thirteen deaths were registered during the week, including measles, 88; scarlet fever, 24; diphtheria, 32; whooping-cough, 19; enteric fever, 22; diarrhœa and dysentery, 34; and small-pox, 1. The deaths from all causes corresponded to an annual rate of 19·7 in a thousand. In greater London 2,025 deaths were registered, corresponding to an annual rate of 19·1 in a thousand of the population. In the "outer ring" the deaths included diarrhœa, 10; measles, 11; diphtheria, 10.

*Ireland.*—The average annual death-rate represented by the deaths registered during the week ending November 3d in the sixteen principal town districts of Ireland was 21·2 in a thousand of the population. The lowest rate was recorded in Wexford, viz., 4·3, and the highest in Armagh, viz., 46·5 in a thousand. In Dublin 165 deaths were registered, including measles, 2; scarlet fever, 1; diarrhœa, 1; whooping-cough, 6; enteric fever, 8; typhus, 2; diphtheria, 1.

*Marseilles.*—Eight hundred and ten deaths were registered during the month of October, 1888, including small-pox, 6; enteric fever, 27; scarlet fever, 1; diphtheria croup, 36; measles, 3; whooping-cough, 12; and diarrhœa enteritis, 61. The consul, under date of November 2d, reported that "the health of the city is good, there being a notable absence of epidemic diseases of all kinds."

*Montevideo.*—Four hundred and twenty deaths were registered during the month of August, 1888, including small-pox, 33; enteric and typhus fever, 6; diphtheria, 37.

*Cardenas.*—The United States consul, in his report for the week ending November 16, 1888, states: "Warm weather and dry. No more fever cases in town. Harbor, good health."

*Nassau, N. P.*—November 10, 1888: City very healthy. Strict quarantine against Cuba and Florida.

*Georgetown, Demerara.*—The United States consul, under date of October 27, 1888, states that "the three cases of yellow fever reported convalescent at the close of the previous week are believed to have entirely recovered. I have the authority of the surgeon general of the colony for the statement that there is no infectious disease prevailing, nor any suspicion of such."

*Ruatan.*—The United States consul, in his dispatch dated November 1, 1888, states that "an epidemic similar to that experienced in this island last year broke out in Truxillo during the month of August last and continued, with fatal effects, until the beginning of the rainy season, about two weeks since. I inclose a list of the citizens of the United States who have fallen victims to this terrible malady, which, in all fatal cases, has presented at least one notable characteristic of yellow fever—viz., black vomit. Some physicians call it 'hæmorrhagic pernicious fever,' while others confess that it is the veritable 'Yellow Jack.' Some of the Americans whose names appear in the list were men of capital, and representatives of American companies operating in this country.

"Mr. Ord was manager of the 'Aguan Company,' of New York, who have a bank in Truxillo. Mr. Rector and Mr. Milligan were owners and representatives of large mining interests in the interior. The last-named gentlemen were accompanied by their wives, who fortunately escaped, and I had the satisfaction of assisting them to a passage to the United States."

*Havana.*—Eleven deaths from yellow fever are reported for the week ending November 9, 1888.

*San Juan, P. R.*—Two cases of yellow fever are reported for the week ending November 3, 1888.

*Sarnia, Ontario.*—Dr. W. Lehmann, provincial health inspector, in a communication to the chairman of the Board of Health, dated November 15, 1888, writes as follows:

Dear Sir:. At the request of the secretary of the provincial Board of Health I have visited your hospitals and quarantines. In conjunction with Dr. Oliver, your medical health officer, I have made a thorough examination: I find nine cases of small-pox—five in the hospitals and four of one family in an isolated house. I find the patients doing well, their medical attendance and comforts satisfactory. Quarantine and disinfection are strictly enforced, and I believe that your present efforts, with compulsory vaccination, which I strongly recommend, will soon free your town of the disease.

I have the honor to be, sir, yours, etc.,

W. Lehmann, M. D.,
*Provincial Medical Health Inspector.*

Mr. George Leys,
*Chairman of Board of Health, Sarnia.*

Mortality Table, Foreign Cities.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Typhus fever. | Enteric fever. | Scarlet fever | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Paris | Nov. 3. | 2,260,945 | 946 | .. | .... | 3 | .... | 18 | 2 | 31 | 17 | 5 |
| Glasgow | Nov. 3. | 545,678 | 200 | .. | .... | .. | .. | .... | 1 | 1 | .. | .... |
| Warsaw | Oct. 27. | 444,814 | 258 | .. | .... | 4 | .... | .... | 21 | 13 | .. | .... |
| Copenhagen | Oct. 23. | 300.000 | 126 | .. | .... | .. | .... | 1 | 2 | 2 | .. | .... |
| Copenhagen | Oct. 30. | 300,000 | 135 | .. | .... | .. | .... | 4 | 2 | 4 | .. | .... |
| Palermo | Nov. 3. | 250,000 | 70 | .. | .... | .. | .... | .... | .. | 7 | .. | .... |
| Belfast | Nov. 3. | 227,022 | 100 | .. | .... | .. | 1 | 2 | 1 | 2 | .. | .... |
| Genoa | Nov. 3. | 179,822 | 97 | .. | .... | 1 | 9 | .... | .. | .. | .. | .... |
| Toronto | Nov. 10. | 130,000 | 19 | .. | .... | .. | .... | 2 | .. | .. | .. | .... |
| Barmen | Oct. 27. | 109,000 | 40 | .. | .... | .. | .... | .... | .. | 1 | .. | 1 |
| Leghorn | Nov. 4. | 102,540 | 41 | .. | .... | .. | .... | 1 | .. | .. | .. | .... |
| Cadiz | Nov. 3. | 65,028 | 43 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Bermuda | Nov. 13. | 30,045 | .... | .. | .... | .. | .... | 6 | .. | .. | .. | .... |
| Curaçoa | Nov. 6. | 25,000 | 5 | .. | .. | .. | .... | .... | .. | .. | .. | .... |
| Vera Cruz | Nov. 8. | 23,800 | 28 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Kingston, Can | Nov. 16. | 17,300 | 1 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Laguayra | Oct. 27. | 7,428 | 6 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| Bluefields | Nov. 10. | 2,000 | 1 | .. | .... | .. | .... | .... | .. | .. | .. | .... |
| San Juan del Norte | Oct. 22. | 780 | 1 | .. | .... | .. | .... | .... | .. | .. | .. | .... |

United States.

*Port Huron, Mich.*—November 17, 1888.—Acting Assistant Surgeon J. K. Farnum writes as follows:

Have just returned from Sarnia, Ont., and while there visited the patients with Dr. Oliver, of Sarnia. The three original patients—one child, nine years old, came from Toronto, Ont.; one Indian student from Owen Sound, twenty years; one woman from Toronto, Ont., thirty years—are all convalescent. From these cases have developed six mild cases, among those quarantined with the original, and all are doing well. All strictly quarantined in a pest-house at a good distance from the city of Sarnia. The Mayor of Sarnia has issued orders for compulsory vaccination. I think there is no danger of Port Huron being infected, although our Board of Health is very deficient. Have had no cases as yet, although papers report some. Could you send me some points by mail to use on the employees of the ferry-boats across the river, as we have the large boats plying constantly?

A supply of vaccine virus has been sent to Acting Assistant Surgeon Farnum.

*Portland, Oregon*—November 9, 1888.—Assistant Surgeon Thomas B. Perry reports existence of small-pox in Portland and vicinity.

*Tampa, Fla.*—Dr. J. P. Wall, president Board of Health, reported as follows, November 14, 1888:

For the week ending to-day there have been reported 6 new cases of yellow fever—5 in the city limits and 1 in the country just outside—and 2 deaths. One of the deaths was that of a woman outside of the city. Her case was complicated by the birth of a child (still-born) directly after being taken with the fever. She died on the 10th inst., and was sick from the 2d inst., and was not seen by a physician till the 8th inst., when I went to see her. The other death was that of a man, and occurred on the 11th inst., after an illness of 12 days. This makes the total number of deaths since the 7th of August, 9. No fever at any other place in the county.

Tampa, Fla., *November 17, 1888.*

The inclosed clipping is from a New Orleans newspaper, and is so full of inaccuracies that I venture to call your attention to them. In the first place, the yellow fever did not break out here last year in August, nor was there any here as late as the 2d of September, when I left to attend the Ninth International Medical Congress in Washington. I got back to Tampa on the 25th of September, and learned that the man Turk had died on the 22d of that month with what the physicians who saw him pronounced hæmorrhagic malarial fever. There was no epidemic of yellow fever here when I got home. During the week following the 25th of September I saw 5 suspicious cases of a mild type, and on the 2d of October, 2 cases, which on the 4th of October I announced to the Board of Health to be yellow fever, and on the 5th publicly declared yellow fever to be in Tampa, and advised the people to leave the place. On the 7th or 8th of October I wired you, in answer to inquiry, that yellow fever was here. So you must see that the statement that the presence of fever in Tampa was concealed until the 21st of October is wholly erroneous and without foundation in fact. From the best information that I can get, the fever probably appeared here as early as the middle of September, during my absence.

The city council, and not the Board of Health, declared the epidemic over about the 19th of December, and refugees came flocking back into the place, but, so far as I know, not a returned refugee took the fever, though there were a few cases in January, and one death as late as January 30th. But these cases did not occur in returned refugees, but among those who had been in Tampa more or less during the epidemic.

The fever got into Plant City in October, but was not recognized till the 14th of November, when the first death occurred, a full month after its first appearance there in a refugee from Tampa. And all this time Plant City was keeping up a strict quarantine against Tampa, and enjoying free intercourse by rail with the outside world. In fact, at no time during the winter was any quarantine instituted against Plant City, the majority of her physicians declaring the fever to be malarial.

In April a case was seen by me in Tampa's corporate limits, though practically in the country. Some of the family had had the fever dur-

ing the epidemic, and this case was in a member of the family who had escaped then. After this there was no case of fever in Tampa until the 11th of July, when Mr. Waterman, a commercial traveler, returned from Manatee on the 10th, was taken sick on the 11th, and died on the 21st of July.

Now, so far as I am concerned, I never denied the presence of yellow fever here at any time, when it was here to my knowledge during the winter or any other time; nor was there any here, except the case in April, from January till July, when the man Waterman sickened and died.

Whether McCormick had the fever * or not I do not know. He left here the 27th of July and there was no other case here till the 7th of August. And in view of all the facts in connection with what has occurred at other points, I am strongly inclined now to the opinion that had not Mr. Waterman contracted the disease in Manatee and been sick in Tampa, we would not have had any fever here this summer.

. . . . . .

At the proper time I expect to write the history of the epidemic in Tampa, when these false statements will be duly noticed.

I have taken great pains in investigating the introduction of the fever into Tampa, and consequently know something about the facts.

All the concealment of cases of yellow fever that I ever heard anything about—and this, Dr. Caldwell charged in "The Times-Union" in August, in answer to Dr. Holt—was the Orange County and Duval County Boards of Health. So I do not wish to be misrepresented in this matter by your report.

Apologizing for the length of this letter, I am, with high esteem,

Yours very truly,

JOHN P. WALL.

Dr. J. B. HAMILTON.

LETTER FROM DR. MAXWELL ON THE ORIGIN OF THE FEVER.

JACKSONVILLE, FLA., *November 17, 1888.*

DEAR SIR: It may aid you in making a report of the conduct of yellow fever in Florida, during the last two years, to be informed of what you probably do not know—viz.: that a case of the fever came to this city from Tampa in the latter part of October, 1887.

The facts are, as related to me by the man himself, that a Mr. Lane, an employee of the music house of A. B. Campbell & Co., went into Tampa twice during the month of October, 1887, the latter visit being in the latest days of that month; that he was taken sick with fever whilst in Tampa the last time, and came directly to his home and family in this city; that he was treated by the late Dr. Leonard, who died of the fever during the prevailing epidemic, and his disease was called "yellow jaundice," but, from his description of the symptoms and course of the disease, in connection with his recent exposure in Tampa, I have no doubt was yellow fever.

I was, by invitation of Dr. John P. Wall, chairman of the Hillsboro' County Board of Health, in Tampa at the time Mr. Lane said he was there and was taken sick, and the fever was then a widely prevalent and somewhat malignant epidemic.

There is good reason to believe that a disease which prevailed in Jacksonville in midwinter of 1887–'88, which by a euphemism was called "society fever," was, in fact, as some of the local physicians said at the time, and Dr. Wall and Dr. Porter told me in February they suspected, yellow fever. Of course in the preparation of a history of this disease you must needs have all the facts attainable. It is to assist you in reaching that end that I write this note.

Respectfully,

GEORGE TROUP MAXWELL, M. D.

N. B.—Campbell's music-store is next door to Bucky's store, which Dr. Guitéras defined as the "focus of infection" last fall.

P. S.—Having a knowledge of the topography of Bucky's and adjoining stores, obtained during a residence in Jacksonville twenty years ago, I examined their condition a few days after my return in August last, and reported the terribly insanitary condition of the ground under their floors, in "The Times-Union." An examination was ordered by the citizens' auxiliary association, but the inspector's report has not been made public. It is understood that his report will corroborate my assertions, and show inexcusable if not criminal culpability on the part of the health officials of the city and country. MAXWELL.

*Camp Perry, Fla.*—Surgeon W. H. H. Hutton telegraphs as follows:

November 17th: "Morning report: Present, officers, 5; guards, 10; employees, 30. Refugees arrived, 7; discharged, 6; remaining, 79. Fever camp, 1; critical."

November 18th: "Morning report: Present, officers, 4; guards, 10; employees, 30. Refugees arrived, 10; discharged, 16; remaining, 73. Fever camp, 1; improving."

November 19th: "Morning report: Present, officers, 5; guards, 10; employees, 30. Refugees arrived, 18; discharged, 9; remaining, 82. Fever camp, 1. Geddings has just returned from Green Cove Springs, Fla., and reports 3 serious cases, 1 moribund."

November 20th: "Morning report: Present, officers, 5; guards, 10; employees, 31. Refugees arrived, 20; discharged, 6; remaining, 96. Fever camp, 1."

November 21st: "Morning report: Present, officers, 5; guards, 5; employees, 28. Refugees arrived, 2; discharged, 13; remaining, 85. Fever camp, 1; recovered. Weather very cold."

November 22d: "Morning report: Present, officers, 5; guards, 5; employees, 28. Refugees arrived, 7; discharged, 2; remaining, 90. Fever camp, 1; recovered."

November 23d: "Morning report: Present, officers, 5; guards, 5; employees, 28. Refugees arrived, 4; discharged, 19; remaining, 75. Fever camp closed."

*Jacksonville, Fla.*—Dr. Joseph Y. Porter telegraphs as follows:

November 15th: "New cases, 16; deaths, 4. Total cases, 4,568; deaths, 396. Patients, St. Luke's, 14."

November 17th: "New cases, 13; deaths, 1. Total cases, 4,596; deaths, 397. Patients, St. Luke's, 14."

November 19th: "New cases, 8; deaths, 4. Total cases, 4,621; deaths, 402. Patients, St. Luke's, 13."

November 20th: "New cases, 22; deaths, 1. Total cases, 4,643; deaths, 403. Patients, St. Luke's, 17."

November 21st: "New cases, 3; deaths, 2. Total cases, 4,646; deaths, 405. Patients, St. Luke's, 15."

November 22d: "New cases, 13; deaths, none. Total cases, 4,659; deaths, 405. Patients, St. Luke's, 14."

*Gainesville, Fla.*—Assistant Surgeon Martin telegraphs as follows:

November 17th: "Six new cases; 2 white, 4 colored."

November 18th: "Five new cases; 2 white, 3 colored. One death, white."

November 19th: "Five new cases; 1 white, 4 colored."

November 20th: "Three new cases; 1 white, 2 colored."

November 21st: "Two new cases; colored."

November 22d: "Two new cases; colored. No frost yet; temperature, 49°."

*Fernandina, Fla.*—Surgeon Ross telegraphs as follows:

November 21st: "One new case of yellow fever reported for twenty-four hours ending 6 P. M., November 20th. Careful analysis of status showed 4 cases of yellow fever under treatment in Fernandina yesterday. On no day since my arrival here has total number of cases under treatment been so small as yesterday. Yellow-fever pabulum about exhausted."

November 22d: "Theodore Fairbanks, the acting railroad agent at Hart's Road, attacked to-day; engine sent out to bring him in hospital here for treatment. Shall visit and inspect Hart's Road to-morrow. For twenty-four hours ending 6 P. M., November 22d, no new cases, and four cases reported as total under treatment in Fernandina. Good reason to believe that there are two additional cases of yellow fever under treatment which are not reported as such. There have been about 1,200 cases, and about 38 deaths of fever here this summer. The great majority of these occurred in August and September, before my arrival. The rule, with remarkably few exceptions, is that persons here who have had yellow fever in former epidemics have not had fever this year, and no person, I believe, has had more than one attack this season."

* McCormick's case was undoubtedly yellow fever.—J. B. H.

*Palmetto, Fla.*—Inspector M. B. Harrison telegraphs as follows:

November 15th: "For week ending November 12th there were, at Palmetto, new cases, 9; deaths, 1. Total cases to date, 84; deaths, 10."

*Palatka, Fla.*—Assistant Surgeon Magruder telegraphs as follows:

November 17th: "Three cases, one having black vomit, reported at Green Cove Springs to-day."

*Enterprise, Fla.*—G. F. Carlile, secretary Board of Health, telegraphs as follows:

November 19th: "Four new cases last forty-eight hours."

November 21st: "Surgeon Hutton reports 8 new cases at Enterprise."

Dr. J. F. Hartigan telegraphs as follows:

*Brooksville, Fla.*, November 19, 1888.—"Have inspected Dade City and Brooksville; both places healthy. Leave for Leesburg to-day."

*Savare's, Fla.*, November 20, 1888.—"Am at Eustis to-day; place healthy. Will leave for Ocala to-morrow."

*Leesburg, Fla.*, November 21st.—"Am at Leesburg to-day. No infectious diseases. Leave for Ocala this afternoon."

*Ocala, Fla.*, November 22d.—"Am at Ocala to-day. Place healthy. My tour is completed. Will leave for Washington to-morrow."

Mortality Table, Cities of the United States.

| Cities. | Week ending— | Estimated population. | Total deaths from all causes. | Deaths from— Cholera. | Yellow fever. | Small-pox. | Varioloid. | Varicella. | Typhus fever. | Enteric fever. | Scarlet fever. | Diphtheria. | Measles. | Whooping-cough. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| New York, N. Y. | Nov. 17. | 1,543,396 | 600 | .. | .. | .. | .. | .. | .. | 13 | 25 | 24 | 12 | 7 |
| Philadelphia, Pa. | Nov. 10. | 1,016,758 | 334 | .. | .. | .. | .. | .. | .. | 13 | 12 | 8 | .. | ... |
| Philadelphia, Pa. | Nov. 17. | 1,016,758 | 354 | .. | .. | .. | .. | .. | .. | 9 | 5 | 18 | .. | 5 |
| Brooklyn, N. Y. | Nov. 10. | 805,855 | 256 | .. | .. | .. | .. | .. | .. | 4 | 5 | 17 | 1 | 3 |
| Brooklyn, N. Y. | Nov. 17. | 805,855 | 296 | .. | .. | .. | .. | .. | .. | 8 | 2 | 33 | 1 | 5 |
| Baltimore, Md. | Nov. 17. | 431,879 | 138 | .. | .. | .. | .. | .. | .. | 3 | 1 | 6 | .. | 2 |
| San Francisco, Cal. | Nov. 9. | 330,000 | 145 | .. | .. | .. | .. | .. | .. | 3 | .. | 7 | .. | 1 |
| Cincinnati, Ohio. | Nov. 17. | 255,139 | 85 | .. | .. | .. | .. | .. | .. | 6 | 1 | 4 | .. | .... |
| New Orleans, La. | Nov. 10. | 248,000 | 104 | .. | .. | .. | .. | .. | .. | 1 | .. | 2 | .. | .... |
| Milwaukee, Wis. | Nov. 17. | 195,000 | 57 | .. | .. | .. | .. | .. | .. | .. | 1 | 2 | .. | .... |
| Minneapolis, Minn. | Nov. 10. | 180,000 | 47 | .. | .. | .. | .. | .. | .. | 4 | .. | 4 | .. | 1 |
| Minneapolis, Minn. | Nov. 17. | 180,000 | 39 | .. | .. | .. | .. | .. | .. | 3 | 1 | 3 | .. | 1 |
| St. Paul, Minn. | Nov. 17. | 175,000 | 32 | .. | .. | .. | .. | .. | .. | 4 | 1 | 2 | .. | .... |
| Rochester, N. Y. | Nov. 17. | 120,000 | 33 | .. | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .... |
| Columbus, Ohio. | Nov. 17. | 101,885 | 17 | .. | .. | .. | .. | .. | .. | 2 | .. | .. | .. | .... |
| Richmond, Va. | Nov. 10. | 100,000 | 30 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Denver, Col. | Nov. 16. | 96,000 | 38 | .. | .. | .. | .. | .. | .. | 6 | .. | 4 | .. | ... |
| Toledo, Ohio | Nov. 16. | 80,000 | 9 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Fall River, Mass. | Nov. 17. | 65,000 | 23 | .. | .. | .. | .. | .. | .. | .. | .. | 3 | 1 | .... |
| Charleston, S. C. | Nov. 17. | 60,145 | 37 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Lynn, Mass. | Nov. 17. | 50,000 | 15 | .. | .. | .. | .. | .. | .. | .. | .. | 2 | .. | .... |
| Manchester, N. H. | Nov. 10. | 41,000 | 24 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Portland, Me | Nov. 17. | 40,000 | 14 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Galveston, Texas. | Nov. 9. | 40,000 | 13 | .. | .. | .. | .. | .. | .. | 1 | .. | 1 | .. | .... |
| Davenport, Ia. | Nov. 10. | 33,715 | 11 | .. | .. | .. | .. | .. | .. | .. | 3 | .. | .. | .... |
| E. Saginaw, Mich. | Nov. 17. | 33,000 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | 1 | .. | .... |
| Altoona, Pa. | Nov. 10. | 29,546 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Altoona, Pa. | Nov. 17. | 29,546 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Auburn, N. Y. | Nov. 19. | 26,000 | 4 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Haverhill, Mass. | Nov. 17. | 25,000 | 5 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Newton, Mass. | Nov. 17. | 21,105 | 5 | .. | .. | .. | .. | .. | .. | 1 | .. | .. | .. | .... |
| Newport, R. I. | Nov. 15. | 20,466 | 3 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Keokuk, Ia. | Nov. 17. | 16,000 | 6 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |
| Pensacola, Fla. | Nov. 17. | 15,000 | 7 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .... |

**The Medical Microscopical Society of Brooklyn.**—At the next meeting, to be held at the Hoagland Laboratory, on Wednesday evening, the 5th inst., Dr. A. Stub will read a paper on "The Micro-organisms found in the Black Vomit and Liver in a Suspected Case of Yellow Fever."

**A Circular to Medical Microscopists.**—In behalf of the American Association for the Study and Cure of Inebriety, the sum of one hundred dollars is offered by Dr. L. D. Mason, vice-president of the society, for the best original essay on "The Pathological Lesions of Chronic Alcoholism capable of Microscopic Demonstration." The essay is to be accompanied by carefully prepared microscopic slides, which are to demonstrate clearly and satisfactorily the pathological conditions which the essay considers. Conclusions resulting from experiments on animals will be admissible. Accurate drawings or micro-photographs of the slides are desired. The essay, microscopic slides, drawings, or micro-photographs are to be marked with a private motto or legend, and sent to the chairman of the committee on or before October 1, 1890. The object of the essay will be to demonstrate: *First*, Are there pathological lesions due to chronic alcoholism? *Secondly*, Are these lesions peculiar or not to chronic alcoholism? The microscopic specimens should be accompanied by an authentic alcoholic history, and other complications, such as syphilis, should be excluded. The successful author will be promptly notified of his success, and asked to read and demonstrate his essay personally or by proxy, at a regular or special meeting of the Medical Microscopical Society of Brooklyn. The essay will then be published in the ensuing number of "The Journal of Inebriety" as the prize essay, and then returned to the author for further publication or such use as he may desire. The following gentlemen have consented to act as a committee: *Chairman*, W. H. Bates, M. D., F. R. M. S. Lond. (President of the Medical Microscopical Society of Brooklyn), 175 Remsen Street, Brooklyn, N. Y.; John E. Weeks, M. D., 43 West Eighteenth Street, New York; Richmond Lennox, M. D., 164 Montague Street, Brooklyn, N. Y.

## ANSWERS TO CORRESPONDENTS.

*No. 241.*—Address the secretary, Dr. J. H. Raymond, 173 Joralemon Street, Brooklyn.

*No. 242.*—The board is not now in session.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# CREASOTE IN THE TREATMENT OF PHTHISIS PULMONALIS.

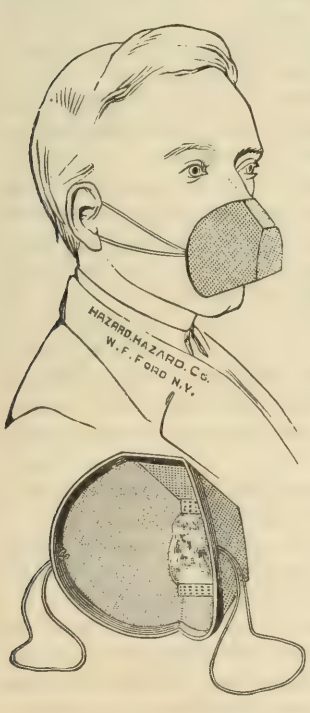
BY AUSTIN FLINT, M. D., LL. D.,
PROFESSOR OF PHYSIOLOGY IN THE BELLEVUE HOSPITAL MEDICAL COLLEGE, NEW YORK; VISITING PHYSICIAN TO BELLEVUE HOSPITAL.

*WITH REPORTS OF TEN CASES.*

BY RUTSON MAURY, M. D.,
HOUSE PHYSICIAN IN BELLEVUE HOSPITAL.

IN the summer of 1888, on entering upon my service in Bellevue Hospital, I noticed a number of patients in the wards of the third division wearing what are known as "perforated-zinc inhalers." For several weeks these patients had been treated with inhalations of creasote by a method suggested by Dr. Beverley Robinson to Dr. Maury, the house physician, before Dr. Maury entered the hospital. The improvement noted in these cases was so considerable that I directed the treatment to be employed in all the cases of phthisis pulmonalis in the male wards, with the exception of a few cases of the last stages of the disease. A considerable number of cases did not remain under observation as long as two weeks. These cases are not reported. In the ten cases reported from the records kept by Dr. Maury the treatment was followed for two or more weeks. In addition to the inhalations in all the cases reported, creasote was also administered by the stomach, and in some cases other remedies were employed.

The perforated-zinc inhaler is slightly modified by Dr. Beverley Robinson from an inhaler originally made by Squire, of London, and is manufactured by Mr. W. F. Ford, of Hazard, Hazard, & Co., New York, who kindly furnished the accompanying wood-cut illustrating its construction and the method of its application. Its simplicity and the ease and comfort with which it can be worn suggest its use in many diseases in which inhalations are of benefit. The following description of the inhalers is quoted from Dr. Robinson:




"They consist simply of a sheet of perforated zinc or tin, bent into a pyramidal shape and large enough to cover conveniently the nose and mouth. At the apex of the pyramid a bit of sponge is firmly held by means of strings in two bends in the margin of the zinc plate. Between the sponge and the mouth and nose there is a vacant space which obviates the stifling feeling which is so objectionable in the use of inhalers that are applied closely over the face. The inhaler is held in place by two narrow elastic bands, which pass around the ears. Before beginning an inhalation the sponge should be properly moistened with water or alcohol, and the inhaling fluid poured upon it." *

In the cases reported, the fluid used consisted of equal parts of creasote, alcohol, and spirit of chloroform. Of this mixture, ten to fifteen drops were put upon the sponge. The treatment was begun with an inhalation of fifteen minutes' duration three or four times daily, increased until, in some cases, the inhalers were worn almost constantly except at night. There was no irritation produced by the inhalation, all the patients saying that after a few trials it relieved the cough and the irritability of the throat. In some cases in which the sweating at night was very profuse, atropine, $\frac{1}{96}$ of a grain, with fifteen drops of aromatic sulphuric acid, were given at bed-time. In a number of cases in which the appetite was very poor a tonic, usually a mixture of iron, quinine, and strychnine was administered before meals. In some cases in which the cough was very severe a palliative cough-mixture of spirit of chloroform, dilute hydrocyanic acid, and syrup of wild cherry was used. No other medication was employed.

CASE I.—T. W., aged twenty-eight, laborer, was admitted May 19, 1888. The family history was negative. The patient has had cough with expectoration for the past five months, and has lost considerably in weight. He has suffered from night-sweats for the past few weeks. Three weeks ago he had considerable pain in the chest on the right side, followed by some fever and dyspnœa, which have persisted. The temperature on the date of his admission to the hospital was 101·2° F.

Physical examination revealed the characteristic signs of pleurisy with effusion on the right side, that side of the chest being about half full of liquid. A little clear effusion was taken with an exploring needle, but the chest was not tapped. At the left apex there were signs of solidification, with fine and coarse mucous râles. Tubercle bacilli were found in the sputum and in the liquid taken from the chest with the exploring needle.

The patient was put upon a tonic treatment with a liberal diet. For a number of days the temperature was 100° to 103°, and once or twice was found at 104° F.

*June 1st.*—In addition to the tonics and the liberal diet, the patient was given creasote, three drops three times daily, and an inhalation of creasote, spirits of chloroform, and alcohol, equal parts, at first for a few minutes three times daily, and afterward for four, six, or eight hours during each day. The temperature was soon reduced to 99° to 100° F., and after the middle of June it was practically normal. The patient was strong enough to be weighed only on June 23d. At that date the weight was one hundred and thirty-two pounds. The liquid in the chest disappeared much more rapidly after the inhalations were begun than before.

*July 20th.*—The patient left the hospital. There was no cough or expectoration, and no sputum could be obtained for examination. There were no night-sweats, and the patient said he felt as strong as he ever had been. There were still signs of solidification at the left apex, but the râles were very much less and were drier. The weight was one hundred and forty-three pounds and a half.

* Robinson, "A Manual on Inhalers, Inhalations, and Inhalants," Detroit, 1886, p. 37.

Case II.—J. H., aged nineteen, mason, was admitted June 19, 1888. The family history was good. The patient has had cough with expectoration, and night-sweats, but no hæmoptysis. About six months ago, after "taking cold," he began to lose weight and has now lost about twenty-five pounds. The temperature was 104° F. The appetite is very poor. Physical examination revealed the signs of cavities of moderate size at both apices, with mucous râles and gurgles. The patient was immediately put upon creasote, three drops three times daily, and increased to four drops, with inhalations as in Case I, and whisky, ℥ ss. three times daily.

*June 20th.*—The temperature was normal, and the ward-tonic was substituted for the whisky. The weight on this date was one hundred and sixteen pounds.

*July 18th.*—The patient left the hospital, much improved, with less cough and expectoration, diminished night-sweats, and better appetite. The weight at this date was one hundred and twenty-five pounds. The physical signs were unchanged.

Case III.—T. B., aged twenty-one, porter, was admitted July 31, 1888. The family history was good. The patient had pleurisy two years ago. The present trouble began in December, 1887, with an attack of diarrhœa. He has had since that time cough and expectoration, but no hæmoptysis. He has night-sweats, and some fever in the afternoon. He has lost thirty-five pounds in weight. The temperature was 99° F., and the weight was one hundred and forty-nine pounds.

On physical examination, there were found dullness, bronchovesicular respiration, etc., with fine râles at the right apex. Tubercle bacilli were found in the sputum. The treatment consisted of creasote, three to four drops three times daily, tonic before meals, and the usual inhalations.

*August 25th.*—The patient left the hospital. He said he felt perfectly well. The cough had nearly disappeared, and the weight was one hundred and fifty-nine pounds.

Case IV.—J. M., aged twenty-three, laborer, was admitted September 6, 1888. The patient has had cough with expectoration, and one pulmonary hæmorrhage within the past three months. He has night-sweats and has lost some flesh. The appetite is very poor. The temperature was normal and the weight was one hundred and sixty-four pounds. Physical examination revealed signs of solidification at the right apex, with fine râles. There were some râles also at the left apex. The sputum contained a few tubercle bacilli. The patient was put upon creasote, four drops three times daily, and the inhalations.

*September 22d.*—The cough and general symptoms were much improved. The weight was one hundred and seventy-four pounds.

Case V.—O. G., aged twenty-four, canvasser, was admitted June 23, 1888. Two sisters and a brother had died of phthisis. A year ago the patient had had what he calls an attack of chills and fever, and had not been well since. He noticed cough only within the past four or eight weeks. He had had some expectoration, especially in the morning. He had also had night-sweats, and pain at the apex of the right lung. He had no appetite, and had lost some flesh. The temperature was 99° F., and the weight was one hundred and fifty-four pounds. Physical examination gave signs of slight solidification, with fine mucous râles at the right apex. The patient was put upon the use of creasote, three drops three times daily, with inhalations in the usual manner.

*July 6th.*—The patient had a chill, with a temperature of 102° F. Quinine, ten grains three times daily, was ordered for a few days.

*30th.*—The weight was one hundred and seventy-four pounds. On this date the patient had a chill, followed by a temperature of 105·3° F. He kept the bed for two or three days, with diarrhœa and fever, and at the end of that time his weight was one hundred and sixty pounds. He was then put on the use of a tonic three times daily, the creasote and the inhalations being continued.

*August 25th.*—The patient says he feels perfectly well. He has no cough, and all the symptoms have improved. The weight is one hundred and seventy-three pounds. There is no expectoration, and no sputum can be obtained for an examination for bacilli.

*October 1st.*—The patient has left the ward, and works about the hospital. The inhalations have been continued. There has been no return of pulmonary symptoms. The weight is one hundred and seventy pounds. There are a few râles at the right apex.

Case VI.—J. C., aged forty, tailor, was admitted July 17, 1888. The father of the patient died of phthisis. The patient had had a pulmonary hæmorrhage ten years before. He had had cough, with whitish expectoration and night-sweats, for the past year. The temperature was 101° F., and the weight was one hundred and fifteen pounds. Physical examination revealed a cavity at the right apex and slight solidification at the left apex. Tubercle bacilli were present in considerable number in the sputum. The patient was put upon the use of creasote, three drops three times daily, with the usual inhalations.

*August 25th.*—The temperature was normal, and the weight was one hundred and twenty-one pounds. The cough was less, and all the symptoms had improved.

Case VII.—J. S., aged forty, porter, was admitted July 23, 1888. The family history was negative. Since May last the patient had lost appetite, and had had cough, with at first a whitish expectoration. Subsequently, the expectoration had at times been bloody. He had had night-sweats, but no fever, and said he had not lost flesh. The weight was one hundred and fifty-six pounds. Physical examination revealed solidification, with fine and coarse mucous râles at the right apex. There were a few fine râles at the left apex. Tubercle bacilli were found in the sputum. The patient was put upon the use of creasote, three drops three times daily, with inhalations. The mixture inhaled was composed of equal parts of creasote, spirits of chloroform, alcohol, and tincture of iodine.

*August 14th.*—The patient left the hospital. All the symptoms had improved, and the weight was one hundred and sixty-four pounds and a half.

Case VIII.—P. M., aged thirty-one, plumber, was admitted July 31, 1888. The patient had had two or three pulmonary hæmorrhages within the past six months. He had had cough, with copious expectoration and night-sweats, and said he had lost fifty pounds in weight. The appetite was very poor. The temperature was 101° F., and the weight one hundred and twenty-one pounds. Physical examination revealed signs of solidification at both apices, with fine mucous râles. Tubercle bacilli were found in the sputum. The patient was put upon the use of creasote, three drops three times daily, with the usual inhalations.

*September 18th.*—All the symptoms were much improved. The weight was one hundred and thirty-four pounds.

Case IX.—P. B., aged twenty-eight, was admitted August 13, 1888. The family history was negative. The patient had been in bed for several days. He had had cough, with copious expectoration and profuse night-sweats, for nearly a year. He had had one pulmonary hæmorrhage. Physical examination revealed cavities of considerable size at both apices. Râles of intercurrent bronchitis were heard over the entire chest. Tubercle bacilli were found in the sputum. The patient was treated with iron, quinine, and whisky three times daily, and a cough-mixture, for three weeks.

*September 3d.*—The patient was put upon the use of creasote, three drops three times daily, and the usual inhalations. All other remedies were discontinued except the quinine and iron.

*October 5th.*—The only improvement in this case was some increase in strength. During the three weeks before the inhalations he kept the bed, but afterward he was able to be about the ward. The cough is a little less troublesome and the expectoration is slightly diminished. The weight has remained about the same.

Case X.—P. C., aged twenty-four, was admitted July 7, 1888. The family history was good. The patient had pneumonia about ten years ago. He had had cough with expectoration and two or three pulmonary hæmorrhages within the past five or six months. He now had night-sweats and had lost considerable flesh. The temperature was 103·2° F. The patient was too weak to leave the bed. Physical examination revealed cavities of considerable size at both apices. Tubercle bacilli were found in large number in the sputum. The patient was put upon tonic treatment, a cough-mixture, creasote, three drops three times daily, and the usual inhalations.

*July 20th.*—The patient was able to sit up. The temperature was normal and the weight was one hundred and four pounds.

*October 5th.*—The patient is now in a much better condition than at the time of his admission. He is able to be about the ward and his cough is less troublesome. The physical signs are about the same. Tubercle bacilli are present in the sputum, though in diminished quantity. The weight is one hundred and six pounds.

The number of cases of phthisis in Bellevue Hospital is never large, especially in the summer, as cases of chronic disease are usually sent to the Charity Hospital on Blackwell's Island; but even the few cases reported, although not long under observation, seem to me to be very instructive. These cases were unselected and the inhalations were employed in all cases in the male wards, except those of the last stages of the disease and a few in which complications existed. Of the ten cases reported, four presented cavities and in six there was solidification only. All the cases were uncomplicated except one, in which the right chest was half full of liquid, the liquid containing tubercle bacilli. The patients were all males of an average age of about twenty-eight years, the oldest being forty and the youngest nineteen. The average duration of treatment was forty-six days, the longest being ninety-nine and the shortest sixteen days. The average duration of the disease was a little more than six months, the longest being twelve months and the shortest between one and two months. In only two cases was there a family history of phthisis. In two cases the temperature was normal. In one case the temperature was not recorded. In all the others there was more or less pyrexia, the temperature being 101° to 104° F. Night-sweats existed in all the cases. There was a history of loss of weight in all cases but one. Tubercle bacilli were found in eight cases. In two cases the sputum was not examined. In four cases there had been hæmoptysis and in one of these this had occurred ten years before. The inhalations were well borne and gave relief to the cough in all cases. In five cases the treatment was with creasote internally and inhalations. In five cases, in addition to this treatment, tonics, stimulants, or expectorants were employed.

The results which are fairly attributable to the treatment by creasote internally and inhalations are the following:

*Weight.*—The change in weight was one of the most important results observed. The gain, which occurred in every case but one, could hardly be attributable to changes in surroundings and diet, for the diet, though sufficient, was probably not more liberal than that to which the patients had been accustomed. The following table gives the changes in weight while the patients were under observation:

| Case. | Gain in weight. | Remarks. |
|---|---|---|
| I. | 11½ pounds in 27 days. | Solidification at left apex; right chest half full of liquid. |
| II. | 9 pounds in 28 days. | Small cavities at both apices. |
| III. | 10 pounds in 28 days. | Solidification at right apex. |
| IV. | 10 pounds in 16 days. | Solidification at right apex. |
| V. | 20 pounds in 37 days. | After having gained 20 pounds, the patient had malarial fever and diarrhœa, and lost 14 pounds; he afterward gained 10 pounds in 62 days, making a net gain of 16 pounds in 99 days. Solidification at right apex. |
| VI. | 6 pounds in 39 days. | Solidification at both apices, with cavity at right apex. |
| VII. | 8½ pounds in 22 days. | Solidification at right apex. |
| VIII. | 13 pounds in 49 days. | Solidification at both apices. |
| IX. | No change in weight. | Large cavities on both sides; general bronchitis; profuse expectoration; patient in bed and very weak. |
| X. | 2 pounds in 15 days. | Large cavities on both sides; patient in bed and very weak. |

*Temperature.*—In seven cases in which there was pyrexia when the treatment was begun, the temperature became normal within a very few days. In two cases (IV and VII) the temperature was normal when the patients were admitted. In Case IX the temperature was not recorded.

*Night-sweats.*—All the patients had night-sweats. The night-sweats disappeared entirely in three cases (I, III, and V); they were much diminished in six cases (II, IV, VI, VII, VIII, and X); and in Case IX the night-sweats were not affected. In Case IX there were large cavities on both sides, with general bronchitis and profuse expectoration, and the patient was very weak.

*Cough and Expectoration.*—In three cases (I, III, and V) the cough and expectoration nearly or quite disappeared. In all the cases there was improvement, which was generally quite marked. There was slight improvement even in Cases IX and X, in which there were large cavities. There was considerable improvement in Cases II and VI, in which there were small cavities.

*Physical Signs.*—The physical signs showed more or less improvement in all the cases, except in Cases II, IX, and X, in which there were large cavities. In Case X the bacilli in the sputum were diminished. In the remaining cases no examinations for bacilli were made after the treatment was begun.

*General Physical Condition.*—In Cases I, III, and V the patients said they were perfectly well. In Case I there was solidification at the left apex, and the right chest was half full of liquid. In Cases III and V there were signs of solidification at one apex. Tubercle bacilli were present in the sputum in all of these three cases.

The appetite was improved in all the cases recorded.

In all the cases also there was improvement in strength. In Cases IX and X, with large cavities, the patients were in bed and very weak at the beginning of the treatment, but afterward were able to be up and about the ward.

*Cases with Solidification only.*—In the six cases in which there were no cavities the improvement under treatment was very marked. In three cases (I, III, and V) the strength and weight were regained, all the symptoms disappeared, and the patients expressed themselves as feeling perfectly well. These patients were under treatment for twenty-seven, twenty-eight, and thirty-seven days, respectively.

The gain in weight was considerable in all these six cases. The smallest gain was in Case VII, eight pounds and a half in twenty-two days, and the largest was in Case V, twenty pounds in thirty-seven days. In the four remaining cases the gain in weight was between ten and thirteen ponnds. In all the six cases it was recorded that all the symptoms were much improved.

*Cases with Cavities.*—In Cases IX and X there was but little improvement. In these cases the cavities were large.

In Case II, in which there were cavities of moderate size at both apices, with a loss of weight of twenty-five pounds in six months, under treatment there was a gain of nine pounds in twenty-eight days, the temperature was reduced from 104° F. to normal, there was diminished cough, expectoration, and night-sweats, and the strength and appetite were improved.

In Case VI hæmoptysis had occurred ten years before, there had been "considerable" loss of weight, the temperature was 101° F., and there was a cavity at the right apex. Under treatment there was a gain in weight of six pounds in thirty-nine days, the temperature became normal, and the cough, expectoration, night-sweats, etc., were improved.

*Conclusion.*—In conclusion, the records of the ten cases reported show that creasote by the stomach and the inhalations, in cases of solidification without cavities, effect prompt and decided improvement in all phthisical symptoms, with increase in appetite, weight, and strength, even with surroundings much less favorable than would obtain in many cases in private practice.

In cases with small cavities much less improvement is to be looked for, but some benefit may be expected.

In cases with large cavities the treatment seems to have little more than a palliative influence.

The observations here recorded are defective as regards the influence of the treatment upon the bacilli. In one case, with large cavities, it was noted that the number of bacilli was diminished. No other examinations for bacilli were made during or after treatment.

No estimate was made of the relative value of creasote taken into the stomach. As regards the inhalations, it is assumed that the chief benefit was derived from the creasote, the spirit of chloroform and the alcohol rendering this agent more volatile, and soothing the mucous surfaces. The inhaled vapor undoubtedly penetrated by diffusion as far as the air-cells. It is by diffusion that fresh air, anæsthetic vapors, etc., penetrate the lungs, and cases of pneumonokoniosis illustrate the fact that even solid particles may be carried to the pulmonary vesicles.

I have employed the method of inhalation here described, conjoined with other treatment, in private practice, with good results. In a case of irritative cough of several months' standing, with slight bronchitis and emphysema, but no signs of phthisis, which resisted ordinary treatment, three inhalations produced complete relief, and the cough had not reappeared at the end of four weeks.

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# PROGRESSIVE MUSCULAR DYSTROPHIES:

## THE RELATION OF THE PRIMARY FORMS TO ONE ANOTHER AND TO TYPICAL PROGRESSIVE MUSCULAR ATROPHY.*

By B. SACHS, M. D.

The diseases to be discussed in this article have passed under so many different names that it will be necessary, first of all, to state what shall and what shall not be understood by the term "progressive muscular dystrophies."

This term is intended to designate those forms of disease in which a primary progressive wasting of some or all of the muscles of the body is the most characteristic feature, and in which this wasting (atrophy) may or may not be associated with true or pseudo-hypertrophy of some muscles. These primary progressive dystrophies are our chief concern; we have nothing to do with muscular atrophy following cerebral, myelitic, or peripheral nerve disease. One form of disease, however, which is undoubtedly due to changes in the spinal cord we must draw into the discussion. I refer to typical progressive muscular atrophy. This must, in fact, be the basis upon which our discussion shall proceed, for a very large number of the cases and different forms of disease which we shall have to consider were once classed under this term. "Progressive muscular atrophy" was for many years, and with many authors still is, a mere clinical designation, just as locomotor ataxia was a mere clinical term until the pathological anatomy of the disease was established, and the term was finally restricted to cases of tabes dorsalis.

Neurologists are at present engaged in sifting the clinical material, and many cases which only a decade ago would have been labeled as "progressive muscular atrophy" are now recognized to be cases of amyotrophic lateral sclerosis, of syringomyelia, of tumor of the cord, of tabes dorsalis, of poliomyelitis anterior infantilis, or of multiple neuritis. I insist again that we have nothing to do with these issues, and that we are concerned with typical progressive muscular atrophy (type Aran-Duchenne) only in its relation to the primary myopathies or muscular dystrophies.

For the purpose of establishing this relation, I propose, with the above limitations in mind, to give a short historical review of our subject. The discussion which is still waging, and which has already succeeded in establishing at

* Opening paper of the discussion on "Muscular Dystrophies," read before the American Neurological Association at its fourteenth annual meeting. With some few omissions and corrections, the paper is printed as read.

least six different forms of progressive muscular wasting, began along two different lines with the creation of two distinct diseases—viz., typical progressive muscular atrophy, and pseudo-hypertrophic muscular paralysis. Let us first take up the history of "progressive muscular atrophy."

Duchenne, in 1849, was the first to describe this disease, and embodied his observations in a paper presented to the French Institute (1). In the next year Aran (2) gave a full description of the same disease and reported a number of cases; the same was done by Cruveilhier (3) three years later, but the full dignity of the disease was not recognized until Duchenne's classic account of it appeared in his famous work on "L'Électrisation localisée" (4). Duchenne distinguished two forms—progressive muscular atrophy of the adult, and progressive muscular atrophy of infancy. The latter will come up for consideration, together with the new type of muscular atrophy which Landouzy and Déjérine have described and advocated. The former type remains almost in all particulars as Duchenne described it. Modern authors, including Charcot, Leyden, Strümpell, Hammond, Gowers, and others, have been able to add but very little to Duchenne's original description. The chief characteristics of this form are as follows:

*Progressive Muscular Atrophy* (type Aran-Duchenne).—This form begins in a large majority of the cases with an atrophy and corresponding weakness in the small muscles of the hand (thenar and hypothenar). The atrophy spreads from muscle to muscle ("atrophie individuelle"). Beginning, as a rule, with the adductor pollicis longus, it involves, next in order, the opponens pollicis and deep muscles of the thenar; from these it extends to the hypothenar, the interossei, the flexors and extensors in the forearm. At this stage the disease may remain stationary, or it may spread to the flexors in the upper arm, to the deltoid, possibly the triceps, and finally to the muscles of the trunk, the shoulders, and the back. Duchenne recognized the fact that the atrophy may begin, in exceptional cases, in the trunk, in the shoulders, or in the legs.* Certain it is that in those cases in which the atrophy begins in the hands, the legs are not affected until very late in the course of the disease. One marked exception to this rule has occurred in my own practice in the case of a woman aged forty, in whom the atrophy attacked almost simultaneously the small muscles of the thenar and the anterior muscles of the thigh. This case had all the other symptoms of typical progressive muscular atrophy.

The atrophied muscles in progressive muscular atrophy exhibit fibrillar contractions and as a rule retain their faradaic contractility. There may be a diminution of faradaic or galvanic excitability proportionate to the wasting of some muscles, and a complete or partial reaction of degeneration may be present in other muscles. The march of the disease is steadily progressive. Heredity is a strong factor in the disease, as is shown by the remarkable series of cases published by Naunyn and Eichhorst in the "Berliner klinische Wochenschrift," and by the account of the Weathersbee family given in the later editions of Hammond's treatise, although the latter cases probably belong to the peroneal type, to be discussed later on. Osler's cases (5) also give strong proof of heredity.

With the exception of the factor of heredity, all the clinical features, as given above, were known to Duchenne. For many years, too, the clinical features of progressive muscular atrophy were beyond question. All discussions that followed related to the question whether this disease was of spinal or peripheral origin. Duchenne first regarded the disease as of peripheral origin, but in his third edition retracted this view, convinced, as he says, by the pathological and anatomical facts gathered by Charcot and Joffroy (6), Lockhart Clarke (7), Hayem (8), and others (9). To Clarke, and above all to Charcot and his school, we owe the advances made (in the years 1860 to 1870) in our knowledge of the pathology of progressive muscular atrophy.

The main changes found are these: A sclerotic and pigmentary atrophy of the ganglion cells of the anterior horns, inflammatory changes in the neuroglia, increased size of the blood-vessels, and proliferation of the cellular elements. In fresh preparations granular corpuscles are found, and, according to the degree and stage of the disease, the anterior gray cornua are reduced in all diameters, and the ganglion cells either atrophied or entirely lost. The anterior nerve-roots are affected secondarily to the lesion of the gray substance. The nerve-fibers are not all destroyed, a number of them remaining intact. Those that are destroyed exhibit the appearances of simple atrophy—a point to which Charcot * alludes as distinguishing these cases from infantile spinal paralysis.

The theory of the disease was and is, that the inflammation spreads slowly from the ganglion cells of the anterior horns along the anterior nerve-roots without destroying as many of these fibers as is the case in infantile poliomyelitis. The atrophic changes in the muscles are, on this hypothesis, the direct result of the irritation which begins in the cells of the anterior horns and is propagated thence through normal or only half-wasted nerve-roots to the peripheral muscular fiber.

The earlier pathological investigations erred in various respects; first of all, all changes in the spinal cord were not noted, the white columns of the cord were not carefully examined. In consequence of this inadvertence in the examination of pathological specimens and on account of insufficient clinical description, many cases of amyotrophic lateral sclerosis were recorded as cases of progressive muscular atrophy. It is Charcot's great merit to have done pioneer work in this, as in so many other neurological problems. In France, Charcot (10) succeeded in making his *tephro-* (*polio-*) *myélite chronique parenchymateuse* the anatomical substratum of Duchenne's progressive muscular atrophy.

* Of these exceptional cases mentioned by Duchenne a considerable number will now be relegated to other forms of muscular atrophy. Duchenne states that only two cases in one hundred and fifty-nine began in the legs. Hammond said in the first edition of his treatise on "Nervous Diseases," p. 66, eight cases in twenty-nine; in his last edition, p. 535, he says only six in fifty-two cases.

* "Maladies du système nerveux," vol. ii, p. 209.

From this time onward German investigators play a very important *rôle* in the solution of the problem under discussion, attacking the problem both from the pathological and from the clinical standpoint. Bamberger and Recklinghausen (11) published two cases of Duchenne's atrophy in which no changes could be found in the spinal cord post mortem, but it was not until the appearance of Friedreich's great monograph (12) that the possible peripheral origin of progressive muscular atrophy was again pushed into the foreground.

Friedreich maintained that the changes found in the anterior nerve-roots and in the anterior cornua, in cases of progressive muscular atrophy, were secondary changes, and to this he allowed no exception. According to Friedreich's views, progressive muscular atrophy is a primary chronic myositis which is followed in due course of time by secondary changes in the nervous system. The intermuscular nerve-filaments are the first to be affected, and from these nerve-filaments an ascending neuritis travels along the peripheral nerve-trunk to the anterior roots of the spinal-cord segment; the neuritis of these anterior nerve-roots may spread to the cord and here set up chronic myelitic changes which will vary greatly in degree and distribution; the extent and character of the changes will, according to Friedreich, depend upon the extent of the muscular affection. The changes in the peripheral nerve-fibers and in the ganglion cells of the anterior horns are the result of the impaired motor functions of the affected muscles (*op. cit.*, p. 118 and 124).

On this theory alone, Friedreich insisted, can we explain why in certain cases a wide-spread muscular atrophy is associated with changes in the cervical segment only, as in the cases of Dumesnil (13), of Lockhart Clarke and Gairdner (14), in the cases of Clarke and Cooper (15), Clarke and Johnson (16), and others, in which changes were found in the spinal cord and none in the nerve-roots. Friedreich claims that the nerve-roots were not properly investigated; on the other hand, the cases of Recklinghausen, of Friedberg and Cruveilhier, of Trousseau, and his own cases (Nos. 4 and 21), proved to *him* that changes may occur in the muscles themselves, or in the nerve-trunks and anterior nerve roots, and not in the spinal cord; but Charcot (*op. cit.*, p. 209) very correctly protests that all these cases upon which Friedreich's proof rested were examined before the present successful histological methods for staining the spinal cord had come into vogue, and that they therefore prove nothing.

While Friedreich's judgment unquestionably erred in regard to many of these cases, the error can be explained, since many of the cases upon which he based his views are now known to belong to other forms of muscular atrophy in which there is *no* accompanying change in the spinal cord. As regards typical progressive muscular atrophy, the investigations of later years have put the spinal origin beyond question, although, as Schultze (17) has shown in his excellent monograph, there are but two cases of Duchenne's atrophy [cases of Pierret-Troissier (18) and of Strümpell (19)] in which the anterior gray matter was the *only* part affected, and alone responsible for the wide-spread muscular atrophy. To this list we might add the case of Wood and Dercum (20) if the clinical history were not unsatisfactory. Schultze arrives at his conclusions by excluding even those cases in which the nuclei of the medulla had become involved by extension of the process. Without wishing to depart from the subject before us, I may intimate that these pathological researches prove that, although progressive muscular atrophy is of spinal origin and is a distinct clinical entity, it is not necessarily a morbid entity, and in most cases represents an early stage of one of several spinal-cord diseases.

It is now time for us to retrace our steps and note the development of our knowledge regarding pseudo-hypertrophic muscular paralysis.

The history of this form can be related in few words. The clinical features as laid down by Duchenne, Griesinger, Seidel, and others have been universally accepted. These authors, and all who followed them, fastened upon the increase in the size of some muscles as the characteristic symptom of the disease, and have largely disregarded the wide-spread muscular atrophy which is present in many cases of pseudo-hypertrophy.

The earliest cases of pseudo-hypertrophy of muscles were described by Meryon (21) in 1852. Similar cases had been described by Charles Bell in 1830, but were not valued at their true worth, and Meryon even maintained that his cases were intimately related to Cruveilhier's (Aran-Duchenne's) atrophy. Oppenheim in 1855 published a thesis at Heidelberg on progressive muscular atrophy in which he reported a number of cases of pseudo-hypertrophy, without, however, making a distinction between these cases and Duchenne's type. It was Duchenne again who, in a paper (22) published in 1861, first called attention to the increase in the volume of certain muscles as the important feature in the disease, and in his "Électrisation localisée" established this type of disease for all time. Since that time innumerable cases have been published, enabling Gowers (23) in 1879 to base his studies upon a series of 220 cases, some of these, however, evidently belonging to other categories. The clinical features have been verified so many times over that we need not in this paper analyze all the cases, but can, without hesitation, present the general features of the disease.

*Pseudo-muscular hypertrophy* or pseudo-muscular sclerosis (Jaccoud), atrophia musculorum lipomatosa (Seidel) (24), is a disease of early youth, the vast majority of cases beginning before the age of six. Boys are affected somewhat more frequently than girls, and there is good proof of heredity, the disease, although largely affecting boys, being most frequently inherited through the mother. Meryon's cases appeared to form an exception (*vide* Gowers, *op. cit.*, p. 24). The first symptoms are a weakness in the muscles of the leg, a waddling gait, and an apparent increase in the size of some of the muscles of the leg. In many cases the calves only are hypertrophied; in others the calves and thighs, and in rarer cases, like one now under my observation, the disease is limited to, or at least begins in, the thigh muscles.

*Author's Case I.*—A. K., aged ten. Mother has had six children; one died of "brain fever" and one of croup. Four

living, one older than patient, all healthy. No history of heredity. Patient, a stout child, a newsboy, had first teeth at four months; when one year old began to walk. At one year and a half showed weakness and could not walk alone; was provided with some sort of machine with which he learned to walk. Was treated for rickets. Youngest sister has distinct rickets at present. No change until last December, when parents noticed that he was getting lamer. Mother states that thighs were always large; had difficulty in finding trousers that would fit the boy in the thighs. Boy could never walk as other children did, and could never run after others. He now complains of great fatigue, and when walking throws himself down on the grass from mere fatigue. Examination shows increase of volume of anterior thigh muscles of both sides, most marked in the middle portion of the vasti. Calves not hypertrophied; no other atrophy anywhere except in the serratus anticus of the right side. Grasp of both hands normal; knee-jerks present; all electrical reactions normal. With the assistance of Dr. Peterson I excised two pieces of muscle from the left vastus externus which will be referred to in a later section of this paper. The wound healed readily; boy complains of greater weakness in the leg from which pieces of muscle were removed.

Duchenne made out three stages of the disease. In the first, difficulty in standing and walking, and weakness of muscles of lower extremities and of sacro-lumbar region. In the second stage the hypertrophy becomes the prominent feature, spreading to various muscles of the body, and in the third stage there is increased feebleness of the muscles of upper and lower extremity of the trunk. Other authors recognize a weakening of the sacro-lumbar region and in a general way a weakness of the upper extremities, but, in view of Erb's recent studies, it is due to Gowers to state that he called attention to the fact that in many cases of pseudo-hypertrophy the "infraspinati and deltoids are often increased in size. . . . The latissimus dorsi is commonly much wasted, and so also is the lower (sterno-costal) portion of the pectoralis major. . . . The forearm muscles are rarely affected."

To complete the clinical picture we must in addition refer to the lumbar lordosis (probably due to the weakness of the extensors of the hip), to the occasional presence of contractures, and to the peculiar difficulties in rising from the ground (the patient climbing up upon himself) which are present in some cases, but not necessarily in all, and to which Gowers attaches too much importance in making it the cardinal symptom of the disease. My patient has distinct pseudo-hypertrophy, but rises from the floor with the greatest ease. In a general way it is to be noted that there are no fibrillar contractions in the affected muscles, no changes in the electrical reaction, except diminished excitability to both currents, no sensory disturbances, and the patellar reflex may or may not be present. As a typical example of pseudo-hypertrophy with unusual atrophy of the upper extremities I will cite the following case now under my observation:

*Author's Case II.*—M. K., girl, aged twelve years and a half; mother has one other child living and healthy. One son died at age of twenty-four of meningitis. Patient first seen by me two years ago. History showed that child had severe fright at age of ten months. Child has always been very nervous; learned to stand and walk at usual age, but had diphtheria at age of four, since when the disease has become much worse. Legs first grew thin. The calves increased in size about four years ago. Child has always had characteristic difficulty in walking and rising from the floor. Examination showed decided weakness in posterior group of leg and thigh muscles; calf and thigh muscles distinctly hypertrophied. Nerves and muscles of lower legs react well to faradaic current, much more readily on indirect than direct excitation. No atrophies anywhere in the body, none around shoulder girdle; hands normal. Child has difficulty in getting upon a chair, and in descending comes down with a bound.

Thigh—left, $13\frac{10}{16}$ inches; right, $13\frac{3}{16}$ inches.

Calves—left, $10\frac{1}{4}$ inches; right, $10\frac{5}{16}$ inches.

Examined the child again after two years; found condition very much the same. Thighs—left side, 16 inches; right, $15\frac{1}{2}$ inches. Calf—left side, 11 inches; right, $10\frac{1}{2}$ inches, showing that the growth of the calf muscles has not kept step with the growth of thigh muscles. Muscles of calf and anterior thigh muscles still appear large. Resistance to passive movements very much diminished, particularly in extensors of thighs. Atrophy of sternal portion of the sterno-cleido-mastoid; left shoulder stands out more prominently than right, but shows no hypertrophy. *All arm and forearm muscles thin;* distinct atrophy in the muscles of the interosseous spaces; grasp very weak; right 18, left 18. In walking, both feet assume valgus position. Arms are in marked contrast to legs. Length of arms, 25 inches; length of legs, 28 inches. Electrical examination: All muscles respond promptly to faradaic current, except interossei and vasti of both sides, which require very strong currents. Galvanic response diminished in interossei and in muscles of thenar, but formula not altered.

Having agreed to accept the foregoing description and histories as typical of what is ordinarily called pseudo-muscular hypertrophy, we must now devote a little more attention to the pathological anatomy of the disease. Cases of pseudo-hypertrophy with autopsies are relatively few, and for that reason the evidence must be sifted carefully.

Middleton, in his very excellent paper (25), collected seventeen cases of pseudo-hypertrophies with autopsies; one of these (26) must be excluded from the list as being a clear case of amyotrophic lateral sclerosis. Schultze (*op. cit.*, p. 36) has added to this list the two cases of Middleton, one by Berger (27), two cases described by Günther (28), one by Pick (29), and one by Friedreich (*op. cit*, p. 347), making twenty-three cases in all.

Of these twenty-three cases, those of Friedreich, Meryon (Case II), Kesteven (30), Baeg (31), Brigidi (32), Ross (33) (Case I), and of Günther must be excluded, either because the spinal cord was not examined microscopically or because the examination was not properly made. Of the fifteen remaining cases, *the spinal cord and anterior nerve-roots were found absolutely normal* in ten, and in five others the changes that were found could not be held responsible for the changes in the muscles. These ten cases (34) are unobjectionable in every point; their clinical histories are very similar in every respect and are sufficient proof of the fact that pseudo-hypertrophy of the muscles is *not* dependent upon changes in the spinal cord.

In the endeavor to increase this list I have carefully searched for earlier cases with autopsies, in our own literature in particular, which might have escaped Schultze's notice, and have furthermore endeavored to collect cases

which have appeared since the publication of Schultze's monograph, but the total increase is not great.

First of all, attention should be directed to Gibney's (35) case, which was presented to the American Neurological Association two years ago. The history of the boy, aged sixteen at death, who had been under observation for ten years, is a typical one of the disease. There was first distinct enlargement of the calves, followed later on by atrophy. A brother is affected in the same way. Dr. Amidon, who examined the cord, reports: "The only lesion appeared to be in the ganglion cells of the anterior horns. . . . About one half of the cells seemed to have disappeared, leaving no trace. The remaining ones are poorly defined, small, and in many instances processless. . . . Lesion more marked in the dorsal than in lumbar region."

Through the kindness of Dr. Amidon, I have been permitted to re-examine the specimens, and I must confess that the case would appear to show that there are no serious cord changes in pseudo-hypertrophic paralysis. Processless ganglion cells mean as little in the spinal cord as processless pyramids mean in the cortex, and a diminution in the relative number of cells in any one section is a point exceedingly difficult to determine, and, if present, is more apt to be a secondary than primary affair. I hope that both Dr. Gibney and Dr. Amidon will concur in this view of their case.

The only other cases of pseudo-hypertrophic paralysis *with autopsies* which I have been able to find were these: Westphal (36) reported the cases of two sisters, both affected with typical pseudo-hypertrophy, in the one case characterized by unusual increase in the volume of many muscles and by slight involvement of the facial muscles. Westphal found *no changes whatever either in the cord or in the peripheral nerves.* Coming from so distinguished an author, these facts deserve the greatest consideration.

Middleton (37) has described another interesting case with enormous pseudo-hypertrophy and a wide-spread atrophy, including even the masseters, but the cord did not harden well and a microscopical examination could not be made. The case is, therefore, useless for our present purposes.

Further autopsies on typical cases of pseudo-hypertrophy are extremely desirable, but Westphal's cases, together with the others analyzed above, place the non-spinal origin of pseudo-hypertrophy beyond question.

These facts do not appear to be properly appreciated as yet, for we find Dr. Inglis (38) very recently reporting several interesting cases of pseudo-hypertrophy and assuming that all pathologico-anatomical facts point to the spinal cord as the seat of disease. Dr. Inglis gets over the discomforting negative facts by stating that "the cases in which the post-mortem examination shows the cord visibly intact do not invalidate this idea (the spinal origin of pseudo-hypertrophy), and that the defect in the distal ends of the motor fibers, while not in every case accompanied by atrophy of the central cells, is yet the indication of an impaired activity of those cells." It is more surprising still to find Hammond (39) disregarding the evidence of the last ten years and adhering to the spinal theory of pseudo-hypertrophic paralysis, and even going so far as to entitle the disease "pseudo-hypertrophic *spinal* paralysis." Hammond's conclusions are based on cases of Barth (40), Müller (41), and Lockhart Clarke (42). Barth's case is one of amyotrophic lateral sclerosis; Müller's case was complicated by cerebral disease and therefore useless for the determination of the anatomical lesion; while Lockhart Clarke's case showed changes which are not primary and which Gowers, whose case this was, acknowledged (in the "Lancet" for 1879) to have been possibly due to the paralysis of long standing and to the frequent pulmonary troubles.

At this stage of our studies let us note that careful clinical investigation and post-mortem examinations have shown among other facts that a wide-spread atrophy is common to progressive muscular atrophy (type Aran-Duchenne) and pseudo-hypertrophy, but that the absence of all changes in the central nervous system, the absence of fibrillar contractions, and the absence of reaction of degeneration in cases of pseudo-hypertrophy, separate it widely from the former disease. Later on we shall see that a very intimate relation exists, however, between pseudo-hypertrophy and certain other forms of muscular dystrophy which were formerly included under the general heading of progressive muscular atrophy.

The process of distinguishing these forms from progressive muscular atrophy was of slow development, and with the steps of this process we shall become best acquainted by alluding to a few excellent articles published between the years 1870 and 1880.

Lichtheim (43) was one of the first to take up the cudgels for Friedreich's theory of progressive muscular atrophy. In 1878 he published a paper on a case of "progressive muscular atrophy without disease of the ganglion cells of the anterior horns." A condensed history of his case is as follows:

Louise Groth, aged forty-two. With exception of an acute fever (typhoid), was well until the age of twenty-seven. Severe pains in right arm lasting one day and followed next day by weakness in the arm. Continued her work as laundress for nearly a year in spite of increasing weakness. Was improved by treatment and resumed her work. After another year, a severe confinement (forceps); formation of abscess around right ankle; right leg grew weaker; weakness and atrophy of right upper arm were superadded. Worked with interruptions for seven years longer and gave up work two years and a half previous to Lichtheim's examination. No hereditary influences. From the description of loss of function, I infer that the following muscles must have been affected: Muscles, wasted—serrati, right > left; latissimi, right > left; pectorals, right > left; deltoids, right > left; lower portion of trapezei, right > left; and various facial muscles (can not pull up nose, frowning difficult, can close eyes, can not whistle, no difficulty in mastication or deglutition). Wasted also—intercostals, supraspinati, biceps brachialis, and supinator longus of both sides; no atrophy of forearms or triceps. Thenar and hypothenar wasted, left > right. Opponens pollicis in fair condition; tremors when fingers are moved. Gluteal muscles wasted; left calf slightly larger than the right; no hypertrophy. Abdominal muscles normal. No sensory disturbances; no reaction of degeneration; patellar reflex weak but present. Death from phthisis. Autopsy (Cohnheim): *No changes in the cord.* Flexors

of thighs show fatty degeneration; also fatty degeneration and atrophy of right rectus abdominis. Muscular fibers: atrophy of contractile elements in diseased muscles; increase of connective tissue, and remaining fibers exhibited a highly nucleated perimysium internum. No changes in peripheral nerves.

This case of Lichtheim was followed up by one of Erb and Schultze (44) and one of Kahler (45). The former authors endeavored to disprove Lichtheim's case by a case of typical progressive muscular atrophy with changes in the cord. Erb's criticisms were quite severe, but they have lost all their force since Schultze showed in later years that the changes which he and Erb found were not sufficient to account for the muscular changes, the cells that were atrophied being now known to be in no physiological connection with the muscles that were atrophied; and, furthermore, Erb has since decided that Lichtheim's case, though a very important one, belongs to the type which Erb (34) first described a few years later. And to this most important class of cases we must now devote our attention.

*Erb's Juvenile Form.*—Erb described this new form of disease in his "Elektrotherapie," but sufficient attention was not paid to this juvenile form until Erb again described the disease in an article entitled "Ueber die juvenile Form der progr. Muskelatrophie," in the "Dtsch. arch. f. klin. Med.," 1884.

The following is a typical case of Erb's juvenile form, the history of which will bring out clearly enough the differences of this form and typical progressive muscular atrophy.

Erb's Case I.—Male, aged forty-six. No hereditary history, no syphilis; several acute diseases in childhood. At the age of fifteen noticed that the right arm was weaker and thinner than the left. No pains or paræsthesiæ. Trouble did not grow worse until about the age of forty; at that time the legs and left arm became involved; no sensory, vesical, or sexual disturbances.

Examination revealed changes in the following muscles:

*Wasted:* Both pectorales major and minor, both trapezii, latissimus dorsi, serrati ant. maj., rhomboids with exception of upper portion of right rhomboid superior, both sacrolumbales and longissimi dorsi, deep neck muscles, levator anguli scapulæ right > left, brachialis anticus right > left, supinator longus (both sides), triceps right > left, gluteal muscles right > left, ilio-psoas right > left, quadriceps, tensor fasciæ; anterior leg muscles weak with exception of tibialis anticus; abdominal muscles, diaphragm paretic.

*Normal:* Sterno-cleido-mastoid, levator anguli scapulæ dexter, coraco-brachialis, flexors and extensors of forearm, thenar and hypothenar, adductors, flexors of leg, calf muscles, small muscles of foot.

*Hypertrophied:* Deltoid left > right, infraspinati muscles, both teretes.

No ataxia; patellar reflex present; no fibrillar contractions; diminished electrical excitability of muscles, but no trace of reaction of degeneration.

The other cases of Erb resembled this one in every respect, except that in at least one of his patients a later examination revealed an incipient hypertrophy of the calves.

Erb has taken the trouble to hunt through medical literature, and proves very conclusively that similar cases have been described by Aran, Duchenne, Friedreich, Ross, and others, either as cases of progressive muscular atrophy or of pseudo-hypertrophy. Erb thus summarizes the chief features of this juvenile form: It is a progressive wasting with weakness of certain groups of muscles, beginning either in childhood or early youth, involving, as a rule, the muscles of the shoulder girdle, the upper arm, the pelvic girdle, the thigh, and the back, the forearm and leg muscles remaining intact for a very long time. The atrophy may be associated with true or pseudo-hypertrophy of some muscles. Fibrillar contractions and reaction of degeneration are never present. No sensory or visceral disturbances. He adds that the wasting is distributed in a typical manner. The pectorals, trapezii, latissimi dorsi, the serrati, the rhomboids, as well as most of the upper arm muscles and supinators, are apt to be wasted, while the deltoids, supraspinati and infraspinati are either normal for a long time or hypertrophied. The preservation, furthermore, of the hand and forearm muscles gives a very striking clinical picture.

This disease Erb has chosen to call the juvenile form of progressive muscular atrophy—a very unfortunate term, since many of the cases exhibited no symptoms until the patient was well advanced in years, and others again began in early infancy. Erb's description has been accepted by Nothnagel, Schultze, Charcot, Eulenburg, Remak, Gowers, and many others.

Upon the exact distribution of the atrophy and hypertrophy, as demonstrated by his cases, Erb lays the very greatest stress. According to his view, well-preserved forearms, atrophied upper arms, hypertrophied deltoids, and wasted scapular muscles would be almost sufficient for a diagnosis of his special form. In the lower legs an almost analogous change occurs; the thighs and glutæi are well wasted, while the leg muscles and calves are well preserved.

The question arises whether Erb did not attach too much importance to this exact topographical distribution of muscular atrophy and hypertrophy. He alleges perfect identity between his juvenile form and pseudo-hypertrophy; On page 518 he says: "If this disease occurs in earliest childhood and is not associated with any considerable lipomatosis, the disease is what has been termed hereditary muscular atrophy. If it happened to be associated with early-developed and excessive lipomatosis, particularly in the lower extremities, it is synonymous with so-called pseudo-hypertrophy. . . . But all of these forms are identical with one another and merely represent different manifestations, a different march of the disease (*Verlaufsweisen*), and varying degrees of intensity of the same disease."

The relation to hereditary muscular atrophy I will discuss later on, but, as for its relationship to pseudo-hypertrophy, is it not curious that Erb's form is so far less frequent than the ordinary pseudo-hypertrophy? To be sure, this might be explained in a number of different ways. First, the accuracy of description has been at fault in many cases. Most authors have had the hypertrophy, and that only, in mind, and have not, with the exception of Friedreich and Gowers, paid much attention to the atrophy in the upper extremities; and, if detected, most authors have described the atrophy so poorly that a clinical picture such as Erb discovered can not be made out from their descriptions. This is true not only of older writers, but also of

those that have written since the appearance of Erb's paper. I have analyzed all recent cases of pseudo-hypertrophy for the purposes of clinical differentiation, but in the fewest cases have even the functional motor disturbances been stated with sufficient clearness to permit an inference as to the wasting of certain muscles, and definite statements with regard to the atrophy of this or that muscle are entirely wanting in the majority of cases. I wish incidentally to remark that every case of pseudo-hypertrophy should be examined with the greatest care regarding the condition of the upper extremities, and the smallest amount of atrophy or hypertrophy of any muscle should be distinctly noted. I have found a slight change in the faradaic response of symmetrical muscles a valuable hint in getting at an incipient wasting with corresponding paresis. Such a condition would, in at least one case, have escaped my notice if I had not examined both pectorals and had found that the one gave a much more lively response to the faradaic current than the other did.

And yet, allowing for all these possible errors, an examination of American cases, for instance, has convinced me that Erb's juvenile form is very much rarer in this country than typical pseudo-hypertrophy is. In England, Ormerod (46), Ross (47), and Dreschfeld (48) are the only ones who have described cases resembling Erb's form, and Ormerod's case contains several atypical features.* In this country none have to my knowledge been published as cases of Erb's juvenile form, though, as Seguin has pointed out, Mastin's cases of hereditary ataxia may be cases of Erb's form. I have not been able to get at the original paper of Mastin. (See Seguin's abstract in "Ann. of the Univers. Med. Sci.," i, 1888.)

During the past two years I have waited patiently for an example of Erb's form to turn up, without, however, meeting with a single one. This disease may be as much less frequent in America as the Landouzy and Déjérine type is less frequent in Germany than it is in France. Furthermore, the thought naturally occurs to one that Erb's special form may represent in many instances a late stage of pseudo-hypertrophy, and that the majority of cases of this disease dying at an early age never reach this stage. And yet we must not forget that Erb has described several cases of his typical form beginning at a very early age; and, on the other hand again, we well know that cases of typical pseudo-hypertrophy may be associated with atrophy in the upper extremity without this atrophy assuming Erb's characteristic distribution, as proved by my own case (No. II), cited above.

In view of such cases as this one and the reasoning followed above, it seems to me that the topographical distribution of the atrophy or hypertrophy can not be depended upon to prove the absolute identity between pseudo-hypertrophy and the juvenile form, and that for the present pseudo-hypertrophy deserves the rank of a special form. Their relationship seems to me, however, to rest upon several cardinal symptoms which they have in common:

First. Upon a progressive wasting beginning in early life, associated with hypertrophy at some time during the course of the disease.

Second. Upon the entire absence of fibrillar contractions.

Third. Upon the absence of the reaction of degeneration.

Fourth. Upon the absence of changes in the spinal cord, the autopsy in Lichtheim's case going to prove this last statement. My friend Dr. Gray ("New York Med. Journal," May 18, 1888) is therefore wrong in stating that no autopsy has ever been obtained in a case of Erb's type.

These cardinal symptoms several other forms of muscular atrophy have in common with the two forms just discussed.

*(To be concluded.)*

* In one of Ormerod's cases there was partial reaction of degeneration in the infraspinatus, the very muscle which Erb found remained healthy longest; but Ormerod's electrical examinations are not very satisfactory, for he alludes to the polar formula being altered with regard to the anode—a condition which is found in perfectly healthy muscles.

## WHITEHEAD'S OPERATION FOR HÆMORRHOIDS.

By CHARLES B. KELSEY, M.D.

This operation consists in amputating the entire "pile-bearing" region of mucous membrane. An incision is made around the anus at the junction of the skin with the mucous membrane; the latter, with the hæmorrhoidal tumors, is dissected upward till the upper limit of the hæmorrhoids is passed, and then amputated by a circular incision. The mucous membrane is then drawn down from above and stitched to the skin. Various modifications have been made in the technique—all intended to facilitate the performance of a naturally difficult, tedious, and bloody operation; but no essential change has been made in the guiding principle.

The operation is based by its inventor upon the following propositions, all of which appear to be at least open to discussion: He says: "During the first five years of my professional career I employed the ligature in the few cases of severe hæmorrhoids that came under my treatment. I operated according to the most approved method of that time, cutting through the skin and mucous membrane, and applying the ligature in the artificially produced pedicle. The number of cases operated upon did not, perhaps, exceed a dozen; nevertheless, they were sufficient to convince me that the ligature by no means produced a radical cure. One of my patients returned almost as bad as ever, and the reports I heard of another were anything but satisfactory."*

This statement is so obviously open to criticism that it seems almost heartless to comment upon it. A young man in early practice operates a dozen times, and two of his cases are failures! Older men operate thousands of times and never have a failure! Whatever else may be raised as an objection to the operation by ligature, this, I believe, is the first time it has ever been impeached on the ground that it was not radical. Men have objected to it because it caused pain, because it had been followed by untoward con-

* "Brit. Med. Jour.," Feb. 26, 1887.

sequences, and because they believed a radical cure could be obtained by other methods preferable, but never because it failed to cure.

The second proposition is better stated and less open to obvious criticism, but none the less, I believe, an error. The author says:

"After abandoning the ligature, I adopted the clamp and cautery. . . . My experience, which exceeded fifty cases, resulted eventually in the conviction that it was decidedly inferior to the ligature. The immediate risks I found to be greater and the failures by recurrence more numerous. Certainly it was more frequently followed by secondary hæmorrhage, and I am acquainted with cases where the bleeding which is reported to have taken place must have been little less alarming after the use of the clamp and cautery than that which occurred in those days when hæmorrhoids were unceremoniously excised, and no precautions whatever taken to arrest hæmorrhage. These cases were operated upon by surgeons of recognized repute in this special method of treating piles. I consider that a plan of treatment which fails to compass that special end for which it was designed, and, in addition, has other obvious disadvantages besides the further objection of being somewhat difficult to understand and complex in execution, loses its position in surgery and must give place to other operations which involve less risk, give better results, and do not require any special surgical training."

Looking at this sweeping condemnation a little more closely, we find that the author with an experience of fifty cases found "the immediate risks to be greater and the failures by recurrence more numerous" than by the ligature. What immediate risks *he* found he does not state, but he had heard of cases of secondary hæmorrhage in the practice of others. What percentage of failures he had he does not state, only that the results were worse than by the ligature. If by this is meant that while he failed in two out of a dozen cases with the ligature he failed in a still greater percentage with the clamp, his results were indeed bad. How are we to compare his results with those of Allingham and Smith, who number their operations by these two methods by the thousands and never report failures? Smith never speaks of any difficulty in understanding or practicing the clamp operation or of any particular "special surgical training" as necessary for its performance. Indeed, I know of nothing much simpler than to pinch up a pile with a clamp, and, after cutting off a part, burn the stump which remains.

The author does not sufficiently particularize what "immediate risks" he found to be so great. I never have heard of any immediate risk beyond the risk attending the administration of an anæsthetic. Nor does he tell what the additional "obvious disadvantages" were. I will not, however, argue the question. The author tried it and did not meet with success, while other men have practiced it for a life-time and found it perfectly satisfactory and eminently free from all the objections which he raises.

The third proposition is this:

"I do not consider that any surgeon has a thorough conception of hæmorrhoids until he has performed the operation of excision. He may have dissected the *cadaver* any number of times with the special object of studying the structure of hæmorrhoids, but it is only on the living subject that dissection will reveal their true nature. It is these vivisections that have confirmed my belief in the inefficiency of the ligature and clamp, and they have revealed also the cause of failure. In surgical literature we read of hæmorrhoids as distinct individual tumors, but the vivisections I have referred to demonstrate that the entire plexus of veins surrounding the immediate interior of the gut is at fault. Without doubt the hæmorrhoidal condition is marked by special protuberances at certain points in the circumference of the gut, and these I find have a pretty uniform position, owing, no doubt, to the regular disposition of the fibrous septa. But the essential fact remains that, though possibly concealed by these masses, there are minute venous radicles behind and between the main tumors."

I interrupt the author's remarks at this point merely to call attention to the fact that he has asserted something which nobody has ever denied—the veins of the rectum anastomose. He goes on to say that these small venous radicles

"are now as small as their larger neighbors once were; but let the latter be removed by clamp or ligature, and the apparently insignificant venules will dilate and take their place, the very removal, perhaps, affording room for growth, and, whilst taking off external pressure, leaving the tension within increased. It is on the removal of these rudimentary piles that the permanence of the cure and the future welfare of the patient depend."

The calling of a "minute venous radicle" a "rudimentary pile" is, I believe, an entirely new and original pathological idea—very analogous to the assertion that the normal arch of the aorta is a rudimentary aneurysm. The whole proposition seems to me rashly stated, unfounded in fact, incapable of proof, and unsupported by the clinical experience of the greatest authorities.

In the first place, the author may argue as he will about the causes of his failures in operating by the two methods he condemns—other men who have practiced the operations longer, and are therefore greater authorities, do not fail; and with them minute venous radicles do not develop into piles after they have operated. With them the removal of three or four sections of the mucous membrane with the clamp or the ligature, and the substitution of firm cicatrices for hæmorrhoidal tumors, does not lead to the development of new hæmorrhoids by "affording room for growth," "taking off external pressure," and "leaving the tension within increased."

The question is not one for pathological discussion, or in any sense for argument; it is one of clinical fact. Does the ligature operation or that with the clamp cure, or does it not? On the negative I do not consider Whitehead's experience of twelve cases with the ligature and fifty with the clamp as any offset to the figures of Allingham and Smith. Nor do I believe that those who are practicing Whitehead's operation to-day are doing so because they have found the others to be unreliable. Both the ligature and the clamp will cure, but it is possible to imagine something better than either in certain particulars—something that will cause less pain, less confinement to the bed, less sympathetic vesical disturbance, and less danger of surgical accident. This it was hoped carbolic-acid injections would

supply, and, this hope proving unfounded, it is natural to try the next thing—excision. If this gave a more permanent cure than the older methods—which it does not—and if it were attended by less subsequent pain and a more rapid recovery—which it is not—it would very soon take their place. Otherwise it will surely give room to the next properly attested method which is brought to the notice of the profession, for, if it has no great advantage in its results, it will inevitably be carried out of practice by the inherent difficulty of its performance.

The author speaks of the clamp operation as "being somewhat difficult to understand" and as requiring "special surgical training." Its performance by a practiced operator is a matter of seconds, not minutes. It is more rapidly done than the ligature, and both can be done in less than a minute—or could be before so much time was devoted to antiseptics. An operation such as these will not be abandoned for an elaborate dissection like Whitehead's until the latter has been proved to be in many ways preferable, and I venture to say that this has not yet been done. Whitehead himself does not give results in sufficient detail to enable us to judge on the points necessary for a decision. He says:

"I have now operated upon more than three hundred patients without a death, a single instance of secondary hæmorrhage, or one case where any complication, such as ulceration, abscess, stricture, or incontinence of fæces, has occurred."

This is certainly a good result, but nothing exceptional, and surely no better than can be shown by either the clamp or the ligature in other hands than his.

The points upon which the merits of the operation must rest are not that it cures and fails to kill, but the amount of pain and constitutional disturbance it causes. He says that "the patient sits up on the fourth day, and is in condition to resume work within a fortnight"; that he rarely finds much pain after the operation, and only occasionally uses the catheter. These are also good results, but not exceptional or confined to his method.

On these points Weir* has given some more accurate data from an experience of six cases.

As the cases are well and clearly reported, I take this opportunity for examining them, and through them the results of the method, rather closely.

Regarding the first, it is stated that much less pain was experienced after the operation than is often observed after the operation of ligation; that on the eighth day the line of suture was completely healed, and a week later the patient was discharged from the hospital perfectly well, with a clean and well-shaped anus, only two sutures remaining attached to the skin, and these causing no trouble.

In the second case the patient urinated voluntarily after the operation, the bowels moved without pain on the seventh day, and he was walking about on the twelfth. The stitches were removed, and he was discharged on the eighteenth day.

In the third case the patient suffered a good deal of pain after the operation, and the urine had to be drawn once; perhaps, however, both these facts may have been attributable to the increased stretching and manipulation of an examination for a possible stricture. The bowels moved painlessly on the seventh day; on the eighth the wound was found to have united primarily, with the exception of a small area; and on the thirteenth day he was up and about.

In the fourth case there was no reaction whatever after the operation, there being no pain and the urine being passed voluntarily. The patient was sitting up in bed on the third day, and about on the sixth. The majority of the sutures were removed on the tenth day.

In the fifth case these particulars are not given; but in the sixth the patient was catheterized during the first twenty-four hours, the subsequent progress was painless, the patient was able to sit up in bed squarely on the affected part at the end of the third day, and was dressed within a week.

Weir compares these results very favorably with those of the ligature method, and, I think, with perfect justice. The recovery is quicker, and the reaction, as shown by pain and difficulty in urination, is less. But with regard to the clamp and cautery method the same certainly is not true. It is now many months since I have used the catheter after an operation for hæmorrhoids—so many that I do not know if I possess such an instrument; and a case in which the patient is not able to report at my office in a week after the operation is an unusual exception. Indeed, I have difficulty in keeping my patients under observation after the first week. I had a letter from one this morning who disappeared on the seventh day, telling me he would come and see me if I wished, but that he was all right, and this is not an unusually good result.

For exactly the reasons that Weir prefers Whitehead's operation to the ligature I prefer the clamp to either. All three of them give the same satisfactory results in the end, but the clamp and the method by excision cure with less pain than the ligature, and the clamp operation is much simpler than that of excision, while possessing all its advantages.

* "Medical Record," July 14, 1888.

## HYSTERICAL BLINDNESS IN THE MALE,

*WITH A REPORT OF THREE CASES.**

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Hysteria is a term the etymology of which is misleading, and until quite recently the disease was considered to be confined to the female sex. Those who have maintained the Hippocratic opinion that the sole source of hysteria lies in the uterus have denied the existence of the disease in the male sex. Even physicians of the present day, Landouzy, Monneret, and others, share this incredulity. On the other hand, Rosenthal says: "We must admit that moral causes which may often lead to hysteria in the female may also produce the same disease in delicately constituted members of the male sex." Briquet, in one

* Read before the American Ophthalmological Society at its twenty-fourth annual meeting.

thousand cases of hysteria, found fifty in males, or one male in twenty cases. Other authors think that one in fifteen is more nearly the average. Between the years 1875 and 1885 no fewer than five theses on hysteria in the male appeared in France. In the male the symptoms last longer, and are more apt to occur in weak and effeminate, yet may occur in strong persons. Lasègue has been led to apply the term peripheral hysteria from the fact that any form of irritation in a patient predisposed to hysteria may act as an exciting cause.

For instance, a foreign body on the cornea may be sufficient to set up the full train of nervous symptoms. Of course, simulated one-sided blindness is well known in countries where every healthy man is forced to do military service, and many wish to evade it by this subterfuge.

Harlan has reported a case of a boy eleven years old, and Galezowski also.

Case I.—J. C. B., farmer, male, aged twenty-five, married, no children, living at Long Ridge, Conn. Father and mother healthy. The third of five children. Has always been in good health until two years since, when he began to show nervous symptoms, being disposed to frequent quiet places, and be more or less morose. Was very fond of reading, especially at night. Did not smoke or drink, and had no vices.

*June, 1886.*—Complained of failing vision in L. E., and after two weeks stated that he could not see even light with it. Being naturally alarmed, he sought advice.

*June 16th.*—When first seen by the reporter both eyes were seen to look normal in external appearance, with pupils equal in size and responsive to light.

L. E., V. = 0 (according to his statement).

R. E., V. = $\frac{20}{20}$ Em.

Ophthalmoscope showed normal fundus, except in the right a slight patch of opaque nerve-fiber near the papilla. Testing with the prism and the candle gave vertical diplopia, and, as there was no error in the R. E., convinced us at once of the fact that vision was present in the L. E. Pressure on one eyeball to change the relation of the optic axes was made, and again diplopia produced, showing absolutely that vision was present and that the blindness was mental. The patient was informed that a treatment of a few days by electricity would accomplish a complete cure. A strong faradaic current was applied, one pole to the nape of the neck and the other over the eyelids closed, and the full force applied quickly and alternately so that the shock would be more felt. The treatment was a great surprise to him, and he jumped from the chair exclaiming that already there was an improvement. This strong current was again applied the same day, only in the reverse order, a very mild current at first, and then, when not expecting it, the strongest. The effect, as before, was startling and marked, and after this application, L. E., V. = $\frac{20}{50}$, much to his satisfaction.

The next day an application of the galvanic current was made to the cervical sympathetic, after which the patient declared vision perfectly restored. By test it was V. = $\frac{20}{xx}$ Em., and reading perfect. At no time was there achromatopsia. Patient returned home at the end of ten days without further treatment, and has never since had any difficulty, yet surrounded by the same influences.

Case II.—G. F., male, aged twenty-two, single, resident of West Woodstock, Vt., student and farmer, a large, well-formed, and fine-looking patient. On the paternal side insanity is present and one living uncle is in an asylum, although his father and mother are well and of correct nervous organization. First seen by me in May, 1888, when the following history was obtained:

Eighteen months before, having some trouble in reading, he sought the advice of a physician, thinking that he might need glasses. Atropine was used for two days and glasses were prescribed. The atropine so annoyed him that he became very excited over the mydriatic effect and consequent blurring of near objects—so much so that he thought he would become blind. From this time on he put on smoked glasses, and finally bandages, and then remained in a darkened room, going out by being led in the evening for a short walk. He would not open the lids, and declared he was blind. For ten months he kept this darkened room, and even then with shades and other coverings, so great was his fear that light would enter the eyes, it being a part of his fear that should it fall on the eye it would seriously affect the optic nerve.

At no time was there inflammation of the eye or eyelids, nor any pain. Nothing except the mental photophobia, but none actually (as I have learned from his attending physician).

When seen by me, May 15, 1888, he looked pale from the long stay in the darkened chamber, but otherwise healthy. He had what I have always noticed in hysteria—a great fondness for minute details of his condition, and spoke with that characteristic precision noticed in such nervous conditions. He was brought a distance of forty miles to see me, and had a picturesque appearance with his colored glasses, and these in turn covered by a veil and shawl.

On examination, the eyelids were found shut, but not by spasm; they could be opened, but not by the patient. The corneæ were clear, conjunctivæ slightly red, pupils responsive to light. V. = 0. The appearance of the external eye was normal. Ophthalmoscopic examination under ether revealed normal fundus in each eye.

The general appearance led to the diagnosis of hysterical blindness, and a prognosis was given that in one week he would be returned home well. Canthoplasty under ether was advised and accepted.

*May 17th.*—Profound etherization was produced and a liberal canthoplasty performed, the lids being carefully inspected at the same time.

On recovering from the etherization, the patient opened the eyelids and looked at the surroundings, and, by asking questions, showed that he saw clearly.

When fully out of ether, he was confidently told that the seat of the disease had been discovered and removed, and that he would be well in a few days.

In brief, the case progressed most rapidly, and the second day he was walking about the grounds of the hospital without colored glasses, and returned home in a week from the operation alone, some forty miles distant. A letter received July 12th says he works daily about the farm and can read at night without fatigue. He had no sexual vices.

Case III.—H. de B. W., male, aged fifteen, second son of nervous parents, living in the country in a farming district. Attends school and is fond of study; has a delicate appearance. Regular in his habits, special pains having been made by the reporter to ascertain if there was any sexual perversion or excitement to cause the ocular disturbance. No smoking or use of other toxic agents. Had been disappointed in not securing a prize at school, and from that time the ocular symptoms manifested themselves gradually. He showed no aversion to attending school, but lacked the enthusiasm formerly shown. One month after the disappointment he became blind in the R. E., stating that it had gradually failed until, when seen, May 7, 1885, R. E., V. = 0 (as stated by patient). L. E., V. = $\frac{20}{20}$, + 1 D.

Normal appearance of eyes and pupils.

Ophthalmoscopic picture perfect, and no limitation of the visual or color field in L. E. No loss of colors in the R. E. had been noticed. Prisms placed in position over the eyes produced diplopia, and the displacing of the optic axes by the finger produced the same result. The test with colored glasses and the test-type also proved that binocular vision was present.

Treatment suggested was the administration of ether; this was accepted, and on May 10th he was put under the anæsthetic, and, on recovering from the same, the L. E. being bandaged, he opened the R. E. and asked various questions showing the vision to be perfect; he also could read.

Being assured that the seat of the difficulty had been discovered, he manifested great pleasure, and, after treatment of hygienic character, electricity, and cold douching of the eyes, he returned home, May 28th, with V. $= \frac{20}{20}$, each eye, and no complaint of difficulty in using either.

He returned to school, and has never since had a similar attack.

In each of the three cases reported some shock was produced in the treatment of the case; in the first by harsh electricity, in the second by etherization and canthoplasty, and the last by the ether alone.

In all, the assurance of the discovery of the cause, in my opinion, acted as an important factor in the cure.

It is a mistake to tell these patients that they have nothing the matter and that it is simply hysteria, for they all are anxious to be cured, and do the best in their power to overcome the difficulty, but have not the requisite force. Any operation or any shock is sufficient to cure this class of cases.

My object in presenting these subjects to the attention of the society is to make more prominent the fact that hysteria is prevalent in the male, and that we should be on the alert for its detection.

The idea of using ether as a means of cure was suggested by the experience of Dr. J. H. Hutchinson, of Philadelphia, in 1864, who cured a case of hysterical deaf-mutism by the repeated use of this drug.

128 Madison Avenue.

## OBSERVATIONS OF THE EFFECT OF RAPID CHANGES OF ALTITUDE ON A CASE OF INTERSTITIAL NEPHRITIS IN AN ADVANCED STAGE.*

By GEORGE CHISMORE, M. D.,
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It is seldom that an opportunity is afforded to note the effect upon a case of interstitial nephritis, in an advanced stage, of a journey from San Francisco to New York over the Central and Union Pacific Railroads, involving, as it does, such rapid and extreme changes in altitude.

When the patient, whose case is here reported, and his friends sought my professional sanction to the proposed journey, the first question occurring to my mind was, What will be the effect of variations of atmospheric pressure, amounting to many inches daily, upon a man already suffering from dyspnœa of nephritic origin? The other exigencies of travel could be, in a great measure, guarded against; this one had to be endured, and that, too, by one whose power of adjustment was inadequate to the requirements of a fixed locality. Not finding the slightest allusion to this point in the text-books or medical journals within reach, and lacking personal experience to guide me, approval was withheld. The patient then declared that, as he had been told *that his disease was fatal, go or stay*, he would assume the entire responsibility, preferring to die trying to do that which he wished, to waiting for death to come to him. Thenceforth he hastened his preparations with all the energy that had ever characterized him in his successful career as a business man, and on the appointed day was ready to start.

Mr. D. T. M., aged fifty-five, American, merchant, married, called at my office about the middle of March, 1885, to have his heart examined, as he had lately been troubled with "palpitation accompanied with shortness of breath when going up stairs or on making any unusual exertion." He had first noticed these symptoms just after his arrival in this city from New York a few weeks before.

He had been in the habit of consulting me from time to time during the previous ten years, and, although frequently making voyages to Europe and back, it was seldom that six months passed without my seeing him professionally. During this period he had never been seriously ill, but was always inclined to be nervous about himself. Thus it happened that I had examined his heart on several occasions, never finding anything beyond an irritable condition, the pulse rising from 70 up to 100 or more under nervous excitement. This was attributed to his life-long habit of drinking large quantities of very strong tea daily.

Although his appearance did not indicate a serious change, I found marked hypertrophy of the heart, without valvular lesion; the apex-beat was an inch outside the mammillary line.

It had been his custom to have his urine examined once or twice yearly, but he had omitted to do so for the past two years, as it always had been found perfectly normal. I at once asked for another examination, but he did not send me a specimen until the 2d of April. There were voided during the twenty-four hours 64 ounces of pale, limpid urine, odorless, acid; specific gravity, 1·010; albumin by bulk, ¼. It contained 1·3 per cent. of urea, amounting to 384 grains in all, and under the microscope showed large and small granular casts in abundance. Thereafter the urine was carefully observed, the result of nineteen examinations between the 5th of April and the 19th of May being as follows:

Quantity in twenty-four hours (maximum), 65 ounces; specific gravity, 1·012; urea, 406 grains. Quantity in twenty-four hours (minimum), 44 ounces; specific gravity, 1·009; urea, 120 grains. Quantity in twenty-four hours (average), 53·43 ounces; specific gravity, 1·009145; urea, 247 grains. Albumin varying from ¼ to $\frac{1}{10}$ bulk.

The progress of the disease was unusually rapid, he lost flesh and strength, and, although without pain or fever, suffered more and more from "shortness of breath." This was perhaps because he was actively engaged, not only carrying on one great mercantile concern, but also building a costly structure to contain another, in which he intended to invest a large sum. The contemplation of this last venture, which would "require five years of personal supervision to render a success," led him to demand "perfect candor" as to his "probabilities of life," and

* Read before the American Association of Genito-urinary Surgeons at its second annual meeting.

on the 17th of April an unfavorable prognosis was given. This he accepted without a murmur, saying: "God's will be done," and at once set himself about settling his affairs.

He was a devout Catholic, and firmly believed that, could he live to reach the shrine of Our Lady of Lourdes, he would be made whole; hence his desire to start while he yet had strength for the journey. On the 24th of May, 1885, he set out. At that time he was still able to walk a little and to be up most of the day. He had fallen from 160 to 130 pounds in weight, was very weak, troubled during the day and tortured at night by dyspnœa, able to take food freely, although subject at intervals to fits of explosive vomiting, œdema of the feet and ankles being present to a slight extent, the urine diminishing in quantity from day to day.

A special car, supplied with everything that wealth could command to make the journey easy and comfortable, was provided. He occupied a large state-room containing a roomy and comfortable bed; registers furnished warmth when needed; an excellent cook attended to his food—in short, it is difficult to imagine in what way his transportation could have been bettered. We left San Francisco at 3 P. M., with the barometer at 30·1°, thermometer 78°. For the first five hours the route was nearly level, and the patient bore the travel well. He was in good spirits; ate a fair dinner with relish; sat up all the time; had a good movement of the bowels; and was unusually free from distress. We then began to climb the foot-hills of the Sierra Nevada Mountains, and by 10.20 P. M. had attained an elevation of 1,640 feet, bar. 28·25°, ther. 72°. Here, after a stool, he began to "feel strange," and complained of stiffness in the legs; the feet and ankles began to swell, the left the larger, the pulse ran up to 120, and the respiration became shallow and hurried.

At 1.37 A. M. we were at Blue Cañon, elevation 4,695 feet, bar. 25·3°, ther. 62°. He had slept a good part of the time, but on awakening complained of headache, thirst, and "oppression," less of the last, however, than at the same hour of the preceding night. A short delay here made him very nervous and impatient, and, indeed, he seemed to feel better at all times when the train was in motion.

From this time until 3.40 A. M., when we arrived at the Summit—7,017 feet above the level of the sea, bar. 23·15°, ther. 64°—he was very uneasy, complaining of "oppression all over," the respiration irregular, pulse varying from 108 to 120. He insisted on sitting up, but gaining no relief, went back to bed again. An hour thereafter we had dropped 1,200 feet, and by 7.40 A. M. 1,500 feet more, bar. 25·5°, ther. 70°. During this period he was seized with sharp pains radiating from the heart, his nose bled, there was great tenderness on pressure over the pericardium, and it was evident that an attack of pericarditis had been lighted up. Owing to his extreme restlessness and impatience, no record of pulse, temperature, and respiration was attempted.

From this time to the end of the first twenty-four hours' journey we ran over a table-land ranging in altitude between 3,918 and 4,330 feet above the sea-level, the barometer remaining between 25·2° and 25·8°. He suffered much from pain in the cardiac region; an endocardial murmur made its appearance, attended with fits of cyanosis; the urine during the last eighteen hours had amounted to only eight ounces, and it was pale and of a specific gravity of 1·006. The progress of the case up to the time of our leaving had been singularly free from febrile complications, but it was now clearly apparent—although, for reasons given, the temperatures were not taken—that acute inflammatory action had been added to the patient's troubles. He lost hope, and became restless, fretful, and despondent. From 3 to 10 P. M. of the 25th we passed over an easy up-grade, climbing from 4,232 feet to 5,629 feet in altitude, barometer ranging between 24·8° and 25·5°. During this time the patient mended a little.

We now ascended rapidly 556 feet to Pequop, and then, almost as quickly, dropped nearly 2,000 feet to Kelton, elevation 4,223 feet, bar. 25·5°. This was an anxious period; he was tormented by thirst, and each act of swallowing was followed by cough and spasm of the glottis; there was much cyanosis; the urine was suppressed; the pulse was rapid and weak. Pilocarpine, given hypodermically, tided him through the danger, relief coming with the perspiration. Minor variations in the grade affected him greatly; each rise made him worse, each drop gave him a little ease. The last three hours before reaching Ogden the road is nearly level, having only one sharp rise and fall of 600 feet, during which time the patient felt better, the bowels moved, and he passed a small quantity of urine.

By 3 P. M., the end of the second twenty-four hours, we had climbed steadily from Ogden (4,294 feet, bar. 25·6°) to an elevation of 7,384 feet, bar. 22·8°, then gradually descended to 6,268 feet; the legs began to swell rapidly, and, coincident with this effusion, the cardiac pain disappeared, the breathing improved, and he became more hopeful. Then there was some cyanosis, and he passed no urine. From Aspen to Laramie the road is moderately level, the greatest variation in altitude being 1,056

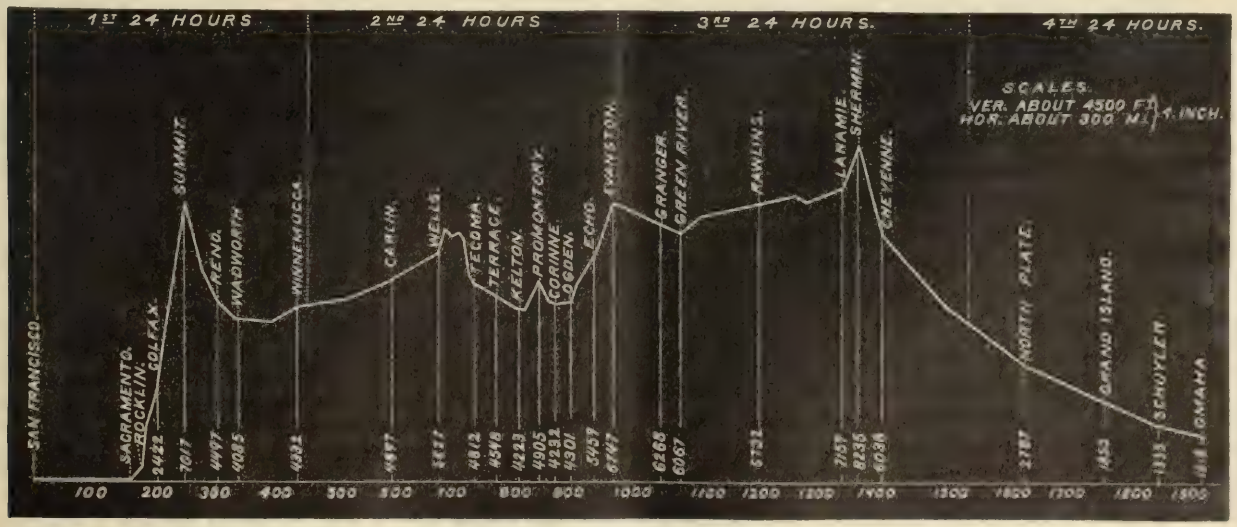



Diagram showing the principal variations in altitude between San Francisco and Omaha, over the Central and Union Pacific Railroads.

feet, and the barometer ranging between 23·55" and 22·9". During this part of the journey there was nothing worthy of note; he slept some, took a little food, and was fairly comfortable. After leaving Laramie he became very apprehensive, dreading the final climb, saying: "I wish we were over the mountain; something always happens when we go up." Dyspnœa, attended with cyanosis, coming on, pilocarpine was given subcutaneously.

Perspiration was again followed by relief. When we reached Sherman—8,235 feet, bar. 22·12", ther. 66°—he was quite comfortable; the bowels moved, and he passed a little water. From this point the descent, at first rapid and then gradual, is continuous. By 3 P. M. (the end of the third day's journey) we were at Big Springs, 3,195 feet above the sea, with the barometer at 26·7°, and the patient was very hopeful. "No more mountain to cross," but his stomach would not retain food, the urine was nearly suppressed, and the heart's action was very irregular.

Early in the fourth day the swelling in the feet and legs subsided, but rapid effusion into the abdomen set in, which continued throughout the day, reaching its maximum about the time we reached Omaha, at 7.30 the next morning. From there until our arrival in New York there were no marked changes to record; although he was a little better in some respects—the ascites almost disappeared, and he was in better spirits—the urine continued very scanty; the stomach was irritable, retaining but little food; and there was a gradual failing of the vital powers.

We reached New York at 5 P. M., May 30th, six days from San Francisco. He was able to walk from the car to the carriage; but, shortly after reaching his hotel, he was seized with a slight chill, followed by a sharp attack of pleurisy in the right side. Drs. Austin Flint, Sr. and Jr., and Dr. F. N. Otis met me in consultation, and the measures adopted seemed in a manner to relieve the pleurisy, but the renal condition went on from bad to worse, ending in complete suppression; the perspiration smelled strongly of urea, and crystals of the same glistened in the beard and hair. All attempts at nourishment failed, and in the evening of June 3d, after two slight convulsions, death closed the scene.

Assisted by Dr. F. N. Otis, I made an autopsy, and found a recent pericarditis in the stage of repair; a recent endocarditis also in the stage of repair; heart hypertrophied, but not dilated; from base to apex, five inches and a half; circumference, eleven inches and five eighths; wall of left ventricle, an inch and an eighth thick; aortic valves slightly roughened; mitral valves insufficient; extensive recent pleuritic adhesions of the right pleura; base of right lung partly consolidated; kidneys small, soft, covered with fat; capsule firmly adherent. Long circumference: left, seven inches and three quarters; right, seven inches and a half. Cut surfaces: cortex thin, pyramids almost obliterated.

This case is presented to you with the hope that it may lead to further observations of the effect of changes of altitude on diffuse nephritis, both in its incipient and later stages.

A number of papers have appeared within the last two years in the medical press on altitude in cardiac cases, more with reference to a prolonged sojourn in some high locality than to rapid changes of atmospheric pressure. The conclusions of the writers differ widely, some finding their patients benefited, others the reverse. In the light of my limited experience, I should strongly urge persons suffering from renal diseases of the diffuse type, with heart complications, to avoid all journeys involving great changes in elevation.

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## THE TREATMENT OF ABSCESS OF THE LUNG.

Surgery is making such rapid strides nowadays that no domain of medicine is exempt from the surgeon's knife. Some surgeons are such optimists that they would not hesitate to cut down on a pulmonary tuberculous cavity and treat it as an open wound. Whether the gain from such a procedure is tantamount to the risks and trouble it would entail is certainly, as yet, an open question. But it is different with an encapsulated or circumscribed pulmonary abscess following pneumonia. Here presumably the surrounding lung tissue is healthy, and the only barrier to a restoration to health is the presence of the purulent collection. It is in such contingencies that surgery finds its proper sphere, and is attended with the most brilliant results.

Two recent articles on this subject—one by Dr. Spillmann and Dr. Haushalter in the "Revue de médecine," and the other by Quincke in the "Berliner klinische Wochenschrift"—deserve attention. The former authors have collected ten cases (including one of their own) in all but one of which pneumonotomy was done. Seven of the patients were cured in a time varying from four to eight weeks after the operation, and a fistulous opening persisted in two cases only. Of the two other patients operated upon, one was benefited by the operation but died suddenly four weeks afterward; the other died in twelve days in a state of collapse. In the authors' case, after withdrawing half a drachm of pus on three successive days with an exploratory needle, on the third day they injected into the abscess cavity, without withdrawing the needle, about half a drachm of glycerin and iodoform. This set up violent cough; the expectoration almost immediately became streaked with blood and had a strong odor of iodoform. The patient died on the following day in a state of collapse.

Quincke reports two very interesting cases occurring in his own practice. They both followed attacks of pneumonia. The treatment adopted in the first case was as follows: An incision was made in one of the intercostal spaces down to the intercostal muscles. The wound thus made was packed with chloride-of-zinc paste, which was renewed every two days. At the end of twenty-five days a portion of the neighboring two ribs was resected and the wound treated in the same way with zinc paste. In about twelve days a funnel-shaped cavity was produced by the escharotic. Then for a week this cavity was cauterized every two days to the depth of an inch and a half with Paquelin's cautery. At the end of this period the abscess cavity was opened and exit given to the pus. No washings of the cavity were carried out. From the moment the pus was given exit, improvement began and progressed steadily, so that

in a few months the patient was restored to his usual health. In the second case the same course was pursued, but, although all the physical and constitutional signs of an abscess obtained, pus was not reached. The patient, however, began to improve after the resection of a rib and the production of a funnel-shaped cavity with the zinc paste. He made a good recovery, which the author attributes to the treatment. Quincke lays great stress upon the necessity of producing inflammatory adhesion between the two layers of the pleura before making an attempt to open the pulmonary abscess. Whether this desideratum may be obtained by other means more rapidly than with zinc paste, which takes from four to five weeks, he thinks will have to be decided by future experiments.

The author speaks hopefully of this form of treatment in cases of pulmonary tubercular abscesses. Of course the cases will require to be selected. They would need to occur in persons who otherwise were enjoying fair health, in whom the abscess cavity had formed slowly, and in whom the surrounding lung tissue was comparatively healthy. Abscesses situated at the apex would be most unfavorable, from the difficulty of obtaining retraction of the chest wall at this point, and from the small amount of surrounding lung tissue.

We think that the author overestimates the dangers of cutting through the non-adherent pleura in order to reach a pulmonary abscess. No one will deny that an adhesion of the two layers of the pleura is very much to be desired, but it seems to us that to wait for the production of such an adhesion four or five weeks in a case attended with hectic symptoms and expectoration of fœtid purulent sputa is bad practice and diminishes the chances of restoring the patient to health. The features of a case that has recently been related to us are instructive in this connection. It occurred in the practice of one of the most eminent consultants in New York. A diagnosis of empyema was made and resection of a rib was done at a site where a previous puncture with a needle had shown the presence of pus. On cutting through the pleura, instead of pus, blood escaped. The wound was filled with antiseptic gauze. The needle was passed at another point and pus withdrawn; the rib was resected, and the same thing occurred. A third time the needle was passed and showed pus; a third rib was resected, and this time the abscess within the pulmonary tissue was reached. It was evacuated and the patient made a good recovery. On the first and second occasions the needle had penetrated the pulmonary tissue before reaching the purulent collection.

## MEDICAL SUPERSTITIONS.

A certain M. Challamel has written a book entitled "La France à vol d'oiseau au moyen age," in which, as we learn from some extracts given in the "Union médicale," he tells of a number of medical superstitions current in France in the middle ages, most of which are said to prevail at the present time also. In those days the French seem to have had unlimited faith in preservatives against diseases and in infallible means of cure, and it may be added that they were not alone in their trustfulness. The following are some of the superstitious practices mentioned:

To cure fever, they abstained from both flesh and eggs on Easter and on other high festivals; they caused a cabbage stolen for the purpose from a neighboring garden to be dried on a pot-hook; they wore one of a dead man's bones as an amulet; they inclosed a green frog in a bag, and hung it to the sick person's neck; they ate the first Easter daisy that they found; and they received the benediction in three different parishes on the same Sunday. While telling their beads, they searched for a mullein-stalk and threw it to the winds; they passed through the cleft of a tree; they caused a horse to drink a bucketful of water, and then drank after him; they crossed a procession between the cross and the banner; they drank holy water on Easter Eve or on the eve of Pentecost; they twined the hems of a shroud about their arms or neck; and they drank three times of a mixture of water from three wells in a new pot. The people of Provence had their fisheries blest on a certain saint's day. On Assumption Day the people of Périgord went before sunrise, walking backward, to gather nine sprigs of centaury, which they fastened to a feverish person's neck, after which they gave him an infusion of the herb to drink. A toad choked to death on the eve of St. John's Day had the same virtue. It was common for a feverish patient to rise early in the morning and walk backward in a meadow, plucking a handful of herbs without turning or looking at them, then throw them behind him and keep on in his course without turning back; the result of this was that the fever attacked the devil. Another practice was for the fevered person to drop a piece of money in a public place, with some mummery; whoever picked up the coin took the fever. The waters of several fountains cured fevers, and in particular the fountain of Krignac triumphed over tertians.

To overcome fear, one had only to stick pins into a dead man's shoe, carry a wolf's tooth or eye about, or ride a bear. To banish rheumatism, the sick person caused a miller or his wife to strike three blows with the hammer, saying: *In nomine Patris*, etc. Bathing the painful parts with the water of the fountain of Moniès caused the pain to cease. In Landes, rheumatics and paralytics were cured of their ills by getting into certain openings, called *étrines*, in the pillars of a church. In Brittany a child was protected against all diseases by having its shirt put on damp. The people of Périgord carefully preserved the ashes and embers of the Yule-log, which cured the maladies of both man and beast. In some districts the butter made in May was kept as a vulnerary. Among the peasants of the Montagne-Noire a white-handled knife was an infallible remedy for colic. Epilepsy was cured by attaching a crucifix nail to the patient's arm or by causing him to wear a silver ring or a medal bearing the names Gaspar, Melchior, and Balthazar. For warts there was a very simple specific—rubbing them with a wad of hair or of broom, and wrapping chick-peas or pebbles in a rag, which the person was to throw behind him on a road. Whoever had toothache touched the aching tooth with a dead person's tooth, drove a nail into a

wall, or asked alms three times in the name of St. Lawrence, and the pain disappeared; sometimes the sound of church bells had the same effect.

The remedy for bleeding from the nose was to allow the blood to trickle on to straw fashioned into a cross, or to apply a tubular key to the back. By running up and down in a church pleurisy was escaped. Sore throat was prevented by fastening a twig of the plum-tree in the fire-place or by touching the pit of the stomach with a plow-share; for the same purpose, it was the custom in Provence to bless bread, salt, and *raisiné* (a preserve made of grapes and pears) on the third day of February, which was a saint's day. By rolling entirely naked in a field of oats, plucking a handful of oat-heads and leaving them to dry on a hedge, one was made proof against the itch. Spitting into a live frog's mouth was a cure for cough. The sweet biscuits of Saint-Denis were a remedy for rabies. Whoever plunged his hands into a dung-heap on the first day of May had nothing to fear from chilblains. Whoever jumped into the queen's fountain, on the mountain of Candiel, was cured of leprosy. Boils were exorcised by blowing into the patient's mouth, fasting, three times in succession daily for nine days. Diseases of the ear were removed by touching the ear with a skeleton's hand. Headache was subdued by binding the temples with a hangman's rope.

These are only a few of the superstitious practices of a bygone time in France. Many of them still survive there and in other countries, humiliating signs of the credulity of man. But they are little if at all more ridiculous than the remedial measures formerly in vogue with the medical profession itself, as may be gathered from almost any old book on pharmacology.

## *MINOR PARAGRAPHS.*

### A PROPOSED NEW SOURCE OF WATER SUPPLY FOR NEW YORK.

On the 30th of November Mr. John R. Bartlett, speaking for himself and for his corporate associates, submitted to the Commissioners of the Sinking Fund a formal proposition to furnish an additional supply of water to the city of New York. Some weeks ago, as our readers are aware, Mr. Bartlett presented an outline of his plan at a meeting of the Medical Society of the County of New York, an eminently proper procedure, since the question is not alone one of protecting the "dry-goods district," but also relates to public hygiene so closely as to make the proposition a fit one for the medical profession to consider. It is understood that the territory from which the company intends to collect its water lies partly in the State of New York west of the Hudson River and partly in the adjacent portion of New Jersey, and that the plan is to build an aqueduct to Jersey City, and thence to convey the water to the lower part of New York through a tunnel under the Hudson River. So far as our information goes, no fault can be found with the salubrity of the proposed source of supply, and a company under such competent management as Mr. Bartlett's may well be trusted to surmount whatever difficulties may be supposed to attach to the work of constructing the tunnel. This enterprise is not to be looked upon as in any way a rival to the new works now in course of construction in Westchester County, but as supplementary to the Croton source of supply. We think the city would find it highly advantageous to arrange with the Bartlett company, and we see no reasonable objection to such a course.

### THE MENTAL CHARACTERISTICS OF THE SEXES.

Dr. J. T. Searcy, of Tuskaloosa, Alabama, the president of the Board of Trustees of the Alabama Insane Asylum, has written a highly philosophical and most instructive article on this subject, which appears in the October number of the "Alienist and Neurologist." By means of quotations from excellent observers and of expressions of his own, the author gives a strikingly faithful portrayal of the differences between men and women, especially those of an intellectual and those of an emotional sort. The reason for their divergence—and at the same time for the greater differences between individual men than between individual women—lies in the fact that woman is the gestative animal, and, being hampered by the necessities of gestation, suckling, and the rearing of children, has fewer opportunities than man of coming in contact with surroundings that are calculated from their novelty to give rise to new modes of thought. The life of a good woman is in conformity to a pattern handed down to her or conventionalized by others of her kind; fidelity is her virtue. A man's life is largely made by himself, accordingly as he reacts to varying external circumstances; his virtue consists in wisely shaping his course amid unforeseen agencies. Each is best fitted for his or her sphere, and the differences between them are not to be accounted for by woman's subjection to man.

### A POINT IN EXPERIMENTS WITH HYPNOTICS.

In an article published in the "Berliner klinische Wochenschrift," Dr. O. Rosenbach offers the self-evident proposition that, in testing hypnotics, the experimenter should eliminate the psychical source of error incident to the patient's knowledge that he is taking a drug expected to produce sleep. Rosenbach's method of procedure, as given in a summary of his article in the "Centralblatt für klinische Medicin," is either to give the dose without letting the patient know what action is expected of it, and indeed at different times of the day, or else to experiment only on "reliable" persons, alternately giving the hypnotic and some inert substance. Manifestly the plan first mentioned is on all accounts the better one of the two.

### ANATOMICAL INJECTION OF THE VEINS.

According to the "Revue de chirurgie," M. Lejars lately presented before the *Académie de médecine* two very elegant anatomical preparations that he had made by a new and highly ingenious process of injecting the veins. After having injected the arteries, capillaries, and veins by Bouveret's method, using an ordinary injection colored with alkanet-root, he throws a second injection into the arteries. This second injection is colored with an insoluble substance in suspension, incapable of passing the capillaries. Thus different colors are given to the arteries and the veins. The entire preparation should be kept in a warm bath during the process, in order that the injection may not become solidified in its passage through the capillaries.

### SOME OF THE PROPERTIES OF MILK.

At a recent meeting of the *Académie des sciences*, a report of which we find in the "Gazette hebdomadaire de médecine et de chirurgie," M. Béchamp considered the following questions: Are the globules of milk free fatty bodies similar to or identical with the globules of an emulsified fat, or are they naturally pro-

vided with an envelope that prevents their agglomeration? On either supposition, does the liquid part contain only one albuminoid, casein, or are different albuminoids contained in different milks? Does milk coagulate and ferment spontaneously—*i. e.*, naturally—or is the phenomenon accidental and dependent on the access of foreign ferments? To the first of these questions M. Béchamp answered that milk was not an emulsion; that the milk-globules were not bare globules of fat, but true free adipose cells. To the second question he replied that cow's milk contained, besides casein, other albuminoid bodies, not free, but dissolved in combination with alkalies; human milk, properly speaking, was not a casein milk, but contained zymase peculiar to itself. As to the third question, he had long since shown that milk coagulated spontaneously without the intervention of vibrios properly so called.

## THE ACCIDENTAL INTRAVENOUS INJECTION OF MORPHINE.

The accident of puncturing a vein and throwing an injection intended to be subcutaneous directly into the circulation is one that has occurred at times and has sometimes given rise to grave results. This was true in a case where a third of a grain of tartrate of morphine was used, reported by Mr. J. Craig Balfour in the "Lancet" for November 10th. The important point in Mr. Balfour's communication lies in a test which he gives of the occurrence of penetration of a vein—one that we do not remember to have seen stated before. It consists in the instantaneous supervention of a prickling sensation in all parts of the patient's surface. Bearing this in mind, one may avoid giving a dangerous dose by injecting very slowly and withdrawing the needle on the appearance of the sensation mentioned.

## SYMPATHETIC VOMITING.

A writer in the "Union médicale" comments upon the credulity of a gentleman who lately reported at a meeting of the Obstetrical Society of Philadelphia a case in which a husband suffered with morning sickness on the occurrence of pregnancy in his wife. The writer in question even doubts if such a communication was really made to the society, and adds that, if it was, it behooves those who record everything sent from abroad to reflect. To this we have to add that it behooves the French writer to make himself somewhat more familiar with the literature of the subject, in which he will find ample evidence that sympathetic vomiting is a recognized occurrence, however inexplicable it may seem.

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 4, 1888:

| DISEASES. | Week ending Nov. 27 | | Week ending Dec. 4. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 15 | 5 | 18 | 4 |
| Scarlet fever | 148 | 28 | 171 | 28 |
| Cerebro-spinal meningitis | 2 | 0 | 1 | 2 |
| Measles | 263 | 8 | 295 | 13 |
| Diphtheria | 121 | 41 | 111 | 26 |
| Small-pox | 1 | 0 | 1 | 0 |

**The New York Academy of Medicine.**—At the next meeting of the Section in Neurology, on Friday evening, the 14th inst., Dr. J. A. Weeks will report "A Rare Case of Hemianopsia with Associated Symptoms," Dr. Frederick Peterson will read "Extracts from the Autobiography of a Paranoiac, edited with a Commentary," and Dr. E. D. Fisher will show some water color sketches, etc., made by a paranoiac.

At the next meeting of the Section in Ophthalmology and Otology, on Monday evening, the 17th inst., Dr. Neil J. Hepburn will present "Notes on Muscular Asthenopia."

**The University or Pennsylvania.**—It is announced that Dr. D. Hayes Agnew has resigned from the chair of surgery, and that he is to be succeeded by Dr. John Ashhurst, Jr.

**The Medico-legal Society.**—At the annual meeting, to be held at the Fifth Avenue Hotel on Wednesday evening, the 12th inst., Mr. H. Guy Carleton will read a paper on "Death by Electricity in Capital Cases," Mr. John H. Wigmore will read a paper (a prize essay) on "Circumstantial Evidence in Poisoning Trials," and a committee report on "The Best Method of Executing the Law Punishing Criminals in Capital Cases by Electricity" will come up for discussion. After the meeting the annual banquet will be given at the Palette Club.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from November 25 to December 1, 1888:*

McClellan, Ely, Major and Surgeon, having reported to the Division Commander, on the 23d instant, as required in Par. 15, S. O. No. 261, current series, A. G. O., is assigned to duty as Attending Surgeon at these headquarters and as examiner of recruits at Chicago, Ill., from that date. Headquarters Division of the Missouri, Chicago, Ill., November 24, 1888.

Cronkhite, Henry M., Major and Surgeon, by direction of the Secretary of War, is granted leave of absence for two months, to take effect upon his being relieved from court-martial duty at Little Rock Barracks, Arkansas. Par. 7, S. O. 276, A. G. O., Washington, November 26, 1888.

Hoff, John Van R., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 134, November 1, 1888, Department of the Missouri, is extended one month. Par. 3, S. O. 274, A. G. O., Washington, November 23, 1888.

Moseley, Edward B., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 67, November 12, 1888, Division of the Pacific, is extended three months. Par. 13, S. O. 275, A. G. O., November 24, 1888.

Carter, William F., Captain and Assistant Surgeon, is granted leave of absence for one month. Par. 4, S. O. 116, Headquarters Department of Texas, San Antonio, November 12, 1888.

Clendenin, Paul, First Lieutenant and Assistant Surgeon, is granted leave of absence for fifteen days, to take effect December 4, 1888. Par. 3, S. O. 116, Headquarters Department of Texas, San Antonio, November 12, 1888.

Benham, Robert B., Captain and Assistant Surgeon, Fort Laramie, Wyoming, is hereby granted leave of absence for one month. Par. 1, S. O. 111, Headquarters Department of the Platte, November 24, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 1, 1888:*

Gaines, J. H., Surgeon. Detached from the Dolphin and ordered home.

Anderson, Frank, Passed Assistant Surgeon. Detached from the Pensacola and ordered to the Dolphin.

Jones, William H., Surgeon. Detached from the Richmond and ordered to the Pensacola.

Russell, A. C. H., Passed Assistant Surgeon. Detached from the Naval Academy and ordered to the Wabash.

Drake, N. H., Passed Assistant Surgeon. Detached from the St. Mary's and ordered to the Coast Survey.

Whittaker, H. W., Passed Assistant Surgeon Ordered to the Nautical Schoolship St. Mary's.

Lewis, D. O., Passed Assistant Surgeon. Detached from the Coast Survey and ordered to the Naval Academy.

Wentworth, A. R., Assistant Surgeon. Ordered for examination preliminary to promotion.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the five weeks ending November 24, 1888:*

Wyman, Walter, Surgeon, from New York to Washington, D. C. November 16, 1888.

Long, W. H., Surgeon, from Detroit, Mich., to Cincinnati, Ohio. November 16, 1888.

Fessenden, C. S. D., Surgeon, from Norfolk, Va., to Louisville, Ky. November 16, 1888.

Purviance, George, Surgeon, from Cincinnati, Ohio, to Baltimore, Md. November 16, 1888.

Austin, H. W., Surgeon, from Chicago, Ill., to Milwaukee, Wis. November 17, 1888.

Godfrey, John, Surgeon, from Louisville, Ky., to Milwaukee, Wis. November 14, 1888.

Godfrey, John, Surgeon, from Louisville, Ky., to New York. November 16, 1888.

Mead, F. W., Passed Assistant Surgeon, from Baltimore, Md., to Norfolk, Va. November 16, 1888.

Guitéras, John, Passed Assistant Surgeon, from Camp Perry, Fla., to Charleston, S. C. November 15, 1888.

Devan, S. C., Passed Assistant Surgeon, from Savannah, Ga., to Washington, D. C. November 15, 1888.

Urquhart, F. M., Passed Assistant Surgeon, from Live Oak, Fla., to Dupont, Ga. November 3, 1888.

Brooks, S. D., Passed Assistant Surgeon, from Wilmington, N. C., to Savannah, Ga. November 15, 1888.

Stoner, J. B., Assistant Surgeon, from Charleston, S. C., to Wilmington, N. C. November 15, 1888.

*Leaves of Absence.*

Bailhache, P. H., Surgeon, twenty days. November 24, 1888.

Long, W. H., Surgeon, sixteen days. November 21, 1888.

McIntosh, W. P., Assistant Surgeon, thirty days. October 24, 1888.

Magruder, G. M., Assistant Surgeon, thirty days. November 23, 1888.

Cobb, J. O., Assistant Surgeon, twenty days. November 20, 1888.

Geddings, H. D., Assistant Surgeon, thirty days. November 1, 1883.

Wyman, Walter, Surgeon, Austin, H. W., Surgeon, and Godfrey, John, Surgeon, detailed as representatives at the meeting of the American Public Health Association.

*Promotion.*

McIntosh, W. P., promoted and appointed Passed Assistant Surgeon. November 21, 1888.

**Society Meetings for the Coming Week:**

Monday, *December 10th:* New York Academy of Medicine (Section in Surgery); Lenox Medical and Surgical Society (private); New York Ophthalmological Society (private); New York Medico-historical Society (private); New York Academy of Sciences (Section in Chemistry and Technology); Boston Society for Medical Improvement; Gynæcological Society of Boston; Burlington, Vt., Medical and Surgical Club; Norwalk, Conn., Medical Society (private); Baltimore Medical Association.

Tuesday, *December 11th:* New York Medical Union (private); Medical Societies of the Counties of Chemung (quarterly—Elmira), Oswego (semi-annual—Oswego), Rensselaer, and Ulster (quarterly), N. Y.; Morris, N. J., County Medical Society (semi-annual); Newark, N. J., and Trenton (private), N. J., Medical Associations; Baltimore Gynæcological and Obstetrical Society.

Wednesday, *December 12th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medico-legal Society (annual); Medical Societies of the Counties of Albany, Cayuga (semi-annual), Cortland (semi-annual), and Montgomery (quarterly), N. Y.; Strafford, N. H., District Medical Society (annual—Dover); Pittsfield, Mass., Medical Association (private); Philadelphia County Medical Society.

Thursday, *December 13th:* Society of Medical Jurisprudence and State Medicine; Brooklyn Pathological Society; New York Laryngological Society (annual); Addison, Vt., County Medical Society (annual); Pathological Society of Philadelphia.

Friday, *December 14th:* New York Academy of Medicine (Section in Neurology); Yorkville Medical Association (private); Medical Society of the Town of Saugerties, N. Y.

Saturday, *December 15th:* Clinical Society of the New York Post-graduate Medical School and Hospital.

OBITUARY NOTES.

**R. H. Sabin, M. D.,** of West Troy, a graduate from the Albany Medical College in the class of 1856, died on Tuesday, the 4th inst. He was a member of the Medical Society of the County of Albany and of the New York State Medical Association.

**Giovanni Ceccarini, M. D.,** formerly a practitioner of medicine in New York, died on Monday, the 3d inst., at Riccione, Italy.

## Letters to the Editor.

HARRISON'S OPERATION FOR PROSTATIC ENLARGEMENT.

80 Hanson Place, Brooklyn, *November 7, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: I wish to add my testimony to the efficiency of the operation of Mr. Harrison, of London, as described by him at Bellevue Hospital, and reported in the Journal of October 6, 1888, for the cure of prostatic disease or enlargement.

On October 24, 1888, I performed that operation on a man, aged seventy-nine years, who had been badly afflicted for ten years, and had been unable to pass his urine without the aid of a catheter for more than three years. A false passage had been formed, and that caused him or his attendants much trouble in introducing a catheter, so that it was attended with more or less bleeding at each attempt until he was almost exsanguinated. I operated as above stated, and he is now doing well. He passes urine readily, and the wound is already nearly healed. I do not know of the operation having been performed in this country previously, unless the case reported in the Journal of September 29, 1888, by Dr. Abner Post, of Boston, was the same opera-

tion. The relief afforded the old gentleman in my case is truly gratifying, and I believe this is destined to become the treatment in such cases. J. A. FREEMAN.

# Proceedings of Societies.

## ASSOCIATION OF AMERICAN PHYSICIANS.

*Third Annual Meeting, held at Washington, Tuesday, Wednesday, and Thursday, September 18, 19, and 20, 1888.*

The President, Dr. W. H. DRAPER, of New York, in the Chair.

(*Concluded from page 472.*)

**Disturbances of the Heart-rhythm with reference to their Causation and their Value in Diagnosis.**—Dr. G. BAUMGARTEN, of St. Louis, in a paper with this title, remarked that disturbances of heart-rhythm were not taken into account in the diagnosis and prognosis of heart difficulties so much as they should be. In studying them we observed not only their character, but the other conjoined elements of impaired circulation. He had found it convenient to group alterations of rhythm, according to their form, under three heads: 1. Fluctuations in rhythm, easily changing the cephalic pulse, as seen in compression of the brain after the initial slowing, and due to a paralysis of the vagus nerve. 2. Variation in frequency, as well as in amplitude, being a change in the strength of cardiac action due to inspiration. It was caused by pressure on the aorta due to inspiration, and did not affect the rhythm. It was seen in the exaggerated respiratory efforts of such a disease as asthma. The *pulsus paradoxus* in children was not really an intermittent pulse. It was due to full respirations taken in deep sleep sometimes, as well as to the respiratory efforts in croup, etc. 3. An intermittent or a double beat; a loss of proper systolic motion, the beat being unnaturally prolonged; the frequent omission of several beats; a state in which the beats were weak and strong in alternation; the very irregular or crazy pulse; and, finally, irregularities giving a resemblance to dactylic and other rhythms. He had found that some very slow pulses were really due to disturbances of rhythm, and not to a rarity. Such were really changed from another sort of rhythm; thus a pulse beating with an irregular fullness of an exaggerated sort might suddenly pass into a very infrequent pulse. The transition took place on a slight provocation—such as the application of cold and heat, the taking of food, or a mental disturbance. Tobacco, coffee, and tea produced many of these cases. The heart-rhythm and the accompanying pulse should be studied together. It was impossible to say what element in the heart was at fault, whether muscles, nerves, or ganglia. It was better to treat the whole organ as a unit. Weakness was at the root of most of these troubles of altered rhythm. In some cases the center in the medulla was the seat of the disorder; in others, disorders of the stomach, liver, or kidney caused it by a reflex irritation; in a third class it might be purely a neurosis due to degenerations in the cardiac ganglia. But tea, coffee, and tobacco were leading causes. Most of the changes in rhythm were the results of incompetency in the heart, and thus became of great importance in prognosis. The arrhythmia of such a heart increased by exercise, but often ceased if the patient lay down. Among the causes and conditions leading to disturbed rhythm the speaker mentioned malnutrition of the cardiac wall, dilatation, and exhaustion from overexertion, mitral insufficiency, chronic and acute myocarditis, sclerosis, and atheroma.

He concluded that any permanent irregularity meant organic change, but that one which could be produced by exertion or excitement and ceased with rest meant loss of innervation, while a paroxysmal arrhythmia pointed to the nervous system.

Dr. E. T. BRUEN, of Philadelphia, spoke of the frequency with which fibroid change in the heart produced a very slow pulse.

Dr. R. T. EDES, of Washington, spoke of an intermittent beat as often of value in the diagnosis of pericarditis.

Dr. WILLIAM OSLER, of Philadelphia, mentioned cases where great irregularity had existed for years without interfering with comfort and good health.

Dr. H. M. LYMAN, of Chicago, remarked that many cases of arrhythmia were due to disturbances of the excretory functions. They also occurred in overworked persons in fair health suffering from a little gastro-intestinal catarrh due to liver disorder. The heart-action was here a barometer of the hepatic state. The treatment in such cases was best directed to the kidney, liver, and intestines. These patients suffered much from pains in the eyes, neck, shoulder, and heart.

The PRESIDENT gave instances where a sudden emotional shock had given rise to cardiac arrhythmia of years' duration. In some cases, where the pulse had been as slow as 20 and 10 to the minute, calcification of the coronary arteries had been found. Disturbed rhythm, with otherwise good health, he compared to instances where headache persisted in occurring at short intervals for a life-time without loss of general health. Arrhythmia sometimes accompanied albuminuria and angina.

**The Treatment of Valvular Affections of the Heart.**—Dr. J. M. DACOSTA, of Philadelphia, read a paper with this title in which he showed that not a study of the valvular conditions, but a clinical observation of the effects of various medicines, was at the root of the matter in successful treatment. When compensation was good no drugs were to be given. If the heart was overforceful, sedatives were of value, and when the heart action tended to fail, small doses of digitalis might prolong life for years. The same valvular affection in different cases called for different treatment. He had seen cases in which aconite gave marked relief where digitalis could not be endured at all and made the condition worse.

As for dosage, he had usually found the best effects from digitalis when given in ten-drop doses twice a day; but some patients did better on ten drops of the tincture once a day; and a few did best on five drops every four to six hours. If the stomach became deranged the drug might be given by suppository. Where there was dilatation of the heart, much larger doses were needed, and it was well to alternate with alcohol and strychnine. When compensation failed, the pulse became rapid and compressible, and œdema appeared, large doses of digitalis, such as fifteen minims of the tincture every hour, were needed, aided by ammonia and brandy. In aortic regurgitation, digitalis was useful if the heart-fiber was sound; but if it was degenerated, arsenic and strychnine gave better results. There were cases of aortic narrowing or regurgitation where compensation was complete, and here no uneasiness was felt. In such cases the patient merely needed to be warned not to undergo sudden strain and to lead a temperate life. Disturbances in regularity and rhythm scarcely called for medical treatment, although some cases of excessive irregularity were improved by belladonna. In dilated heart we had a condition where we wished to strengthen the heart so as to overcome passive venous stasis, and yet, if possible, without causing contraction of the arterioles and capillaries, which so increased the strain on the heart. Thus far we had found no one drug which would do this. It might in the future be accomplished by some combination. The cause and duration of a heart condition must be taken into account when treatment

was considered; thus, three months having elapsed after the development of heart trouble with acute rheumatism, no cure was possible; iodides utterly failed. We should guard against a recurrence of the latter disease. The heart troubles coming on with age had no remedy. When there was decay or fatty degeneration of the heart, acids were of but slight aid; we had no remedy and the strongest stimulants were needed. But in functional disorders much could be done. Rest, graduated exercises, good diet, and cardiac stimulants in small doses were indicated. Great attention was to be paid to everything bearing on the general health, so that the heart should be nourished with good blood; but iron was not of use; it produced constipation, fullness about the heart, headache, and a deranged stomach. Good food was better than iron; coffee and tea in small amounts were not harmful; neither were alcoholic drinks in small quantities if no gouty tendency was present. Light wines, except champagne, were allowable. He advocated gentle exercise and complete repose where there was a violent heart action. Cheerfulness was important; nervous people were apt to do badly, worry being equivalent to a short life in its meaning.

Palpitation had an appearance of strength about it which was fictitious. It really meant a state of weakness and needed ammonia and brandy. It was made worse by fatigue, opium, cannabis indica, or bromides. Nitroglycerin was often valuable where not too disagreeable to take. Speaking of the secondary results, diminution of the urine and its high specific gravity, and many urates without albumin, accompanied by headache and dyspnœa, was a state often relieved by diuretics, caffeine and benzoate of sodium being recommended. Dyspepsia was very common both with and without engorgement of the vessels. In the latter case purgatives and minute doses of calomel were of use.

As to the new drugs, he had found none equal to digitalis. They were of value when the latter could not be longer continued. Strophanthus, caffeine, and adonidine were discussed. Cocaine had a slight value; also chloride of barium was a general as well as a cardiac tonic and easy on the stomach, one tenth of a grain in pill three or four times a day being the best dose to use. The author advised that a regular periodical examination be made of all persons having heart disorders, even if they felt well, in order that further changes might be met when they began and life be thus prolonged.

Dr. F. C. Shattuck, of Boston, remarked that Frazer, of Edinburgh, had alleged for strophanthus that very merit which Dr. DaCosta thought belonged to no known drug—of not closing the small arteries. In regard to violent exercise taken by men with enlarged hearts, he had known a case where the patient was accustomed to swim long distances under water, had an enormous enlargement, and felt no distress or dyspnœa.

Dr. S. C. Chew, of Baltimore, speaking of the value of strophanthus, had seen the results alleged for it by Dr. Frazer, but only, to any marked degree, from a sample of the drug which he had obtained from Dr. Frazer himself.

**The Absolute and Relative Value of the Presence of Albumin and Casts and of Renal Inadequacy in the Diagnosis and Prognosis of Diseases of the Kidney.**—Dr. Robert T. Edes, of Washington, read a paper with this title which opened with the remark that many could remember a time when the presence of albumin in a man's urine was thought a sure sign of approaching death, and that the idea had been more or less an accepted one until quite lately. As to the finding of albumin in the urine of perfectly healthy persons, this had occurred in a large percentage of investigations made by many observers; at least it had been found in traces. It was often present in minute amounts, such as from one fortieth to one tenth per cent. as shown by the finer tests, when no flocculent precipitate was obtainable by heat. Mucin might be the source of these small quantities of albumin.

Passing over the albuminuria of youth, that due to diet and cyclical albuminuria, there were other cases where it was present in conditions of apparent health. Some of these were really cases of nephritis. By care and waiting, casts might sometimes be found in addition.

Overweighted men and those immersed in business often had such a masked interstitial nephritis. Much patience was needed with often a great many trials to find casts—trying a number of slides with the same sample, getting samples of both the morning and evening urine and that before and after meals, as well as on different days of many successive days. Casts might be of the exudative sort, either hyaline or granular; in other cases they were composed of pus, epithelial cells, fat, or mucin. Epithelial casts did certainly point to some change in the kidney tissue. The long, large, straight casts, looking like fine white threads, were made of degenerated epithelial cells. Fatty casts and fat globules might come from the food as well as from fatty degenerations in the renal epithelium. Waxy casts indicated a high degree of degeneration from which recovery was not to be hoped for.

Casts were not always found with albumin, not at least without many and careful examinations. For this reason the negative statements so commonly made by physicians that no casts were found were, as a rule, not to be relied upon. Hyaline casts were of minor importance. Occurring in slight amount, they did not indicate a dangerous condition; and anything which had happened with the patient at the time they were found must not be taken as a cause producing these casts.

The reader proposed, as a definition of renal inadequacy, impaired work and lessened production on the part of the kidney. A great decrease in the amount of the urine deserved inquiry and further examination, but not slight degrees of deficiency. It might be asked if we could diagnosticate the beginning of nephritis by a slight lessening in the amount of urine produced? He would answer that it could be made out more easily by other signs, for deficiency of urine from renal inadequacy was hard to establish; the diet, the water drank, the amount of water thrown off by the skin, all had so direct a bearing on the amount of urine secreted.

Polyuria, together with a low specific gravity, was of some importance, as it often went with commencing albuminuria. The standard normal output per diem was between a little less than an ounce of solid constituents to an ounce and a quarter, varying with the food, race, and habits; but two thirds of an ounce was well within the limits of health. Dr. Noyes had given a good series of experiments in the "Am. Journal of the Med. Sciences," showing what vast changes could be produced by alterations in the character and amount of the food, by the taking of coffee, and by abundant or deficient sleep. A considerable amount of nephritis did not prevent the kidney from discharging, by its portions not yet damaged, adequate urine, both in amount and in contained solids. The capacity of the kidney cells for their functional work was so elastic, anyhow, to meet the variations in diet, that the normal production of urine could go on even till shortly before death when a part, and even a large part, of the kidney was damaged. Therefore, when changes in the amount of solids or fluids occurred, something else must be at fault. Of course, only the daily total of urea was of any value, and should in all cases be obtained, together with the daily total of uric acid and phosphates.

The great and important cause of lessened urine was a lessening of nitrogenous metabolism in the whole body, especially as a result secondary of bad digestion and nervous disturbances.

The term renal inadequacy, however, meant that the kidney was unable to produce enough urine. Given a patient who was anæmic, and whose urine was pale, free from casts or uric acid, and of low specific gravity—should we assume that he had a withered or cirrhotic kidney? We could not, for, if so, albumin and casts could certainly be found. We should remember that extra supplies of food and wine given to a person who overate would at once increase his output of urea, and, by attention to digestion, nutrition, and dietary of such a patient, try to bring about a better metamorphosis of food.

The author believed that the old heat-and-nitric-acid test was the useful one; that the albuminuria of adolescents meant that something was wrong, although the condition was not permanent, and might be accompanied by a few casts; and that if the amount of urine was to be of aid in the diagnosis, we must estimate what reduction in total amount occurred during a long period of time.

Dr. E. G. Janeway, of New York, read a paper on the same subject and reaching the same conclusions in many respects. He spoke of the various cases where albumin had no serious import, and concluded that even casts in small numbers were not proof of kidney disease. Ill-fed and ill-conditioned children often had casts without kidney lesion; digestive disturbances and heart disorders producing congested kidneys led to their formation in other instances. Inflammations of the urinary passages due to gonorrhœa, diabetes, or cystitis, might mislead by showing albumin present in the urine. Intermittent hæmatinuria easily deceived one in this way; also nervous disturbances, affecting the glomeruli temporarily perhaps; and lead-poisoning might lead to the same false deduction from the presence of albumin. In real nephritis, on the other hand, albumin might be nearly or altogether absent, even just before death. Often nervous people were really sufferers from kidney diseases and yet never lost albumin. A small quantity of daily urine with low specific gravity, continuing a long time, was important as a sign of kidney disease.

Hyaline casts might only be a sign of cerebral disturbance. They were produced sometimes by violent exercise followed by an alcohol sponge. Mucous casts resulted from the irritation of urine of high specific gravity. However, the absence of casts, even of mucous casts, did not disprove the existence of nephritis. Richly epithelial and waxy casts were more significant of diseased kidneys. Fatty casts or globules in small amount were not proof of disease; large numbers of them pointed to degeneration of the kidney structures.

Granular casts were apt to mislead, since they might result from aggregations of excreted matters in the tubules, or come from the vagina, or be composed of fine crystals of uric acid. The number of casts, whether small or great, present on a single occasion, must not be given too much importance, as they might have been long in accumulating, but have been discharged all at once. In other cases a few casts had been the result of other conditions, such as neuro-retinitis, tumor of the brain, chronic meningitis, or medicines being given for these affections.

As to renal inadequacy, it was hard to fix on a definition for the term. It should be applied to a lessened excretion of both fluids and solids. When repeated examinations, extended over a long time, showed a low specific gravity, with an abnormally low production of urea in proportion to the total quantity, we had a valuable sign of kidney disease. Renal inadequacy might be simulated for a time as a result of nervous disturbances or of a calculus, especially if of sudden development.

He thought it important to watch the heart. Failure of compensation was one of the most certain signs of an approaching end.

**The Relation of Albuminuria to Life Insurance.**—Dr. James Tyson, of Philadelphia, read a paper thus entitled. He said the remark was sometimes made that life-insurance examiners let some bad kidney cases escape them. On the other hand, while that might occasionally happen, the reverse was often true, that they lost some good risks by judging of a man's chances of life entirely on the strength of finding some albumin and casts in his urine. He would leave to a special classification such types of albuminuria as that of adolescents, cyclical albuminuria, and that due to diet. These he would call functional. Where they resulted from overeating of proteids, it appeared that the liver killed more red blood-cells than could be changed into urea, and the excess left the body as albumin. He would define the functional class of albuminurias as an escape of albumin in some special way past its containing wall. To say certainly that in any case it was purely functional and unaccompanied by any alteration of structure in the kidney, would require some years of observation and a close following of certain rules. Still, it was sometimes possible to establish that a man whose urine regularly contained albumin had no change, or tendency to change, in his kidneys, and that he was a good risk for a life-insurance company.

Some of these rules were the following: 1. In all other respects the man must be healthy. 2. His urine must contain no true casts. 3. The total daily quantity must not be increased by as much as one fifth of its normal amount. 4. The specific gravity should be estimated for the quantity passed in twenty-four hours and without relation to meals. Specific gravity was least significant when it was high. Thus, if the true specific gravity was 1·012, the risk was probably good; under 1·010 or 1·008 it was bad. 5. High arterial tension and hypertrophy of the heart were unfavorable signs. 6. In aged persons functional forms were less likely to occur than between twenty-one and thirty-five years. After forty a careful and long examination would be necessary before accepting the risk. 7. Gout was always a bad indication. It was followed in time by true nephritis. 8. Retinal symptoms were always of unfavorable import. 9. Statements brought by patients that other examiners had or had not found casts were never to be accepted without personal verification.

The author related as an illustration of a risk that had proved good the case of a man whose family were gouty, his own mother having a gouty kidney. This man had had lumbar pains from muscular rheumatism, which had, however, left him. He was forty years of age, and gave good results under all tests, except that his urine contained albumin. As he was now after a number of years in good health, it had probably been a merely functional form.

Dr. A. Jacobi, of New York, said it would be impossible to criticise three papers of such excellence as those of Dr. Edes, Dr. Janeway, and Dr. Tyson. He only wished to call attention to a simple anatomical fact which might explain the frequent occurrence of albuminuria in children without kidney disease. Furthermore, kidney diseases were common in children along with diseases of other sorts. In children there was, he said, a peculiar discrepancy in the growth of the arteries; the renal arteries grew very fast, and grew ahead of the kidney tissue. The capillaries of the kidneys of young children did not permit water to pass through them as it did in the case of the adult; there was a great disproportion between artery and kidney tissue and power to transmit water.

Dr. Pye-Smith, of London, remarked that everybody had felt the difficulty of deciding what albuminuria meant. He liked the term functional as describing the sort of disorder in the renal tissue. Physiological was to him not a good term to use in this connection; it led to a false sense of safety. Though some had

once thought that albumin normally came to the kidney and was reabsorbed there, that idea was not believed in so much now.

When a school-boy showed albumin in his urine shortly after bathing in cold water, we now knew that he needed careful watching. He had known a case beginning thus where cardiac changes, Bright's disease, and hæmatinuria came on later. In all functional albuminurias close observation was called for lest we had mistaken what the condition was, or a real disease was shortly to follow. As to fatty degeneration, we knew the kidney was liable to it; thus, in pernicious anæmia, phosphorus poisoning, and phthisis.

In regard to life-insurance risks and examination of the urine for albumin, he was the examining physician for two large London companies. He had tried the finer tests, such as picric acid, but had come back to the old heat and nitric acid. The delicate tests, such as that by protiodide of mercury, were certainly too delicate to be of practical value. He found it not well to be too close with young men applying for insurance if they simply passed a little albumin; but a low specific gravity with a little albumin was a very serious matter, in his opinion. He had found it best to form his ideas and rules in this direction from an average of many cases in the same condition, of the same age, etc.; not from individual cases.

Dr. F. P. Kinnicutt, of New York, said that he had published some years ago a series of cases of children where albumin for a time was passed in large amounts, but no casts. He had observed them ever since; they were now in good health, and had grown up normally. In all but one the albumin had disappeared, and in that one it appeared only at times. Digestive disturbances had apparently been the cause.

Dr. F. P. Porcher, of Charleston, remarked that in yellow fever it was very common to observe albuminuria, though without a high temperature being present, and it was a very bad sign. This acute nephritis might destroy life in the first ten hours. On this account it was that the main chance for successful treatment was in the first ten hours. If cases were then treated promptly and efficiently by cold applications and mercury, yellow fever was as safe as any acute disease he knew of.

**The Cardiac Changes in Chronic Bright's Disease.**—Dr. A. L. Loomis, of New York, read a paper with this title. (See page 505.)

Dr. Francis Delafield, of New York, remarked that Dr. Loomis in his paper had put forward several propositions which he wished to deal with separately. In the first place, he had said that cardiac hypertrophy was often developed without any change in the kidneys except thickening of the inner and middle coats of the renal arteries. The speaker thought that without doubt the change might begin in the arteries of the kidney and then extend, but that we rarely found these conditions present at the autopsy-table. There we generally met with the diffuse inflammation. He liked to take a broader view. We knew that in adults and old persons there was a growth of connective tissue in the endocardium, lungs, arteries, and kidneys, which was essentially the same change as that which constituted emphysema, endarteritis, and nephritis, and might be called a chronic fibroid degeneration. It occurred in these various organs all together and simultaneously much oftener than separately—a curious fact. It was also curious that it was a change which the patient often bore for years without trouble, while in other people it was one of the most fatal diseases that could be developed. One reason of this was that some developed high arterial tension. This high arterial tension, the speaker continued, came and went without explanation, unless it was that some change occurred in the walls of the blood-vessels; but why this occurred in some and not in others we did not know. It made the good cases and the bad cases according as it was present or not, and, in his opinion, helped much in making the heart undergo hypertrophy instead of the changes in the walls of the vessels bringing that about.

In the second place, Dr. Loomis had said that chronic nephritis was usually associated with dilatation of the heart and degeneration of its wall without the presence of endocarditis. He could not see why his experience differed so much as it did from that of Dr. Loomis in this respect, unless they made their observations with different purposes, for they worked on largely the same material. The speaker knew that many nephritic patients had a bad heart action and a feeble heart during life, but he had not found dilatation and degeneration after death in any large proportion of cases. He looked upon cardiac degeneration as a possible secondary complication, not as a primary lesion. Heart disease with a large white kidney came after endocarditis in his experience.

Dr. George L. Peabody, of New York, agreed with Dr. Loomis as to the relative infrequency of cardiac hypertrophy. He had read before the Academy of Medicine in New York the results of the examination of 2,000 cases of nephritis, mostly of a chronic sort. Of these, in the larger number, 70 per cent., there had been no hypertrophy of the left ventricle, but, on the contrary, in many it had presented an atrophied condition. He had long since concluded that the size of the heart must be disregarded so far as concerned its showing kidney disease to be present or not.

Dr. Pye-Smith, of London, thought Dr. Loomis was on the right path.

Dr. William Osler, of Philadelphia, remarked that he divided up the conditions present at the end of a chronic nephritis. In some cases hypertrophy of the left ventricle was a marked lesion; other patients died suddenly of effusions and serous inflammations; in others the end came by heart failure and dropsy; and it was very common to see dilatation and degeneration with the heart failure. He thought a sclerosis in the coronary arteries had directly much to do with these degenerative changes in the heart.

Dr. Loomis, in closing the discussion, remarked that Dr. Delafield must have made his observations in a different way and for different purposes. The speaker was certain of the sections he had made; he had made them without preconceived notions and had been astonished at finding what he had seen. The cardiac change, to be sure, did not always go so far as to cause dilatation, and was not necessarily the primary change. He simply believed that feeble heart commonly occurred at the bedside, and was an unfavorable sign. A sclerosis and fibroid degeneration came first, and led to more or less hypertrophy; but when the disease got far along he expected dilatation and degeneration. It meant that life was near its end.

**The Relation between Chronic Interstitial Nephritis and Angina Pectoris.**—Dr. Samuel C. Chew, of Baltimore, read a paper with this title, in which he showed that occasionally these two diseases were parts of a single condition. Whether the state of the kidney led to the heart affection in such cases, or whether the angina caused the chronic nephritis, was the inquiry which the title of his paper at once gave rise to. It was known that the heart was often affected by disturbances of the kidney function and that heart diseases produced renal stasis. Might not both be the results of a common cause? There was no mention in the text-books of pathology of any essential connection between the two having been traced. Some books gave chronic nephritis as a complication of angina which sometimes appeared. To him the fact that nitrite of amyl, which so often gave relief in angina, had also a marked effect on the renal function, indicated a close relation between the two. He then related several instances where angina and

through the proximal side of the cartilage, and at the upper and back part, taking off a scale of bone from the supraspinous fossa of the scapula. Pathologically, he considers that this was an epiphyseal separation, although he acknowledges that the center of the coracoid is essentially different in its homology from the ordinary epiphyses.

**The Mortality from Major Amputations.**—Dr. Page ("Lancet," July 14, 1888) presents some very interesting and valuable statistics regarding the results of major amputations performed in the Royal Infirmary, Newcastle-on-Tyne. During 1887 there were 17 amputations for injury with 2 deaths, and 43 for disease with no deaths. During the period from April 1, 1878, to December 31, 1887, there were 155 amputations for injury with 16 deaths, and 277 for disease with 15 deaths, giving thus a mortality of 7 per cent.—9·6 per cent. for injury, 5·4 per cent. for disease. During the period from April 1, 1878, to December 31, 1882, the mortality was for injury, 18·4 per cent.; for disease, 5·2 per cent.; of the whole number (160), 10·6 per cent. From January 1, 1883, to December 31, 1887, the mortality for injury was 4 per cent.

attack of angina and no change was perceptible in the heart certainly seemed to point to the nervous system as the seat of the disease. One fact was of importance—namely, that drugs so often failed to relieve the pain. They seemed to act only when there was spasmodic contraction of arteries.

# Reports on the Progress of Medicine.

## SURGERY.

By MATTHIAS L. FOSTER, M. D.

**The Ætiology of Tumors.**—Dr. Woodhead ("Edin. Med. Jour.," July, 1888) discusses in a clear manner the knowledge we possess on this subject at this time. He holds that the essential feature in the formation of a tumor is that we have in it the result of impaired nutrition, which may be the case even when there is actually more nutriment going to a part. By the law of heredity he explains as within the range of possibility that if cells are formed for generation after generation under the action of some irritant, their specialization may be gradually interfered with and a less and less active irritant serve to keep up this new form of cell until eventually an acquired form may become more or less permanent, especially if constitutional conditions assist.

He points out that the tumors met with in infancy, adult life, and old age correspond closely with the tissues which at these ages are the most active. According to Paget, the tumors of fœtal and early life are usually sarcomatous. Primary encephaloid cancers which are sometimes met with in early life may, in almost every instance, be referred to organs in which there appears to be some interference with the development. In adult life the connective and epithelial tissues are growing about equally and the tumors usually found are adenomas, cystic glandular tumors, cystic sarcomas, and fibro-adenomas. In old age both of these tissues have passed their prime, but the epithelial tissue retains the greater vitality, and at this time cancers and epitheliomas are common.

This development of the active tissue into tumor he holds to be due to an irritant which may be the same for the different forms of tumor at the different ages. If this irritant is applied as the functional activity of the cells is declining, they are stimulated to increased vegetative activity, and, as they are now neither sufficiently organized nor sufficiently nourished to perform their full function, a number of imperfectly developed epithelial cells are formed. Hence we meet with cancer of the breast usually in women between the ages of forty-five and fifty, while epitheliomas of the skin and mucous membranes usually appear later—between the ages of sixty and seventy.

There are marked differences in the structure of the tongue in the fœtus, child, adult, and old person. In the fœtus there is a rapid growth of connective tissue with a delicate epithelial covering. In the child two or three years of age the connective tissue has a more definite structure and the epithelial cells present their characteristic appearance and arrangement. In the adult the connective tissue is still more definite in character, the layers of epithelium are more numerous, and there is a rather more marked horny layer. In the old person, between the ages of fifty and seventy years, the connective tissue is thinned and the fibrils are wide apart and appear atrophied. But the masses of epithelial cells are now considerably branched, finger-like processes passing down from the main mass into the connective-tissue layer, and in places small cell nests are formed. In this condition one can readily understand how a slight continuous irritation of the tongue may cause an epithelioma.

Cell proliferation is caused by imperfect nutrition, which may be due to want of food, increased demand for food set up by an irritant, or to increased difficulty on the part of the cell of taking in food and excreting waste, on account of its size and position. Malignant tumors are formed when there is a preponderance of anabolism or catabolism of the tissues, because of the demand on the resources of the tissues being in excess of their nutrition. The irritant giving rise to this increased demand may be a simple injury, parasite, microbe, or the long-continued action of some organic or inorganic irritant, or chronic catarrh. These irritants can give rise to a tumor only when the conditions of the tissues are so altered by irregular nutrition or age that the line of resistance is passed.

**What is Cancer?**—Dr. Braithwaite ("Lancet," June 30, 1888) maintains that proliferation of cell elements is not alone the cause of malignancy, as when this occurs in other tissues than epithelial the result is not necessarily malignant. The subject he divides into two questions, viz., Why is proliferation of epithelial cells malignant when proliferation of other cells is not so? and What is the cause of the proliferation? To simplify the subject, he confines his argument to malignant disease originating in epithelium, omitting sarcoma and its varieties.

To answer the first question he advances that the natural properties of epithelial cells are such that when growing out of place, or proliferating, encapsulation is impossible, and that, therefore, infiltration necessarily results. Epithelial cells are normally separated from the subjacent tissues by a basement membrane developed from the mesoblast. As long as this membrane is intact, infiltration can not occur, but if this is by any means penetrated or destroyed, the epithelium is free to grow in direct contact with the tissues. If the tissues from a state of lowered vitality are predisposed to cancer, this may result.

The properties of cells in general bearing upon the question of malignancy he holds to be: "1. The relative natural hardiness of the cells. 2. The rapidity of growth and reproduction. 3. The ordinary mode of death. 4. The existence or not of a natural secretion. 5. The contour of the surfaces of the cells. 6. The shape of the cell as a whole. 7. The shape of the surface of a growing mass, whether flattish or consisting of a number of processes. 8. The relation of the blood-vessels to the growing mass. 9. The degree of compressibility or yielding under pressure of individual cells. 10. The degree of cohesion between the individual cells."

An epithelial cell is probably more hardy than the cells with which it comes in contact after the basement membrane has been penetrated. It is able to live on scanty nourishment, and when given much greater nourishment than normal is stimulated to more active growth. Its

**The Formation of a New Acetabulum.**—Ogston ("Annals of Surg.," September, 1888) suggests and has performed with good results the formation of a new acetabulum in cases of congenital or spontaneous dislocation of the hip joint. In tubercular cases the danger of tubercular auto-inoculation is far too great to justify such an attempt being made. The head of the femur is sawn off according to Volkmann's plan, leaving a projecting point. A hole is then gouged through the os innominatum, just above where the acetabulum should have been, large enough to easily admit the point of the thumb. The projecting point of the femur was then placed in the hole and the wound closed by sutures. This idea was based upon the known tendency of perforations in the os innominatum to be filled with fibrous tissue instead of bone, which rendered it not unlikely that if a hole were thus made the point of the femur, if lodged in it, would readily be retained if the opening were sufficiently large, and would unite by fibrous union and so leave a firm and movable joint. In the case reported this desirable result seemed to be obtained. The operation was performed January

health from any cause, old age, mental shock and depression, and eczema of the mucous surfaces. The second from accident, disuse of formerly active glands which become blocked with old epithelium, mechanical pressure and friction, irritation of the deepest layer of epithelium by minute foreign bodies, and from causes not yet understood.

What is the cause of this proliferation? Probably from the removal of a force which may be called the force of formative restraint, or from the addition of a force unknown. It seems not improbable that the great change in the habits of the population in regard to consumption of animal food has something to do with the increased frequency of the disease. Still, this does not form a satisfactory explanation; it is only a surmise to be considered. A cause as yet unknown remains to be ascertained, but this would not explain all cases of cancer, for some commence in such ways as have been considered. A knowledge of the cause of spontaneous proliferation of epithelium would point out one path by which the increasing death-rate from the disease might be checked.

**Fracture of the First Rib Alone.**—Mr. Marsh (*ibid.*) discusses this rare fracture, which he professes to have recognized four times in about three thousand casualties. He says that in the absence of displacement the symptoms can be but slight—perhaps not enough to cause the patient to seek surgical advice. These fractures are usually incomplete, so displacement is the exception. There will be localized pain, sometimes vaguely referred to the shoulder, perhaps felt only on certain movements of the arm or shoulder, but always to be localized by careful manipulation, especially in the supraclavicular fossa. In the more severe cases and where the fracture is complete pain will be felt during ordinary or deep respiration, on coughing, and on putting the scaleni into action. Crepitus may be obtained when the fracture is complete and through the anterior half by fixing the cartilage as far as possible and by moving the rib in the supraclavicular fossa. Injury to the lung or pleura will exhibit the usual symptoms. The diagnosis must be from contusions of the shoulder, scapula, and clavicle, which are often coexistent. The treatment employed was bandaging as for a fractured clavicle.

**Traumatic Diaphragmatic Hernia.**—Farwell (*ibid.*) reports a case of traumatic diaphragmatic hernia which is of interest on account of the symptoms presented and because the patient lived sixteen years after the accident. During this time he enjoyed good health, only occasionally suffering from slight dyspepsia which yielded readily to treatment. It was noticed, however, that his complexion gradually became muddy in color, his lips blanched, and his tongue bloodless, as though his spleen was affected. He finally died with symptoms of intestinal trouble.

On autopsy, a large opening was found in the diaphragm through which the stomach and a large portion of the small intestine had passed into the thoracic cavity, where they were found lying upon the left lung, which was compressed into one fifth of its natural size. In the abdominal cavity the only intestine seen was the ascending, transverse, and descending colons and a small portion of the ileum. The spleen was flat, pale, and much thinned.

and much exhibit, but that we [illegible] his lectures on ten- present at the autopsy-table. There we generally met with the diffuse inflammation. He liked to take a broader view. We knew that in adults and old persons there was a growth of connective tissue in the endocardium, lungs, arteries, and kidneys, which was essentially the same change as that which constituted emphysema, endarteritis, and nephritis, and might be called a chronic fibroid degeneration. It occurred in these various organs all together and simultaneously much oftener than separately—a curious fact. It was also curious that it was a change which the patient often bore for years without trouble, while in other people it was one of the most fatal diseases that could be developed. One reason of this was that some developed high arterial tension. This high arterial tension, the speaker continued, came and went without explanation, unless it was that some change occurred in the walls of the blood-vessels; but why this occurred in some and not in others we did not know. It made the good cases and the bad cases according as it was present or not, and, in his opinion, helped much in making the heart undergo hypertrophy instead of the changes in the walls of the vessels bringing that about.

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**A New Surgical Dressing.**—Hewetson (*ibid.*) recommends China grass as a soft, silky, very highly absorbent fiber used in various manufactures. The combings form an elastic silken wool which, when rendered aseptic, is an excellent absorbent dressing. It is also relatively cheap.

**Empyema.**—Oldman (*id.*, June 16th) reports a successful case of treatment of empyema by "perflation"—*i. e.*, injection of the cavity with air which has passed through a strong solution of carbolic acid. A solution of one to ten was used. The injection was performed by the patient daily. It was commenced more than five years after the first operation for empyema, about the eighth day a large quantity of very offensive pus escaped, and after this the disease decreased until it ceased on the eighteenth day.

**Nephrolithotomy.**—Mr. Henry Morris (*ibid.*) reports four successful cases. As he remarks, it is desirable as a step toward accuracy in diagnosis and precision of exploratory methods that every case should be recorded in which a renal calculus has been removed, and also every case in which a calculus has been suspected and searched for but not found, the symptoms being due to other causes.

[The latter class of cases seem to us by far the more important, as the records we have serve to justify the operation, and a knowledge of the causes which produce symptoms which simulate those of nephritic calculi is necessary for a thorough, careful diagnosis. But this class is the one we see little of, and we expectantly await the paper Mr. Morris promises on this subject.]

**Lithotrity in Children.**—Numerous cases are now appearing in the various journals which show the early age at which lithotrity, or rather litholapaxy, may be performed. The prognosis of lateral lithotomy in children has long been regarded as favorable, but this is true only by comparison with the results of the operation on adults. There is a certain death-rate attached to it, and if litholapaxy is followed by fewer deaths and shorter convalescence there seems to be no reason why it should not be preferred whenever practicable.

**The Diagnosis of Encephaloid Cancer of the Testis.**—Colles ("Dub. Jour. of Med. Sci.," July, 1888) gives these points of diagnosis from hydrocele, the condition with which this disease is most often confounded: In hydrocele the testis can be grasped at the lower and back part of the tumor, feels smooth, and pressure gives the well-known sensation to the patient. In encephaloid cancer it can not be so readily separated, is hard, irregular on its surface, and pressure does not cause the same sensation. Fluctuation is deceptive. In hydrocele the tumor feels more yielding, may change its form on change of position, and the fluid is movable. In malignant disease the semi-fluid substance can not be moved from its position. In malignant disease the cord is readily felt, may be enlarged, can be moved under the finger, and no other substance can be felt. In hydrocele a portion of the tunica vaginalis about the cord is more or less distended with fluid. Removal of the tesitcle when cancerous should be considered only when the cord is uncontaminated by the disease.

**Separation of the Coracoid Epiphysis of the Scapula.**—Bennett (*id.*, Aug., 1888) records a case of this lesion in a boy six years of age who had his arm nearly torn off by a tram-car. It was associated with fractures of nearly all the ribs on that side, fracture of the forearm, and rupture of the axillary vessels and most of the nerves. The coracoid process was detached at its base, the line of separation passing

through the proximal side of the cartilage, and at the upper and back part, taking off a scale of bone from the supraspinous fossa of the scapula. Pathologically, he considers that this was an epiphyseal separation, although he acknowledges that the center of the coracoid is essentially different in its homology from the ordinary epiphyses.

**The Mortality from Major Amputations.**—Dr. Page ("Lancet," July 14, 1888) presents some very interesting and valuable statistics regarding the results of major amputations performed in the Royal Infirmary, Newcastle-on-Tyne. During 1887 there were 17 amputations for injury with 2 deaths, and 43 for disease with no deaths. During the period from April 1, 1878, to December 31, 1887, there were 155 amputations for injury with 16 deaths, and 277 for disease with 15 deaths, giving thus a mortality of 7 per cent.—9·6 per cent. for injury, 5·4 per cent. for disease. During the period from April 1, 1878, to December 31, 1882, the mortality was for injury, 18·4 per cent.; for disease, 5·2 per cent.; of the whole number (160), 10·6 per cent. From January 1, 1883, to December 31, 1887, the mortality for injury was 4 per cent.; for disease, 5·4 per cent.; of the whole number (282), 4·9 per cent. During the last five years there has been only one death from pyæmia or other form of blood poisoning. A larger number of very severe amputations, as at the hip joint, were performed during the latter period.

**Aneurysmal Varix in a Stump.**—Dr. Robinson (*ibid.*) reports an interesting case of aneurysmal varix, caused by a blow upon the stump remaining after amputation of the leg seventeen years after the operation. During this period the patient had no trouble with the stump, except slight abrasions about the knee. On examination, a pulsating tumor was found occupying the posterior aspect of the stump. This was dissected out, and the popliteal vessels were tied. Two seemingly aneurysmal sacs were found, which were in reality varices of the popliteal vein, nearly globular in shape. The distal and smaller constituted the extremity of the popliteal vein after its ligature at the time of the amputation, and opened above into the larger varix. The artery showed no alteration in its walls, though its lumen was diminished; at its termination it communicated by a flap-like opening with the distal varix.

**Varicose Aneurysm at the Bend of the Elbow.**—Mr. Anderson reports a case of this kind, which has become rare in these days of anti-venesection. His remarks regarding the difficulty of recognizing anatomical landmarks during operation for this trouble are well timed. Compression failed to cure in this case, so finally the radial, ulnar, and brachial arteries were ligated ("Lancet," July 28, 1888).

**Preventive Surgery, as illustrated in Knock-knee and Flat-foot.**—Mr. Ellis ("Brit. Med. Jour.," ~~June 30, 1888~~) maintains that treatment of these deformities based upon strengthening of the muscular support is highly satisfactory. If it is admitted that failure of muscular support leads to yielding of ligaments and altered bony surfaces in joints, it appears that vigorous use of the muscles will make them strong and taut; that in this condition they relax and thus renew the overstretched ligaments, and also, by exerting constant pressure, remodify the altered contours of the bony surfaces of the joints. The mechanical law he states thus: According to the parallelogram of forces, a well-known law, if a force acting in the line from the knee toward the hip be opposed by a force acting in the line from the knee toward the foot, in a case of knock-knee, the resultant will be the diagonal of the completed parallelogram, or a tendency toward bow-legs. But all the muscles attached to the leg bones below and to the pelvis above do act in the line from the knee to the hip, while the weight of the body acts from the knee toward the foot, so these muscles draw the knee toward a straight line between the foot and the pelvis, when, as in the erect position, the foot is a fixed point. This action should be utilized in correcting knock-knee. This explains also the spontaneous recoveries which do occasionally occur, and the fact that muscular exercise will remove the deformity.

For flat-foot he maintains "for prevention promote, for restoration renew, the functions of the flexor longus pollicis." The tendon of this muscle subtends the plantar arch in the same relation that a bow-string has to a bow, and must exercise a most important influence on the flexible arch. The writer has obtained the most satisfactory results on himself, as well as others, by treatment based on these lines.

The exercise he recommends is to bring the foot to extreme tiptoe, the knee and hip to full extension, and then, after a pause, to suddenly and vigorously draw downward. This he obtains by raising a weight by means of a cord running over pulleys, by turning a wheel placed so high that the handle is with difficulty reached when at the highest part of the cycle, by pumping, if the handle is placed high enough, or by bell-ringing.

He believes that in flat-foot supports do more harm than good by preventing free action of the short flexor muscles. He is "equally certain that for knock-knee they are in principle wrong and in practice unnecessary. So also of tenotomies in either deformity. Osteotomies and resections," he says, "I can only regard as unwarrantable mutilations."

**A Foreign Body in the Male Bladder.**—Browne (*ibid.*) relates this curious case: A gentleman, having a little difficulty in micturition, molded a paraffin candle into the shape of a bougie and introduced it, but, on attempting to remove it, very little came away. After that he became more and more uncomfortable, until, six weeks later, a mass of paraffin, incorporated with phosphatic matter, was crushed in his bladder with a lithotrite, considerable brought away, and the rest passed, a little at a time, for about three weeks.

**Acute Suppuration of the Knee Joint treated by continued Irrigation.**—Treves ("Brit. Med. Jour.," July 7, 1888) reports two cases which resulted in complete cures, complete restoration of function having followed. The irrigation was accomplished by passing a stream of cold water, with a minute quantity of corrosive sublimate, carbolic acid, or boric acid, through a tube passing through the joint. The tube was fenestrated in the joint, and clamps were placed on it before it entered and after it left the joint. By means of these clamps the amount of fluid passing through the joint could be regulated, as well as the distension of the joint. By closing the lower clamp, the joint could be fully distended as often as was thought necessary.

**Dissolution of a Nail in the Stomach by Hydrochloric Acid.**—Moloney ("Brit. Med. Jour.," July 14, 1888) records a unique case. A carpenter accidentally swallowed a nail about two inches long. He immediately felt severe pain in the œsophagus and stomach. His food was limited to bread and milk, while large quantities of hydrochloric acid were administered with the object of forming a soluble salt of iron. He was kept under the influence of chlorodyne, and the bowels were relieved occasionally by an injection. After two days the motions were blackened and the pain gradually subsided, until the patient became quite well.

**Vesical Symptoms due to the Kidney.**—M. Guyon ("Annales des mal. des org. gén.-urin.," April, 1888) relates an interesting case of a patient, aged forty-two, who had had several attacks of nephritic colic and three lithotripsies. Finally he was seized with sharp pain in the region of the right kidney, followed by a series of nephritic colics growing more and more intense, and by very frequent micturition, which was accompanied by severe vesical pain at the beginning and end of the act. The urine became bloody, but little or no pus was found. Examination failed to find cystitis, but a hard mass was felt at the vesical end of the right ureter. An autopsy revealed inflammatory lesions at the end of the ureter, renal calculi, and dilatation of the right kidney with loss of its cortical substance.

**The Formation of a New Acetabulum.**—Ogston ("Annals of Surg.," September, 1888) suggests and has performed with good results the formation of a new acetabulum in cases of congenital or spontaneous dislocation of the hip joint. In tubercular cases the danger of tubercular auto-inoculation is far too great to justify such an attempt being made. The head of the femur is sawn off according to Volkmann's plan, leaving a projecting point. A hole is then gouged through the os innominatum, just above where the acetabulum should have been, large enough to easily admit the point of the thumb. The projecting point of the femur was then placed in the hole and the wound closed by sutures. This idea was based upon the known tendency of perforations in the os innominatum to be filled with fibrous tissue instead of bone, which rendered it not unlikely that if a hole were thus made the point of the femur, if lodged in it, would readily be retained if the opening were sufficiently large, and would unite by fibrous union and so leave a firm and movable joint. In the case reported this desirable result seemed to be obtained. The operation was performed January

11, 1888, and seven weeks afterward the child was walking about with a movable hip.

**Wheelhouse's Operation.**—Mr. Chavasse (*ibid.*) forcibly advocates the advantages of Wheelhouse's method of treating urethral stricture impassable to any catheter or guide. The method consists in passing a probe-pointed grooved director along the urethra to the stricture, carefully avoiding any false passage, making an incision in the perineal rhaphe from a point just above the knob on the director to the outer edge of the anal sphincter, dissecting down in the middle line, and opening the normal urethra at a point above the stricture. The edges of this opening are seized with acupressure forceps and the hook-like end of the director is used to hold the urethra upward. The entrance to the stricture now lies immediately below the portion of the canal that has been opened. An ordinary probe or probe-pointed director is carefully insinuated, usually with difficulty, through the stricture, then by its side a flat director is passed into the bladder, and upon this the whole length of the stricture is laid open with a probe-pointed bistoury. The after-treatment and complications liable to be met with subsequent to the operation he details in a brief but clear and exact manner.

**Supracoracoid Dislocation of the Shoulder.**—Mr. Robson (*ibid.*) reports a case of this very unusual dislocation. In this case the dislocation was complicated by a longitudinal fracture separating the greater tuberosity from the head and extending down the shaft. Attempts by manipulation and extension to reduce the dislocation having failed, the joint was cut down upon and the glenoid fossa was found to be filled with callus and plastic material thrown out around the fracture, which rendered reduction impossible. Three months later the patient was free from pain and had a good range of movement of the arm.

The observations and measurements made in this case are of peculiar interest, as only three cases have hitherto been placed on record. The circumference of the shoulders, taken by passing a tape under the axilla and over the shoulder, was the same on both sides, 14½ inches. From the acromion to the internal condyle—right, 10, inches; left, 11⅜ inches. From the head of the humerus to the internal condyle—right, 12 inches; left, 12 inches. The elbow could be made to touch the thorax, while the fingers touched the opposite shoulder, although the dislocation was present.

# Miscellany.

## THERAPEUTICAL NOTES.

**Caffeine and the Salicylates in Headache.**—Dr. James Little, of Dublin ("Dublin Jour. of Med. Sci.," June, 1888; "Glasgow Med. Jour.," November, 1888), writes of the treatment of headaches resembling migraine by means of sodium salicylate and caffeine. In a case of which he gives notes, that of a lady who had suffered for eight years with headaches occurring at various intervals, he prescribed the continuous use of bromide of zinc and cannabis, and advised her to take at the beginning of an attack twenty grains of salicylate of sodium in a wineglassful of water made effervescent by the addition of a dessertspoonful of granular citrate of caffeine. If necessary, a second and even a third dose may be given, two hours being allowed to elapse between doses. The mixture is said not to lose its effect.

**The Treatment of Hydatids by the Injection of Ox-gall.**—Dr. Juan Mercaut ("Revist. Balear. de las Ciencias Méd."; "Lyon méd."; "Med. Chronicle"), following the example of Dolbeau and Luton, has treated a case of hydatids of the thigh, from which acephalocysts were being discharged, by irrigation with a six-per-cent. solution of boric acid and injections of ox-gall mixed with an equal quantity of lukewarm water. Three injections are said to have sufficed to expel all the hydatids with their membranous envelopes.

**Cascara Sagrada in Mixtures.**—Dr. John Irving ("Brit. Med. Jour.," September 22, 1888) remarks that the addition of water to the liquid extract of cascara of the British Pharmacopœia makes a muddy and rather repulsive-looking draught, but that the addition of a very small quantity of ammonia-water renders it clear and of a bright ruby-red by transmitted light. Other drugs may be mixed with it, provided the mixture is made alkaline by means of ammonia. Associated with iron, cascara prevents the constipating effect of that drug. Dr. Irving recommends the following formula:

| | |
|---|---|
| Citrate of iron and ammonium | 30 grains; |
| Ammonia-water | 10 minims; |
| Liquid extract of cascara sagrada | ½–1 drachm; |
| Solution of saccharin (5 per cent.) | enough to sweeten; |
| An aromatic water | to 6 ounces. |

An ounce to be taken three times a day.

**Bernd's Physician's Pocket Register.**—We have received a copy of this publication, an account-book adapted to the pocket, and have examined it carefully. The result is that we are satisfied that it must be accorded a high rank among the devices for securing simplicity and saving labor in keeping physicians' accounts. There is no occasion for using any other book with it, as the primary entries serve the purposes of those ordinarily made in the day-book, journal, and ledger. It is published by Messrs. Henry Bernd & Co., St. Louis.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# A POSSIBLE SUBSTITUTE FOR TRACHEOTOMY AND INTUBATION IN CERTAIN CASES.*

BY EDGAR HOLDEN, M. D., PH. D.,
NEWARK, N. J.

THE case of gummatous stenosis of the larynx presented to this association two years ago, in which, after the employment of all the modern devices for relief, I performed thyreoid laryngotomy, led me seriously to consider the possibility of some as yet undiscovered method of relief. A recent case of croupous stenosis in which neither intubation was permitted because of resistance to the gag, nor tracheotomy because of preconceived notions, suggested a device for divulsion. This was to be inserted by puncture through the superior angle made by the thyreoid alæ. It consisted of two narrow strips of gold lying flat together, an inch and a half long, an eighth of an inch wide, and a thirty-second of an inch thick, which bowed after introduction to any desired extent by the approximation of their protruding ends. The trivial incision was, of course, through the base of the epiglottis, but no larger than that made by a small tenotomy knife. This was abandoned through fear of necrosis and because it dilated only the supraglottic larynx, and could be used only on the well-developed patient.

A better method suggested itself, which is the occasion of this essay. Before presenting this will you kindly grant me your indulgence for a few remarks upon the improvement in the mortality of the present methods and the toleration of the larynx under manipulation, whether for dilatation or for temporary relief?

It is the custom for writers to make exhaustive research into the bibliography of their subject and to go back at least to Hippocrates or Paracelsus, but this has been so well done by members of this association and others since the relative merits of tracheotomy and intubation have engrossed our attention, that it would take too much of your valuable time to repeat it.

The title of this paper may be paraphrased as "a new proposition for the relief of stenosis," and appropriately follows the interesting essays that have preceded it.

It may appear strange at this day to attack as unartistic and unmechanical so time-honored a procedure as tracheotomy, but probably every man, when he attempts to force the round tube through a straight cut in the trachea, feels that it is, after all, a somewhat barbarous expedient. One may get a better idea of the mechanical character of the operation by trying it on a rubber tube, or, better still, upon the trachea removed from the body of some animal.

The availability of the operation, its antiquity, and, above all, the necessity for immediate supply of air to a dying patient, have, however, stamped it as correct, while, notwithstanding this, effort has been unceasing to devise a substitute. Perhaps if the mortality afterward were more favorable, this would be less energetic; but as it is we owe it not only to ourselves but to the public to leave no means untried to find a safer if not a better means of relief. This feeling has long actuated our profession, and is the basis of efforts innumerable in the way of catheterism, intubation, and the various methods of dilatation of the occluded larynx.

Now, how far has the mortality been improved? It would aid us greatly to answer this question if we could always distinguish in our statistics between death from operation and death notwithstanding operation. As this is impracticable for obvious reasons, we must approximate by drawing deductions only from large numbers of cases.

The 1,698 cases of Duchek (von Ziemssen), the records of the hospital at Prague (von Ziemssen), and the 5,000 cases of Professor Cohn (Ashhurst's "Surgery") agree with the deductions of Trousseau that tracheotomy in croup and diphtheria gives about 25 per cent. of recoveries.

The 21,853 cases recently collated by Lovett and Monroe ("Am. Jour. of the Med. Sci.") show a much better result—viz., 28 per cent. of recoveries.

Before the recent German surgical congress, Herr Rehn, who had performed tracheotomy 1,926 times, professed even better results—viz., 28·4 per cent. This is tracheotomy as it is; what it may become under the modern views as to antisepsis may be inferred from the experience of the Marburg Hospital, in which, during the last three years and a half, 53 per cent. have recovered ("Deutsch. med. Wochenschrift," 1888). Dr. Karl Roser, of that institution, covers the tube with gauze dipped in sublimate solution and rubbed with iodoform, changed on the second day, continued till the fifth, and then changed to the ordinary tube. This difference, if hereafter confirmed, indicates clearly the influence of the purely surgical part of the procedure upon the mortality.

It would be unfair to bring into contrast the results of intubation even with the large number of published experiences before us, yet we may say that the detailed statements of Dr. O'Dwyer ("Med. Record," October, 1887), of Dr. Francis Huber, Dr. W. P. Northrup, Dr. A. Caillé, Dr. Dillon Brown ("Med. Record," July 23d), and last year that of Dr. Fletcher Ingals before this association giving about 1,000 cases ("N. Y. Med. Jour.," July 2, 9, 1887), show a mortality of, in round numbers, 27 per cent. Larger experience will undoubtedly improve this, but the small difference is surprising in view of the greater apparent danger of tracheotomy. There is so little difference indeed that, while the former is less barbarous, the inference as to the cutting operation is either that it is less dangerous than it appears, or that its danger is counterbalanced by others of a different character in intubation.

As the matter of danger from either is to be weighed in suggesting a possible substitute, may I take the risk of annoying you with what you already know, and hastily enumerate the principal sources of this? For tracheotomy:

* Read before the American Laryngological Association at its tenth annual congress.

haemorrhage, erysipelas, gangrene, necrosis of cartilage, sepsis through the wound, ulceration of the trachea, inflammation from inspiration of air unmodified by the normal passages. For intubation: apnœa and laceration of tissue from prolonged efforts at introduction, interference with deglutition and nourishment when most essential to improvement, occlusion of the tube or of the trachea by pushing down the membrane, ulceration of the trachea by pressure of the tube and consequent sepsis or necrosis, aspiration of retained secretions, inflammation from the passage of food into the respiratory tract, expulsion of the tube by cough when no one is near to replace it, coughing up and swallowing the tube, forcing the tube downward in efforts at removal, or injury from forcible attempts to seize the tube with the extractor.



Fig. 1.



Fig. 2.

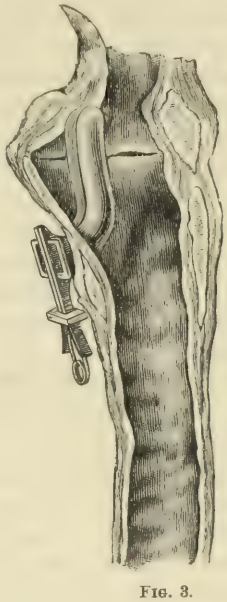


Fig. 3.

I think it self-evident that the size and character of the open wound of tracheotomy greatly enhance the mortality (for, however carefully made, it is practically a contused and lacerated wound). This, of course, is especially true in pseudo-membranous disease. In occlusion by neoplasmata, in hypertrophic or hyperplastic changes, paralysis of the abductors, spasm, œdema, etc., the danger from sepsis is far less, and the question becomes one of tolerance of a foreign body.

With reference to this, the catheterism of Desault (1793), the tube of Bouchut (1801), Fig. 10, the experience of Loiseau, Weinlechner, Green, Reese, and a host of others with which you are familiar, and the tubes of Dr. O'Dwyer, in these forms of stenosis, have established the fact that the larynx will bear indefinitely the presence of a smooth metallic body.



Fig. 4.



Fig. 5.

As to the tolerance of the larynx under dilatation, the experiences you have already heard to-day, and those of Mackenzie, Störck, Schrötter, Liston, Trendelenburg; the dilators of various types and patterns—Navratil's, Whistler's, McSherry's; the flexible metal bougies of Dr. Asch; and the many ingenious expedients given in medical literature—combine to testify, without columns of figures, as to the possibilities in this direction.

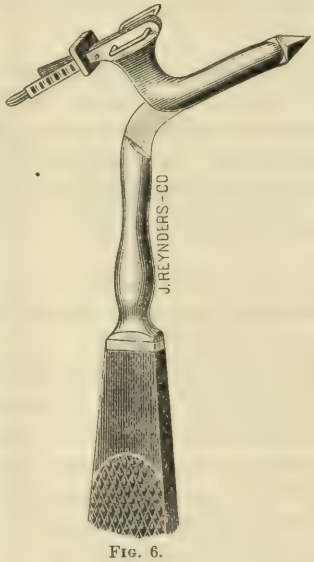



Fig. 6.




Fig. 7.

Now, so far as I have been able to learn, all attempts at dilatation, catheterism, tubage, or intubation have been made either through the mouth or from below through the tracheal cannula, and these methods all commend themselves for cases to which they are individually applicable. The

method I would submit differs radically from any of these. It is divulsion through the crico-thyreoid space. There is nothing new under the sun, and it is quite possible that some one has before entertained the same idea, although I have not been able to find a record of it. The divulsor is quite small, and consists of two blades hinged at the base. They may vary from three quarters of an inch to an inch and a quarter in length, from an eighth of an inch to a fourth of an inch in width, and from a sixteenth of an inch to an eighth of an inch in thickness. It is curved to the shape of the larynx, so as not to impinge upon the base of the epiglottis. A handle, with a blade for perforation, accompanies it, detachable instantly after introduction, different-sized divulsors being adapted to the same blade. This handle, however, is not essential, as the perforation can be made with a tenotomy-knife. The two blades flare at the lower end, which is to remain outside, the smaller ends, when introduced, clasping the perforating knife and curving upward, while the knife-handle curves downward. Once in, the flanges are pressed slightly together, the blade is withdrawn, and the divulsor is closed, passed upward into place, separated, and held by a small sliding plate. The trivial wound is thus closed by the instrument, a small portion of which alone remains in sight. The crico-thyreoid space, readily detected by the finger, can be perforated instantly; the perforation is easy, almost bloodless, and as harmless as any incised wound of the respiratory tract can be. The instrument can be withdrawn and reintroduced very quickly.




Fig. 8.

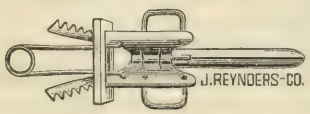



Fig. 9.

It is almost impossible to give a clear idea of this device without drawings, and these are submitted, together with two of the instruments.

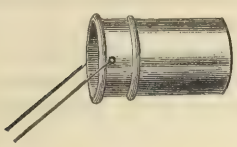


Fig. 10.

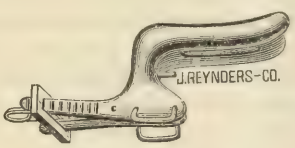



Fig. 11.

Colored drawings of the larynx, made by me from dissections on the recent subject, are submitted to show the normal lateral constriction of the larynx, with its superglottic and subglottic portions (Fig. 1), the appearance upon antero-posterior section (Fig. 4), the instrument introduced through the crico-thyreoid space (Fig. 5), and the same in a larynx contracted by a preservative fluid (Fig. 3). Figs. 6, 7, 8, 9, 10, and 17 show the instrument, with the handle and blade for perforation and introduction, and also the various appearances of the divulsor when detached. These are of the actual size adapted to the adult larynx; those for children and infants are of the same shape, but shorter, to be used with the same blade and handle. A short forceps (Fig. 12) accompanies the divulsor to aid in manipulation.

Fig. 13 shows the position of the hand in introduction necessary to prevent a too deep perforation and consequent wounding of the posterior laryngeal wall. As the drawings sufficiently explain the device, and the instrument itself is before you, it will perhaps be unnecessary to give a more detailed description.

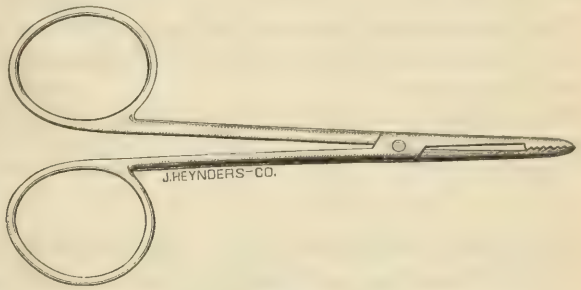



Fig. 12.

It is quite possible that in great tumefaction of the larynx it will be desirable to use wider blades, and this would not be difficult, nor would harm result from a slight transverse section of the dense fascia over the crico-thyreoid space, as is done in Boze's operation, sometimes called bloodless tracheotomy.

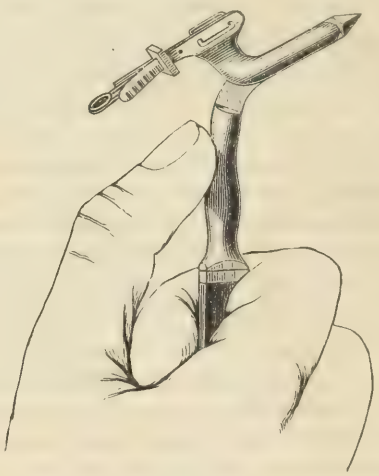


Fig. 13.

This suggestion would not preclude a subsequent tracheotomy, nor a preliminary attempt at intubation. Whether or not the procedure is applicable to children under four years of age experience alone will show. It may perhaps occupy a place between the two familiar operations. It can be done by a tyro in the profession. It permits of breathing through the natural channels. It can be done with greater celerity than either tracheotomy or intubation. It will usually be bloodless, since the only artery likely to be wounded, the median branch of the superior thyreoid, very rarely rises so high as the crico-thyreoid space, and, if present, would be pushed aside by the spade-shaped blade. The instrument can be quickly withdrawn and replaced.

Permit me, in conclusion, to again refer to some of the dangers of tracheotomy and intubation, and to see if any of them would be likely to be met by the procedure suggested. Some are of necessity common to all operations, but the

danger of hæmorrhage, erysipelas, ulceration, and sepsis would be lessened; apnœa during introduction, interference with deglutition and so with nourishment, occlusion by membrane or by its being pushed downward, tracheal ulceration, aspiration of retained secretions, and inflammation from passage of food into the trachea, would be avoided; and expulsion by coughing, swallowing the instrument, or forcing it downward into the trachea, would be impossible.

The "certain cases" alluded to in the title of this paper would at least be any where immediate and rapid operation for relief is demanded.

The divulsor is made by John Reynders & Co., of Twenty-third Street and Fourth Avenue, New York.

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## CLINICAL REPORT ON SULPHONAL.

By WILLIAM H. FLINT, M. D.,
ATTENDING PHYSICIAN AT THE PRESBYTERIAN HOSPITAL.

The writer's attention having been called to sulphonal by Dr. E. C. Wendt's article in the "Medical Record" of June 2, 1888, as well as by editorials in the June number of the "Therapeutic Gazette" (page 376) and in the "New York Medical Journal" of July 7, 1888 (page 9), he placed the drug on trial at the Presbyterian Hospital during his recent summer service in that institution. The observations then begun have been continued during the autumn service of Dr. A. H. Smith, to whose kind courtesy the writer is indebted for the privilege of reporting the more recent cases. The writer is also under many obligations to Dr. D. M. Marvin, house physician at the Presbyterian Hospital, for his efficient services in observing, recording, and tabulating the results attained by the use of the new hypnotic. The clinical features upon which particular stress has been laid in the investigation are: The primary disease of the patient suffering from insomnia; his previous history; the dose of sulphonal administered; the time elapsing after the exhibition of the drug before sleep ensued; the duration of the sleep, its quality, and the after-effects of the remedy. A repetition of these data for each case is rendered unavoidable by the fact that the original tabulated form is not adapted for publication in this journal.

The sulphonal has been administered in powdered form, inclosed in capsules, and the time selected, unless otherwise stated in the reports of individual cases, has been the usual evening bed-time of the patients. In order to prevent mental impressions, either of a favorable or of an adverse nature, from influencing the results, the patients have not been informed of the nature of the drug or of its expected action. The writer has subjoined to the report certain bibliographical references to sulphonal collected from various American and foreign journals, with a view to facilitating the study of its physical and chemical properties and to aiding the reader in consulting the principal original articles relating to sulphonal which have come to the writer's notice.

### Cases of Insomnia treated with Sulphonal.

1. A man, forty years of age, convalescent from an attack of acute articular rheumatism. He stated that persistent insomnia had for several years been the bane of his existence. He had often risen from bed and walked the streets at night in the hope of so exhausting himself as to induce sleep. This insomnia was still present.

*First Trial.*—Dose, 30 grains; asleep in 45 minutes; slept 8 hours; quality of sleep, perfectly natural; after-effects on pulse, temperature, respiration, cerebrum, and bodily functions, *nil*.

*Second Trial.*—Dose, 30 grains; asleep in 30 minutes; slept 4 hours; sleep disturbed by return of pain in the rheumatic joints; after-effect, slight drowsiness during the following forenoon; subsequently morphine, combined with salicylates, was required on account of articular pain.

2. A man, aged thirty-one, with pulmonary tuberculosis in the cavernous stage, for some time an inmate of the hospital. He had been habitually kept awake by coughing, unless soothed by some anodyne or hypnotic remedy. Generally morphine had been employed.

*First Trial.*—Dose, 30 grains; asleep in 25 minutes; slept 9 hours; quality of sleep, natural; after-effect, drowsiness the next morning.

*Second Trial.*—Dose, 30 grains; asleep in 30 minutes; slept 10 hours; sleep natural and refreshing; coughing occurred occasionally without awakening the patient; after-effect, slight drowsiness the next forenoon.

*Third Trial.*—Identical with the second trial.

*Fourth Trial.*—Dose, 20 grains; asleep in 35 minutes; slept 10 hours; no drowsiness the next day.

*Fifth Trial.*—Dose, 20 grains; asleep in 2 hours; slept 8 hours. For two hours after the dose was given, pleuritic pains kept the patient awake, but he then slept quietly as in the other trials.

3. A man, forty-two years old. Disease, cancer of the stomach. Was generally very wakeful without hypnotic, even when free from pain. The insomnia is apparently due to the cachexia present.

Dose, 30 grains; asleep in 50 minutes; slept 8½ hours; sleep natural; no subsequent drowsiness.

4. A man, thirty-eight years of age. Disease, endocarditis and cardiac dilatation due to renal disease. Accustomed for a long time to morphine, and sleepless because of dyspnœa when deprived of it.

Dose, 30 grains; asleep after suffering from dyspnœa for 3½ hours; slept restlessly 6½ hours; no after effects. Morphine was thereafter preferred because of its tonic action on the heart and its controlling influence on the dyspnœa.

5. A woman, aged thirty-two. Disease, typhoid fever at the beginning of the third week; pyrexia moderate and easily controlled with acetanilide. The patient is quite wakeful at night, but not delirious.

*First Trial.*—Dose, 20 grains; asleep in 35 minutes; slept 9 hours; sleep quiet and restful; after-effect, somnolence the next morning.

*Second Trial.*—Dose, 20 grains; asleep in 30 minutes; slept 7 hours; sleep natural; drowsy the following forenoon, but not after noon.

*Third Trial.*—Dose, 20 grains; asleep in 30 minutes; slept quietly 9 hours; no drowsiness the next day.

*Fourth Trial.*—Dose, the same; asleep in 25 minutes; slept peacefully 7 hours; not drowsy.

6. A man, twenty-four years old. Disease, phthisis with cavities; cough keeps the patient awake. Dose, 30 grains; asleep in a short time (exact time unknown); slept 10 hours; sleep restless but not broken by cough; after-effects, none.

7. A woman, aged twenty-one years. Disease, pelvic peritonitis. The patient's pain had almost disappeared, but she was still restless and sleepless. Pain occasionally recurred.

*First Trial.*—Dose, 20 grains; asleep very soon (exact time not ascertained); slept all night, but in broken snatches on account of recurring pelvic pain.

*Second Trial.*—Dose, 20 grains; asleep in 30 minutes; slept 9 hours; sleep natural; after-effects, great refreshment and a sense of reinvigoration.

*Third Trial.*—Dose and results as in the second trial.

*Fourth Trial.*—Dose, 20 grains; asleep in 4 hours; restless from pelvic pain.

8. A woman, aged twenty-eight years. Disease, malaria. The patient has habitually used opium, and is exceedingly nervous and wakeful without it.

*First Trial.*—Dose, 20 grains; asleep in 35 minutes; slept 9 hours; sleep quiet; after-effect, drowsiness the following forenoon. The dose was withheld until midnight, and up to that time the patient was quite unable to go to sleep.

*Second Trial.*—Dose, 20 grains; asleep in 15 minutes; slept 9 hours; sleep perfectly natural and quite profound; after-effect, drowsiness.

*Third Trial.*—Dose, 20 grains; asleep in 40 minutes; sleep quiet; after-effects, *nil.*

9. A man, twenty-five years of age. Disease, typhoid fever, in the second week of its course. The patient is neurasthenic and is notably restless at night, although his temperature is not high (102° F.).

Dose, 20 grains; asleep in 20 minutes; slept 9 hours; sleep natural; not drowsy. This was repeated several times, with like results.

10. A man, forty years of age. Disease, acute alcoholism with tremor, slight delirium at night, and marked insomnia.

Dose, 20 grains; asleep in 4 hours; sleep broken by noisy delirium. The effect being unsatisfactory, chloral and the bromides were substituted for sulphonal in the further treatment.

11. A woman, aged thirty-six. Disease, hysteria and malarial fever. The patient is exceedingly wakeful and nervous. Her condition sometimes closely resembles *coma vigil.* She says she frequently lies awake all night, and this statement has been verified by actual observation in the hospital.

*First Trial.*—Dose, 20 grains; asleep in about half an hour; slept 9 hours; sleep quite normal and very refreshing; no after-effects.

*Second Trial*, made two days later, resulted as the first trial.

*Third Trial* (made five days after the second).—Dose, 20 grains; asleep in 25 minutes; slept 9½ hours; sleep quiet; after-effects, none. On the nights when the patient did not receive the sulphonal she was as restless and sleepless as usual, and complained bitterly of frontal headache. On the mornings after she had taken the drug the headache was absent in each instance.

12. A man, aged forty-five. Bright's disease, with endocarditis, valvular lesions, and cardiac dilatation. The patient affirms that he "has not had a good night's rest for a month."

Dose, 30 grains; asleep in 40 minutes; slept 9 hours. Patient awakened refreshed, but suffered so much the following day with dyspnœa that morphine was used hypodermically in the subsequent treatment.

13. A woman, aged thirty-two years. Disease, Bright's and endocarditis. The patient suffers terribly from dyspnœa, apparently uræmic in nature.

Dose, 20 grains; sleep entirely prevented by dyspnœa. Experiment not continued.

14. A woman, thirty-eight years of age. Bright's disease. She can not sleep without a hypnotic, because of severe dyspnœa, often amounting to orthopnœa. She is accustomed to the use of chloral, of the bromides, and of opium in various preparations.

*First Trial.*—Dose, 20 grains; asleep in 30 minutes; slept 9 hours; sleep natural; no after-effects.

*Second Trial.*—Dose, the same; asleep in 30 minutes; slept poorly all night.

*Third Trial.*—Dose, the same; asleep in 20 minutes; slept 10 hours; sleep natural; no after-effects. A week elapsed between the second and third trials, during which the patient had other hypnotics, chiefly the U. S. solution of morphine, being unable to sleep without some soporific drug.

15. A woman, aged forty-two years. Disease, neuralgia. Patient has habitual insomnia, not always due to pain, but to nervous unrest.

*First Trial.*—Dose, 20 grains; asleep in 35 minutes; slept 6 hours; sleep quiet and undisturbed; after-effects, none.

*Second Trial* (the next night).—Dose, 20 grains; asleep in 25 minutes; slept 9 hours; sleep perfectly tranquil; no after-effects.

*Third Trial* (after five nights, during which the patient had no sulphonal, and was perfectly sleepless).—Dose, 20 grains; asleep in 38 minutes; slept 9 hours; sleep excellent and refreshing; no sequelæ.

16. A woman, aged fifty-five. Disease, splenitis. The patient says she can not sleep on account of pain in the region of the spleen.

Dose, 20 grains; asleep in 40 minutes; slept 9 hours; sleep natural; no after-effects.

17. A man, aged twenty-five years. Disease, simple insomnia. After the patient had been wakeful for four hours, the sulphonal was given. Dose, 20 grains; asleep in 15 minutes; slept 6 hours; sleep deep and natural; no sequelæ.

18. A woman, forty-one years old. Disease, typhoid fever, in the second week, with considerable pyrexia and extensive bronchitis, leading to dyspnœa and some cyanosis. She had been sleepless for the three entire nights preceding the first administration of sulphonal, and had required morphine.

*First Trial.*—Dose, 20 grains; asleep in 35 minutes; slept 9 hours; sleep perfectly natural; no after-effects, save improvement in her general condition and lower range of temperature. The patient slept better and longer than when under the influence of the morphine, and subsequently slept for several successive nights without any hypnotic, when the sulphonal was again used with good results.

19. A woman, aged fifty-two. Disease, chronic rheumatism, chiefly in the hip. Has not slept at night for eight days, since the beginning of the last exacerbation of pain.

*First Trial.*—Dose, 20 grains; asleep in 20 minutes; slept 6 hours, but the sleep was restless, unrefreshing, and often interrupted by the articular pain.

*Second Trial.*—Dose, 20 grains; the result was practically the same, so that the experiment was abandoned.

20. A man, aged forty. Disease, cerebral gumma, with headache and paralysis. The patient has not slept well for two months, usually awakening every hour or two during the night.

*First Trial.*—Dose, 20 grains; asleep in an hour; slept 8 hours; sleep natural. The patient was somnolent the greater part of the following morning.

*Second Trial.*—After a week, during which the sleep had been as usual, very restless and frequently broken. Dose, 20 grains; asleep in 1¼ hour; slept 8 hours; sleep very tranquil; no somnolence afterward.

21. A man, aged twenty-one years. Disease, pharyngitis. The patient has not slept well for a week on account of sore throat and cough.

Dose, 20 grains; asleep in half an hour; slept 9 hours; sleep excellent; no after-effects. On the succeeding nights no hypnotic was needed.

22. A woman, forty-seven years old. Disease, opium-habit of long standing, with obstinate constipation. Large doses of morphine were required to produce sleep at the time when trial was made of sulphonal.

*First Trial.*—Dose, 20 grains; did not sleep all night; complained of the gastric and abdominal pains characteristic of the interrupted opium-habit.

*Second Trial.*—Dose, 30 grains; asleep in 35 minutes; slept quietly 8 hours. No sequelæ.

*Third Trial* (made after three nights, during which the patient could get but little sleep, morphine being withheld).—Dose, 30 grains; asleep in 20 minutes; slept 8½ hours; sleep natural and without after-effects.

*Fourth Trial* (after five nights, during which the sleep was better but still very poor).—Dose, 30 grains; no sleep, because of renewed abdominal pain. U. S. solution of morphine, f ʒ ij, and codeine, gr. j, were required to cause sleep.

*Fifth Trial* (after three weeks, during which natural sleep had been gradually restored, opium being withheld).—Dose, 30 grains; asleep in 25 minutes; slept 10 hours very well, and awoke feeling bright and cheerful.

*Sixth Trial* (after two days, the patient now having some thoracic and abdominal neuralgia).—Doses, at 8 P. M. 30 grains, and at 9 P. M. 30 grains; asleep at 10.10 o'clock; slept 9 hours; sleep broken occasionally by pain, but for only a few moments; after-effects *nil*, except a headache, which the patient was suffering from before the sulphonal was given.

23. A man, forty-three years old. Disease, hepatic cirrhosis with ascites, nephritis, and endocarditis. The patient has intense dyspnœa, apparently due to uræmia and to the encroachment of the diaphragm upon the intrathoracic space.

*First Trial.*—Dose, 20 grains; asleep not until 4 hours, because of the dyspnœa; slept 6 hours; sleep natural, although the exaggerated respiratory movements continued. No drowsiness afterward.

*Second Trial* (after four nights, during which opium was administered).—Dose, 20 grains; asleep in an hour; slept 5 hours; disturbed by oozing of serum from an abdominal puncture made to remove the ascitic fluid.

*Third Trial* (after five nights, during which other hypnotics were invariably necessary to produce sleep).—Dose, 30 grains; asleep in 15 minutes; slept 7 hours; sleep more natural than at any time.

24. A man, aged thirty-eight years. Disease, acute rheumatism. The pain is controlled by salicylates, but restlessness and insomnia persist. Dose, 20 grains; asleep in 30 minutes; slept 8 hours; quality of sleep normal; no after-effects.

25. A woman, twenty-seven years old. Diseases, endometritis and hysterical insomnia. Dose, 20 grains; asleep in 90 minutes; slept 7½ hours; sleep natural; no drowsiness after awakening. The patient was at first disturbed by noise in the ward. The sleep was devoid of the distressing dreams usually attending it.

26. A woman, twenty-six years of age. Disease, sciatica. The patient never sleeps more than three or four hours consecutively, because of pain.

*First Trial.*—Dose, 20 grains; asleep in 60 minutes; slept 9 hours; sleep restless and broken by pain.

*Second Trial.*—Practically the same results, and experiment abandoned.

27. A woman, aged thirty-five years. Diseases, alcoholic gastritis and endometritis. Vomiting and pain prevent sleep.

*First Trial.*—Dose, 20 grains; asleep in 70 minutes; restless sleep all night.

*Second Trial* (the following night).—Dose, 30 grains; asleep in 30 minutes; slept 9 hours; sleep quiet and natural; no drowsiness the next day.

28. A man, fifty years old. Disease, dysentery.

*First Trial.*—Dose, 20 grains; restless and sleepless all night from tormina and tenesmus.

*Second Trial.*—Dose, 30 grains; the same result, so that the experiment was not continued.

29. A man, aged twenty-six years. Disease, acute rheumatism with severe pain, not yet controlled by salicylates. Dose, 30 grains; asleep in 30 minutes; slept in a broken and restless manner 7 hours, being awakened, time and again, by pain. Experiment discontinued.

30. A man, thirty-four years of age. Diseases, neurasthenia and exhaustion. The patient has been homeless for two weeks, and has suffered greatly from mental distress and consequent insomnia, never sleeping more than a few hours at a time.

Dose, 30 grains; asleep in 35 minutes; slept 10 hours; sleep natural; patient much refreshed by sleep.

31. A man, aged forty-six years. Disease, hepatic abscesses following tropical dysentery, spontaneously evacuated through the bronchi and colon. The cough and frequent dejections prevent sleep. Dose, 30 grains, repeated in an hour. Results entirely negative, and experiment abandoned.

32. A man, aged thirty-four. Disease, the opium-habit. After having been broken of the habit for several months, he had a relapse, and, after having injected morphine hypodermically for ten days, himself discontinued the habit a second time, but applied for aid in carrying out his good resolution. For three days and nights he had hardly slept at all, and was much exhausted physically and mentally. On the third day he came under observation, and, having suffered from violent gastric pain and from vomiting, was put upon the milk diet and received 20 grains of sulphonal every two hours for six hours, at the end of which time he fell asleep and slept quietly for 7 hours, awaking refreshed and comparatively free from pain. On the following three nights he took two consecutive twenty-grain doses of sulphonal, at intervals of two hours, and slept comfortably all night. On the succeeding nights he slept without a hypnotic so long as he remained under observation, which was eight days.

33. A woman, eighteen years old. Diseases, anæmia and hysteria. The patient can not sleep because of severe dyspnœa, apparently of purely nervous origin. On one occasion she had orthopnœa for some hours, and f ʒ ij of the U. S. solution of morphine having failed, after two hours, to relieve the dyspnœa, 30 grains of sulphonal were administered. The patient, having kept awake two hours longer, then slept quietly for seven hours in the recumbent position. The next morning she was very drowsy, complaining that she could hardly keep her eyes open. This somnolence passed away during the forenoon.

While the cases reported above are too few to justify any generalizations regarding the exact indications and effects of sulphonal, they yet offer some interesting corroborative evidence regarding its great hypnotic value already established by earlier observations. The general conclusion which may be drawn from these observations is that sulphonal, even in single doses of 20 or 30 grains, is a safe and, in the main, reliable hypnotic, free from unpleasant concomitant effects, and usually from all undesirable sequelæ. The single objectionable after-effect witnessed by the writer has been moderate somnolence on the morning following the administration of the remedy. In none of the cases has there been the slightest derangement of appetite or digestion, nor have the circulation and respiration been

appreciably affected at the time of awaking. The cutaneous and renal secretions have neither been increased nor diminished; nausea, vomiting, and constipation have not followed the use of the drug. Several of the cases seem to show that an increase of the original dose is often not required, and that, after a certain time, natural sleep being restored, the sulphonal may be discontinued. This is the only light thrown by the writer's cases upon the important question as to the possibility of engendering a sulphonal habit or of prejudicially affecting the organism by the continued use of sulphonal. The doctrines that sulphonal is of exceptional value in insomnia occasioned by debility, neurasthenia, and mental perturbation, and that it has no appreciable anodyne properties, receive support from the history of several of these cases. Thus, in Case 30, the happiest results followed the use of the drug in a destitute, homeless, neurasthenic, and exhausted patient. The same was true in Cases 11 and 25, of hysteria. In Cases 1, 7, 19, 26, 28, and 29, the pain of acute rheumatism, of pelvic peritonitis, of chronic rheumatism, of sciatica, and of dysentery was not sufficiently controlled by the remedy to permit of quiet sleep. On the other hand, the pain of splenitis (Case 16), of cerebral gumma (Case 20), of pharyngitis (Case 21), and of alcoholic gastritis (Case 27), was not of sufficient violence to prevent the patients from sleeping under the influence of sulphonal. The effect of sulphonal was particularly fortunate in the cases of those patients who had previously been addicted to the use of opium and of other hypnotic drugs or were suffering from insomnia due to the withdrawal of these remedies. These results are illustrated by Cases 4, 22, and 32. In Cases 4, 12, 13, and 14, of insomnia due to the dyspnœa of cardiac and Bright's disease, sulphonal was powerless to produce sleep, and morphine was alone perfectly adequate to meet the indications. In Case 4, of cardiac dyspnœa, the hydrate of amylene proved fairly successful. In Cases 2 and 6 insomnia was occasioned by the harassing cough of pulmonary tuberculosis, but, under the influence of sulphonal, the patients slept better than usual, and although the cough continued during sleep, they were not awakened by it. Sulphonal also rendered excellent services in the insomnia of typhoid fever, as shown by Cases 5, 9, and 18.

The average length of time at which sleep ensued after the administration of the sulphonal was about an hour.

The average duration of sleep was a little over six hours, and success attended the use of the sulphonal in about 82 per cent. of all the trials.

The high average of successes, in a series of unselected cases, many of which were plainly unsuitable for experiment with a pure hypnotic, encourages the writer to publish this record in the hope that it may aid in hastening the general introduction of sulphonal.

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# PROGRESSIVE MUSCULAR DYSTROPHIES:

## THE RELATION OF THE PRIMARY FORMS TO ONE ANOTHER AND TO TYPICAL PROGRESSIVE MUSCULAR ATROPHY.

By B. SACHS, M. D.

(*Concluded from page 626.*)

We have now to turn our attention to another type, to the so-called hereditary form of progressive muscular atrophy. This type was created by Leyden (49) and warmly advocated by Möbius (50). According to Leyden, this form is characterized as follows:

*The hereditary form of progressive muscular atrophy* attacks several members of the same family. It appears at an early age, as a rule between the eighth and tenth years, in one case not before thirty. Males are more apt to be attacked than females (the elder Eulenburg, however, described the affection in three sisters of one family). The disease begins invariably with weakness in the back and lower extremities, and in these regions a wasting of the muscles is first observed. After a lapse of years the muscles of the upper extremities may be involved. Occasionally the patient may attain to an old age. Atrophy may become so extreme that the patients are absolutely helpless. The march of the disease is steadily progressive. Electrical reactions normal; no fibrillar contractions. The atrophy is associated with hypertrophy, particularly of calf muscles. No sensory disturbances, no disturbances of speech, of deglutition, or of ocular movements.

Leyden records the case of a man thirty-seven years of age who had trouble in walking from early childhood on, and who had decided atrophy of back and thigh muscles, with vast increase of calf muscles, without any involvement of shoulder and arm muscles. The general symptoms were of the kind stated above. Leyden counted among this class of cases a well-known one of Meryon (51), the cases of Oppenheimer (52), of Hemptenmacher (53), of Bernhardt (54), and of Eichhorst (55); but all of these cases have been considered by most other and later authors to belong to the type of pseudo-hypertrophy. Leyden has been followed by Möbius, by Zimmerlin (56), by Landouzy and Déjérine (57), by Schultze (58), and by others in the description of this type; but of these Möbius and the French

authors alone can be said to be advocates of this special form.

In my opinion, there is not sufficient reason to create a separate type of disease on the points laid down by Leyden. First, all forms of muscular atrophy may be and often are hereditary. This is particularly true of pseudo-hypertrophy. Second, cases with distinct heredity often start in the upper extremities; and third, all cases beginning with weakness and atrophy in the back and leg muscles are not necessarily hereditary, as we shall see when we come to the consideration of my case of the peroneal type of progressive muscular atrophy.

As regards the first point, in the cases of Oppenheim, Friedreich, and Hemptenmacher the disease began in the muscles of the back, but spread to the upper extremities instead of the lower. Barsikow (59) has described a number of cases occurring in two families. In the members of the one family the disease attacked back and leg muscles; in the other family the spreading of the atrophy was not uniform, attacking the leg muscles in one member and in another the shoulder first and then the leg muscles. Zimmerlin (*loc. cit.*) published seven cases—four in one family and three in another. In the one family the four cases are distinctly of the juvenile type, while in the second family the two cases began in the upper extremities, leaving the legs intact, while in the third case there was involvement of upper and lower extremities and even involvement of face muscles—an approach to the type Landouzy-Déjérine.

Schultze (*loc. cit.*) describes the cases of two brothers, one affected with typical pseudo-hypertrophy, and the other with a general wasting of the upper and lower extremities. In this country Harrington (59*a*) has reported seven cases in which the onset was in the legs in some, in others in the legs and arms simultaneously, and in still others the legs were affected first, and only a year later the arms. Ormerod's cases of muscular atrophy in three children after measles might be used to show the same differences in the mode of onset (cf. No. 70).

We have, therefore, good reason for insisting that Leyden's hereditary form is not entitled to rank as a special type of progressive muscular atrophy; that pseudo-hypertrophy and Erb's juvenile form are distinctly hereditary, and, furthermore, that cases with a distinct heredity are by no means necessarily characterized by an atrophy first attacking the muscles of the back and thighs. All of Leyden's cases would properly come under the head of pseudo-hypertrophy of Erb's juvenile form, or of the "peroneal type."

The next type of progressive muscular atrophy—the type facio-scapulo-humeral, type Landouzy-Déjérine, the infantile progressive muscular atrophy of Duchenne—can not be disposed of so easily.

Cases of progressive muscular wasting with involvement of face muscles have always been considered rare. Duchenne described several; Remak (60), Mossdorf (61), Bernhardt (62), Kreske (63), and Westphal (64) have each described one or two cases, but Landouzy and Déjérine (*loc. cit.*) have succeeded in calling renewed attention to this form, have made the most careful examinations, and have obtained a post-mortem examination in one case. For this reason it is just to refer to the features of this type as laid down by Landouzy and Déjérine, who have seen more cases than all other recent authors taken together.

*The Type Landouzy-Déjérine.*—This form of progressive muscular wasting begins, as a rule, in early life, and in the majority of cases in the muscles of the face, giving rise to what the authors term the "*facies myopathique.*" The lips are considerably thickened, and constitute the "*bouche de tapir.*" Great stress is laid upon this tapir-mouth appearance. Later on in the course of the disease the atrophy spreads to the shoulder and arm muscles; the supraspinati and infraspinati, the subscapularis, the flexors of the hand and fingers remain normal. The muscles of deglutition, mastication, and respiratory and laryngeal muscles, as well as the ocular muscles, remain normal. In exceptional cases the disease may begin in the shoulder or arm muscles, or even in the lower extremities. The disease is distinctly hereditary. Fibrillar contractions and reaction of degeneration are never present.

In their first paper Landouzy and Déjérine published cases occurring in two different families; in the first the disease could be followed up through five generations. Cases that are described relate to a father and four sons, five other children not having been affected. The history of one son is characteristic.

The trouble began at the age of three with atrophy of face muscles; no other symptoms observed up to the age of seventeen. From that time on atrophy was noticed in the muscles of the shoulder and arm, spreading to the trunk. At the age of twenty-one atrophy had become extreme—"nothing but skin and bone"—*facies myopathique* and *bouche de tapir.* Sensation normal, sphincters also; patellar reflex lost, electrical excitability diminished in proportion to the wasting, but no reaction of degeneration. At the age of twenty-four, death from phthisis.

*Autopsy.*—Atrophy determined as follows: Frontalis, orbicularis palpebrarum, zygomatici, orbicularis oris, and buccinator of both sides (levator anguli oris, normal), trapezius, deltoid (infraspinati and supraspinati, subscapularis, teres major and minor, normal), biceps, brachialis anticus, and coraco-brachialis, triceps, supinator longus and extensor radialis (supinator brevis, flexor digitorum sublimis et profundus, normal), extensor pollicis longus and extensor indicis (extensor digitorum communis, extensor digiti minimi, extensor ulnaris, normal), abductor longus and extensor pollicis brevis slightly wasted, abductor brevis pollicis wasted, other thenar and hypothenar muscles normal. Lumbricalis distinctly wasted, and interossei slightly wasted; pectorals wasted; serrati and sacro-lumbar normal. Lower extremities not so carefully examined; glutæi were atrophic; no marked lipomatosis anywhere; no changes in the nervous system. Diseased muscles revealed simple atrophy of primitive muscular fibers; slight traces of increase of interstitial connective tissue and of fat. No increase in muscular nuclei.

The histories of the cases of Remak and of the other authors quoted are very similar. In some the atrophy set in in the extremities first, and in the face later on. In Remak's case both sides of the face were involved; in Kreske's, the one side only.

The similarity between this form and Erb's will be apparent to every one at a glance; it is practically Erb's form

plus involvement of face muscles. Erb never observed this complication in his own cases, and Landouzy and Déjérine argue that their cases are different on account of the absence of lipomatosis and the presence of facial symptoms. As for Erb's never having observed the facial atrophy in any of his cases, it is worth noting that in a later paper (65) Landouzy and Déjérine publish a case (No. VI) of their form in which the face muscles appeared normal during life, but, on post-mortem examination, revealed decided morbid changes. It is possible, therefore, that the same changes were present in some of Erb's cases without so excellent an observer as he being able to detect them. If this is allowed (and the French authors themselves urge the possibility of this), there is no just reason for making a separate type for such cases as they describe. They deny the resemblance between the two forms in consequence also of the invariable absence of lipomatosis; but Westphal (66) again seems to have found a decisive case which shows that the face muscles may be associated with typical pseudo-hypertrophy, and it must be remembered that Landouzy and Déjérine grant that they have found hypertrophied fibers in some of the muscles. We can not, therefore, see the propriety of creating a separate type such as Landouzy and Déjérine have described. There is a slight difference between their cases and those of Erb in the topographical distribution of the atrophy, and even this is doubtful, while their cases resemble Erb's form in the involvement of the upper arm and shoulder muscles chiefly, in the presence of hereditary influences, in the absence of fibrillar contractions, and absence of reaction of degeneration.

I wish, however, to enter a special plea for the recognition of still another type—the *peroneal type of progressive muscular atrophy.* This form was first described by Charcot and Marie (67), and, independently of them, by Dr. Tooth (68), of England, in a Cambridge thesis. Charcot and his associate reported five such cases, Tooth four cases, and Herringham (69) has recently reported one case in a family in which various members in successive generations have been similarly affected. To this list I am able to add one case of considerable interest; and similar cases, although not designated by this title, have been described by Hammond (Weathersbee ail), by Ormerod (70), by Schultze (71), and, no doubt, some other of the cases of hereditary muscular atrophy would more properly belong to this class.

*The Peroneal Form of Progressive Muscular Atrophy* begins in early youth, or may, as in one of Charcot's cases, attack a person beyond the age of puberty. There may be distinct family inheritance. According to Herringham, as a rule, boys inherit the disease through the mother, as has been shown to be the rule in cases of pseudo-hypertrophy. The atrophy begins in the lower extremities, first attacking the extensor hallucis longus, then the common extensors of the toes, and then the peronei; the small muscles of the foot may be affected as well. The calf muscles atrophy a little later, while the muscles of the thighs offer greater resistance, and do not undergo atrophy until the disease has well run its course. Several years after the onset of the disease in the legs the hands become involved; the interossei, the muscles of the thenar and hypothenar, as well as the muscles of the forearm, become wasted; the supinator longus, the muscles of the shoulder, of the neck, trunk, and face, remain normal. The atrophy need not be entirely symmetrical. Fibrillar contractions occur occasionally; the reaction of degeneration is present in some muscles; the skin reflexes remain normal.

My own case is as follows:

*Author's Case III.*—R. J., a Russian girl, aged twelve, was referred to my department at the Polyclinic by Dr. Gibney. She is the third child of healthy parents; two born later died—one of diphtheria, and one of cerebral trouble after a fall. No disease similar to the one from which this patient suffers has been known in any branch of the family. While carrying this child, the mother was considerably troubled with swollen feet and legs, possibly of nephritic origin, but is now a healthy, stout woman. The child was asphyxiated when born; no doctor in attendance. Patient began to walk at nine months; had a slight fall at the age of ten months without doing any injury to herself. At the age of three, mother noticed that there was something wrong with the right knee, and in the hospital in St. Petersburg a plaster-of-Paris splint was put on. This the child wore for seven weeks. She could walk perfectly well after that, and played as well and ran as fast as any child. Has had a number of diseases—measles at the age of one year, small-pox at the age of four, scarlet fever at the age of six, and typhoid fever at six and a half. In spite of all, recovered and walked perfectly well. Came to this country one year ago; nine months ago fell on left hip, and for some weeks had pain in left hip. While recovering from this fall she noticed that she had difficulty in moving the toes of the right leg. This is now five months ago. The impairment of motion gradually grew worse until the child was not able to move the toes at all. Never had pain on her right side. Her present manner of walking developed very slowly. At first sight her gait seemed to be characteristic of poliomyelitis. Child complains of fatigue, particularly in mounting stairs; no other special symptoms. Patient was a bright girl; no hysterical tendencies. The history shows that the present condition of paresis developed slowly, and was not preceded either by convulsions or fever. Furthermore, that there was no pain accompanying the paresis at any time. Has distinct feeling of movement under the skin.

*Examination.*—Girl of medium size. Upper extremities, good grasp with both hands. Forearm muscles and hand muscles well developed; supinators, also biceps and deltoids, well marked, the latter not hypertrophied. Trapezii and rhomboids of normal strength; right pectoral a little thinner than left. Right shoulder blade shows slight winged appearance. Right serratus slightly weakened. Distinct wasting of the right leg, thigh, and gluteal region. The leg muscles of the right side more distinctly atrophied than the thigh muscles. The child can not lift toes of right foot while resting the heel on the ground. The same movement can be performed fairly well on the left side. Can not raise herself on tip-toes on the right side, but can do so with the left foot. Posterior surfaces of thighs proportionately less developed than anterior surface. Right extensor quadriceps very weak; left weaker than normal, but stronger than on the right side. Evident atrophy, therefore, of anterior tibial and posterior tibial group of right leg, of posterior thigh muscles, and the glutæi muscles of right side. In the lying position, ten centimetres below lower edge of the patella, right leg, 23½ ctm.; left leg, 24½ ctm. Eighteen centimetres below iliac crest, right thigh, 37 ctm.; left thigh, 39 ctm.

Knee-jerk absent on right side; on left side it was impossi-

ble to obtain the knee-jerk for several weeks; it is now present, however, and very lively. Occasional fibrillar contractions. No sensory disturbances anywhere. No rectal or visceral symptoms. The triceps tendon reflex present on both sides but weak. Occasional fibrillar contractions have been noticed.

*Electrical Examination.*—Faradaic examination of all nerves and muscles gives satisfactory responses except in the case of the right peroneal nerve, which exhibits diminished faradaic excitability. On faradaic excitation of peroneal nerve, tibialis anticus muscle contracts very feebly. Serratus also responds more powerfully on the left side than on the right to current of moderate strength. Left pectoralis major does not respond as well as right to faradaic current. Galvanic examination satisfactory. The following alone need be mentioned: Examination with the 10 ctm. square electrode: Right peroneal nerve, KCC, 2½ ma.; AOC, 3½ ma.; ACC, 6½ ma. Left peroneal nerve, KCC, 2½ ma.; AOC, 3½ ma.; ACC, 6½ ma. Right tibialis anticus muscle, direct examination, KCC, 7 ma.; ACC, 8 ma. Left tibialis anticus, KCC, 4½ ma.; ACC, 6 ma. Electrical examination thus shows a decided diminution of response to the faradaic current, and to the galvanic current as well in the tibialis anticus of the right side, the KCC being almost equal to the ACC. Ormerod would have said that the right peroneal nerve showed reaction of degeneration with regard to the anode, but this, I insist, is nothing morbid. We have, therefore, slight electrical changes in a single muscle; the other muscles of the peroneal group respond normally.

The diagnosis in this case could have rested only between acute anterior poliomyelitis, a peripheral neuritis, or this form of progressive muscular atrophy. The mode of onset, gradually and without pain, without fever or convulsions, argues against a poliomyelitis anterior acuta, as well as against peripheral neuritis. The atrophy, too, is not as great as we would expect in a case of spinal infantile palsy. All of the symptoms—the paralysis proportionate to the wasting of the muscles, the absence of the knee-jerk, and the slight changes in electrical reaction—can be best explained by the diagnosis we have made. Furthermore, the disease is not retrogressive as poliomyelitis acuta would be, but gradually progressive, and the slight indications of this progression in the muscles of the trunk lend further support to the view of a progressive muscular atrophy, which is strengthened still more by the occasional presence of fibrillar contractions.

The diagnosis in such cases as these must be made with the greatest care, but I have no doubt that some of the cases which have hastily been put down as cases of peripheral neuritis will prove to be cases of this type. From poliomyelitis anterior acuta it will not be difficult to differentiate this disease, nor from neuritis. It will be more difficult to distinguish between these cases and those of a widespread atrophy following traumatic joint lesions, in which, as I have seen a number of times, the atrophy may spread with surprising rapidity, and may affect the entire extremity. We must, therefore, either rely upon the history in these cases, upon the presence or absence of fibrillar contractions, or must exclude a purely traumatic atrophy in case the atrophy jumps from the affected part to some other portion of the body.

In many cases of progressive muscular atrophy of the typical form the histories show that the disease was first noticed after some accident. The question therefore arises whether it may not be possible for typical progressive muscular atrophy to develop after a joint lesion in a subject predisposed to this disease.

We have now to consider the relations of this peroneal form of progressive muscular atrophy to the other primary dystrophies which we have discussed.

It will be seen at once that the anatomical distribution is entirely different from the four forms of primary myopathies discussed above. If the atrophy spreads to the upper extremities, it involves the muscles more after the fashion of a Duchenne's atrophy than after the fashion of a pseudo-hypertrophy or an Erb's form of atrophy. The analogy to Duchenne's form becomes still closer when we consider that this peroneal form is distinguished from the other myopathies by the occasional presence of fibrillar contractions and by alterations in the reaction of degeneration. The spreading of the atrophy from the muscles of the big toe and the small muscles of the foot to the muscles of the legs and thighs reminds one of the manner in which the atrophy spreads in the upper extremities in cases of typical progressive muscular atrophy. There seems, therefore, to be good reason to separate this form from the simple muscular myopathies and to make it a subdivision of typical progressive muscular atrophy. This form might be properly entitled the leg type, in contradistinction to the hand type which would represent the ordinary form of Duchenne's progressive muscular atrophy.

If the ordinary progressive muscular atrophy is a poliomyelitis anterior chronica cervicalis, the leg type might represent a poliomyelitis anterior chronica lumbalis. But this is speculative pathology and needs corroboration, as indeed all the clinical and anatomical features of this form do.

In the preceding pages I have given an account of the commonly received forms of progressive muscular wasting. Some cases will surely be found that can not properly be classed under any one of these heads. Schultze's case, for instance, had some of the features of pseudo-hypertrophy, some of those of Erb's form, and in the presence of the fibrillar contractions and reaction of degeneration in some muscles approached to the type of typical progressive muscular atrophy. I have had occasion to observe one case in a child about seven years of age in which there was a general wasting of all the muscles of the body excepting those of the head. The power of the legs and arms was weak, without there being any actual paralysis. There was a winged appearance of the scapulæ, but there were no other disproportionate atrophies or hypertrophies anywhere in the body. The wasting was an entirely uniform one. Such a case as this one is mentioned by Charcot in his recent volume (72) and by Gowers in his text-book. Baeg (*loc. cit.*) and Oppenheim (73) have reported cases with involvement of the face, tongue, laryngeal and ocular muscles, which it is impossible at present to classify under any of the ordinary forms of progressive muscular atrophy.

There is good reason, therefore, for allowing that there are mixed cases of progressive muscular wasting, and that the exact rank of these cases can not be determined at present, except that, according to their cardinal symptoms, they

should be classed either with the spinal or primary myopathies.

To complete this study of the various forms of progressive muscular atrophy, it will be necessary to add a few words regarding the histological changes in the muscular tissue. Let me say by way of preface to these remarks that no proper inferences can be drawn from mere harpoon examinations. All such cases I have therefore excluded from the present consideration, and have used with considerable caution even those cases in which pieces of muscle were removed by the knife. As in my own case of pseudo-hypertrophy, I believe that very limited inferences only can be drawn from the examination of such small pieces, and that, after all, post-mortem examinations alone are entirely satisfactory in giving evidence regarding all the changes that may occur in the atrophied muscles.

If the histological examination of muscles is to be of value in making a differential diagnosis between the various forms of muscular atrophy, it must help us, first of all, to differentiate between the primary muscular dystrophies and the spinal forms of progressive muscular atrophy.

The changes in muscles atrophied from spinal lesions are: A change in the striation of the fibers and a narrowing of the fibers, an increase in the number of muscle nuclei, and possibly segmentation of the nuclei; granular or fatty degeneration of the fibers, and occasional globules of fat between the muscle-fibrils. I need not add that some or all of these changes will be present according to the length of time the atrophy has existed, and all of these changes have been found both in spinal forms and in primary dystrophies, but the increase in the muscle nuclei is never as great in the latter as in the former form. Furthermore, in the spinal forms hypertrophied fibers are never found, while they are common in the purely muscular types. Müller is the only author who records an exception to this rule, in a case of poliomyelitis of old standing. In spite of this fact, we may say that the presence of any considerable number of hypertrophied fibers, side by side with atrophied and degenerated fibers, is sufficient proof to exclude such a case from the spinal form. Roth (74) professes to be able to differentiate between atrophy from spinal lesion and atrophy following nerve lesion. He states, for instance, that the atrophy of the muscular fibers in progressive muscular atrophy affects the length of a fiber only, causing a shortening, while the breadth of the fiber remains normal. In cases of muscular atrophy after nerve lesion there is, according to this author, simple atrophy and interstitial sclerosis.

And now the question arises. Is it possible to differentiate by histological examination between the various primary myopathies? The histological changes of ordinary pseudo-hypertrophy are too well known to need a detailed description in this place. We have, as a rule, narrowing of fibers with changes in their contour, granular or fatty degeneration of the fibrils and accumulation of fat globules between the fibrils, and increase without marked proliferation of the connective tissue. In pieces of muscles excised from the living subject, enlarged fibers will be seen in the immediate vicinity of fibers of normal or less than normal dimensions. In post-mortem examination of muscles in pseudo-hypertrophy we need not expect to find fibers of unusual breadth, for the examination generally is made at a time when atrophy has supervened upon a preceding stage of hypertrophy. A slight increase in the muscle nuclei is often found in typical cases of pseudo-hypertrophy, but unusual increase is suspicious of muscular disease of spinal origin. It was on the strength of this increase of these nuclei that Friedreich insisted that typical progressive muscular atrophy began as a myositis. Schultze (*loc. cit.*, p. 24) mentions peculiar giant-cell formation as occurring in cases of pseudo-hypertrophy which he regards as the residue of muscular protoplasm with its proliferated nuclei.

Jacoby (75) thinks that the disease consists in the main of a chronic inflammation invading both the perimysium and the muscle tissue, and would call the process a myositis progressiva hyperplastica. The careful drawings Jacoby has made are very different from the pathological findings in other cases and need further corroboration; besides, his case is a pseudo-hypertrophy of rather unusual type, exhibiting, as the author says, "hypertrophy to an enormous extent of the deltoids, infraspinati, biceps, triceps, and costal portion of the pectoralis major." He likens his case to Case X of Friedreich, and this is now taken to be a case of Erb's juvenile type. Westphal, in his typical case of pseudo-hypertrophy, found, on post-mortem examination, enormous increase of adipose tissue in which the muscular fibrils were nearly of normal size; increase of the interstitial connective tissue; no hypertrophic fibers; strands of connective tissue occasionally pass through the fatty tissue, few of the muscular-fiber groups appearing to be strangulated by strands of connective tissue.

The sections from the vastus externus of my case of pseudo-hypertrophy have been cut from tissue hardened in Müller's fluid and alcohol, and stained with alum-carmin, hæmatoxylin, and eosin-hæmatoxylin. The specimens show slight loss of striation, slight increase of connective tissue and its cells, and a number of enlarged fibers crowding in upon other and narrower fibers. The changes are slight in degree, and I have no doubt that if a piece had been excised from the midst of the muscle, instead of from its surface, the specimens would have exhibited more decided changes; but, slight as these changes are, they confirm me in the belief that hypertrophy is a very marked and early change, and is associated with early increase in the connective tissue.

In Schultze's case, which stands midway between pseudo-hypertrophy and Erb's juvenile form, the muscles were examined more exhaustively than ever before. Schultze found, in addition to the giant-cell formation alluded to above, large numbers of fat cells in the muscular tissue, an increase of connective tissue and remnants of hypertrophied, normal, and atrophic fibers, and an enormous increase of nuclei which the author thinks greater than in ordinary cases of pseudo-hypertrophy, though he quotes one case of Erb's, of pure pseudo-hypertrophy, in which the finding was entirely similar. The vacuoles which were present in Schultze's case represent a very late stage in the pathological process, and, if developed to the extent they were in this case, can not be due to hardening.

In Erb's juvenile form most of the conditions are exactly the same, but it is important to note a few points of difference. In his first paper, in the "Archiv f. klinische Medicin" for 1884, Erb insisted that the hyperplasia and proliferation of the interstitial connective tissue, and next in order the considerable deposit of fat in this connective tissue, were the most characteristic histological features of the disease (p. 492); the atrophy of the fibers and the presence of a few hypertrophic fibers were thought to be features of secondary importance. In his later articles Erb changes his original opinion and corroborates the hypothesis first put forth by Barsikow—viz., that the hypertrophy of the muscular fibers is the primary and most characteristic change; this hypertrophy may finally pass into an atrophy. Other and secondary features are a rounding off of the contours of the fibers, an increase in the muscle nuclei, an increase of connective tissue and its nuclei, and fissuration and vacuolization of the fibers. Lipomatosis may occur.

Hitzig (78), the latest author on this subject, has published very careful researches which tend to corroborate Erb's views. Hitzig has examined four cases; three are typical, one decidedly atypical and suggestive, I think, of amyotrophic lateral sclerosis. He concludes that "the primary and most important change in juvenile atrophy does not consist of any interstitial process, but is decidedly parenchymatous, and, according to the intensity of the disease, is represented by slight or excessive hypertrophy of the fibers. . . . The anatomical changes in pseudo-hypertrophy, on the other hand, are characterized by active changes in the connective tissue." If this proves to be correct—and there is a strong probability in its favor—it will corroborate the conclusion I arrived at by an analysis of the clinical facts—that pseudo-hypertrophy and Erb's juvenile form can not be considered entirely identical. Hitzig expresses the opinion also that the atrophy of most fibers is due to mechanical compression by hypertrophied fibers, the hypertrophy being due to an irritative process. The atrophy of the fibers is followed by the deposit of fat, the latter being a mere substitute for the diminished muscular tissue.

In cases that developed most rapidly the atrophy is therefore most extreme. This compression theory of Hitzig will need further corroboration. Singer (79) is in agreement with Hitzig, except that he regards the increase of connective tissue as the first stage in the production of fat.

As to the histological changes in Landouzy and Déjérine's type, we must rely chiefly upon the changes reported in the one case on which Landouzy and Déjérine held an autopsy. They found simple atrophy or entire disappearance of the primitive muscular bundles, a few hypertrophic fibers, but note that the case had taken an exceedingly rapid course. No indication of degenerative atrophy; very slight increase of interstitial connective tissue and fat, which would seem to prove that the atrophy must be due to some cause within the muscle fibers; no unusual increase of the nuclei. All this, therefore, is in agreement with Erb's form, and goes to prove the close relationship between these two forms.

The changes in the peroneal form of progressive muscular atrophy have not been reported upon by Charcot and Marie, Tooth, Herringham, or Hoffman (80). In my own case I have not yet obtained permission to excise a piece of muscle, but hope to do so before long, and it will be interesting to note whether the changes resemble those of primary dystrophies or are similar to those found in muscular atrophy from nerve and spinal lesions. Leyden states that in the hereditary form the muscular changes are the same as in typical progressive muscular atrophy, but his hereditary cases presumably include the peroneal type, and thus his statements might be taken as an indirect histological proof of the close relationship between the peroneal form and typical progressive muscular atrophy.

From this survey of the histological researches in various forms of muscular atrophy we conclude that an examination of muscular changes may help us to differentiate between typical progressive muscular atrophy and the primary myopathies; and again, if Hitzig is correct, between pseudo-hypertrophy and Erb's juvenile form. There does not, however, appear to be a marked distinction between Erb's juvenile form and the remaining primary dystrophies, the histological changes in the peroneal form being still undetermined.

The argument which has been held throughout these pages leads to the following conclusions:

1. Progressive muscular atrophy, type Aran-Duchenne, is due to spinal-cord disease. The peroneal type of progressive muscular atrophy bears close resemblance to this form and may possibly have a similar pathology.

2. Duchenne's type of progressive muscular atrophy might be termed the hand type, while the peroneal form would represent the leg type.

3. Pseudo-hypertrophy is not of spinal origin. Lipomatosis is a mere incident in the course of the disease and is associated with wide-spread atrophy in various parts of the body.

4. There is a close relationship between pseudo-hypertrophy and Erb's juvenile form of progressive muscular atrophy, but not an absolute identity. This close relationship is marked by the onset of the disease at an early age, by the entire absence of fibrillar contractions in both forms, by the absence of reaction of degeneration, and by the occurrence of lipomatosis some time during the course of the disease. They differ from each other in the distribution of the muscular atrophy, and possibly in the histological changes in the affected muscles.

5. Hereditary muscular atrophy does not deserve the rank of a separate clinical entity, all forms of primary myopathies being occasionally hereditary.

6. The type Landouzy and Déjérine is closely related to Erb's form, the additional involvement of the face muscles not being a sufficient basis for a wide clinical differentiation.

7. Pseudo-hypertrophy and Erb's form should be regarded as the two representative forms of primary progressive dystrophies.

8. Primary progressive dystrophies are distinguished from spinal progressive dystrophies by their cardinal symp-

toms—the onset at an early age, the occurrence of true or false hypertrophy, the absence of the reaction of degeneration, and the absence of fibrillar contractions.

This paper can not be properly closed without reference to the subject of classification. The term "progressive muscular atrophy" has been variously used both to designate the fact of a general and progressive muscular wasting, and also as the proper name for Duchenne's type of atrophy. This has led to great confusion, and it would be well if the term "progressive muscular atrophy" were to be used in a generic sense merely, and if some other name were found for Duchenne's type. Erb's suggestion seems to me to be a good one, and I therefore propose to designate the type Aran-Duchenne as spinal progressive amyotrophy.

If my argument against the validity of anatomical distribution of atrophies or hypertrophies as a basis for classification be accepted, the classification of muscular atrophies could be reduced to the following simple form:

1. Amyotrophia spinalis progressiva:
   - *a* Hand type;
   - *β* Leg type = peroneal form.
2. Primary progressive dystrophies: *
   - *a* Pseudo-hypertrophy;
   - *β* Erb's form.

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76. Schultze (cf. No. 17).
77. Erb, "Neurol. Centralbl.," 1884, and July 1, 1888.
78. Hitzig, "Berl. kl. Wochenschr.," Nos. 25, 34, 35, 1888.
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*October 1, 1888.*

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## THE MECHANICAL TREATMENT OF SENILE COXITIS.*

By HENRY LING TAYLOR, M. D.

By "senile coxitis" (malum coxæ senile) I understand a rheumatoid affection of the hip joint occurring in old people and characterized clinically by local pain, muscular spasm, wasting, stiffness, and disability, but never showing a tendency to suppurate. It may or may not be associated with similar troubles in other joints.

When the hip joint of an elderly person becomes affected in the manner indicated, the cause is usually referred to a dyscrasia with joint manifestations, called rheumatoid arthritis, an affection not confined to the aged and probably having small affinity with tuberculosis, gout, or rheumatism. Its characteristic local lesions are eburnation and atrophy of the bearings of the joint, with hypertrophy and proliferation of its peripheral parts not subject to pressure. Some cases of senile coxitis may have a different causation and morbid anatomy with a similar clinical picture.

The usual treatment is medicinal, dietetic, and local, but many patients go through the various stages of local sensitiveness and disability, sometimes with moderate constitutional reaction, often with long remissions of the active symptoms, until finally the affected joints become crippled and nearly or quite useless. Can anything be done for such of these helpless old people as seem likely to resist or have already resisted orthodox treatment?

It is stated that malum coxæ senile sometimes follows directly on local traumatism, and while it must be admitted that some cases of impacted fracture of the neck of the femur may have been confounded with inflammatory trouble in the observations, we can not help noticing the positive effects of traumatism in determining or aggravating attacks.

It would seem on general physiological grounds that the strain and pressure of attempted free locomotion must aggravate the local difficulty, and that an endeavor might reasonably be made to allay irritation and improve the local and general nutrition by efficient mechanical protection to the disabled hip joint. If it is feared that these old people can not or will not submit to mechanical measures, we have not found it so in our experience; indeed, I am able to make the broader statement that adult or advanced life is a much less unfavorable factor in orthopædic practice than is usually supposed. Nevertheless, in devising a plan of treatment for senile coxitis, unnecessary confinement of body and limb has been avoided.

In several cases which had resisted previous treatment, and the patient seemed urgently to need help, we have tried the plan of applying counter-traction thoroughly, and then protecting the joint from all traumatism for a considerable period. The patient is put to bed with the long counter-traction hip splint and extra weight attached, the leg being supported in a sling. At the end of a month or six weeks we find the muscles about the hip joint softer, and position and mobility improved, and allow the patient to go about on the jointed supporting splint ("Dows's"), which protects the hip joint from pressure, but allows motion at the hip, knee, and ankle. The patient is thus enabled to enjoy the benefit of fresh air and moderate exercise with a certain amount of healthy stimulation to the now quiescent joint, through the protected and pressureless motion. If progress is not satisfactory, the traction in bed is repeated, and the patient again allowed to go about after a few weeks.

Case I.—Mrs. W., aged fifty-seven years, came in March, 1883, with the history of trouble in the left hip joint of two years' standing, but she stated that she had had some tenderness in several joints for four years. The trouble began in her right shoulder and had affected the elbows, wrists, right ankle, and one finger. The toes never got sore and the fingers were not deformed. She stated that her general health had been good, but she looked delicate and rather older than she was. The tenderness and pain in the joints had never laid her up and she had felt well throughout. About two years before she had stepped into a hole and hurt her foot, and for the past year had limped with the left leg. During the summer of 1882 she began to have difficulty in going up stairs and to feel weak and have pain in the anterior thigh muscles on motion, and stiffness in the left limb. She had noticed soreness in the left groin for two weeks, but had always supposed the pain to be due to muscular rheumatism, and never suspected that the hip was affected until told by her physician two weeks previously.

On examination, tenderness, crepitus, and limited motion were found, to a greater or less extent, in several joints, noticeably in the right elbow and both wrists. The left thigh was considerably flexed and adducted, and there was a coarse crepitus at the hip joint. She was very helpless, walking with difficulty. She was put to bed with long counter-traction splint and eighteen pounds extra weight for six weeks, and then allowed to go about on crutches, with a jointed supporting splint ("Dows's"), which took the weight off the joint.

The condition of the hip improved slowly, but perceptibly, from the start. Soreness became less, and position and motion at the hip improved. In the winter of 1884–'85 she was walking readily around the house without crutches. The following summer (1885) she went to Richfield Springs, and took the ap-

* Read before the American Orthopædic Association at its second annual meeting.

paratus off to take the baths; she found she could walk so well that she did not put it on again. When I saw her in November, 1885, she walked very nicely, and had extensive motion at the hip in all directions, with very little tenderness. The condition of the other joints seemed no better; crepitus, stiffness, and tenderness were about the same as before. In a letter just received, her daughter writes, in answer to my inquiry; "We think mother quite as active as any member of the family; a little lame, but so much better than we ever expected to see her, [we] do not notice the limp. . . . She is very comfortable, as far as the rheumatism will allow; her hands are quite weak and somewhat out of shape."

Case II.—Mrs. R., aged fifty-eight, came in February, 1883. She was a large, strong, young-looking woman, had always had excellent health, and her family history was good. Eight years previous to coming the patient noticed that the right foot was rotated out; when she turned it in, it caused pain on the inside of the knee; this pain also came when she got fatigued. It gradually grew worse, and for the past four or five years she had given up one duty after another, owing to lameness and increased pain. She had always supposed the knee to be at fault, and neither she nor her doctor had ever suspected the hip. For two years past she had been obliged to put a pillow under the right knee in order to be able to sleep, and the knee had received electrical and other treatment.

Examination showed the right thigh considerably flexed and adducted. Mobility at the hip was almost gone, except flexion and extension through a few degrees. She never had pain except when tired—then it came on the outer aspect of the right knee; when she was still more tired, in anterior part of thigh, hip, and back. She had a moderate lameness. The functions of the knee were normal.

The patient was put to bed, with the long hip splint, sixteen pounds extra weight, and sling, for a month, during which time the thigh muscles relaxed, flexion was reduced, and pain was latterly absent. She was then allowed to get up on the jointed supporting splint ("Dows's"), and in a few days was walking nicely with the apparatus only, and feeling no pain.

The patient did well, but had on a few occasions some recurrence of pain, and once or twice was put to bed for two weeks with counter-traction as before. In January, 1885, the apparatus was removed, and she was discharged cured, walking easily, with but slight limp; position of limb almost normal, mobility increased. When last seen, over a year after her discharge, she got around very readily and comfortably, having retained what she had gained.

These results have been sufficiently encouraging to warrant the belief that many cases of intractable senile coxitis may be much relieved and an unserviceable limb restored to comfortable use by a plan of treatment such as the one described.

201 West Fifty-fourth Street.

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## A CASE OF ACONITINE POISONING.

*RECOVERY.*

By FERD. C. VALENTINE, M. D.

The comparative infrequency of intentional or accidental poisoning by aconitine may warrant reporting briefly a case in point. If, from paucity of characteristic appearances or because of my lack of descriptive ability, the case proves of little value to toxicological literature, it may be of use to younger practitioners, as a warning against allowing patients to become familiar with the places where physicians keep powerful drugs.

The paucity of symptoms observed may be attributable to the well-known capriciousness of the drug. The phial containing it was purchased some two months ago, while I was suffering with an attack of facial neuralgia, and shortly after swallowing half a tablet ($= \frac{1}{120}$ grain) I felt a numbness of the tongue, a tickling of the throat, and pricking in the extremities, which lasted fully eight hours.

I had no occasion to use the contents of the phial again, except in the instance about to be related.

B. M., aged thirty, single, German, vigorous constitution, five feet eight inches tall, one hundred and sixty-five pounds, no history or evidence of specific disease, and with only a trace of neurotic heredity, has traveled extensively in the marshy regions of East India, Africa, and in some parts of the United States, is now here for treatment of necrosis of the inferior turbinated bones. For the past two years he has resided in Central America, where he made a number of visits to the malarial coasts. He has had several attacks of neuralgia of the cervical region, together with left-sided prosopalgia. These attacks were not relieved by morphine by the stomach or hypodermically. A very severe attack of this neuralgia on the evening of August 20th caused me to give him $\frac{1}{240}$ of a grain of aconitine (Wyeth's hypodermic tablets) dissolved in about an ounce of water. Half of this solution he took at 9 P. M., and found amelioration in fifteen minutes; the other half he took at 9.30 P. M., and in ten minutes more the pain stopped entirely.

At about 10.30 P. M. of Saturday, September 15th, he called at my office, desiring relief from a severe recurrence of the neuralgic pains. Not finding me in, and remembering where he had seen me put the aconitine tablets, he found them and swallowed one of them dry. His account of subsequent doses is evidently erroneous. He stated that he waited for relief until midnight, and then took one tablet every half-hour thereafter until he had taken the contents of the phial (eighteen tablets altogether). Finding himself attacked with dyspnœa, he went to the room occupied by another young gentleman for assistance. Then he found that he had great difficulty in using his legs; he fell and had to be helped back to his room.

As I was sent for at 12.30 A. M. to attend him, I judge that he must have taken one tablet at least every two minutes, or oftener, miscalculating time in the intensity of his neuralgic pains. I found him with symptoms of paraplegia; stertorous, irregular respiration, from six to thirteen times a minute; precordial anxiety, strangling, tingling in the fauces, and a sensation as if his nose were double in size. The pulse beat twice in as many seconds, followed by from five to twenty very rapid, irregular pulsations, with frequent intermissions. The pupils were slightly dilated and responded sluggishly to light. The skin was dry, except at the back of the neck. There was no tingling in the extremities; the hands and feet were hot, but the toes were cold. This coldness of the toes afterward progressing up to the ankles, warmth of the feet was restored by the use of hot bottles.

He was conscious when I arrived, but soon sank into a species of coma, in which he did not feel two hypodermic injections of morphine ($\frac{1}{16}$ grain each) which I gave him when the heart showed increased interruptions and a decided tendency to flag. The morphine evidently stimulated the heart, which became more active. This cardiac improvement was accompanied by the return of consciousness, in a measure.

While an emetic of mustard was being prepared I gave him, as soon as he could swallow, half an ounce of whisky to further stimulate him. This was followed almost immediately by copious vomiting of undigested food. Deeming the case of sufficient responsibility to be divided, and desiring the advice of an able general practitioner, I sent for Dr. Alexander B. Pope, who, after examining the patient, indorsed the course I was pursuing. We did not essay the use of nux vomica, as another attack of vomiting at 1.15 A. M. was followed by a marked diminution of the symptoms of aconite poisoning. As these abated, the patient became strongly delirious. Not much importance was attached thereto, however, as this patient, like all of his family, easily becomes delirious.

Toward 3 A. M. the delirium subsided somewhat, and an intense thirst set in, which, upon being but partially satisfied by small sips of ice-water, was followed by nausea and several severe attacks of vomiting. Each effort at vomiting was followed by a partial return of the cardiac flagging, which we endeavored to meet with half-ounce doses of whisky. While each administration of whisky was followed by improved heart action, it was accompanied by increased nausea. He was then given several drachm doses of aromatic spirits of ammonia, half an hour apart, when the nausea stopped. At 4 A. M. all symptoms of poisoning had disappeared, and only a severe general headache and intense thirst remained.

For the three following days anorexia, headache, and depression of spirits were marked; these subsided after copious alvine evacuations, which resulted from the use of citrate of magnesia.

While this case presented but few of the recorded symptoms of aconite poisoning, they, particularly those of the heart and lungs, were especially alarming.

The only unrecorded symptom noted was the sensation of the nose having doubled in size. This I would not offer as an addition to the toxicology of aconite until it was confirmed by the observations of others. I attribute it to the patient's delirium being directed in the usual channel of his thoughts; he is in the habit of joking about his nose, which is of ample proportions; he has recently lost one of his inferior turbinated bones, and daily makes four or five large antiseptic nasal injections.

It is to be regretted that the patient's temperature could not be taken during the intensity of the symptoms of poisoning, as his great, almost uncontrollable restlessness made this impossible.

215 West Forty-eighth Street, *September 30, 1888.*

## DIHYDROBROMIDE OF QUININE FOR SUBCUTANEOUS INJECTIONS.

By JAMES P. PARKER, M. D.,
KANSAS CITY, MO.

The inevitable disappointment experienced by physicians from the application of the oleate of quinine in cases where neither the stomach nor rectum will accept quinine has rendered it so desirable to obtain a suitable preparation of quinine for subcutaneous injection that many efforts have been made to produce such a salt, but with moderate success.

The difficulty has been to obtain a salt of quinine sufficiently soluble in water to make a solution concentrated enough to bring the dose within the limited capacity of the ordinary hypodermatic syringe, and yet have it free from caustic or irritant qualities that might set up local inflammation. A solution containing about three grains of the alkaloid (quinine), or three grains and nine tenths of the ordinary sulphate of quinine, in sufficient water to make thirty minims of solution, may be considered the proportion which is not too dilute and not too caustic by concentration for hypodermatic application. It was thought at the time of the adoption of the last revision of the United States Pharmacopœia that the hydrobromide of quinine would meet the requirements, but it is to be regretted that the hydrobromide of quinine described by the Pharmacopœia can not be found in the market, and manufacturers assert that it can not be produced.

The Pharmacopœia defines a neutral or slightly alkaline salt soluble in about sixteen parts of water at 15° C. (59° F.), but no one has been able to obtain a hydrobromide of quinine in the market that can be dissolved perfectly enough for subcutaneous injection in less than about seventy parts of water at 15° C. (59° F.).

This important point of solubility in water has been the cause of failure by physicians in all attempts to use it hypodermatically. An extemporaneous solution prepared by dissolving ninety-six grains of quinine (alkaloid) in sufficient quantity of hydrobromic acid, and adding water enough to make one fluidounce of solution, has long been used by physicians in the malarial districts of the South with good results. Such a solution is unquestionably better than any that can be prepared from the official hydrobromide of quinine, but it is not free from irritant qualities.

A better preparation is obtained by direct combination of the hydrobromic acid with the base and crystallization from the solution. The chemical formula of this crystalline salt is a little uncertain, but it is probably $C_{20}H_{24}N_2O_2(HBr)_2 + 3H_2O$. (It has not been ascertained whether it has two or three molecules of water of crystallization, but it most probably has three.)

As the foregoing formula indicates, it is a dihydrobromide, consisting of two molecules of hydrobromic acid and one molecule of quinine (alkaloid). This salt is as permanent as any of the acid salts of quinine, and is soluble in five parts of water at 15° C. (59° F.), and, when dissolved in that quantity of water, the solution will have a specific gravity of about 1·056, being about the same as that of the blood. This acid salt closely resembles that of a foreign make that has appeared in the market at a very high price, and is well adapted for subcutaneous application.

The writer has administered it subcutaneously a large number of times, and has as yet produced no abscess. It undoubtedly comes as near to being the desired salt as any that has been proposed.

As all the world knows, the bromine element tends to correct quininism, even in small doses, and when large doses are required, as in pernicious intermittents, it becomes effective for good.

**The Chair of Death.**—At a meeting of the Medico-legal Society held on Wednesday, the 12th inst., Dr. C. F. Stillman read a paper by Mr. H. G. Carleton, describing an apparatus for the execution of criminals by electricity.

THE
NEW YORK MEDICAL JOURNAL,
*A Weekly Review of Medicine.*
Published by D. APPLETON & Co. Edited by FRANK P. FOSTER, M. D.

NEW YORK, SATURDAY, DECEMBER 15, 1888.

## SHALL PHYSICIANS USE GOOD ENGLISH?

AT first blush but one answer seems possible to this question. May not the medical man choose apt adjectives, make use of happy illustration, and avoid objectionable adverbs as well as another? Yet an absurd affectation exists to the effect that a good literary style is somehow incompatible with sound scientific attainment, and that a physician capable of presenting thought according to the genius of the language is more or less to be mistrusted. He writes too well, she writes too well, they write too well—these inflections are common expressions of criticism, with an air of "'ware the dog" half hidden in their pellucid depths. Attention to words and their uses, the narrow critics imply, presupposes a lack of practical insight and business capacity. It is a foregone conclusion that fine writing is the natural accompaniment of a life poverty-stricken in illuminating scientific events. By a mysterious process, something comes from nothing. Devoting themselves almost exclusively to clinical work—and by a strange coincidence they all do—these short-sighted critics themselves fear not form nor regard the Queen's English. Ever and anon one of this august and exclusively clinical body announces, after the fashion of the gifted member of Parliament, but in scientific parlance and upon some scientific subject, usually of the order Dryasdust, that "the po-ta-to-a is a ve-ra good fruit-a." Sometimes this sort of thing overflows into print, where it brings a blush to the cheek of young and other medical persons afflicted with *esprit de corps*. Fortunately, the practical beings under consideration seldom indulge in literary effort—on principle. They refuse all invitations to drop into scientific prose, even in a friendly way, and turn a deaf ear to hints in the matter of book reviews. The editorial serpent is powerless—so they say—to move them; and, like the adder, they ignore the voice of the charmer, charm he never so wisely. Clinical work is the thing. There may be a good many holes in a skimmer, but there is only one way to the top.

A great deal of living goes to a very little writing. Possibly the most difficult form of creation is literary composition. Any sentence that is distinct, clear, and well-rounded, however simple in construction, is the outcome of painstaking effort and a careful mental registering of experience. Sometimes several generations contribute to its style and vigor. Its very existence announces severe mental discipline, and familiarity with the best models. And why not? Language is the ultimate test of mind. It is the growth of definiteness in language which marks the progress of mankind. Whoever can sketch out his idea in exact words justly passes for an extraordinary man. To render an ideal visible and intelligible to others, whatever its caliber, is a slow, laborious task, a relentless struggle. That which is most deserving of fame in art, as Balzac has it (and the term must include all creations of thought), is courage—a courage of which common souls have no conception, and which has never perhaps been explained. To act well the part of parent to an idea, raising it from birth and hapless infancy, nourishing it tenderly when it cries for food and attention at inopportune moments, clothing it in garments fifty times over that are cast away as unfit, and yet never revolting against the trials of this agitated life, but bringing out of them some masterpiece—sentence, brochure, or inspiring volume—is indeed the very triumph of courage. Shall physicians use art to represent nature? Away with the cant that any one can write too well, or draw too well, or speak too well! It is nowhere hinted that clinical work can be done too well. Boorishness in style is not an evidence of intellect, nor slovenly expression the necessary accompaniment of cultivated observation. Such defects are greatly to be deplored. Their meaning goes deep. A university graduate suggests that it should be a point of honor among medical men to write in such form that an educated person can tell what the subject-matter is, though not himself an expert in medical lore. The suggestion presents nothing unreasonable. Thought is not a thing apart from language. Viewed by the white light of sound sense, where are now the little inflections that skipped so nimbly through familiar conversation—he writes too well, she writes too well, they write too well? Gone, with the other ghosts, quite faded away. And let us trust that the petty necromancy of little minds will be ineffectual in securing for them any future existence.

## NATIONAL HEALTH LEGISLATION.

THE opening of Congress has brought the usual crop of health bills, and the ease with which any gentleman can secure the introduction of a bill is taken advantage of by every one afflicted with what might be termed medico-sanito-legal *cacoethes scribendi* to add his mite to the shower of sanitary bills rained upon a suffering Congress. The bill introduced by Mr. Gibson, of Louisiana, on Tuesday of last week is one prepared in New Orleans. By this bill all existing sanitary national laws are to be repealed, and a health commissioner is to be appointed. This health commissioner is to act under the direction of the Secretary of the Interior, and, when once appointed, can not be removed by the President; this is in direct violation of the constitutional prerogative of the President, and can not pass either house. Section two of the bill provides for the appointment of *twenty* persons "who shall be experts in the disease to which their section is devoted." These statutory "experts" are to be divided as follows: Five to be assigned to the "yellow-fever section"; three each for the cholera, typhoid-fever, scarlet-fever, diphtheria, and small-pox sections. Their market value, as set forth in the annual salary allowance of these experts, is placed at twelve hundred dollars each. The same section gives command of quarantines, both State and local, to the health commissioner, and puts the collectors of customs under

his command. Section three provides for the annual meeting of the commission in Washington, and supersedes all State boards of health in any case of epidemic. Sections five, six, seven, and ten provide for work already being done by the Marine-Hospital Bureau. The eighth section gives the President the power to detail Government officers—a power vested in him by the Constitution, which no statute could legally take away. Section eleven contains the essence of a bill already pending in the Senate, known as the Harris bill, which was prepared at the Treasury Department, and which is a really efficient supplement to the existing laws. Sections twelve and thirteen provide the sinews of war, and for the repeal of all previous sanitary legislation.

The only really good thing about the proposed bill, which as a whole violates every known principle of American government, is the fact of the impossibility of its passage.

## *MINOR PARAGRAPHS.*

### EXECUTION BY ELECTRICITY.

A committee appointed by the Medico-legal Society to inquire into the methods proper to be pursued in the execution of criminals by electricity was to make a report on Wednesday evening, the 12th inst. We have been favored with a printed copy of the report, and we must say that it shows evidence of much ingenuity and carefulness. It recommends the use of a dynamo capable of generating an electro-motive force of at least 3,000 volts, and the employment of an alternating current of a potential of from 1,000 to 1,500 volts, according to the resistance of the criminal (to be estimated, we presume, from his size), the alternations to be not fewer than 300 to the second, and the current to be passed from 15 to 30 seconds. It is thought that the sitting posture will prove preferable, with one electrode applied to the head and the other over the vertebral column, but it is admitted that greater simplicity and equal efficiency may perhaps be secured by the use of wristlet electrodes.

### THE NAVAL MEDICAL SERVICE.

It appears by the "Report of the Chief of the Bureau of Medicine and Surgery to the Secretary of the Navy" for the year ending October 25, 1888, that there seems to be no immediate prospect of legislation making the medical service of the navy attractive enough to lead to the filling of the vacancies in the corps, which are now eleven in number. This is a state of things that is very much to be regretted, and one to which we have more than once alluded. The difficulty continues in spite of the almost continuous session of an examining board for several years past. Unless Congress soon takes the only proper course open to it—that of improving the condition of assistant surgeons in rank and pay, as the bureau has repeatedly recommended—it is only a question of time as to a lowering of the standard in the admission examinations, an alternative that Surgeon-General Browne most properly deprecates. If that step has to be taken, the navy will shortly find itself officered by incompetents so far as the medical corps is concerned.

### TESTIMONY IN CASES OF LUNACY.

A few years ago a man was adjudged insane before a magistrate on the testimony of two physicians. He afterward brought an action against the magistrate and the physicians in one of the courts of this State. A decision having been given against him, he appealed to a higher court, and that tribunal, while sustaining the decision as to the magistrate, has reversed it as to the physicians and rendered judgment for the plaintiff. Whatever may be thought of the justice of this decision, its tendency will undoubtedly be to make physicians hesitate to testify to a person's insanity. If undue conservatism is the result, the medical profession can not be blamed.

### THE LADIES' HEALTH PROTECTIVE ASSOCIATION.

We are glad to see that this vigorous and commendable organization is likely to meet with co-operation on the part of the Board of Health in its efforts to bring about the destruction of garbage by combustion. That its members are willing to put their own shoulders to the wheel is shown by their having undertaken at their own expense an examination of the crematories in various other cities. It is to be hoped, too, that they will finally prevail upon the Police Commissioners to appoint matrons for the station-houses, a step that has already been authorized by the Legislature.

### SUDDEN DEATH IN PLEURISY AND AFTER THORACOCENTESIS.

The question of the cause of the occasional occurrence of sudden death in the course of pleurisy, attributed by Bartels and others to a sharp curvature of the vena cava inferior, has recently been investigated anew by Dr. Oscar Hagen-Torn, whose article on the subject, originally published in the "Archiv für pathologische Anatomie und Physiologie und für klinische Medicin," is summarized by Dr. Goldschmidt in the "Centralblatt für klinische Medicin." Hagen-Torn's conclution is that death in the course of a rapid pleuritic effusion, as well as after tapping the chest, is due to interference with the action of the heart as a result of diminished intrathoracic inspiratory pressure (increased "negative pressure"). When puncture needs to be performed under circumstances indicating danger of sudden death—such as decided cyanosis, a low situation of the diaphragm, etc.—it is well, in the author's opinion, to bind a pillow to the abdomen, as after tapping of the peritoneal cavity.

### TREPHINING OF THE STERNUM.

In the "Lancet" for November 3d Mr. Charles A. Ballance, of the West London Hospital, gives an interesting account of a case of purulent collection in the anterior mediastinum in which he trephined the gladiolus at two different levels, and connected the two apertures by removing the intervening portion of bone, whereby he was enabled to treat the posterior surface of the bone, which was found to be carious, as well as the wall of the pus-cavity. Eventually the patient, a lady, recovered perfectly. Mr. Ballance appends brief references to a number of cases of mediastinal disease in which surgical intervention has been of service, and closes with the proposition that the mediastinum is "fit ground for the exercise of the surgeon's art."

### THE HORSE'S TAIL AS AN ANTISEPTIC ATOMIZER.

In the December number of the "American Veterinary Review" Mr. P. Peters reports a case in which he removed a urethral calculus from a gelding by incision at a point about four inches below the anus. In the after-treatment the attendant was directed to steep the horse's tail two or three times a day in a solution of bichloride of mercury, so that "the horse

attended to the frequent dressing of the wound, purifying the air and surrounding objects himself."

## ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 11, 1888:

| DISEASES. | Week ending Dec. 4. | | Week ending Dec. 11. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 18 | 4 | 23 | 7 |
| Scarlet fever | 171 | 28 | 164 | 31 |
| Cerebro-spinal meningitis | 1 | 2 | 0 | 0 |
| Measles | 295 | 13 | 351 | 23 |
| Diphtheria | 111 | 26 | 136 | 32 |
| Small-pox | 1 | 0 | 1 | 0 |

**The Health of New York City.**—During the four weeks ending Tuesday, December 11th, the following numbers of cases and deaths from infectious diseases were reported to the Sanitary Bureau of the Health Department: Typhoid fever, 77 cases and 25 deaths; scarlet fever, 613 cases and 107 deaths; cerebro-spinal meningitis, 3 cases and 2 deaths; measles, 1,230 cases and 51 deaths; diphtheria, 460 cases and 127 deaths; small-pox, 3 cases and no deaths.

**The Health of Kansas City, Mo.**—For the two weeks ending Saturday, December 8th, according to the city physician's report, there were 61 deaths, including 2 from croup, 1 from diarrhœa, 2 from diphtheria, 3 from typhoid fever, 1 from typho-malarial fever, 1 from marasmus, and 2 from meningitis. The death-rate for the two weeks was 10·1 and 7·5 in a thousand of the population.

**The Southern Surgical and Gynæcological Association** held its first annual meeting last week in Birmingham, Alabama. The programme, which we have already published, was closely carried out, and the meeting was in every way creditable and profitable. Officers for the ensuing year were elected as follows: President, Dr. Hunter McGuire, of Richmond; vice-presidents, Dr. W. O. Roberts, of Louisville, and Dr. Bedford Brown, of Alexandria; judicial council, Dr. J. S. Cain, Dr. W. T. Briggs, and Dr. V. O. Hordon, of Nashville, Dr. J. M. Taylor, of Corinth, Miss., and Dr. D. Ford, of Augusta, Ga.; publication committee, Dr. W. B. Rogers, of Memphis, and Dr. V. O. Hordon, of Nashville. It was voted to hold the next meeting in Nashville, beginning on the second Tuesday in November, 1889.

**The Jefferson Medical College Hospital.**—By the courtesy of the Philadelphia "Polyclinic" we learn that Dr. Henry Leffmann has been elected pathological chemist at the hospital. No teaching duties are connected with the position, but it has been instituted to permit of regular investigations in medical chemistry in the clinical work of the hospital.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 2 to December 8, 1888:*

Williams, John W., Major and Surgeon, is hereby relieved from further duty with the battalion of the Second Artillery, at Fort Wadsworth, New York Harbor, and will proceed to join his permanent station, Jackson Barracks, Louisiana. Par. 3, S. O. 256, Headquarters Division of the Atlantic, Governor's Island, New York city, December 5, 1888.

Ball, Robert R., First Lieutenant and Assistant Surgeon. By direction of the Secretary of War the leave of absence granted in Special Orders No. 129, October 18, 1888, Department of the Missouri, is extended one month. Par. 11, S. O. 279, A. G. O., Washington, November 30, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 8, 1888:*

Bransford, J. F., Surgeon. Detached from the Smithsonian Institution and granted six months' leave, with permission to go abroad.

**Marine-Hospital Service.**—*Official List of Changes of Stations and Duties of Medical Officers of the United States Marine-Hospital Service for the two weeks ending December 8, 1888:*

Stoner, G. W., Surgeon. When relieved, to proceed to Detroit, Mich., and assume charge of the Service. November 26, 1888. Granted leave of absence for thirty days. November 28, 1888.

Carmichael, D. A., Passed Assistant Surgeon. Granted leave of absence for thirty days. November 27, 1888. Relieved from duty at Washington, D. C., and ordered to Marine Hospital, Wilmington, N. C. December 3, 1888.

Devan, S. C., Passed Assistant Surgeon. Detailed as Attending Surgeon and acting Chief Clerk, Marine-Hospital Bureau. December 3, 1888. Granted leave of absence for eight days. December 8, 1888.

Urquhart, F. M., Passed Assistant Surgeon. To proceed to Evansville, Ind., for temporary duty. November 30, 1888.

Brooks, S. D., Passed Assistant Surgeon. Granted leave of absence for thirty days. December 8, 1888.

Norman, Seaton, Assistant Surgeon. Ordered to examination for promotion. November 27, 1888. Granted leave of absence for twenty-five days. December 8, 1888.

Fattic, J. B., Assistant Surgeon. Ordered to examination for promotion. December 7, 1888.

Magruder, G. M., Assistant Surgeon. Relieved from special duty at Way Cross, Ga. December 8, 1888.

Kinyoun, J. J., Assistant Surgeon. Granted leave of absence for ten days. December 8, 1888.

Vaughan, G. T., Assistant Surgeon. Granted leave of absence for twenty-three days. December 8, 1888.

Guitéras, G. M., Assistant Surgeon. To proceed to Savannah, Ga., for temporary duty. December 3, 1888.

**Society Meetings for the Coming Week:**

Monday, *December 17th:* New York Academy of Medicine (Section in Ophthalmology and Otology); New York County Medical Association; Medico-chirurgical Society of German Physicians; Hartford, Conn., City Medical Association; Chicago Medical Society.

Tuesday, *December 18th:* New York Academy of Medicine (Section in Theory and Practice of Medicine); New York Obstetrical Society (private); Medical Society of the County of Kings, N. Y.; Ogdensburgh Medical Association; Baltimore Academy of Medicine.

Wednesday, *December 19th:* Harlem Medical Association of the City of New York; Northwestern Medical and Surgical Society of New York (private); Medical Societies of the Counties of Allegany (quarterly) and Tompkins (semi-annual—Ithaca), N. Y.; New Jersey Academy of Medicine (Newark).

Thursday, *December 20th:* New York Academy of Medicine; New Bedford, Mass., Society for Medical Improvement (private).

Friday, *December 21st:* Chicago Gynæcological Society (annual); Baltimore Clinical Society.

Saturday, *December 22d:* New York Medical and Surgical Society (private).

# Proceedings of Societies.

## NEW YORK NEUROLOGICAL SOCIETY.

*Meeting of October 2, 1888.*

The President, Dr. George W. Jacoby, in the Chair.

**Muscular Dystrophies.**—Dr. B. Sachs presented the histories of three cases, comprising the original portion of a paper read before the American Neurological Association. (See pages 620 and 651.)

Dr. W. R. Birdsall had been interested in the types shown and was not inclined to question the author's diagnosis. The last case was, he thought, allied to the progressive muscular atrophy type rather than to that of an acute poliomyelitis. He thought, however, that there might be grades between the two; that there was no sharp line of demarkation between them. The former presented the characters of a degeneration, while the latter was an acute inflammatory condition which might involve not only the gray matter, but extend to the neighboring tracts. The speaker had a case in mind diagnosticated as acute inflammatory poliomyelitis. There was involvement of the muscles of the anterior and posterior aspects of the thigh, with slight affection of the anterior tibial group, and exaggerated reflex, showing extension to the lateral column. In the speaker's opinion, the different varieties of atrophy represented grades rather than distinct pathological entities. The fact that the atrophy in one case had affected an arm and a leg, in one was hemiplegic and in another paraplegic, should not blind one to the possibility that the pathological processes might be the same. In the present state of our histological knowledge, he thought that we were not even able to separate cases into those of myopathic and those of myelopathic origin. The number of the cases was meager and our methods of examination were not calculated to reveal minor degrees of atrophy. In the muscles, nerves, and cord it might be possible to have a gradual destruction and regeneration going on which would escape detection. The value of the electric reaction was equally open to doubt. If fibers degenerated one by one, it was probable that the reaction would remain normal until the number of atrophied fibers had attained a certain grade. The degeneration reaction would in any case be interfered with by the normal reaction of the healthy fibers. The question was whether there was great uniformity in these various types or great diversity; he favored the latter, the types running into each other.

Dr. Mary Putnam Jacobi suggested that the gluteal muscles had been unaffected in the second case presented. This accounted for the lack of the usual difficulty in getting up from the floor.

Dr. Sachs was of the same opinion. He had referred to the point because Dr. Gowers had mentioned the symptom as pathognomonic.

Dr. C. L. Dana referred to a case of pseudo-hypertrophy in which the disease had advanced from the calves to the thighs and thence to the shoulder girdle. There was slight hypertrophy of the forearm, the part said to be unaffected in Erb's form. The fundamental distinction between the symptoms of chronic anterior poliomyelitis and those of progressive muscular atrophy was the retrogressive or stationary character of the former and the progressive character of the latter. It was difficult to criticise the diagnosis in Dr. Sachs's last case. He would suggest that a careful examination of the urine be made for lead. A number of cases of anterior poliomyelitis in children had been recently ascribed to lead.

Dr. L. C. Gray would, upon *a priori* reasoning, decide that Case III was one of chronic anterior poliomyelitis, but anterior-horn myelitis was, as had been suggested, retrogressive. Muscular atrophy could be, he thought, divided into that of spinal and peripheral origin; of the latter, however, we must distinguish between that arising in the muscles and that due to peripheral neuritis. The results of treatment varied. There were cases which, with rest in bed, faradism, and gentle massage, improved, while other cases were unaffected by treatment. He thought that the former were spinal while the latter were peripheral, either neural or muscular, in origin. Formerly the diagnosis of a central or peripheral origin had been determined by the presence or absence of the reaction of degeneration. Now confusion surrounded this test also. The speaker inquired in regard to opinion upon this point. Was the degeneration reaction present only where the muscles were degenerated?

Dr. Sachs was pleased that Dr. Birdsall, who had not heard his paper in Washington, had been in substantial agreement with it. While there was diversity of types, there was no anatomical distinction between pseudo-hypertrophy and atrophy. The primary and spinal muscular dystrophies were distinguished by their symptoms. The primary affection occurred early; there was absence of fibrillary contractions, and there was absence of the reaction of degeneration. This group included pseudo-hypertrophy, Erb's type, and that of Landouzy and Déjérine.

Dr. Gray begged to refer to a case recorded by Schultze, which had been assumed to be primary, but in which there had been found changes in the cord.

Dr. Sachs explained that the change referred to was independent of and unconnected with the muscular symptoms. It was in a part of the cord not connected with the muscles affected. He suggested that in Dr. Dana's case the atrophy in the right arm might have given rise to a fictitious appearance of hypertrophy in the forearm.

Dr. Dana added that the muscles had also the peculiar feel of pseudo-hypertrophy.

Dr. Sachs did not question Dr. Dana's diagnosis. He believed that all present had agreed upon the desirability of getting rid of the present classification upon anatomical distribution of the hypertrophy or atrophy. He had retained the term "peroneal form" for convenience only.

**Othæmatoma or Insane Ear.**—Dr. M. D. Field read a paper with this title. The title referred to a shrunken, shriveled condition, preceded by a period of active congestion, during which the organ was swollen, hot, and very painful. Between the cartilage and the perichondrium there was effused a serosanguinolent fluid, which might become purulent. This was absorbed, or rupture occurred, with healing and the deformity described. The deformity was not uncommon among the insane. It had been attributed to trophic change. The most general opinion had been that othæmatoma was characteristic only of chronic cases, and usually indicated an incurable condition. The question of a traumatic origin had received some attention. It had been remarked that a Greek statue represented a boxer with this deformity. The author could not recall the reference. It had been said to result in boys from the violence of the game of foot-ball. It had also been observed among soldiers.

The author had had under his care the case of a professional pugilist who had presented the deformity in question. Upon directing his attention to it, the man had remarked that it had resulted from a blow upon the head, and that it was common in his profession; that he knew as many as a hundred men similarly injured. Arrangements had been made with this man to be present at the meeting. He had been unable to come, but had sent a substitute. Several undersized professional pugilists were exhibited—all presenting the deformity. It could be added that only one had ever been in an asylum. This one had

been in for delirium tremens. It was evident that the insane ear might proceed from traumatism, also that it was more common than was generally supposed.

Dr. F. Peterson had seen the condition frequently in the insane, and believed that it was always due to traumatism. It was more frequent among the insane, probably on account of the necessity for restraint, also because the insane were apt to injure themselves in many ways. He also believed that the changes in the walls of the vessels in insanity predisposed to the result. Retrograde metamorphosis of the cartilage and perichondrium, like that of senility, was common in general paresis and other varieties of chronic insanity.

Dr. R. L. Parsons exhibited a cast of othæmatoma in the recent state taken some years ago. He had always considered the condition a result of nerve degeneration. The exhibition this evening had, however, demonstrated that it might result from traumatism alone.

Dr. Douglas had seen a considerable number of instances of the insane ear, and thought that it had been due to violence in every instance, either from the attendants, from other patients, or from the sufferer himself.

Dr. Ingram could corroborate this statement. The insane had the habit of rubbing the ears, which might account for some cases. He could add to Dr. Field's record that of a case of recovery after double othæmatoma during an active maniacal attack. With improvement of the mental condition there was improvement in the ear. Upon recovery, there was diminution in the size of the ear, but no deformity.

Dr. Peterson added that the reference to the Greek statue had been made by Fürstner ("Arch. f. Psych.," iii).

Dr. Field referred to the case reported by Dr. Hun; after the patient had been struck with a broomstick, the hæmatoma appeared upon the opposite ear. Dr. Hun had cited the case as an instance in which traumatism could not have been the direct cause.

## MEDICAL SOCIETY OF VIRGINIA.

*Nineteenth Annual Meeting, held at Norfolk, on Tuesday, Wednesday, Thursday, and Friday, October 23, 24, 25, and 26, 1888.*

The President, Dr. Benjamin Blackford, of Lynchburg, in the Chair;

Dr. Landon B. Edwards, of Richmond, Recording Secretary.

(*Concluded from page 584.*)

**Report on Advances in the Practice of Medicine.**—Dr. William D. Hooper, of Liberty, gave a running account of the progress of the germ theory in the last twelve months, saying the advance had been in rather a "retrograde" direction. Sternberg had proved that Freire's inoculations for yellow fever were a failure, and that M. Gibier had not discovered the true germ of that disease, but thought he himself had. Pasteur's patients were dying with hydrophobia, but Koch's tubercle bacillus was accepted as true by a recent congress for the study of tuberculosis which had met in Paris. Pasteur thought M. Gamalier, of Odessa, had discovered a true inoculation for cholera, and had referred his communication to the prize committee of the Academy of Sciences. The reporter also gave a description of a new method of treating ulcerated bladder with enlarged prostate by repeated irrigation of that organ with warm water holding iodoform in suspension. He used a Y-shaped tube five inches long, as he found it was not necessary to have a double catheter for that purpose. He reported two cases—the first in a man, aged seventy-eight, relieved on his death-bed after all other means had failed; the other patient, a gentleman aged seventy-five years, had been cured, as he slept all night without emptying the bladder, and rode horseback during the day.

**Cultivation of Vocal Music in our Schools as One of the Means of preventing Phthisis** was the title of a suggestive paper by Dr. C. E. Busey, of Lynchburg. He stated as a well-known fact that those nations which were given to the cultivation of vocal music were strong, vigorous races, with broad, expansive chests. If an hour was daily devoted in our public schools to the development of vocal music there would not be the sad spectacle of the drooping, withered, hollow-chested, round-shouldered children. There was too great a tendency to sacrifice physical health upon the altar of learning. Vocal music was a gymnastic exercise of the lungs by development of the lung-tissue itself. The lungs in improved breeds of cattle, which naturally took little exercise and were domiciled much of the time, were considerably reduced in size when compared with those of animals running at liberty; and so it was with the human race, which led inactive lives from civilization. Phthisis generally began at the apices of the lungs, because these parts were more inactive, and because the bronchial tubes were so arranged that they carried the inspired air with greater facility to the bases than to the apices. During inactivity a person would ordinarily breathe about 480 cubic inches of air in a minute. If he walked at the rate of six miles an hour he would breathe 3,260 cubic inches. In singing, this increased more than in walking, as to sing well required all the capacity of the lungs. The instructor of vocal music, in addition to his musical education, should understand the anatomy and physiology of the respiratory organs.

**Mysticism in the Developments of Medicine** was the title of a paper presented by Dr. M. A. Rust, of Richmond, in which he said that the science of medicine to-day embraced surgery as well as medicine. The modern surgeon was a scientific physician endowed with manual skill. But surgery and medicine had not developed from the same germ. The traumatic injuries must needs have engaged our progenitors' attention at an epoch when brain evolution was not so far advanced as to enable them to take cognizance of internal disturbances; thus we likewise saw our domestic animals bestow some kind of treatment on external injuries. Now, if we followed surgical art through all its stages, we should find its work ever to be tangible work—ever free from mystery. It was different in regard to internal diseases. As soon as brain evolution had reached the point of manifesting itself by some kind of reason or thought, the internal functional disturbances, for which no visible cause existed, were attributed to the action of some occult and supernatural power. Wherever we met man, even in the lowest state of savagery, we found the idea of this power evolved. Primitive man, as little as the savage of to-day, was capable of dealing with it. But there arose a particular class of men endowed with superhuman qualities, and fitted for interposing between mankind and good and evil spirits. Priestcraft and the healing art coalesced into one and the same sacred profession, of which the actually existing and ministering medicine-man in the Indian Territory or on the banks of the Congo was a living prototype. The healing art still bore the vestiges of its descent: there still existed a faint family likeness between the professional healer and the medicine-man, priest, sorcerer, or juggler. The mysticism of mediæval medicine took shape and color through the co-operation of various factors.

Foremost stood the Judaic-Christian devil, who followed in the wake of advancing and triumphant Christianity. Wherever the cross was planted, there the upas tree of diabolism, of demoniacal nosology, of pathology and therapeutics, of witchcraft, developed and branched out into gigantic dimensions, infecting Christianity with a most baneful mental epidemic.

While surgery was left in the hands of the barber-surgeon, the healing art became the monopoly of monks and priests; theurgy and thaumaturgy were all-pervading. Even when, after the revival of letters and the foundation of universities, the healing monopoly had been wrenched from the priestly grasp, mysticism continued to cleave to the healing art, and was as yet not extinct. At a time when, among the generality of men, an all-embracing culture was advancing with long and rapid strides, the field of the knowledge of life and health still lay overgrown with the weeds of superstition and darkened by the fogs of ignorance. The implicit belief in drugs of all sorts, from all sources, was still unshaken; the appetite for nostrums insatiable; the magnitude of the consumption appalling; the consequences, in many instances, disastrous. Disease was regarded as an inimical entity which had to be fought with all earthly and unearthly weapons; for every special disease an herb or a mineral must exist that would heal it; greatness was bestowed upon the healer who could make the greatest fuss and stir. Withal, the relations of surroundings to life and health, the simplest hygienic rules, were ignored or recklessly disregarded. However, the time was fast approaching when hygienic and preventive medicine would supersede the methods of the old healing art, when the physician would minister as a public functionary of the highest order, invested with the guardianship of the well-being and happiness of the human race, present and future. Before this change could take place public opinion must be educated; man must be awakened to the momentous cogitation that he held in his hands the power over his destiny and the destiny of his offspring. It was the physician, and the physician only, who could lift public conceptions of life, health, and disease to this higher level. In order to fulfill his vocation of educating the public, of controlling and regulating the relations between human life and the outer world, he must acquire an exhaustive knowledge of all the surroundings of man—a knowledge of the whole of nature. Without it, he must disastrously fail. No doubt the scent of burnt offerings operated propitiously on the gods; but, said Goethe, "if the priest has a cold in the head, the gods can not smell."

**What is the Duty of a Doctor to his Patient suffering from Malignant Disease?**—Dr. William W. Parker, of Richmond, presented a paper with this title, and reached the following conclusions: 1. In the treatment of cancer and other necessarily fatal diseases it was the duty of the doctor to mislead and deceive his patient as long as he could as to the nature and fatal ending of the disease. 2. It was also his duty, in other maladies not fatal, often to deceive his patient both as to the medicine used and also as to his real opinion of the case. Such deception was also a daily occurrence, and was practiced by all doctors. 3. This mode of proceeding was not at all agreeable to the doctor, and was a great strain upon his nervous system; and the only motive for it must be the good of his patient. 4. Deception had always been recognized as lawful and right in war, and had been highly commended by the wisest men. 5. In this deception, in the case of both the doctor and the general, the motive must be of the highest and most unselfish character. 6. In many of the great crises of life one virtue had for a time to be in abeyance, and yield to other greater virtues and duties. Human life was daily saved by withholding, if needful by deceit, sad news that would be apt to kill by shock. 7. It was plainly the duty of the doctor to prolong the life of his patient, and in every case and by all means in his power to render him comfortable in body and mind. 8. The utmost frankness should be practiced by the doctor in his intercourse with the sick person's friends, and was demanded alike by regard for his own reputation and for the rights of his patient. 9. It was the doctor's duty, in all cases of malignant disease, to consent to a consultation, if not to suggest it. 10. Hope was one of the most precious instincts or faculties of the soul, and it was the doctor's duty to cherish it to the last. As every patient had the desire to live, "the expectation," the other element of hope, must be cultivated by the doctor. 11. However desperate the case might be, it was the doctor's duty to stand by his patient, and cheer him to the last.

In response to numerous calls, Dr. John B. Hamilton, of Washington, Surgeon-General of the Marine-Hospital Service, said that he could not hope to say anything in the nature of instruction to this old and distinguished association, especially as what he should say was entirely unpremeditated and without preparation. But in epidemiology, history was always interesting, and he would briefly give the outline history of the epidemic of yellow fever now existing in the State of Florida.

Last year the yellow fever had appeared in Key West in the family of a restaurant keeper by the name of Baker. It appeared that one Bolio family—who had kept hotels in Havana in various places, the last being called the *Quinta Avenida* (Fifth Avenue Hotel)—unfortunately for Florida, emigrated to Key West. Their household effects, under the regulations governing the regular lines of steamers, could not be shipped by them, so they shipped these effects, consisting of bedding and various articles of furniture, by an irregular "tramp," not now running, called the Cochran. There was no objection officially made at Key West, and these effects were landed and stored above Baker's restaurant. The Baker family died of the fever, and thus the fever started and rapidly became epidemic. The Government, under the operation of that section of the statutes forbidding interference with local authorities, did nothing except, on request of the Governor, to aid the local board, establish a dispensary, and pay the expenses of the city hospital. To provide for the speedy depopulation of the city, a refugee camp was established at Egmont Key at the mouth of Tampa Bay. No case from Egmont Key communicated the disease.

The first cases in Tampa were kept secret from August to October 21st. A family of Italians by the name of Turk, fruit dealers, brought the fever into Tampa. The steamers had refused, under orders from the Hillsborough County Board of Health, to bring fruit from Havana or Key West. These Italians, finding it impossible to continue in business, set up a smuggling line and brought fruit by way of Punta Gorda Bay, and overland to Tampa. For this purpose the man Turk and his assistant Peep, or "Pete," made frequent surreptitious visits to Key West while the disease was there epidemic, and blankets were purchased in the infected city and used while on the overland trip and brought to Tampa. It was a significant fact that the whole family of these Italians were the first taken sick, but they were not publicly known to have been out of the town, although the fact was now known. The measures taken by the Government were simply to conform to the wishes of the Governor to aid the Hillsborough County Board of Health. The duty of preventing the spread of the disease was undertaken by the Florida State Protective Association, an organization consisting of one representative from each County board of health, under the presidency of Dr. King Wyly, of Sanford. In December the association raised the quarantine against Tampa. The County Board of Health asserted that the disease had disappeared, but, unfortunately, the disease had not been stamped out, and, although the cases of fever lingered all winter in Tampa, its existence there was bitterly denied.

From Tampa the disease spread to Plant City, Manatee, and other places, and it was now believed that the fever had been at Jacksonville as early as February. Dr. Potts treated cases in Bay Street in June, and there were probably cases continuously

until the formal announcement was made. The speaker then described the Governmental measures taken to prevent the spread of the disease, and referred in detail to the marked success of the operations at Camp Perry.

**Report on Psychology and Neurology.**—Dr. Randolph Barksdale, of Petersburg, in his report sketched the history of the treatment of insanity: Over two thousand years ago insanity had been believed to be a state of being possessed by the devil, and the treatment had been directed toward driving the devil out and punishing the person for letting the devil in. Hippocrates had been the first to cast off such superstition, and announced that insanity was the result of disease of the brain; that the mind—the soul—could not be diseased; and his doctrines prevailed and resulted in improved treatment. But after the fall of the Roman Empire these doctrines had passed away. Again the insane had become victims of persecution and punishment. It had not been until 1795 that Pinel had inaugurated the reformation school of treatment which prevailed to this day. He had again taught that insanity was a disease, and that the insane were entitled to all the care of the skilled physician and nurse. Since then improvements had been almost yearly made in the care and treatment of the insane, as of other diseases. Under the head of *neurology* Dr. Barksdale mentioned some approved uses of electricity in medicine, and also noted approvingly some advances made by Seguin and others with reference to the localization of functions of the brain, which might help the surgeon materially in selecting the site for the trephine in certain obscure brain injuries and diseases.

**Report on Obstetrics.**—Dr. G. McDonald, of Union, West Virginia, in his report spoke of the value of asepsis and antiseptics in midwifery, repeating the precautions that had time and again been repeated in books, journals, etc. As to anæsthetics in labor, chloral hydrate in fifteen-grain doses, every half-hour or so, was better during the early stages of labor than chloroform, which latter should be reserved for the final throes. The placenta was best expelled by Credé's method. It had been recommended to pack the cavity of the uterus with iodoform gauze in cases of post-partum hæmorrhage after the failure of ergot, hot or cold injections, etc.; but, as a rule, we should empty the uterus promptly and cause tonic contraction of the organ. In cases of placenta prævia, the tampon might undoubtedly be used to gain time for sufficient dilatation of the os uteri in order to use the hand, etc. When a case of occipito-posterior position was seen before rupture of the membranes, and before the head and shoulders became impacted in the pelvis, the aseptic hand should be introduced (the patient under chloroform), the head caught between the fingers and thumb, and the occiput rotated forward, when the labor might proceed as in a normal case. In regard to face presentations, when the chin fell into the hollow of the sacrum, the chin should be brought forward and held there until expelled. The Veit-Smellie method was advocated for extraction of the after-coming head in breech cases. The importance of laparotomy, etc., in rare instances in obstetrics was dwelt upon.

**The Conduct of Pregnant Women before and after Delivery.**—Dr. William L. Robinson, of Danville, presented a paper in which he considered—1. The causes and treatment of the nausea of pregnancy. 2. The effects of granulations of the cervix uteri and vagina before delivery, and the dangerous complications resulting therefrom during delivery. 3. The causes and treatment of constipation during pregnancy. 4. The proper hygienic and aseptic precautions that should be taken before and after confinement. 5. The causes of post-partum pains unduly protracted, the dangers to be anticipated therefrom, and the proper means of correcting the trouble. 6. The causes and treatment of post-partum hæmorrhage. 7. While antipyrine controlled after-pains, did it not unduly diminish the normal discharges? 8. Chorea of pregnancy, with the citation of several interesting cases.

**Report on Diseases of Women.**—Dr. George B. McCorkle, of Covington, presented the report. In regard to electricity, he presented the conclusions of Dr. Martin, of Chicago, as to its use in the treatment of fibroids of the uterus. It was free from danger, was absolutely painless, invariably checked excessive hæmorrhage, rapidly reduced the size of the tumors, and stopped neuralgic pains; its use was based upon the principle of the exact dosage of electricity. Electricity had likewise proved useful in removing tumors from the female breast in the practice of Dr. Garnett, of Berlin. It had also been useful in increasing the flow of milk in mothers' breasts. Dr. Byford used electricity in paralysis of the bladder after inflammation had subsided. Dr. Rockwell had successfully used it in amenorrhœa. Even in a case of complete extrusion of the uterus electricity had been successfully resorted to to retain the organ in place after its reposition. Operative procedures seemed to be taking the place of pessaries. Dilating and curetting the uterine cavity for numerous growths on its inner surface, etc., were again becoming very popular.

**Report on Diseases of Children.**—Dr. Oscar Wiley, of Salem, presented the report. He remarked on the marked excitability of infants and children, and then stated that their diseases were greatly modified by the nervous impressibility of the subjects. The severity of symptoms, however, furnished no safe guide as to the severity of the disease. For instance, a convulsion, than which we had no more hideous symptom or sign, might be the result of a centric or eccentric lesion; it might be innocent in its effects, due entirely to an easily removable cause, or it might result from some organic changes which would increase from day to day in severity. Intercurrent complications had to be carefully watched for in diseases of children. Stress should be laid on the hygienic and dietetic habits. He closed with some pertinent remarks on dietetic therapeutics.

**Report on Ophthalmology.**—Dr. Alfred C. Palmer, of Norfolk, read the report. He divided his subject so as to speak systematically of whatever concerned (1) the lids, lacrymal apparatus, and orbit; (2) the cornea, conjunctiva, and sclera; (3) accommodation, refraction, and the motor apparatus; (4) the uveal tract, vitreous, aqueous, and lens; (5) the retina and optic nerve.

**Report on Otology and Laryngology.**—Dr. John T. Francis, of Norfolk, presented the report. He first spoke of the pathology of aural vertigo, and then, with reference to the treatment of otorrhœa, said that lactic acid attacked only the fungous growths, diminished the secretion, and caused the odor to disappear. Pilocarpine was also recommended. Photoxylin (twenty-per-cent. solution) had closed a perforation in the membrana tympani. The ear was first syringed with boric-acid solution, and dried with absorbent cotton. Then the edges of the perforation were painted several times until the opening was covered. He reported a case of serious injury to the ear as a result of simply syringing that organ for a purulent discharge. The remainder of the report was on laryngology, and spoke mostly of laryngeal tumors, tracheotomy, chronic and atrophic rhinitis, hay fever, etc.

**Enlarged Tonsils—What shall we do with them?**—Dr. Charles M. Shields, of Richmond, read a paper with this title. After a brief discussion of the necessity of removing hypertrophied tonsils, and answering in the negative the question, "Can they be removed by the application of astringents, absorbents, or mild caustics, or the hypodermic injection of ergotin, iodine, etc.?" the speaker presented the comparative merits of the amygdalotome and galvano-cautery, stating

that he now only used the amygdalotome in young children, or where the tonsils were of the soft variety, where there was no danger of hæmorrhage, on account of the prompt contraction of the blood-vessels. He had never seen or heard of fatal hæmorrhage following the amputation of the tonsils in children, for the same reason. In adults, where the tonsils were of the hard, fibrous variety, although dangerous hæmorrhage only occurred about once in 500 cases, he thought that risk sufficient to make us discard the instrument if a safer and just as efficient method was at hand. The galvano-cautery fulfilled these indications. From four to eight sittings were sufficient to melt down large tonsils, and he touched six or seven points at one sitting. If a ten-per-cent. solution of cocaine was first applied, patients did not complain of pain. He had observed no tendency to recurrence after removal by this method. He summed up as follows: In all cases except in young children, or where the tonsil was very soft, the galvano-cautery method was to be preferred, because, 1st, the tonsil could be more nearly restored to its normal proportions; 2d, irregularly shaped masses could be removed; 3d, the effects seemed to be more permanent; 4th, it was devoid of danger.

**Improved Means of Diagnosis and Surgical Treatment of Nasal and Throat Troubles.**—Dr. Joseph A. White, of Richmond, read a paper in which he described a number of new inventions made by himself, both original instruments and improvements in old ones. Those of chief importance, as he regarded them, were (1) a post-nasal speculum, or self-retaining palate retractor, which had been described in the "Journal of the American Medical Association," and also in the "Virginia Medical Monthly"; (2) a self-retaining tongue depressor, now presented for the first time to the profession; and (3) a ratchet snare and galvano-cautery handle, described last month in the Philadelphia "Medical News." The tongue depressor invented by Dr. White, once applied, could not be displaced by the motion of the patient's tongue, while it was firmly pressed down on the floor of the mouth. It exposed the pharyngeal wall perfectly and allowed of the free use of the rhinoscopic mirror while the post-nasal speculum was in position.

## Book Notices

*Diseases of the Skin.* Their Description, Pathology, Diagnosis, and Treatment. By H. Radcliffe Crocker, M. D. Lond., Fellow of the Royal College of Physicians of London, etc. With 76 Illustrations. Philadelphia: P. Blakiston, Son, & Co., 1888. Pp. xvii–746. [Price, $5.50.]

It has long been a matter of some surprise that England has produced only two recent books upon the diseases of the skin which may be classed as treatises. Wilson's large book dates back to the dark ages of dermatology, and his "Cutaneous Medicine," though of later date, is for the use of students. Tilbury Fox's treatise, though a most valuable work, was written in 1864, and the latest editions are not very recent. Germany has given us Kaposi, Behrend, von Ziemssen, Lesser, and Hans Hebra; France, Hardy and Guibout: Scotland, Anderson and Jamieson; and the United States, Duhring, Hyde, Robinson, and Shoemaker; England has kept silence. But now the silence is broken, and when we read this book of Crocker's we can but think that it was worth while for England to keep silence so long if by so doing she has been able to give us so good a work. Its author has been long and favorably known as an able contributor to medical-journal literature, and he is one of the most highly esteemed dermatologists in London. By this book he should win a host of admirers wherever good books are read.

It commends itself by its very honesty. What the author believes, he says; and if he does not know a thing, he says that he does not know. We know that he is a man of large experience in the care of skin cases, as he is the dermatologist to University College Hospital. That he is an acute and careful observer and a systematic recorder of his observations his book teaches us. As one of the physicians to the East London Hospital for Children he has enjoyed special advantages in the study of the skin diseases of children, and in the work now before us special attention is given to the symptomatology of such diseases; a unique feature of the book. He is also a skilled pathologist. Nearly all the drawings from microscopical sections are his own, and very beautiful they are as works of art. Another special and commendable feature of the book is that the general pathology of the various diseases is printed in the ordinary type of the book, while the minute anatomy is given in smaller type. This will be appreciated by many readers. Great prominence is given to constitutional conditions as causes of skin diseases, and to the importance of treating the patient quite as much as his cutaneous disorder. Dietetic matters and general regimen are insisted upon, and wisely. The definitions of the terms used in dermatology are good and useful. The general practitioner often fails to convey a proper idea of a disease to his consultant, because he does not know the correct terms to use in describing a case. The chapters on ætiology and treatment are excellent. Arsenic is deposed from its old-time supremacy and put in its proper place as a drug that is useful only at times and in certain conditions. Ichthyol is damned with faint praise. The author condemns, and justly, the use of poultices for the removal of crusts. He has a special fondness for calamine lotion—composed of calamine, oxide of zinc, glycerin, and rose-water—as an application for erythema, eczema, and most hyperæmic conditions. Counter-irritation over the vaso-motor centers is recommended in chronic eczema, and we have found it useful in one case in which we followed the author's advice. Under hydroa he places dermatitis herpetiformis and herpes gestationis. In the treatment of psoriasis, turpentine is highly recommended, both internally in doses of ten carried to thirty drops three times a day, and externally. He regards lichen ruber acuminatus and lichen planus as the same disease, the difference of clinical appearances being due to the different seat of the pathological process in the two forms; about the hair follicles in the one and the sweat-pores in the other. Sulphate of magnesium he has found useful for warts when taken by the mouth. Subcutaneous injections of mercury he regards as no more efficacious in syphilis than the same drug given by the mouth, and condemns them as both painful and troublesome to the patient. He does not accept as proved either the parasitic origin or the contagiousness of alopecia areata.

We would note the following as new terms added to our already burdened nomenclature: Dermatitis repens, conglomerative pustular perifolliculitis, atrophoderma pigmentosum, furunculus orientalis, and monilethrix.

In a work so carefully and admirably done as this one, it may seem ungracious to make any adverse criticism, but we notice that the use of sheet rubber in eczema scroti is not mentioned, and we are sure that in many cases it is one of the best methods of treatment. We are surprised to see that salt rheum and its German equivalent, *Salzfluss*, are omitted from the synonyms of eczema, angeioma from those of vascular nævus, and pimples from those of acne.

The bullous form of impetigo contagiosa and dysidrosis of the

face receive no mention. Injuries do not figure as ætiological factors in zoster, and the use of the curette is not mentioned in the treatment of warts. We believe that the author is wrong in advising the withdrawal of the needle before the hair is loosened and leaves the follicle in the treatment of hirsuties by electrolysis. The H. is omitted from the name of our Fox, on page 171; Elliot is spelled with two t's instead of one, on page 179; and F. is used instead of T. in the name of Jackson, on page 605. Würzburg is probably meant, on page 232, not "Wursberg." There is one too many it's in the spelling of blepharadenitis, on page 410. We think that the book is marred by the use of such abbreviations in the text as W. C., P. M., B. P., and U. C. H., and that it would be well to drop the ancient spelling of plaister.

But the work is so excellent that these slight blemishes count as nothing. It is one of the most thorough treatises on the diseases of the skin that it has ever been our good fortune to review, and as such we heartily commend it to our readers.

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*A Treatise on Headache and Neuralgia*, including Spinal Irritation, and a Disquisition on Normal and Morbid Sleep. By J. Leonard Corning, M. A., M. D., Consultant in Nervous Diseases to St. Francis Hospital, etc. Illustrated. New York: E. B. Treat, 1888. Pp. 10–15 to 231. [Price, $2.75.]

While there is much that is admirable in this book, it must be said that the different subjects are treated with unequal merit. Thus the chapters on headache are far less satisfactory than those on spinal irritation, and it would not seem to us that the author's classification of headaches was one which he would wish to be permanent. It would have been well to say more respecting the pathology of the various subjects treated. In respect to treatment, the author dwells largely upon various appliances and methods which he has devised, which are extremely creditable to him, and have been favorably received by the profession.

We do not think he has exercised sufficient caution in his advocacy of alcohol and morphine. Neurotic individuals, especially if they are somewhat weak-minded, find it extremely easy to shelter themselves behind a physician's prescription in gratifying a readily formed appetite for these useful but dangerous drugs.

Dr. Corning's writings are never obscure, and are therefore always readable, and we doubt not that many will find much satisfactory information in the work which has been thus briefly noticed.

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*A Text-book of Pharmacology, Therapeutics, and Materia Medica.* By T. Lauder Brunton, M. D., D. Sc., F. R. S., Fellow of the Royal College of Physicians, Assistant Physician and Lecturer on Materia Medica at St. Bartholomew's Hospital, London. Adapted to the United States Pharmacopœia. By Francis H. Williams, M. D., Boston, Mass. Third Edition. Philadelphia: Lea Brothers & Co., 1888. Pp. 1–9 to 1261. [Price, $5.50.]

We are pleased to call the attention of both medical practitioners and medical students to the third edition of this admirable work. Unfortunately, the rapid exhaustion of the second edition prevented the author from making as many improvements in the present edition as we could have desired. His treatment of the connection between chemical constitution and physiological action is still too elementary. More space should have been devoted to it. Certain uses of drugs, such as that of antipyrine as a nervine and that of calomel as a diuretic, are not discussed in the light of the most recent investigations. The general index has been thoroughly revised, but the index of diseases and remedies—compiled from Dr. Potter's "Index," Napheys's "Medical Therapeutics," and Neale's "Medical Digest"—is merely a suggestion of what it might be. Dr. Brunton attributes the appearance of "apis" in his list as a remedy for inflammation of the tonsils to an amanuensis's error, and humorously assures the homœopaths that, if any other like oversight has occurred, it was unintentional. He proceeds to show that homœopaths are wrong, not because they assert *similia similibus curantur*, a principle known to Hippocrates and recognized by him to be true in certain cases, but because they raise this principle to the rank of a universal law and believe that the diminution in the dose is compensated for by the potency conferred upon the drug by prolonged trituration. On the other hand, homœopathic doctrines have lessened the practice of polypharmacy and strengthened the modern tendency to allow the *vis medicatrix naturæ* free scope. After an introduction, in which the author defines materia medica and points out the supreme importance of rational therapeutics and the steady advances of prophylaxis and pharmacology, he devotes a section of the work to each of the following subjects: General pharmacology and therapeutics; general pharmacy, inorganic materia medica; organic materia medica; vegetable materia medica, almost entirely remodeled on Hooker's plan; and the animal kingdom. The chemical appendix, general index, index of diseases and remedies, and bibliographical index follow. The struggle for existence between microbes and the living organism, illustrated in the first edition by a single diagram of a bacillus and an amœba, is fully illustrated in the third edition by ten woodcuts taken from Metschinoff's paper. Jackson's theories on the nervous system are illustrated by a diagram which, when covered with successive layers of thin paper, exemplifies the effect of anæsthetics and narcotics in gradually destroying various faculties. Chapter IX, on the action of drugs on the organs of special sense, is very satisfactory. It contains a diagram of the nervous supply of the eye; another representing a section through the corneo-scleral region, ciliary body, and iris of a healthy eye and also of a glaucomatous eye; and a third diagram showing the position of the rods and pigment-cells in the retina of a frog. The chapter on antipyretics is fuller than in the first edition. "Some diagrams illustrating the pathology of fever and the mode of action of antipyretics have been introduced; but it is very difficult in the present state of our knowledge to deal satisfactorily with this subject." As in the past, Brunton's "Pharmacology" will be in the future of the greatest use to the medical profession.

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*The Ear and its Diseases.* Being a Practical Contribution to the Study of Otology. By Samuel Sexton, M. D., Aural Surgeon to the New York Eye and Ear Infirmary, etc. Edited by Christopher J. Colles, M. D., Assistant Aural Surgeon to the New York Eye and Ear Infirmary. With Numerous Illustrations. New York: William Wood & Co., 1888. Pp. xii–461.

In this age of compilation, when the sole aim of each new book seems to be the recital of what has been done by every one except the author, and when anybody who has gained a smattering of a specialty thinks himself entitled to rush forthwith into print and pose as an authority, mainly upon the strength of his reading, it is refreshing to find a book of real originality—one, namely, that is based neither upon borrowed opinions nor upon unsupported theory, but upon the solid ground of long-continued and intelligent personal observation. Such a book Dr. Sexton has produced in the volume before us. It presents the results derived from the careful study of some twenty thousand cases of aural disease occurring in the author's practice, about ten thousand of which have been carefully recorded and tabulated. These cases furnish a strong statistical

basis for his propositions and arguments, and with their presentation and discussion a large part of the book is taken up. It is not to be inferred from this that Dr. Sexton ignores the work of others. There is perhaps no otologist who is more conversant with the literature of his specialty, and, when the occasion offers, he makes free use of the works of contemporary and of by-gone writers. But he is above all things an observer, and the great value of his work lies in his observations there recorded, and in his deductions from them.

The book consists of four parts. The first contains a succinct account of the anatomy of the external ear and the drum-membrane and of the muscles which act upon them, together with a clear description of the relations between the naso-pharynx and the tympanum and a brief chapter on the physiology of hearing. To the general practitioner, however, probably the most interesting portions of the book will be found in the second part, which is taken up with the ætiology of aural affections. Of special importance and value are the chapters upon catarrh of the upper air tract and upon oral irritation as causal factors in the production of ear disease, and very suggestive and full of truth are the shorter sections indicating the troubles induced by bathing, the use of the nasal douche, and other similar agencies. In the third part, which appeals more particularly to specialists, Dr. Sexton takes up in succession the principal affections of the middle ear. Before considering the inflammatory disorders of the tympanic cavity, he gives an exhaustive account of the injuries and wounds both of the external ear and of the tympanum, in which he has had an exceptionally great experience. This portion of the work occupies over a hundred pages, including forty devoted to othæmatomata, a space quite disproportionate to the importance of that subject. We are glad to see that in this connection the author gives extended notice to the lesions produced by blows upon the auricle, and very properly deprecates the barbarous habit of boxing the ears, which is still a prevalent method of infantile correction and which has led to disastrous and even fatal results.

The chapters on inflammation of the middle ear are preceded by a short but adequate account of the anatomy of the region, special attention being given to the relations existing between the atrium, the attic, and the antrum, which are of such practical importance in reference to the spread of inflammation from one part to another. The section upon catarrhal otitis media is worthy of all praise, the remarks upon the treatment being especially judicious and satisfactory. We wish, though, that Dr. Sexton had devoted a little more space to the consideration of that bugbear of otologists, chronic catarrhal otitis. In the article upon suppurative otitis media, which is very full and excellent, the author maintains his well-known conservative attitude in regard to the mastoid operation in threatened involvement of the brain. He also draws a strong distinction between the cases of purulent inflammation which are suitable for the treatment by insufflation of powders and those which are not, holding that such treatment is applicable only when we desire to convert the mucous membrane of the middle ear into a non-secreting (dermoid) structure. On both of these points many otologists will take issue with the author, although the deliberate statements of one who has had such large experience will necessarily command respect, if they do not produce conviction.

In the article on polypi we should have liked to see a little more said about the alcohol treatment, which in our own experience has had excellent results.

Quite interesting, both to the otologist and to the alienist, are the sections upon anomalies of audition and their effect upon the mind.

The third part of the book closes with an elaborate account of the radical operation for excision of the drum-head and ossicles, as a means either of checking inveterate suppuration or of improving the hearing in advanced cases of non-suppurative sclerosis. Twenty-nine cases of the former kind and seven of the latter are reported in detail, and the reports are deserving of careful study even by those who (to our thinking, unjustly) reprehend the operation as useless and unjustifiable.

The fourth part of the book comprises various miscellaneous articles, including some on subjects of much interest to the general profession, such as the question of the education of deaf-mutes, and that of deafness considered as a pensionable disability. One article—that upon the injurious effects of unskillful treatment—we wish could be read by every practitioner in the land. There is no truth which so urgently needs to be brought home to the minds of doctors and patients alike as the one, so often lost sight of, that meddlesome and ignorant interference with the eye or ear is apt to be followed by the most disastrous consequences.

It will be seen that Dr. Sexton's book is not a complete treatise upon ear diseases. Many subjects—such as obstruction and inflammation of the auditory canal, otomycosis, and the pathology and diagnosis of internal-ear disease—about which we should have liked to have the benefit of his experience, are not touched upon at all. Nevertheless, the subjects which are included comprise by far the most important and, generally speaking, the most common of aural maladies, and they are fully and ably presented; and the book, even with these omissions, certainly constitutes a most valuable contribution to otological literature.

## BOOKS AND PAMPHLETS RECEIVED.

Should not the National Government defend our Ports against the National Enemy, Contagious Disease? By Benjamin Lee, A. M., M. D. Ph. D., etc. [Reprinted from the "Journal of the American Medical Association."]

Treatise on the Diseases of Women. For the Use of Students and Practitioners. By Alexander J. C. Skene, M. D., Professor of Gynæcology in the Long Island College Hospital, Brooklyn, etc. With Two Hundred and Fifty-one Engravings and Nine Chromo-lithographs. New York: D. Appleton & Co., 1888. Pp. xiv–966. [Price, $6.]

The Life-Insurance Examiner. A Practical Treatise upon Medical Examinations for Life Insurance. By Charles F. Stillman, M. S., M. D., etc. New York and Chicago: The "Spectator" Company, 1888. Pp. 6–7 to 187.

The Orthopædic Treatment of Paralysis of the Anterior Muscles of the Thigh. By A. B. Judson, M. D., New York. [Reprinted from the "Medical Record."]

Uterine Displacements and their Influence on the General Nervous System. By Francis H. Davenport, M. D., of Boston. (Read at the annual meeting of the Massachusetts Medical Society, June 12, 1888.)

Clinical Lectures on certain Diseases of the Nervous System. By Professor J. M. Charcot, Professor to the Faculty of Medicine of Paris, etc. Translated by A. P. Hurd, M. D., Newburyport, Mass. Detroit: George S. Davis, 1888. Pp xxiv–155. [The Physicians' Leisure Library.]

The Dispensatory of the United States of America. By Dr. George B. Wood and Dr. Franklin Bache. Sixteenth Edition. Rearranged, thoroughly revised, and largely rewritten. With Illustrations. By H. C. Wood, M. D., LL. D., Member of the National Academy of Science, etc., Joseph P. Remington, Ph. M., F. C. S., and Samuel P. Sadtler, Ph. D., F. C. S., etc. Philadelphia: J. B. Lippincott Co., 1888. Pp. xiv–2091. [Price, $7.]

Consequences of Acute Suppuration of the Middle Ear, with Special Reference to Opening the Mastoid. By A. R. Baker, M. D., Cleveland, Ohio. [Reprinted from the "Transactions of the Ohio State Medical Society."]

Report of the Proceedings of the Illinois State Board of Health.

Quarterly Meeting, Chicago, October 25–26, 1888. The Yellow Fever Epidemic of 1888—Unnecessary, Ruinous, and Inhuman Quarantines—The "Danger Line" in Yellow Fever—Meteorological Conditions—Public Health in Illinois.

Atlas of Venereal and Skin Diseases. Comprising Illustrations and Selections from the Plates of Professor M. Kaposi, of Vienna; Dr. J. Hutchinson, of London; Professor I. Neumann, of Vienna; Professors A. Fournier and A. Hardy, and Drs. Ricord, Cullerier, Besnier, and Vidal, of Paris; Professor Leloir, of Lille; Dr. P. A. Morrow, of New York; Dr. E. L. Keyes, of New York; Dr. Fessenden N. Otis, of New York; Dr. J. Nevins Hyde, of Chicago; Dr. Henry G. Piffard, of New York, and others. With Original Text by Prince A. Morrow, A. M., M. D., etc. Fasciculus IX. New York: William Wood & Co., 1888.

Second Annual Report of the State Board of Health and Vital Statistics of the Commonwealth of Pennsylvania. Transmitted to the Governor, December 1, 1886.

The Comparative Merits of Tracheotomy and Intubation in the Treatment of Croup. By George W. Gay, M. D., Visiting Physician to the Boston City Hospital. [Reprinted from the "Boston Medical and Surgical Journal."]

Cataract Extractions, with only the Eye operated upon closed by Adhesive Strips. The other Eye left Open for the Guidance of the Patient. By Julian J. Chisolm, M. D., Baltimore. [Reprinted from the "Journal of the American Medical Association."]

The Great Value of a 0·25 D. Cylinder in the Relief of Headache and Eye Pains. By Julian J. Chisolm, M. D., Baltimore. [Reprinted from the "Journal of the American Medical Association."]

The Ætiology of Dipsomania and Heredity of "Alcoholic Inebriety." By Lewis D. Mason, M. D., Fort Hamilton, N. Y. [Reprinted from the "Quarterly Journal of Inebriety."]

The Preferable Climate for Phthisis; or, the Comparative Importance of Different Climatic Attributes in the Arrest of Chronic Pulmonary Diseases. By Charles Denison, A. M., M. D., Denver, Col. [Reprinted from the "Transactions of the Ninth International Medical Congress."]

## New Inventions, etc.

### AN IMPROVED CANNULAR AURAL FORCEPS, COMBINED WITH SCISSORS.

By W. H. Carmalt, M. D.,
NEW HAVEN, CONN.

The instrument is a modification of Bumstead's well-known cannular forceps, figured in most of the catalogues of the instrument-makers. It was shown at the recent meeting of the American Otological Society, held in Washington, but, as it appeared from the discussion, as was not altogether unexpected, that the idea was not original to the members of that society, several gentlemen stating that they had had instruments constructed on that principle made for *themselves*, it was decided to withdraw it from publication there; but, inasmuch as nothing just like it has, so far as I or the instrument-makers have been able to discover, been published, the profession is no better off, and I have decided to let this one be figured for the benefit of "whom it may concern," making no other claim to originality than is contained in the foregoing statement.

The objection to the Bumstead instrument is that the spring handle is double—*i. e.*, each arm is a spring the same as in the ordinary thumb forceps, and the inevitable tendency in use is to close the blades by drawing the thumb and forefinger together. The resultant motion is to draw the forceps extremity back away from the object in the ear which it is intended to grasp. In order to avoid this, the whole hand must move slightly forward, but *this* motion at once is rough and uncertain compared with the delicacy and surety necessary in manipulating in so small a space and at such a distance. It is very apt to cause severe pain. To obviate this, I have had the anterior or forceps blade made stiff and continuous with a handle which, being grasped in the full hand, is firm and fixed, the posterior or cannular blade only moving forward by pressure with the thumb. The action is uniform and steady. The only motion is that of the thumb, and this may be regulated to any nicety.




Besides this modification of the handle, I have adapted, by means of a screw at the point *a*, several other instruments working in a similar manner—*i. e.*, a "rongeur" forceps for gnawing off the surface of exuberant granulations or the remains of the pedicle of a polypus previously removed, and also two pairs of scissors, one curved on the flat and one straight.

The instrument is made by the well-known firm of Tiemann & Co., New York.

## Miscellany.

**The Buffalo Lithia Water in Uric-acid Lithiasis.**—Dr. E. C. Laird, of Haw River, North Carolina ("Maryland Med. Jour."), says:

"The relief afforded by Buffalo lithia water to a patient of mine, Colonel H., of this place, a sufferer from renal calculi, is, I think, worthy of some record. The first of May last he came under my care subject to frequent attacks of nephritic colic. Except as to the usual treatment for the relief of present suffering, I put him exclusively upon Buffalo lithia water, Spring No. 2, under the influence of which he in a few weeks passed four calculi weighing from two to three grains each, which was followed by a disappearance of symptoms. Notwithstanding, however, the continued use of the water, after a short interval there was a return of these attacks with increase both of frequency and severity, when he made a visit to the Buffalo Lithia Springs, where he used the water six weeks with the following results: Ten days after arrival he began the discharge at intervals of large quantities of calculi and sand, which continued for several weeks and afterward gradually diminished, until at the expiration of the six weeks there was only occasionally and barely perceptible upon minute examination a slight sandy deposit in the urine. At the same time improvement in the general condition of the patient was very marked. The amount of calculous matter discharged may safely be estimated at from one to one and a half ounces. Under microscopic examination it was evident, I think, that the calculi were originally parts of larger formations dissolved by the action of the water. Analysis, made by Dr. F. S. Whaley, resident physician at the Springs and consulting physician in the case, showed it to be uric acid. Six weeks have elapsed since he left the Springs. Use of the water continued. The urine is free from sediment and normal. It is proper for me to add that I was in constant attendance upon Colonel H. during his stay at the Springs."

Dr. Whaley adds the following:

"Dr. E. C. Laird brought to me for analysis in June last three calculi which he informed me had been passed by Colonel H., of Haw River, N. C. They were egg-shaped, hard, brown, and weighed respectively two, two and a half, and two and three quarter grains. All of them showed marked facets. Analysis proved these to be uric acid. The formation was in consecutive layers and I made three analyses of one—one from the outer layer, one from the middle, and the other from the nucleus. All these analyses proved a uric-acid calculus. My examinations were both chemical and microscopical. After this the patient came to the Buffalo Lithia Springs, where, as resident physician, I was called in and saw him daily for about four weeks. He suffered from frequent attacks of nephritic colic and passed at intervals large quantities of uric-acid calculi and uric-acid sand under the use of Spring No. 2. The particles passed were irregular and so soft that they could be mashed between the fingers. The sand and fine particles under the microscope looked broken, porous, and presented a worm-eaten appearance. I believe, from this and similar cases which have come under my observation, that the Buffalo lithia water possesses solvent power over uric-acid calculi. My belief is based on the following observations: 1. That the calculi passed under the use of this water are softened so that they crumble easily. 2. The crystals under the microscope (which are passed under the use of water) are not so well defined and present a worn appearance, and the edges are not so sharp. 3. That patients with attacks of nephritic colic, under the use of the water, passed uric-acid sand and the attacks are relieved."

**The Hoagland Laboratory.**—The trustees announce that the laboratory is to be formally opened this (Saturday) evening, when an address will be given by Professor H. Newell Martin, of the Johns Hopkins University.

**Charity Hospital.**—Dr. A. M. Phelps has been appointed a surgeon to the hospital, in place of Dr. F. N. Otis, resigned.

**Coca in Laryngeal Affections.**—The Paris correspondent of the "Wiener freie Presse" quotes the following regarding the critical analysis made by Dr. Fauvel, the noted Paris laryngologist, in reference to Mackenzie's book "Frederick the Noble:" ". . . That which most surprises me is the fact that medication played a secondary *rôle* in the management of the case. I would have recommended the employment of coca Mariani to rouse the flagging energies of the patient. . . . My investigations, dating back to 1865, establish the fact that coca is a potent agent in combating debility. I have also shown that the injection of concentrated coca (thé Mariani) has a salutary influence on the laryngeal mucous membrane, alleviating pain and congestion. In Europe this remedy is relied on in cases of debility and where pain is a prominent symptom. . . . As further proof the case of General Grant is cited, in which Dr. Fordyce Barker, Dr. George F. Shrady, Dr. J. H. Douglas, and Dr. Sands were active. Coca was employed in this case with success (the preparation exhibited being thé Mariani), and it was stated by the attending physicians that without the use of this drug the general would not have been physically able to undergo the strain incidental to the work of finishing his 'Memoirs.'"—*Berliner Tageblatt.*

**The late Dr. Sands.**—At a special meeting of the Medical Board of the Roosevelt Hospital, held on Tuesday, November 20, 1888, the following entry was made in the minutes:

[Signed] J. West Roosevelt, *Secretary.*

"The death of Dr. Henry B. Sands removes from among us one who, as chief surgeon of this hospital, not only faithfully performed every duty, but elevated the character of the whole institution.

"An attending surgeon to the hospital from the date of its opening, November 2, 1871, his time and his great talents were freely given to its service. Careful and thorough in his work, skillful as an operator, clear and accurate in his judgment, truly and unselfishly considerate of the patients committed to his charge, his resignation upon March 31, 1888, was a most serious loss. Yet so thorough had been his work, so complete his method of organization, that his influence has remained a permanent good.

"On May 30, 1882, he was appointed the sole attending surgeon to the hospital. He had long advocated the plan of organization with a single responsible head to each department—a plan till then untried in any large hospital in the United States. His strength of purpose and determination overcame all obstacles. This appointment was a great compliment to his professional reputation and personal character, and he showed himself worthy of the trust reposed in him.

"Such was his energy and such his devotion to work that he left the hospital with a surgical department second to none in the country. The chief ambition of his professional life was realized, and he had the satisfaction of seeing the system, for which he had done so much, firmly established.

"The members of the medical board inscribe in their minutes their high appreciation of the services rendered to the hospital by Dr. Sands, their recognition of his extraordinary ability, and their deep sorrow for the loss to themselves and the entire community of so great a surgeon and so good a man."

## ANSWERS TO CORRESPONDENTS.

*No. 243.*—Glass or gutta percha.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

### THE INFLUENCE OF THE NERVOUS SYSTEM ON CELL LIFE (METABOLISM).*

BY T. WESLEY MILLS, M. A., M. D.,
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IN a paper entitled "A Physiological Basis for an Improved Cardiac Pathology," read in abstract in August, 1887, before the Canada Medical Association, I endeavored to show the relation of the cardiac nerves to the nutrition of the heart; but the subject grew as I proceeded with its study, so that I perceived that the theory I applied to the heart was equally true of the other organs and tissues. In that paper, which was published in the New York "Medical Record" of October 22, 1887, I advanced a large number of facts derived from common experience, physiological experiment, pathology, and clinical medicine in favor of what I termed a theory of *constant neuro-trophic influence.*

Briefly, this theory was to the effect that in mammals, if not also in some lower groups of vertebrates, the nutritive processes are all under a *constant* regulative influence by the nervous system, in the sense that they are so dependent upon this influence that they do not and would not go on without it. It was also pointed out that function was not a thing totally distinct and alone regulated by the nervous system, but that function was only one *phase* of a general metabolism, and was no more under the influence of the nervous centers than the other less recognized phases.

A year's additional study of the subject has convinced me more than ever of the necessity of widening our views of the relation of the various organic processes, so that, instead of terming the theory I would offer for your consideration one setting forth a constant neuro-trophic influence, I would replace it by the expression *constant neuro-metabolic influence*, as it implies a wider and truer conception of the subject as I view it; and I am not sure but that it would be well to abandon the term "nutrition" altogether, or, if not, certainly to define it afresh.

The following, then, is a brief presentation of the subject in a form largely free from technicalities.

This subject is of the utmost importance and has not received the attention hitherto in works on physiology to which, we believe, it is entitled. We may first mention a number of facts on which to base conclusions:

1. Section of the nerves of bones is said to be followed by a diminution of their constituents, indicating an alteration in their metabolism.

2. Section of the nerves supplying a cock's comb interferes with the growth of that appendage.

3. Section of the spermatic nerve is followed by degeneration of the testicle.

4. After injury to a nerve or its center in the brain or spinal cord, certain affections of the skin may appear in regions corresponding to the distribution of that nerve; thus herpes zoster is an eruption that frequently follows the distribution of the intercostal nerves.

5. When the motor cells of the anterior horn of the spinal cord, or certain cells in the pons, medulla, or crus cerebri, are disordered, there is a form of muscular atrophy which has been termed "active," inasmuch as the muscle does not waste merely, but the dwindling is accompanied by proliferation of the muscle nuclei.

6. In acute decubitus, bed-sores form within a few hours or days of the appearance of the cerebral or spinal lesion, and this with every precaution to prevent pressure or the other conditions that favor the formation of such sores.

7. After section of both vagi, death results after a period varying in time, as do also the symptoms, with the animal.

In some animals pneumonia seems to account for death, since it is found that if this disease be prevented, life may at all events be greatly prolonged.

The pneumonia has been attributed to paralysis of the muscles of the larynx, together with loss of sensibility of the larynx, trachea, bronchi, and the lungs, so that the glottis is not closed during deglutition, and the food, finding its way into the lungs, has excited the disease by irritation. The possibility of vaso-motor changes is not to be overlooked. In birds, death may be subsequent to pneumonia or to inanition from paralysis of the œsophagus, food not being swallowed. It is noticed that in these creatures there is fatty (and sometimes other) degeneration of the *heart*, liver, stomach, and muscles.

8. Section of the trigeminus nerve within the skull has led to disease of the corresponding eye. This operation renders the whole eye insensible, so that the presence of offending bodies is not recognized, and it has been both asserted and denied that protection of the eye from such prevents the destructive inflammation.

With the loss of sensibility there is also vaso-motor paralysis; the intra-ocular tension is diminished, and the relations of the nutritive lymph to the ocular tissues are altered. But all disturbances of the eye in which there are vaso-motor alterations are not followed by degenerative changes.

9. Degeneration of the salivary glands follows section of their nerves.

10. After suture of long-divided nerves, indolent ulcers have been known to heal with great rapidity. This last fact especially calls for explanation.

It will be observed, when one comes to examine nearly all such instances as those referred to above, that they are complex. Undoubtedly in such a case as the trigeminus or the vagi many factors contribute to the destructive issue, but the fact that many symptoms and lesions are concomitants does not of itself negative the view that there may be lesions directly dependent on the absence of the functional influence of nerve-fibers over the metabolism.

We prefer, however, to discuss the subject on a broader basis and to found opinions on a wider survey of the facts of physiology.

* Read before the American Physiological Society at the Congress of American Physicians and Surgeons at its first annual meeting, September, 1888.

After a little time (a few hours), when the nerves of the submaxillary gland have been divided, a flow of saliva begins and is continuous till the secreting cells become altered in a way visible by the microscope. Now, we have learned that protoplasm can discharge all its functions in the lowest forms of animals and in plants independently of nerves altogether. What, then, is the explanation of this so-called "paralytic secretion" of saliva? The evidence that the various functions of the body as a whole are discharged as individual acts or series of acts correlated to other functions has been abundant and clear; and, looking at the matter closely, it must seem unreasonable to suppose that this would be the case if there was not a close supervision by the nervous system over even the details of the processes. We should ask that the contrary be proved rather than that the burden of proof should rest on the other side. Let us assume that such is the case, that the entire behavior of every cell of the body is directly or indirectly controlled by the nervous system in the higher animals, especially mammals, and ask, What facts, if any, are opposed to such a view?

We must suppose that a secretory cell is one that has been in the course of evolution specialized for this end. Whatever may have been the case with protoplasm in its unspecialized form, it has been shown that gland cells can secrete independently of blood-supply when the nerves going to the gland are stimulated. Now, if these cells have learned in the course of evolution to secrete, then, in order that they shall remain natural—not degenerate—they must of necessity secrete, which means that they must be the subject of a series of metabolic processes, the final of which only is expulsion of formed products. Too much attention was at one time directed to the latter. It was forgotten, or rather, perhaps, unknown, that the so-called "secretion" was only the last of a long series of acts of the cell. True, when the cells are left to themselves, when no influences reach them from the stimulating nervous centers, their metabolism does not at once cease. As we view it, they *revert* to an original ancestral state when they performed their work, lived their peculiar individual life as less specialized forms, wholly or partially independent of a nervous system. But such divorced cells fail; they do not produce normal saliva; their molecular condition goes wrong at once, and this is soon followed by departures visible by means of the microscope. But just as secretion is usually accompanied by excess of blood, so most functional conditions, if not all, demand an unusual supply of pabulum. This is, however, no more a cause of the functional condition than food is a cause of a man's working. It may hamper if not digested and assimilated.

It becomes, then, apparent that the essential for metabolism is a vital connection with the dominant nervous system.

It has been objected that the nervous system has a metabolism of its own independent of other regulative influence, but in this objection it seems to be forgotten that the nervous system is itself made up of parts which are related as higher and lower, or, at all events, which intercommunicate and energize one another.

We have learned that one muscle cell has power to rouse another to activity when an impulse has reached it from a nervous center. Doubtless this phenomenon has many parallels in the body and explains how remotely a nervous center may exert its power. It enables one to understand to some extent many of those wonderful co-ordinations (obscure in detail) which are constantly taking place in the body.

We think the facts as they accumulate will more and more show, as has been already urged, that the influence of blood-pressure on the metabolic (nutritive) processes has been much overestimated. They are not essential but concomitant in the highest animals.

Turning to the case of muscle, we find that when a skeletal muscle is tetanized the essential chemical and electrical phenomena are to be regarded as changes differing in degree only from those of the so-called resting state. There is more oxygen used, more carbonic anhydride excreted, etc. The change in form seems to be the least important from a physiological point of view. Now, while all this can go on in the absence of blood, or even of oxygen, it can not take place without nerve influence or something simulating it.

Cut the nerve of a muscle and it undergoes fatty degeneration and atrophy. True, this may be deferred, but not indefinitely, by the use of electricity, acting somewhat like a nerve itself and inducing the approximately normal series of metabolic changes. If, then, the condition, when not in contraction (rest), differs from the latter in all the essential metabolic changes in rate or degree only, and if the functional condition or accelerated metabolism is dependent on nerve influence, it seems reasonable to believe that in the resting condition the latter is not withheld.

Certain forms of paralysis (*e. g.*, hysterical) are not followed by atrophy. Why? Because in this form the metabolic nerve influence is still exerted.

The recent investigations on the heart make such views as we are urging clearer still. It is known that section of the vagi leads to degeneration of the cardiac structure. We now know that this nerve contains fibers which have a diverse action on the metabolism of the heart, and that according as the one or the other set is stimulated, so does the electrical condition vary; and everywhere, so far as known, a difference in electrical conditions seems to be associated with a difference in metabolism which may be one of degree only, perhaps, in many instances, still a difference. The facts as brought to light by experimental stimulation harmonize with the facts of degeneration of the cardiac tissue on section of the vagi; but this is only clear on the view we are now presenting—that the action of the nervous system is not only universal, but that it is *constant;* that function is not an isolated and independent condition of an organ or tissue, but a part of a long series of metabolic changes. It is true that one or more of such changes may be arrested, just as all of them may go on at a less rate; thus, actual outpouring of pancreatic secretion is not constant; but secretion is not summed up in discharge merely, and, on the other hand, it would seem that in some animals the granules of the digestive glands are being renewed while they are being used up in secreting cells. The processes may be

simultaneous or successive. Nor do we wish to imply that the nervous system merely holds in check or, in a very general sense, co-ordinates processes that go on unoriginated by it. We think the facts warrant the view that they are in the highest mammals either directly (mostly) or indirectly originated by it; that they would not take place in the absence of this constant nervous influence.

The facts of common observation, as well as the facts of disease, point in the strongest way to such a conclusion. Every one has experienced the influence on not one but many functions of the body, we might say the entire metabolism, of depressing or exalting emotions. The failure of appetite and loss of flesh and mental power under the influence of grief or worry tell a plain story. Such broad facts are of infinitely more value in settling such a question as that now discussed than any *single* experiment.

The best test of any theory is the extent to which it will explain the whole round of facts. Take another instance of the influence over metabolism of the nervous system.

Every athlete knows that he may overtrain—*i. e.*, he may use his muscles so much as to disturb the balance of his powers somewhere, very frequently his digestion; but often there seems to be a general break; the whole metabolism of the body seems to be out of gear. If we assume a constant nervous influence over the metabolic processes, this is comprehensible. The centers can produce only so much of what we may call nervous force, using the term in the sense of directive power; and if this be unduly diverted to the muscles, other parts must suffer. The same holds of excessive mental application.

On this view, also, the value of rest or change of occupation becomes clear. The nervous centers are not without some resemblance to a battery; at most, the latter can generate only a definite quantity of electricity, and if a portion of this be diverted along one conductor, less must remain to pass by any other.

It is of practical importance to recognize that under great excitement unusual discharges from a nerve-center may lead to unwonted functional activity; thus, under the stimulus of the occasion, a man may in a boat-race originate muscular contractions he could not by the strongest efforts of his will cause under other circumstances. Such are always dangerous. We might speak of a reserve or residual nerve-force, the expenditure of which results in serious disability. It also applies to mental and emotional effects as well as muscular, and seems to us to throw light upon many of the failures and successes (so called) of life.

It seems that our past views of secretion and nutrition have been partial rather than erroneous in themselves, and it is a question whether it would not be well to substitute some other terms for them, or at least to recognize them more clearly as phases of a universal metabolism. We appear to be warranted in making a wider generalization.

To regard processes concerned in building up a tissue as apart from those that are recognized as constituting its function seems to be illogical and unwise with the knowledge we at present possess. Whether in the course of evolution certain nerves, or, as seems more likely, certain nerve-fibers, in the body of nerve-trunks have become the medium of impulses that are restricted to regulating certain phases of metabolism—as, *e. g.*, expulsion of formed products in gland cells—is not, from a general point of view, improbable, and is a fitting subject for further investigation. But it will be seen that we should regard all nerves as "trophic" in the wider sense. What is most needed, apparently, is a more just estimation of the relative parts played by blood and blood-pressure, and the direct influence of the nervous system on the life-work of the cell.

These views are greatly strengthened by the facts well known to every observer of disease in the human subject. The preponderating development of the cerebrum in man must be taken into account in the working of every organ. To have a normal stomach, liver, kidneys, etc., is not enough; for real health all the parts of that great complex of organs we call the brain must not only work, but work in concert. We must regard the nervous centers as the source of ceaseless impulses that operate upon all parts originating and controlling the entire metabolism of which what we term functions are but certain phases, parts of a whole, but essential for the health or normal condition of the tissues. Against such a view we know no facts either of the healthy or of the disordered organism.

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## ON A FORM OF PURPURA

### ASSOCIATED WITH ARTICULAR, GASTRO-INTESTINAL, AND RENAL SYMPTOMS.

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The combination of purpura rheumatica with diarrhœa is frequently referred to by the older writers.

The cases which I here report have additional features, and, with others to be found in the literature, belong to a very remarkable group worthy of more careful study. The characters are:

I. Recurring outbreaks of purpura often associated with urticaria or local œdema.

II. Articular pain, sometimes with swelling.

III. Gastro-intestinal disturbance—colic, vomiting, diarrhœa, and occasionally hæmorrhage.

IV. Hæmaturia, albuminuria, and sometimes a fatal nephritis.

Case I.—A. B., boy, aged six, seen January 23, 1888, with Dr. Dunton. No rheumatic history in family; some members gouty. An aunt's child on father's side, aged three weeks, died of purpura hæmorrhagica. The child has been exceptionally well developed and strong. During the past summer he failed somewhat in health. The present trouble began about four weeks ago with pain about the ankles, followed by attacks of colic, with diarrhœa, and a skin eruption, urticaria-like in character, which tended to become purpuric. Large areas were black and blue, just like a bruise.

About ten days after the beginning of the illness there was bleeding from the bowels, but not in large amount. There were not in all more than eight or ten stools, containing from a teaspoonful to a teacupful of blood. No bleeding from the gums or from the other mucous surfaces. For the past two weeks he has been up and down, crops of purpuric urticaria

coming out with the recurring attacks of colic. There has not been fever at any time.

*Present Condition.*—The child is not specially anæmic, not much wasted, though he has fallen away greatly from his former plump condition. Temperature, 98°; pulse, 96; tongue is a little furred; abdomen slightly protuberant, not painful on pressure. When asked where the pain is, he always places his hand upon his navel; no enlargement of the spleen or of the liver; joints not painful. On the skin over the elbows there is a fresh crop of reddish-brown urticaria wheals, rather more solid and less œdematous-looking than ordinary hives; there is a patch also on the flexor surface of the right arm. These spots are all hæmorrhagic, and about the raised ones are numerous small extravasations. There is no swelling of the elbows. About the buttocks and thighs there are very many purpuric spots. No swelling of the ankles.

An attack of pain came on during the visit. It had the character of ordinary colic. The stools were brownish-black in color, but contained no blood. The urine was clear; specific gravity 1·018, containing distinct traces of albumin. Microscopical examination showed a few red blood-corpuscles and fine granular tube-casts.

I saw the boy on four other occasions between January 23d and February 7th. About the 25th of January œdema of the ankles was noticed. This increased, the scrotum became swollen, and within ten days there was general anasarca. The urine was highly albuminous, and contained tube-casts and a few red corpuscles.

I did not see the boy again, but learned from Dr. Dunton that the renal symptoms persisted, and these assumed the character of Bright's disease, of which ultimately he died in about six weeks. No further articular or purpuric symptoms developed

Case II.—Bartholomew H., aged forty-six, machinist, admitted to the Philadelphia Hospital, October 28th, with diarrhœa, an extensive purpuric rash, and polyarthritis. The patient has been a tolerably healthy man; has used spirits moderately; no history of specific disease; he knows of no similar affection in his family. In April, 1887, he had a severe attack of gastro-intestinal disorder, accompanied with "black eruption," as he describes it, on his legs, similar to that from which he now suffers. There were no spots on the arms. He was ill at this time about two or three weeks. Since April of last year he has been failing in health, and has had several sharp attacks of diarrhœa. The present attack began on Saturday, October 20th, with pain in the arms and knees, and a rash came out on the elbows and legs. Throughout the week he had great pain in the joints, and the knees, ankles, and right elbow became swollen.

On the 29th, the day after his admission, the following note was made: The patient is a moderately well-nourished man; looks pale; the tongue is furred, swollen, and indented. Both elbows tender, not swollen; complains of pain on flexing the right arm. On both arms there are numerous purpuric spots from 1 to 3 mm. in diameter, most abundant on the flexor surfaces. Just below the bend of the right elbow there is a large extravasation the size of a quarter-dollar piece, which is a little raised at the center. There are eighteen or twenty spots on the extensor surfaces of the elbows; no extravasations on the skin of thorax or of abdomen. Hip joint not painful to touch or to movement; the right knee is a little swollen, and can not be flexed; the right ankle is not swollen, but is tender. There are numerous fading ecchymoses on the extensor surfaces of the thighs and many on the skin of the popliteal spaces; there are none on the legs. During the examination he had several attacks of colic. The urine was turbid and deposited a flocculent sediment of mucus. On boiling, it cleared slightly. On the addition of acid there was a distinct deposit. Microscopically, there were leucocytes, isolated red blood-corpuscles, and a few blood-casts. He has had profuse diarrhœa, but no blood in the stools.

*October 30th.*—Urine not materially reduced in amount. Specific gravity 1·016. Chemical and microscopical characters as before. Has had persistent vomiting to-day.

*November 1st.*—Passed a restless night; vomiting has been very distressing; complains a good deal of joint pain; the lobes of the ears are very tender to the touch, congested and red; no distinct extravasation; the right elbow is red and swollen; last night a fresh eruption of purpuric spots appeared on the exterior surfaces of both elbows; the spots are raised, and look like those of purpura urticans. There are also two spots on the metacarpal joint of the left index finger. The ecchymoses on the flexor surfaces of arms have faded. The knees and ankles are not swollen. Temperature, 100°; pulse, 88, small. Heart sounds normal. Tongue still coated; gums not spongy.

*4th.*—For the past three days the albumin in the urine has been much more distinct, and there are many tube-casts. Uric acid deposits if the urine is left standing. The general condition has much improved; the diarrhœa is checked, and he no longer complains of abdominal pain; vomiting is not so distressing.

*5th.*—Patient much better to-day; no joint pain; the ecchymoses have almost faded, and the vomiting is checked.

From this date the recovery was rapid, and at present date (November 30th) convalescence is established. The urine is still albuminous. The treatment consisted in the administration of naphthalin with Dover's powder for the diarrhœa and colic, and increasing doses of Fowler's solution.

*Remarks.*—Atkinson, in Pepper's "System," vol. ii, refers to this form of purpura as described by Henoch ("Berliner klin. Wochenschrift," 1874), and by Couty ("Gazette hebdomadaire," 1876). The latter author, in an exhaustive article, has collected a large number of cases, and describes the disease as "*une espèce de purpura d'origine nerveuse.*" Wagner (Archiv der Heilkunde," Bd. x) and Zimmermann ("Archiv der Heilkunde," 1876) have also reported cases identical with those above described With the exception of a paper by Binet on "*Purpura hémorrhagique avec œdèmes mobiles et crises intestinales*" ("Revue méd. de la Suisse Rom.," 1886) I find no very recent accounts in the journals.

I think these cases come properly under the designation *purpura rheumatica*, of which they constitute the most aggravated and serious form. The varieties of this condition may be grouped as follows: 1. Cases in which the purpura occurs with slight articular pain, or with diarrhœa alone, or in which the eruption comes without these symptoms in children who have had rheumatic manifestations. 2. Acute arthritis involving many joints and associated with extensive *purpura urticans*—the *peliosis rheumatica* of Schönlein. 3. The variety here described in which, with articular affection and purpura, there are gastro-intestinal crises, hæmorrhages from certain of the mucous surfaces, albuminuria, and in some cases a fatal nephritis.

Are these cases truly rheumatic, or is not the articular affection upon which so much stress is laid analogous to that which we see in hæmophilia and scurvy? It is difficult to escape from the former view in the presence of

characteristic cases of *peliosis rheumatica* with endocarditis and pericarditis; and yet the close relationship and even interchangeability of certain of these cases of purpura with urticaria, with erythema nodosum, and with the angio-neurotic œdema, favor the suggestion that the entire group may depend upon some poison—an alkaloid, possibly, the result of faulty chylopoietic metabolism—which, in varying doses in different constitutions, excites in one urticaria, in a second peliosis rheumatica, and in the third a fatal form of purpura.

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## MALIGNANT NEOPLASMATA:

READ IN THE DISCUSSION:
BEFORE THE NEW YORK STATE MEDICAL ASSOCIATION,
*October 10, 1888.*

By JOSEPH D. BRYANT, M. D.

*Question 7.* What is the rationale of the recurrence of excised neoplasmata in distant parts?

*Question 8.* What is the explanation of the tendency of certain neoplasmata to involve secondarily neighboring glands?

*Question 13.* Are malignant neoplasmata ever cured?

These and kindred queries have been made audibly and inaudibly for many years. The acute clinicians of the past have propounded them to the correspondingly learned pathologists of their time. The skilled surgeons too, in addition to this, have silently interrogated their own and the experience of others for the correct answers. The unfortunate victims of this disease have anxiously addressed the last question of this series to any and to all who might perchance offer them encouragement and consolation in their affliction. And now at the latest moment, after these years of thoughtful consideration given to them by master minds, the questions are asked again; therefore

> "Together let us beat the ample field,
> Try what the open, what the covert yield."

For the purposes of this discussion it is proper, I think, to limit consideration to malignant neoplasmata alone, since these are the growths that excite the greatest apprehension and call for the most judicious opinions and treatment. In this connection the expression malignant is understood to apply to the neoplasmata that are malignant by reason of their inherent nature, rather than by reason of certain destructive changes that may occur in growths irrespective of their nature, whereby the strength of the patient is sapped and death finally ensues from exhaustion dependent on septic and other secondary influences.

That a malignant neoplasm of a similar character as the one excised may occur in a part distant from the seat of the excision is a fact too well and too long recognized to require even a moment's consideration at this time; still, the exact reasons for this occurrence or recurrence are yet unsettled. It is aptly said: "The whole creation is a mystery, and particularly that of man." It might well be said, and as aptly, that normal vital force is a mystery, hence perverted vital force is alike mysterious.

It seems to me to be hardly necessary to give an entirely separate consideration to each of the first two questions allotted to me (seven and eight of the series). They are interdependent, for, when the "rationale of the recurrence of excised neoplasmata in distant parts" is stated, it will be seen that the explanation of this fact will comprehend all that is reliable regarding "the tendency of certain neoplasmata to involve neighboring lymphatic glands." The latter occurrence is but a well-defined step in the course of the more extended journey of the former. There are two genera of recurrent neoplasmata to which it is particularly desirable that attention be called—viz., carcinoma and sarcoma. These genera represent to the fullest extent the phenomena of the inception, cause, and termination of malignant growths. It is advisable at this time to recall some of the theories regarding the reasons for the occurrence and spread of carcinoma. It will be noticed that these propositions are of both a diverse and an interdependent character.

1. That carcinoma is the expression of a specific blood condition.

2. That a morbid material is present in the blood, which, coming in relation with appropriate tissue, enters into combination with it and causes the growth of the tumor.

3. The dyscrasia theory; the theory that the disease has its origin in the constitution at large, the tumor being only the local manifestation.

4. That the disease is purely local in its nature, arising from a local embryonal or idiopathic point of departure.

5. That it is due to a constitutional predisposition not dependent on dyscrasia in the ordinary acceptation of the term.

6. That it is due to perverted nervous influence. This is a curious but not a rational theory. In addition to these can be added a more modern theory—one that is attracting much attention at this time, viz.:

7. That malignant growths are of an entirely local origin, dependent on a specific local virus, endowed with characteristic bacilli.

There are many examples of this presumptive contagion cited, which, to say the least, afford somewhat startling evidence in favor of this last theory, since they can hardly be referred alone to the strangeness of coincidence.

If carcinoma and sarcoma were the expressions of a specific blood condition, the peculiar morbid blood state should then antedate the appearance of the tumor, and its existence should be quite as well marked before as after the appearance of the tumor. The fact is, the tumor, when external, always antedates the appearance of a depreciated blood state, often for some time.

The removal of a growing carcinoma or sarcoma may be followed by complete recovery from the disease, the patient maintaining perfect health thereafter. This could hardly happen if the occurrence of the disease had depended on a specific or peculiar blood state, unless it is assumed that the only tissue of the body susceptible to its influence had been removed by the operation, or that the blood had become pure, or that the tissues had become tolerant of the poison.

If carcinoma or sarcoma depended on a specific or peculiar blood condition, either of the growths should appear

in different parts of the body, in like tissues at about the same time, and, too, each should recur after removal in a tissue similar to that which was first attacked, as in the opposite mammary gland, etc.

That these diseases have a hereditary bearing of importance, dependent either on tissue transmission or on some other process, it seems almost impossible to deny. The percentage of cases of cancer having hereditary association has been variously estimated. Sir James Paget expressed the belief that at least in one in three of the afflicted heredity could be traced, and traced, too, in such as had undoubted cancer. It is important to remember in this connection that not a few die of cancer in whom its existence has not been suspected. But why spend further time "carrying coals to Newcastle"? To-day the mass of evidence seems to point to the following facts:

1. That carcinoma and sarcoma depend entirely on local causes for an existence in many cases.

2. That they are more commonly a local manifestation of an inherent peculiarity of the tissues, called forth by some form of irritation at the seat of development.

Be this as it may, the local manifestations of these diseases are the first to be seen; they appeal first to the fears of the patient, and for these reasons they first invoke the wisdom of the medical profession. It is these manifestations that present to the mind of the medical profession the only point of departure from which to begin successful treatment. In this connection the question can now be asked, "How do malignant growths infect neighboring and distant parts?" There seems to be no doubt of the fact at this time that either the nuclei or the granular matter of the cells peculiar to malignant growths, or the cells themselves, are the agents that directly or indirectly cause the spread of the disease from the primary point of occurrence. These agents of infection are carried from the primary site by the lymph-vessels associated with the growth, and they often find a resting place in the lumen of these vessels, and are checked in their journey through them by the lymph-glands nearest to the point of departure. These infective agents are also conveyed directly to distant parts or viscera by means of the capillary blood-vessels, whose open mouths are frequently to be seen within the intimate structure of a highly vascular malignant growth. The cells of sarcomata especially possess an inherent tendency to "move on" and to otherwise extend their area and influence by increase of their number through the recognized process of cell-growth. By reason of these latter facts the normal tissues that surround malignant neoplasms become so infiltrated with the elements of the growth that ere long they, too, form a part of it, and exercise in turn a like influence on the neighboring structures. In sarcomata the blood-vessels are the chief means of the spread to distant parts, due, it is thought, to the better accommodation afforded by the blood-vessels to the size of the cells of the growth, and also to the intimate relations existing between the blood-vessels and these cells.

Sarcomatous tumors, therefore, spread more rapidly than the carcinomatous, and occur secondarily at greater distances from the initial growth. The cells of these growths reach their final resting places more commonly by means of the blood-current, which is rapid transit indeed as compared with the movement in the lymph-vessels, irrespective of the frequent interruptions of the latter by the lymph-gland locks of these vessels.

If such is the method of the spread of malignant tumors, it naturally ought to follow that the direction, extent, and rapidity of the spread will be in direct relation with the degree of vascularity of the growth, the richness of the region in lymphatics, and the density of the surrounding tissues, other things being equal. These conclusions seem to be well substantiated by clinical evidence, for the more vascular the tumor, the more rapid is its growth, and the sooner secondary processes of a similar nature are established in distant parts; the richer the contiguous structures are in lymph-vessels and glands, the sooner the disease establishes secondary footholds in the neighborhood and the more difficult the eradication becomes; the denser the surrounding tissues of the growth, the slower are the processes of infiltration. The influence of this density is often well shown by the irregularity in the outline of a rapidly developing tumor, which extends more rapidly in the direction of the least resistance. Malignant growths can be produced also by inoculation and self-inoculation. These methods of causation are believed to be strong arguments in favor of the specific-virus theory of the causation and dissemination of malignant formations. Malignant growths vary from each other in the rapidity of dissemination, a fact which appears to depend largely indeed on their anatomical peculiarities; as, for instance, abundant granular matter, small cells, great vascularity, and loose structural arrangement of the tumor and of the surrounding tissue, are some of the conditions that are associated with rapid dissemination. It now remains to be said that the carrying from the initial growth to a near or distant part of any of the infecting elements of a growth, by either of the means of transmission already mentioned, causes the development in the part at the place of lodgment of a growth similar in all respects to that from which the infecting agent took its departure. In this secondary depot, processes and changes take place similar to those that had occurred in the primary one, and it in turn disseminates its virulency to the parts allied to it by associated function or contact.

Thus far in this paper the constitutional aspect of the question of the production and dissemination of malignant neoplasmata has not been given a hearing. The lack of time and space will not permit me to discuss this phase of the disease up to the point of the belief that I shall express in the matter. Malignant disease as such is not inherited, but analogy alone in respect to transmitted similarities of a different kind teaches us that the tendency of malignant disease, as expressed by the vulnerability of the cell tissue to the peculiar or exciting influences of the growth, is transmissible from parent to offspring.

*Question 13.* Are malignant neoplasmata ever cured?

This question can be safely answered in the affirmative. The efforts of nature alone are reported to have effected a cure in rare instances. The endeavors of the surgeon, too, have been followed by a fair percentage of cures. The site of the growth, however, has much to do with the result in

this respect. The late Professor S. D. Gross expressed the belief that 9 per cent. of mammary cancers could be cured by thorough operation when employed at the proper time. Butlin reports 38 per cent. of the cases of cancer of the lower lip to have passed the three years' limit of cure without return. Gross felt assured that a year might be added to the lives of patients by operation on those unfavorable for cure. It is not my intention to cite cases of real or presumptive cure that have come under my personal observation, since they will add nothing important to the results that have just been mentioned. It is my intention, however, to embrace this opportunity, under this heading, to speak in emphatic terms of the measures which I think necessary to be adopted to gain the full benefit to the patient of the surgeon's ability to cope successfully with a larger number of cases of this disease.

This consideration will be divided into the following headings:

1. Early diagnosis of the nature of the morbid growth.
2. Prompt and thorough treatment of it.

The early diagnosis of malignant disease will require the timely action of three distinct agents: (1) of the patient; (2) of the medical attendant; (3) of a microscopical expert. The natural inclinations of a member of the human family who is in the possession of a rational mind lead him to resent the idea of the occurrence of malignant disease in himself or in one of his own. He will not infrequently seek advice from the sources which will afford him the greatest personal comfort, irrespective of the wise promptings of his own judgment in the matter. This course, on his part, is due quite as much to pride and sentiment as to dread of being informed of the actual facts of his case. The medical attendant can do very much indeed to rectify this unfortunate state of affairs. He should consider it a case of *emergency* in the full sense of the term, and advise the patient of a course of action that will meet the full requirements of it. But how does the medical attendant in a multitude of instances fulfill his duty in this respect? He, too, is often controlled by sentiment, or by a habit of professional moral syncope that permits him to shirk unpleasant responsibility. Sentiment causes the physician to encourage the patient in the belief of non-malignancy; to smile at his fears, if he has any, and, whether he has them or not, to say to him: "Come in a week or two if it is no better," or, "Come and see me again after a while," or, "Don't think it amounts to much; any way, don't worry," and at the same time he recommends something simple "for the blood" or for external application. A physician might do worse than this, and there is great danger that he will; he might disguise the characteristics of the morbid growth and accelerate its development by the application to it of some form of caustic, believing it to be good treatment in any case. Professional carelessness—better named professional shiftlessness—may permit the medical attendant to omit obtaining the history of the case or omit the examination of the diseased part except with a glance. Such methods of procedure as these are culpable, whether the patient is afflicted with a real or with a fancied disease. A hospital surgeon, or one with a private *clientèle*, can recall many instances of consultations with victims afflicted with malignant disease in whom the opportunity of affording more than temporary relief has been sacrificed by the ignorant or sentimental dalliance of a medical attendant. Patients should be educated in the belief that "an ounce of prevention is better than a pound of cure." The adoption of this line of action will cause patients to seek information whenever anything unusual happens to them, and then the physician who performs his Christian and professional duties well will solve the nature of the affliction at once, or as soon as possible thereafter. The patient who is left largely to his own discretion by the emasculated admonitions, "Drop in when you are this way" or "when you come to town," etc., is lured into a sense of safety that will lead him to stifle the wise promptings of his own good judgment. If the physician finds himself unable to determine the nature of the growth by the means at his command, the aid of the microscopist should be sought at once. It may be said that this aid can not be had in all instances, and that it too is not conclusive. The instances when this aid can not be had are very few indeed. The medical attendant has only to remove a small portion of the growth, if accessible, properly inclose it and send it by mail to the nearest recognized authority on the microscopical appearances of morbid growths, with a statement of the part of the body from which it was taken, and of his suspicions regarding it. In a few days at most the answer will be at hand. It is proper to add, in this connection, that the inclosure of a fee for the examination will in no way delay matters, nor detract from the value of the opinion. As to the importance to be placed on the opinion, I think I may say that it should always be considered as *one* of the determining factors of a diagnosis, rather than as conclusive evidence of it. In only rare instances in my experience has the microscope failed to decide the question for or against malignancy.

None but simple and unirritating applications should have been made to a suspicious growth prior to the completion of the diagnosis. If it be necessary to remove a suspicious growth, for any reason, before a diagnosis can be confirmed by microscopical examination, this aid should be sought as soon thereafter as possible, since the knowledge thus gained will become of great importance in estimating the subsequent treatment and final prognosis.

*Treatment.*—The treatment should always be twofold—constitutional and local. The former should be of a kind intended to strengthen the patient in every possible manner, in order that the healthy tissue cells of the patient's organism may be the better able to resist the influence on them of the cells and other products of the malignant growth. Special general medication, with the view of curing or delaying the progress of the growth, will proved elusive, and will be destructive, if it is employed to the exclusion of operative procedure. Let the maxim ever be, *Operate first, medicate afterward.* The use of the knife is the operative measure to which the patient should be subjected. The growth should be removed thoroughly by excision at the earliest possible moment after the diagnosis is made, and, if a doubt exist as to the nature of the growth, give the benefit of that doubt to the patient and remove the growth at once.

The earlier the removal, the better will be the chance of preventing and limiting dissemination. Any and every measure of treatment that will stimulate unnecessarily the flow of blood to the growth, or stimulate the action of the lymphatics in the neighborhood, should be avoided, for these results of irritation of the growth are directly productive of the dissemination of the infecting agents of the disease to the lymph-glands and distant parts by means of the blood and lymph currents associated with it. The knife meets the indications better than all other means for the removal of malignant growths for the following reasons:

1. It can be applied with precision at a greater distance from the growth than can any other measure.

2. It acts promptly and with less injury to contiguous tissues than any other agent; and without pain if anæsthesia be employed.

3. Healing takes place immediately when removal is done early and with proper care.

4. Neither irritation nor pain attends the healing process if the surgical indications of the wound have been carefully observed.

5. Cicatrization and deformity are less than from the use of caustics and other local agents.

The preceding are some of the practical advantages that attend the proper use of the knife for the removal of malignant growths with antiseptic precautions. The converse of these usually attends the use of caustic, cautery, and other means that are more slowly effective, and with the use of which, suppuration, ulceration, and sloughing, and their histological processes, antedate and often complicate the final healing. I am of the opinion that with an early diagnosis, prompt, repeated, and wide removal of malignant growths with the knife, a much larger number of lives will be spared, with a minimum of suffering to the patients. The surgeon's watchwords ought to be, *Cut early, cut often, cut wide, and remove contiguous lymphatic structures when practicable, whether diseased or not.*

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## ON TUMORS:

### THE CLOSURE OF THE DISCUSSION BEFORE THE NEW YORK STATE MEDICAL ASSOCIATION,

*October 10, 1888.*

By JOHN W. S. GOULEY, M.D.

[Dr. Gouley, when called to defend his thesis and close the discussion, said:]

1. The object of the remarks introductory to the discussion on tumors was to elicit the opinions of the fellows of the association and of others on questions of theoretical and practical value that have not been definitively settled, such as the questions of names and arrangement, of genesis, of metamorphosis, of contagiousness, of diagnosis, of treatment, of recurrence, and of cure. The time allotted to the discussion, being comparatively short, did not permit as complete an examination as the subject merits. It is therefore hoped that the association will soon direct the reopening of a question of such vital importance as the examination of new formations in the human body, and particularly of the so-called cancerous tumors.

2. In the defense of the thesis presented to-day, and in the closure of this discussion, an endeavor will be made to invalidate the exceptions taken by the debaters against some of the views declared in the introductory remarks.

3. The question of consistent adherence to the anatomical basis for the nomenclature and classification of tumors received to-day only one negative answer, and this negative answer was not directed to its basis but to the nomenclature itself, to the effect that the profession "would not stand the long names" given in the schema presented. The learned fellow who made this assertion has, unintentionally, reflected upon the intelligence and scholarship of those most interested in the study of tumors, and it is more particularly for their use that the nomenclature is offered. But he has lost sight of the fact that the old names of tumors, placed between brackets in the schema, were given during the introductory remarks. There does not appear among these "long names" a single word which is not in current use in medical language, and to the histologist these "long names" are definitions of the pathic conditions which they are intended to designate. It may be said that the highest aim of the nomenclator is attained when he gives names which indicate the nature of the objects so named. Descriptive names are often considered good, but those that define are best. The debaters should remember that generic names mostly are used in ordinary medical language; that generic names are single—for instance, epithelioma for cancer, endothelioma for sarcoma; that single names for genera are in strict accordance with the rules of nomenclature and classification laid down by the highest authorities in nosonymy and nosotaxy; and that certain modern writers violate these rules by making use of the terms epithelial cancer for cancer and endothelial cancer for sarcoma, thus employing two words to express each generic name. The specific, varietal, and subvarietal names must of necessity consist of more than one word, that they may be distinguished one from another. The memory of the student of medicine is no more taxed by compound names than is the memory of the student of botany. The botanist is obliged to study his subject in accordance with the schema of which the following is a fair illustration, only one species, one variety, and one subvariety of clematis being given:

*KINGDOM.*—VEGETABLE.
*SUBKINGDOM.*—ANTHOPHYTA.
*CLASS.*—ANGEIOSPERMÆ.
*Subclass.*—Dicotyledonæ.
*Order.*—Ranunculaceæ.
*Genus.*—Clematis.
*Species.*—Clematis alpina.
*Variety.*—Clematis alpina occidentalis.
*Subvariety.*—Clematis alpina occidentalis tenuiloba.

The student of botany does not complain of long names. He soon becomes familiar with these names, and conducts his investigations agreeably to a method which has been shown to be time and labor saving, and compound names are essential to this method. Why should not the medical man do likewise, since his time is as precious as, and his

life no longer than, that of the botanist? The objection to the "long names" is not only ill-founded, but seems to carry with it the implication that the mental caliber of medical men is inferior to that of other men of science. No refutation of such an idea is needed. Aside from certain preliminary requirements, is not the study of medicine of itself conducive to exact methods, and is it not true that this study must begin with philosophy, which presupposes a knowledge of the value of correct terms? In point of fact, students of medicine are trained to remember compound names from the beginning of their anatomical work. They are required to remember the Latin names of all the bones, muscles, etc. They must soon become acquainted with *musculus sterno-cleido-mastoideus*, *musculus genio-hyoglossus*, *musculus levator labii superioris alæque nasi*, etc. But they are unjustly asked to form a conception of what is the column of Goll, of what are Pott's, Graves's, Basedow's, and Duchenne's diseases, and of many normal and diseased structures also bearing the names of men! If they are able to remember all this, will it not be easier for them to memorize compound names that are well formed and based upon anatomy? In the case of species, varieties, and subvarieties of tumors the points of difference are so marked in their gross anatomical and in their histogenic characters that the compound names given them are not only justifiable but essential.

4. The old saying that "the profession is not yet ripe for a philosophical nomenclature and classification of diseases" is still often reiterated by those who lose sight of the fact that nomenclature and classification, diligently studied, are the best exercises to ripen and broaden the medical mind, and that the endeavor to properly name and systematically arrange morbid conditions leads to the most direct path toward the right understanding of their nature. Without some sort of nomenclature of diseases no medical book could ever have been written, and the earliest medical writings were most probably the outcome of a nomenclature begun long before, and of many attempts at arrangement. Medical writers, ever since the time of Hippocrates, made successive improvements in nomenclature until Cesalpino, Platerus, Warenius, and others suggested systematic arrangement of the diseases already named, and until this was carried into effect by Sauvages. From that period many generations of physicians have contributed their share in the improvement of both nomenclature and classification, and it behooves every new generation to do likewise, for the work will probably never end. To attempt to make an entirely new arrangement would not be wise; to strive to improve that which is at hand is practicable and practical; but to wait for further maturity of the medical mind is virtually to retrograde. The time for improvement is always the present.

5. Some of the debaters and not a few writers have made use of the word "papilloma" as a generic term, most probably, however, through inadvertence, for they are well aware that there are no "papillomata," but that papillæ are sometimes found upon the surface of certain benign as well as of malignant growths, and that these papillæ upon neoplasmata can only constitute subvarieties—*e. g.*, papillary cylindro-cellular ino-epithelioma, papillary squamo-cellular epithelioma, papillary fuso-cellular endothelioma (sarcoma), papillary inoma, etc. The term "papilloma" has led to much confusion among clinicians, and the question of the benignity and malignity of "papillomata" was long under debate. Some clinicians believed "papilloma" to be benign, while others were of the contrary opinion. Those who regarded it as benign were right when the growth proved to be a papillary inoma, which is known to be benign, and the others who regarded it as malignant were right when the growth happened to be a papillary epithelioma or a papillary sarcoma, known to be malignant; but when on the one side it was asserted that all "papillomata" were benign, and on the other side that they were all malignant, both contesting parties were manifestly wrong. It is clear, then, that no tumor is entitled to the name papilloma, and that the prefixed adjective papillary is a subvarietal designation.

6. Telangeiectasis in the malignant growths named in the schema can only constitute a subvariety—*e. g.*, telangeiectatic polymorpho-cellular ino-epithelioma, telangeiectatic cylindro-cellular ino-epithelioma, formerly called fungus hæmatodes, after the beginning of the necrotic process in the tumor. Inasmuch as this bleeding fungus occurs also in sarcomata and other tumors, it is clear that fungus hæmatodes can not be regarded as a distinguishing character of any particular genus of new-growths. Is it not therefore better to employ names of several words which indicate the histogenic characters of tumors than to perpetuate such a name as fungus hæmatodes, which can only convey an incomplete, if not erroneous, notion of the disease?

7. Many observers agree that, in epitheliomata, involvement of the lymphatic glands is very common, because cells are carried away from the primary growth chiefly through the lymph-current, while in endotheliomata (sarcomata) lymphatic glandular involvement is very uncommon because the disease generalizes itself chiefly through the blood-current. These facts, which have an important bearing in the differential diagnosis of epithelioma and endothelioma, were very properly set forth to-day by Dr. Carmalt, Dr. Nancrede, and Dr. Jacobson.

8. Endotheliomata (sarcomata) sometimes spring up from the neighboring tissues after fractures of long bones, preventing their union. Dr. Jacobson's case is a good illustration of this complication of fracture. But endotheliomata and other malignant growths of the periosteum or of the osseous tissue have been known to be indirect causes of fracture of the long bones. The so-called spontaneous fractures, occurring even when patients have attempted a sudden movement of the body in bed, are, in some instances, the outcome of malignant disease directly or indirectly affecting the bones.

9. Dr. Nancrede's point in reference to the place of the surgeon's attack in the ablation of certain breast cancers is sound and well taken—viz., that "he should begin his operation in the axilla, and that in case it were not possible to remove all the diseased lymphatic glands, he should abandon the operation upon the breast." Therefore it may be said that whenever the lymphatic system is extensively invaded,

the operation upon the primary neoplasma is contra-indicated.

10. After asking the question whether there are specific histogenic characters by which cancer may be distinguished from other tumors, Dr. Moore made reference to the "caudate cell," now almost forgotten. Before answering the doctor's question, a brief statement of the history of the "caudate cell" will be made for the benefit of the junior fellows of this association. During the development of the cell doctrine, histologists, in endeavoring to solve the problem of specificity of cancer cells, thought they had discovered in the "caudate cell"—an elongated cytoblast with a tail-like appendage, a large nucleus, and well-defined nucleolus—the typical cell of cancer, but this notion was soon overthrown by the discovery of such cells in the normal urine of man, and afterward among the epithelia of the urinary passages—the epithelium of the bladder having been found to consist of many forms of cells, among which were "caudate cells."

In 1853, or perhaps before that time, the histologists had already arrived at the conclusion that there is no single typical cancer cell, but that certain cancerous tumors contain all forms of epithelial cells, while such is not the case in other tumors. This is only a part of the answer to Dr. Moore's question. Polymorphism of the cells is now admitted as a distinguishing character of certain cancers, but there is another element which is also an essential characteristic, and that is fibrous tissue forming alveoli in which the cells are contained; and fibrous tissue, being derived from the elements of the mesoblast, gives to these cancers, in this respect, a common origin with sarcomata. The derivation of such cancers is therefore triple—*i. e.*, epiblastic, hypoblastic, and mesoblastic, while other cancers issue from the elements of the epiblast only. Fibrous tissue is found in the variety of cylindro-cellular epithelioma whose cells are monomorphic, but there is no fibrous tissue in the squamo-cellular epitheliomata whose cells are also monomorphic. This is as far as Dr. Moore's question can now be answered. It is, however, necessary to look beyond histogenesis to fully explain what it is that makes cancerous and certain other tumors malignant, or rather what is the nature of the toxic element of malignant tumors. Bio-chemists may in time be able to give a satisfying answer to this very interesting and important question.

11. One of the debaters takes the ground that some of the cases cited, in the introduction to the discussion, to illustrate long periods of immunity, are in reality absolute cures, and that when the disease reappears it is by an entirely new invasion. At first sight this view seems plausible, but, since he tacitly admits that it does not apply to all of the cited cases, why, then, should it apply to any of them? Case II and Case III are fair examples of immunity for periods of eight and sixteen years, respectively, and of final recurrence in the scar. Case V and Case VII are also recurrences in the scar, in twenty and thirty years respectively, and there could be no better example than Case IX to support the view of recurrence after short and long intervals of immunity, and therefore of only temporary cure. Case XI could scarcely be regarded as an entirely new invasion. It is only Case X that might possibly be considered as a new invasion, the disease having reappeared in forty years. Dr Muzzie's case, cited by Dr. Moore, is a fair case of recurrence. Dr. S. D. Gross's case of breast sarcoma, cited by Dr. Nancrede, is another good example of true recurrence, the patient having undergone twenty-two operations in four years and being alive and in good health ten years and nine months after the last operation. The view that, clinically considered, cancers are curable, and that technically they are incurable, still seems tenable, for no proof has been adduced to show that the operation and subsequent treatment have eradicated the morbific elements, and that these elements have not remained latent, any more than that the growth is the result of an entirely new invasion.

12. The question of hereditary predisposition to malignant tumors, raised by Dr. Cronyn, is one of the most difficult of the problems to be solved. Any attempt at such solution must involve very extensive examinations of family records of many generations, and on the largest scale. Broca, in his treatise on tumors, gives an illustration of such an examination of the records of one family of thirty-three individuals during three generations, covering a period of sixty-eight years, sixteen persons in the three generations of this family having died of cancer. The investigation was facilitated by the preservation of accurate memoranda made by three succeeding physicians who were members of the afflicted family. This is probably the most complete record in existence, and its perusal will well repay the student of the question of hereditary predisposition to malignant tumors.

13. The question of micro-organisms infesting malignant neoplasmata has not been proposed in this discussion, because none of the fellows were prepared to take it into consideration. In a future discussion it may be asked, Are there micro-organisms which can be regarded as peculiar to malignant neoplasmata? In Germany it has been asserted that there exists a cancer bacillus, but the proof of its existence is, so far, unsatisfactory.

14. In the latter part of the last, and in the beginning of this century, the aid of chemistry was invoked in the study of tumors; but the work, considering the time when performed, was necessarily incomplete. Chemical investigation should now be instituted, on a new basis, with the object of ascertaining if there are leucomaines or extractives that are peculiar to malignant neoplasmata, or if these neoplasmata develop toxic elements other than leucomaines which can account in any degree for some of the symptoms manifested by patients in the later stages of malignant disease.

15. The contagiousness of malignant neoplasmata by grafting or otherwise, and many other important questions, yet remain to be discussed.

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**Cerebro-spinal Tubercular Meningitis.**—"The morbid process in cases of this disease need not be limited to the meninges, the actual substance of the spinal cord being invaded. A single nodule of gray granulation has been found at times imbedded in the medulla oblongata, and looking as if it exactly replaced the natural tissues. Very likely odd symptoms of 'meningitis' may receive an explanation from such an occurrence."—*Lancet.*

# RAILWAY INJURIES.*

By CHARLES W. BROWN, M. D.,
ELMIRA, N. Y.

There may be no valid reason for speaking of railway injuries as a separate and distinct class, but as injuries produced by car-wheels and car-bumpers have many distinctive characteristics, both as regards the effect upon the individual injured and the best plan of treatment to be pursued for their relief, and also the rapid increase in the number of such cases as the railways enlarge the amount of business and consequently employ a larger number of men, it is important that we should give this subject special attention.

In presenting this subject to your notice, I only hope to place before you some facts obtained from my experience in the treatment of quite a number of cases which have come under my observation.

So characteristic are most injuries produced by railways that the surgeon who has had large experience in this class of cases will usually be able, by examining the injury, to tell what part of the machinery produced it; for instance, when a hand or fingers have been caught between the draw-heads the parts are nearly if not completely cut through, and when between the bumpers, the parts are crushed to a pulp, the skin burst open, and the soft parts pressed out through the opening; and when the forearm or arm is caught between the bumpers, the bones are frequently forced up or down and shot from the two bumpers (like a cherry-pit from between the thumb and finger) and the soft parts burst open on the side of the limb from which the bones are forced out. When the wheels have passed over a limb it is frequently mangled and torn to shreds as far as the wheels came in contact with it, though I have seen many cases where from one to a dozen wheels of loaded cars had passed over a leg which had on it a heavy sock, a heavy boot-leg, and thick trousers, and after removing these the skin was found unbroken, and to a casual observer would not show even a mark of injury at the point over which the wheels had passed, but was slightly enlarged by the stretching of the skin from the hæmorrhage beneath it; and when the knife was thrust through the limb at the injured point it would collapse like a broken bubble: all the soft parts except the skin—bone and all—were reduced to a fluid pulp.

In one case a few years ago a Swede, working on the track, who was very deaf and did not hear the order which was given the men to clear the track for the gravel train, was knocked down by one of the cars and ten wheels passed over his right leg and foot; the limb was protected by a heavy boot reaching nearly to the knee; the leg presented the same appearance as described above; the skin did not appear to be even bruised, but was hard, distended, and pale.

On amputating the leg at the upper third, as soon as the knife was passed through, the skin of the whole leg below collapsed like an empty stocking, and there was not a piece of the tibia or fibula two inches long from the lower extremity to the junction with the upper third.

* Read before the New York State Medical Association at its fifth annual meeting.

Fractures of the long bones are very liable to be compound, as when brakemen jump from the top of cars to save falling, or when cars are going down the bank; the force is so great that the bones are driven through the soft parts.

Fracture of the patella was produced by muscular force in two cases by brakemen jumping from trains in motion.

Injuries produced by car-wheels and bumpers are far more serious than those usually produced by other means which at first would appear similar to a person not experienced in the treatment of railway injuries.

An idea of the nature of the injuries in 265 consecutive cases of railway injuries which have come under my care and treatment is given by the following table:

| | Cases |
|---|---|
| Crushed fingers (80 fingers) | 53 |
| " thumb | 21 |
| " hand | 17 |
| " forearm | 18 |
| " right forearm through elbow joint, olecranon process crushed off, and injury to chest | 1 |
| " right forearm through elbow joint | 1 |
| " toes | 12 |
| " foot and toes | 7 |
| " ankle | 2 |
| " thigh | 11 |
| Contused wound, shoulder | 2 |
| " " knee | 1 |
| " " thigh and back | 2 |
| " " right hip and both legs | 1 |
| " " thigh | 3 |
| " " back | 7 |
| " " hip | 1 |
| " " inner side of thigh and perinæum | 1 |
| " " through perinæum into bladder | 1 |
| " " foot | 1 |
| Fracture, fingers | 7 |
| " metacarpus | 4 |
| " radius and ulna | 2 |
| " scapula, and injury to hip and abdomen | 1 |
| " scapula | 3 |
| " clavicle | 2 |
| " ribs | 16 |
| " sternum | 1 |
| " fibula | 2 |
| " fibula and astragalus | 1 |
| " tibia and fibula | 8 |
| " tibia, involving knee joint, compound | 1 |
| " patella | 3 |
| " innominate bone | 1 |
| " femur (both thighs) and dislocation dorsal vertebra | 1 |
| " tibia and fibula (compound), two ribs, and perforation diaphragm | 1 |
| " base of skull | 3 |
| " nasal and malar bones | 1 |
| " metatarsus | 2 |
| " tendon quadriceps extensor | 1 |
| Scalp wounds | 14 |
| " " and contusion, back and shoulders | 3 |
| " " and lacerated wound of leg | 1 |
| Lacerated wound thigh and knee joint | 1 |
| Wounds of face | 6 |
| Squeezed through body and injury to kidney | 1 |
| " between bumpers, injury to bladder | 1 |
| Dislocation shoulder, and fracture clavicle | 1 |
| " right ankle | 1 |
| " elbow, cut over eye, and concussion brain | 1 |
| Scalds by steam, face and body | 4 |

| | Cases. |
|---|---|
| Scalds and burns of hands | 2 |
| Torpedo shot wound, leg | 2 |
| Rupture right eyeball and lacerated wound, face | 1 |
| Radial artery cut off by broken glass | 1 |
| | 265 |

The cause of injuries was as follows:

| | Cases. |
|---|---|
| Fingers caught between draw-heads | 31 |
| Thumb caught between draw-heads | 10 |
| Fingers caught between bumpers | 22 |
| Thumb caught between bumpers | 4 |
| Hand caught between bumpers | 9 |
| Foot caught between bumpers | 7 |
| Ankle caught between bumpers | 1 |
| Toes run over by car-wheels | 1 |
| Foot crushed by wheels | 4 |
| Leg crushed by wheels | 7 |
| Thigh crushed by wheels | 6 |
| Hand crushed by wheels | 3 |
| Arm crushed by wheels | 8 |
| Fell from top of car | 5 |
| " from top of caboose | 2 |
| " from top of cab | 1 |
| " from engine | 4 |
| " in man-hole | 2 |
| " across coal-board in tender | 2 |
| " in culvert | 2 |
| " in turn-table pit | 1 |
| " from coal-chute | 3 |
| " from coal-trestle | 2 |
| Bridge timber fell on foot | 2 |
| Unloading heavy machinery, fell on foot | 1 |
| Unloading barrel of sugar, fell on foot | 1 |
| Face cut by glass | 1 |
| Radial artery cut by glass | 1 |
| Scald by water and steam from engine | 4 |
| Body caught between end of car and tie | 1 |
| Hand caught between end of tie and car | 1 |
| Leg caught under tie (unloading) | 1 |
| Body caught between bumpers | 6 |
| Elbow caught between bumpers | 2 |
| Arm caught between bumpers | 9 |
| Forearm caught between bumpers | 19 |
| Foot caught between pump-plunger and cross-head | 1 |
| Foot caught in frog, and run over | 2 |
| Coupling, fingers caught by head of pin | 8 |
| Body caught between car and building | 2 |
| By cars going down bank | 25 |
| Hand-car ran off track, and over | 1 |
| Car-wheels ran over thighs while working under | 2 |
| Engine pushed over while working under | 1 |
| Engine ran in culvert | 1 |
| Struck by engine | 8 |
| Fireman, fingers crushed between door-frame and chunk of coal | 2 |
| Jumping on and off switch-engine | 2 |
| Crawling under cars in motion | 1 |
| Catching on trains in motion | 4 |
| Jumped from top of box-car | 3 |
| Stepped off car in motion | 4 |
| Head struck bridge | 1 |
| Fireman's poker caught in bridge | 1 |
| Eye struck by brake-lever | 1 |
| Finger crushed by brake-lever | 2 |
| Struck by pieces of torpedo | 2 |
| | 265 |

This table does not include any which were immediately fatal

AMPUTATIONS.

| | Cases. |
|---|---|
| Fingers (patients, 41) | 58 |
| Thumb | 12 |
| Hand | 4 |
| Forearm | 12 |
| Arm, upper third | 10 |
| Arm, at shoulder joint | 2 |
| Toes (patients, 7) | 12 |
| Foot, at middle | 3 |
| Ankle joint | 1 |
| Leg, at middle | 5 |
| Leg, right and left foot | 1 |
| Legs, both at lower third | 1 |
| Thigh, lower third | 3 |
| Thigh, upper third | 2 |
| Thighs, both, upper third | 1 |
| Wrist joint | 2 |
| | 106 |

These all resulted in recovery except four; one amputation of arm at upper third died of mental shock, added to the shock already produced by the injury, on the fifth day. (This case was reported in a paper formerly read before this association on "Shock.") Another was an old man, fifty-seven years of age, who had several car-wheels pass over his right leg just below the middle, and a compound fracture of the left leg near the knee; he died of shock nine hours after the operation.

A strong, healthy car repairer, while working under a car, other cars ran down against it and pushed one wheel over his right thigh above the middle and up on to the knee of the left, so the joint was torn open; his condition seemed to warrant an amputation, and accordingly the right thigh was amputated at upper third, and the left dressed in fracture-box. He seemed to be doing well three hours after the operation was completed, but suddenly the heart stopped beating.

A double synchronous amputation of both thighs (formerly reported in the paper on "Shock") died within an hour after the amputations.

The amputations were all immediate except two, which were of the thigh—one four weeks after the receipt of the injury, and the other, a reamputation after amputation of leg near knee, over a year before (by another surgeon), which was followed by osteomyelitis.

It is not my intention to discuss the general field of amputations, but those necessitated by railway injuries.

There seems to be a question of doubt regarding the propriety of immediate operation after railway injuries, and I consider this a question of paramount importance.

In amputations after accident most authors divide the period in which the operation may be performed into the immediate, primary, and secondary. An immediate amputation is done during the prevalence of shock, and usually in from one to six hours after the receipt of the injury necessitating the operation; primary, after reaction from shock and before inflammation is established, usually within twenty-four hours after the injury; secondary, when performed after this limit and during the prevalence of inflammation. The danger of death after amputation depends chiefly upon the character of the injury and the location

of the line of section. The prognosis becomes grave in proportion to the exhaustion of the patient as a result of the loss of blood, shock, sepsis, or of any dyscrasia or intercurrent disease. Amputations of the lower extremity are more fatal than those of the upper, and the nearer the line of section to the body, the greater the danger.

Now, as regards the best time to amputate after railway injuries, I have no doubt about immediate amputation being the safest and best in nearly every instance where the surgeon is able to decide at once whether amputation will positively be necessary, and in a majority of railway cases there can be but little reason for doubt—as, when from one to a dozen car-wheels, or the wheels of an engine, have passed over a limb, it is a plain case, and amputation is the only safe procedure; as also where a limb has been crushed between car-bumpers. Where a limb has received such a crushing injury, and the circulation to the part beyond the injury is entirely cut off and a large amount of tissue is crushed to a pulp, it is my opinion that every hour beyond three or four that the amputation is delayed increases the danger of blood-poisoning and increases the danger to the patient's life, as so much crushed or lacerated tissue as is cut off from the circulation immediately becomes dead and decomposition very soon begins, and septic germs will be very liable to enter the circulation and, after amputation has been performed, destroy the life of the patient. I know it is urged by many surgeons that we should wait for reaction to take place. There may be cases where this is the proper thing to do, but in a large majority of railway injuries it is waiting for septic poisoning and for the patient to die without surgical aid. In many cases, waiting for reaction to take place is waiting for the shock already produced by the crushing wound to be aided by mental shock, which, in many instances, will produce death; when if, in place of waiting for reaction, an effort is made by the use of whisky hypodermically and artificial heat, with hot sling internally to assist nature in bringing about the much-desired reaction—which will, in nearly every case, manifest itself by rapid improvement in the circulation and all symptoms as soon as ether is administered, added to the stimulating effect of the ether—we have relieved the case of the mental anxiety, which always plays an important part in producing shock and keeping it up; as was plainly shown by a brakeman who had been injured four hours before I saw him, and he supposed he only had a fractured leg, and that it was produced by falling from a train in motion; his condition seemed good, and pulse indicated no severe shock; his body was not cold; but when his clothing was removed, and it was found that his leg was crushed by the wheels passing over it at the middle and he knew it must be amputated, he was immediately covered by a cold perspiration, with trembling of the body and limbs, and was nearly pulseless; but ether was at once administered and his condition rapidly improved; amputation was proceeded with, and after the operation was completed he seemed in better condition than before, and made a rapid recovery. I have noticed the same improvement after severe injury when ether was administered in a large number of cases.

I believe that many patients are lost after severe injuries and operations by neglecting to keep them surrounded by artificial heat and the use of stimulants hypodermically during and after operation; and until reaction is established they should be closely watched, as many times they will appear to rally from the effects of the ether and be doing well, when suddenly, without warning, the heart ceases to beat.

As gangrene is the death of a part of the body from the general or sudden arrest of its nutrition, we should always be certain that the parts used for flaps in amputations have enough vitality left to keep up capillary circulation sufficient to keep them alive.

In amputations after railway injuries the surgeon with but little experience in this class of cases is liable to let his anxiety to save as much of the limb as possible lead him to use for flaps tissues which have been so injured and the capillary circulation so feeble in them that the entire flaps become gangrenous and slough off, and have to heal by the slow, tedious process of granulation, if the bones do not ultimately protrude and require reamputation.

Injuries of this class are very deceiving, and parts far above where external inspection indicates sound tissue are most always so injured that in a few hours after the receipt of the injury the circulation ceases in the part and soon forms a slough, including all the injured tissues; so, when practical, the operator should be certain that none of this bruised or injured tissue is included in the flaps; though there are cases, where the loss of an important joint is involved, when we are justified in using some of this tissue to help make up the flaps, preferring to have the flaps partly sloughed off and heal by granulation to sacrificing the joint, as with proper antiseptic precautions a considerable amount of bruised tissue can be used as covering for granulations to spring up under; and though the part is dead and becomes discolored, it does not break down and decompose as with the wet dressings formerly used, but dries down and serves as a harmless covering until, in cases where the surface is not too large, the process of healing has gone on under it and entirely healed over.

I can best illustrate the manner of operating and dressing which I prefer by briefly reporting the details in the following case:

W., brakeman, aged twenty-three, healthy appearing young man, on December 7, 1887, about 5.45 A. M., was going over the top of a freight train setting brakes when his foot slipped and he fell partly between two cars, and the wheels of six cars passed over his right leg and the great toe of his left foot. He was brought to his home, and three hours after the receipt of the injury I first saw him and found he had lost considerable blood and had indications of considerable shock; he was very pale and covered with clammy sweat; the pulse was very feeble and irregular; he said he knew that the wheels had crushed his leg and foot.

His body was wrapped in dry, hot flannel blankets, he was placed in bed in a warm room, bottles of hot water were put around him, hot whisky sling was given liberally, and whisky was injected under the skin, and in less than half an hour there was marked improvement in his condition; ether was then administered, which still improved the pulse, and the body and

limbs became quite warm. On examination, it was found that the wheels had passed over the right leg at the lower third, and for four inches it was crushed to a pulp. The left great toe and that side of the foot, including the head of the first metatarsus, was crushed.

The hair was shaved from the leg, and it was thoroughly bathed with a very warm solution of bichloride of mercury, one part to two thousand; the left foot was also bathed with the same solution; a piece of quarter-inch rubber hose twelve feet long was tied to the bale of a pail, one end resting in the bottom; the pail was filled with hot water that had been boiled and one part to three thousand of bichloride of mercury added and the pail suspended to the ceiling eight feet above the floor, the hose forming a siphon.

Esmarch's bandage was applied, and with the catling the anterior flap was formed from without inward and the posterior by transfixion; the flaps were then turned back and held by tractor which had been wet with bichloride solution, and the bones sawed through as nearly at the same time as possible. The crest of the tibia was slightly beveled with the saw, a stream of water from the hose was applied by an assistant, and by this means the flaps were kept thoroughly cleansed without touching a sponge to the cut surfaces.

The arteries were tied with juniper catgut and the ends cut short; the Esmarch bandage was then removed, the stream of water was allowed to flow over the flaps until oozing had ceased and they were nicely glazed; and the toe of the left foot, to the middle of the tarsus removed, was cleansed in the same manner; the flaps were brought together and were sufficiently long to come together without the least stretching, and the edges of the skin came perfectly in apposition. Then three deep sutures of catgut and numerous horse-hair sutures were introduced to keep the flaps smoothly and perfectly together; the line of incision was then thickly covered by iodoform and a piece of absorbent lint covered by the same placed over the whole stump and smoothly covered by four layers of the same, extending to the knee, and which were in turn held in place by a roller bandage. Then a piece of lint as wide as from the end of the stump to the knee, of sufficient length to go around under the limb and pin with safety-pins in front of the tibia, was applied; then a small stick was passed through under the loop of lint, with strings at each end tied to the arches of a bed-cradle.

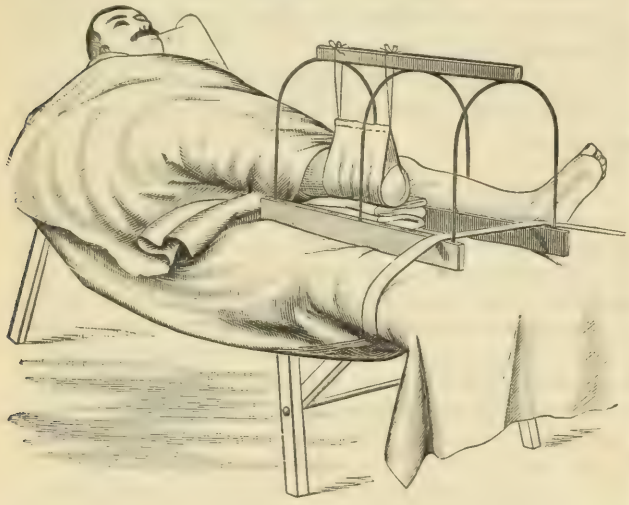


Fig. 1.

This supported the muscles of the posterior side of the limb, and the flaps, rounded up, allowed the tibia to settle down toward the center of the stump, in place of having the heavy muscular posterior flap dragging down and pressing the thin anterior flap against the sawed end of the tibia, as is usual in amputations of the leg.

This apparatus can be applied by any surgeon, and is well represented in Fig. 1, which is from a photograph of the support as applied to the patient just described. He rallied nicely after the ether, and had no pain, swelling, nor redness; the dressings were not removed until the fifth day; there was no discharge whatever, and on the fourteenth day he was dismissed; at no time did the temperature rise above 99°.



Fig. 2.

Fig. 2 shows the stump, which is from a photograph taken October 3d.

The advantage of healing amputations by immediate union can hardly be estimated. Those of us who are much interested in obtaining the best results in every case must not forget the necessities on our part, not alone in using proper skill and judgment in our operating, but the closest attention to every detail as regards perfect cleanliness and modes of dressing wounds and amputations, and see to it that there is no neglect on our part, and, if possible, to apply our dressings so as to obtain not only support, but as near absolute rest as the individual case will permit.

The circulation to the extremity of the flaps in amputations I have known to be obstructed by the application of adhesive strips, which defeated the object for which they were applied, and were the means of producing sloughing, which would not have occurred if they had not been used.

There can be nothing more gratifying to the surgeon than to be able to witness the completeness and perfectness of his work whereby immediate union of the flaps takes place after an amputation, when, without one drop of de-

tected suppuration, the eschar is so very faint and union so perfect that, in place of the hard, thick, and semi-organized tissue of a large scar, he can have the pleasure of seeing the smooth, tough, and elastic integument almost complete in its original perfectness, and giving to the wearer of artificial limbs a useful and comfortable appliance in place of a painful and useless stump, as is many times the result where there is a large amount of cicatricial tissue, which by the slightest injury or pressure is liable to be converted into a chronic ulcer and a constant annoyance to the patient.

Of course it is more gratifying to the surgeon to save an injured limb than to amputate, though we frequently hear laymen giving the surgeon credit for "cutting off legs and arms for the fun of it." With perfect cleanliness, the removal of all foreign substances, and modern dressings and appliances, with perfect quietude, many valuable limbs can be saved that would have been impossible under former plans of treatment. In this list of cases are many that were treated successfully without amputation that five or six years ago I would have believed impossible.

In one case a brakeman, nineteen years of age, was coupling, his body was caught between the cars and he fell to the track insensible, and a car-wheel passed over his right elbow, through the joint, producing a lacerated and contused wound six inches in length; the olecranon process was crushed off; the shock was so great, and of the insidious variety, that it was dressed without an anæsthetic, and he was apparently happy all through the operation, singing and joking as the sutures were being introduced. The piece of bone was removed, the wound thoroughly cleansed with bichloride solution as hot as I could bear my hand in, and the tissues that were crushed were removed with the scissors. It was found that the important vessels in the bend of the arm were intact, so the wound was closed as well as the scanty amount of tissue would permit, and dressed with iodoform and absorbent lint. He recovered in three months, with some motion in joint, and is now braking on freight-train.

In another case a man had his elbow crushed between the bumpers, which only caught the outer side of the arm, and it was shot out from between, so the large vessels received no direct injury; the joint was torn open, and there was an opening through the joint that water passed through when it was poured into the upper wound. This was dressed in the same way as in the former case, and the man made a good recovery, with motion of the joint nearly perfect, except rotation.

And now I will not take more of your time in reciting cases, but, in closing, wish to enter my protest against the use of air-tight dressings after amputations and in dressing wounds after injury—I refer to oil-silk, rubber tissue, etc. By their use more harm than good is done by preventing evaporation of perspiration and moisture from the part. Suppuration is more apt to take place than with light porous dressings made aseptic with bichloride and iodoform.

**The Treatment of Eczema by Cold Powders.**—Dr. Veiel, in a paper on the treatment of eczema ("Monat. f. prakt. Derm.," 1888, p. 181), speaks highly of the soothing effects to be obtained in acute cases without exudation by the application of cold dry starch powder. Gauze bags filled with the powder are applied to the part, and kept cold by being covered with India-rubber bottles filled with ice and salt, which were frequently refilled.—*Brit. Med. Jour.*

## SULPHONAL IN INSOMNIA.

By E. B. DOOLITTLE, M. D.,
JEANESVILLE, PA.

Having noticed the very favorable results alleged by our German colleagues with this new hypnotic, I procured a sample for trial, and have thus far given it in about thirty cases of insomnia, some simple, others accompanying acute and chronic diseases. The results were uniformly good. The dose given, with one exception, was half a drachm.

In every case but one sleep followed in about an hour, lasting from four to eight hours. In one case it had no perceptible effect, but a dose of forty-five grains afterward produced sleep of nearly six hours, and was followed by considerable languor, mental hebetude, and loss of appetite for twelve hours or more; in no other case were there any unpleasant after-effects noticed. Several of the patients had previously been taking chloral, and expressed themselves as having a more quiet and longer sleep after the sulphonal. In a few cases which had been quite obstinate, a few doses seemed to establish the normal habit, and so far no return of the insomnia has occurred.

A dose of half a drachm taken by myself produced in about an hour heaviness of the eyes, and slight vertigo on walking, followed by a quiet sleep of eight hours. The only after-effect noticed was slight drowsiness, which disappeared in two or three hours.

Although these few cases are insufficient to be of much avail, I give them in the hope that thereby others who have suitable opportunities may give the drug a more extended trial. So far as these few cases go, they accord with previous reports, and seem to indicate that we may find in sulphonal a valuable addition to our hypnotics, and an aid in the treatment of an affection sometimes very troublesome.

## Correspondence.

### LETTER FROM PARIS.

*The New Buildings of the Pasteur Institute.—Typhoid Fever simulated by Fatigue.—The Eschscholtzia californica.—Methyl Chloride in Neuralgia.—The Opening of the Clinics.—The Obstetrical Service.*

Paris, *November 19, 1888.*

Monsieur Pasteur is the hero of this week again, as he has been often in medical circles of late years. On Tuesday the magnificent edifice that bears his name was opened by President Carnot, thus crowning the triumph of the great French chemist. The Pasteur Institute has been completed by public subscription, which, by the way, leaves a substantial balance to the credit of the institution after all expenses are paid. The architects and many of the workmen would not accept any pay, so that, the whole amount subscribed having been 2,586,680 fr., there remains a balance of 1,022,894 fr. after paying all bills. This capital ought to maintain the establishment for a long time to come, and prove or disprove the efficiency of the inoculation treatment in hydrophobia. We can only wait and see what the ultimate result will be. Notwithstanding all that is said against it, of people dying of rabies after the treatment, etc., it is still a

comfort to the victims of dogs, and time alone can tell if it is really of value. The new buildings erected are two handsome edifices, quadrangular in shape and four stories high. They stand in an attractive garden in the upper part of the city, and have every possible appliance for study—chemical laboratories and class-rooms, as well as operating-rooms—alongside of the inoculation hall. Outside there are stables and a large number of dog-kennels. All the buildings are plain but substantial, and the interiors are decorated with massive oak ceilings and panels. In fact, everything is admirably adapted to the purpose of the institution. Modern times have never seen such a tribute to talent, and it is to be hoped that great results will be achieved. The opening ceremony was quite French; the spacious library was crammed to suffocation with the *élite* of Paris, the celebrated Republican Guards Band played the "Marseillaise," while the President with his attendants arrived at one o'clock and the speech-making began. M. Pasteur's forty years of labor in the cause of humanity and his great merits were glorified to the full by several speakers, including Professor Grancher, who is professor of children's diseases at the faculty and physician to the Infants Hospital, but he also has been the one who has done the larger part of the inoculation, as M. Pasteur, not being a physician, had no right to perform any operation on man. During the delivery of the laudatory speeches M. Pasteur was deeply moved, and while the record of his struggles was narrated he was completely overcome, and the tears coursed down his cheeks, so that when his turn came to speak he could not do so. The President of the Republic held his hands, and quite in French style they both cried and embraced one another, while many in the audience did the same. All the same, it was an interesting sight, and we must hope for the result of M. Pasteur's eloquent words (they were read by his son in his place). Two opposing laws, he said, appeared to be engaged in a death struggle—one of war and blood (in Europe), that was daily devising new weapons of destruction, and another of peace, labor, and security, that only thought of delivering mankind from the ills to which flesh was heir. "May the latter win, and certainly French science will never be forced in obeying this law of humanity to set the limit of human life further back."

French physicians, notably Professor Peter, M. Eloy, and others, have frequently spoken of the pathological states that are brought on by fatigue, and that are often allied to the typhoid states. It is rather difficult to define fatigue. All of us say "I am tired," but hardly any one can define or correctly describe what he feels. The dictionaries don't help us much. Littré called fatigue "a painful feeling with difficulty of moving or acting." Robin wrote: "Fatigue is from an exaggerated activity of all parts of the body endowed with internal or external sensibility, which determines a state of these parts that is transmitted to the nervous centers and there felt, and this perception has received the name of fatigue." This is a definition of a sense of fatigue, but not of the tired state itself, which must be a functional trouble profoundly felt in the anatomical elements themselves whose activity has been exaggerated and whose repair has been delayed or become impossible from some reason; so that fatigue is really a consequence of perturbations or a slowing up, even stopping, of the cell changes. It is really a pathological state having its degrees, its symptoms, and its changes that should be studied and taken into account by the practical physician. Its manifestations, such as lumbago, cramp, irritable heart, and muscular pains of a pseudo-rheumatismal character, are more or less well known, but it is particularly to the difficulty of diagnosticating between fatigued states and real typhoid ones that Dr. Peter calls attention. He gives the case of a man who had walked all the way from Lyons to Paris, begging by the way, but getting hardly anything to eat, and on his arrival in Paris was received into a hospital as a subject of typhoid fever. His high fever and other symptoms quite bore out Dr. Peter's interne's diagnosis, but the history of the case changed the diagnosis as well as the prognosis, as the poor fellow left the hospital after a few days of good living and rest. The therapeutical indications of such cases are met with rest, baths, oxygenation of the tissues, and general tonics.

M. Bardet and M. Adrian have examined the American plant called *Eschscholtzia californica*, and they find that it really contains morphine, and this is the first time that a plant of any other order than the *Papaveraceæ* has been found to contain that alkaloid. It contains also another base, together with a glucoside, which may be very important when their characters have been studied. In any case the drug should be a valuable aid in replacing the opium alkaloid when necessary.

M. Bardet also has noticed that chloride of methyl can be applied very exactly by simply covering the skin of the part with a coat of glycerin. Considerable use is made here of the little tampons on which the methyl chloride is sprayed from the iron apparatus containing it, and these are passed over the nerve or part that it is desired to affect. Dr. Bailly was the first to use this tampon method, which has come into considerable use in sciatica and other neuralgic troubles. Now, according to M. Bardet, all that is needed is to brush a coat of glycerin over the part which one wishes to treat, and then allow the jet of methyl chloride to fall on the glycerin, which absorbs the drug and turns into ice, and then the patient feels the characteristic burning pain, which is prolonged more than with the usual method of using the chloride of methyl. This new method has also the advantage that the agent is easily brushed or wiped off and the effect arrested as desired. Debove first introduced the use of this freezing method, and certainly its revulsive effects have kept it in use for the last three years. Constant practice only increases the confidence in it. The only annoyance is the disagreeable smell of the methyl chloride as it leaves the iron apparatus.

Last week saw the opening of all the clinics of Paris, and we had quite a feast of lectures by the great professors. One of the most interesting was that of Professor Tarnier, who took his place as the head of the *Clinique des accouchements*, taking the place formerly held by Dr. Pajot as clinical professor of obstetrics. This new change leaves the place of professor of theory at the Faculty open, and it is also intended to throw open a portion of the old Maternity Hospital to a new clinic of obstetrics. Thus it is likely that two new full professors will be named for these posts. Dr. Budin and Dr. Pinard, the able *agrégé* professors, will probably have the places, and the study of obstetrics in Paris should, and probably will, become of the highest importance. Professor Tarnier, in his opening lecture last week, drew a parallel between the new and the old systems of the study of obstetrics. About a hundred years ago Tenon wrote on the accouchement service as it existed in the Hôtel Dieu of those days. The women were two and three in a bed, and the mortality was one in fifteen. The pauper children were kept with them, and they were actually let, or sold for twenty cents a piece, for begging purposes. Even in 1856, when Tarnier was interne first at the Maternity, the mortality was still very great. This lying-in hospital, which is now to be thrown open to men pupils as well as women (that is, midwives), has until now been open to the latter only. To-day what a difference! The beautiful *Clinique des accouchements* belonging to the Faculty, under Dr. Budin's charge last year, allowed all students to superintend at least from three to four accouchements, and some men who devoted themselves to it had charge of as many as thirty confinements. Besides this, there are now nine hospitals where confinement wards exist in Paris, and they

are in charge of competent accoucheurs nominated to the posts in the same way as the hospital doctors, by public competition, so that with the new maternity service open to male students and the new professors named, there will be no fewer than a dozen large services where medical men can see several births every day in the year, and undertake entire charge of them if they wish to. Under the new system Paris will certainly be ahead of all other places in the world for this special study. Some of the services have three births a day, and they are all directed by eminent accoucheurs, who freely offer lectures and any explanation to all.

There is evidently an intention on the part of the Paris Faculty to distance all competition in this matter, and with a city of over three millions, and women in the habit of being confined at these institutions, we shall be much mistaken if they do not succeed. The first *clinique d'accouchement* was formed in France in 1830, at Strassburg, by Flammand, and after him it was conducted by Stoltz, and only in 1834 did Paul Dubois start the first Parisian clinic from which these great results have come. Tarnier, in 1881, applied the antiseptic system to midwifery in Paris, and adopted a method of isolating his fever patients, and his mortality is now not more than one in a hundred. The hospitals give almost as good results, and, whatever may be said of antisepsis, certainly it can not be denied that its greatest triumph here is in midwifery.

## LETTER FROM LONDON.

*Paralytic Rabies.—Arthrectomy.—An Important Judicial Decision relating to Syphilis.*

London, *November 20, 1888.*

The announcement of a paper by Mr. Victor Horsley on "Paralytic Rabies" was sufficient to draw a large audience at the last meeting of the Clinical Society. The case was one that created a good deal of stir at the time, because the patient had been submitted to M. Pasteur's treatment, and it was, of course, at once assumed by Pasteur's opponents that the treatment had killed him. The patient was admitted into St. Thomas's Hospital six weeks after being bitten by a rabid cat. He had been treated locally at the time of the accident, and, as I have already stated, had been sent to Paris for treatment by M. Pasteur; but on his return he began to have abdominal symptoms of an obscure kind. On the next day he complained of pain in the back, and on the following day there commenced an acute ascending paralysis, which carried him off in three days. Inoculation with the spinal cord proved that the disease was rabies. It was stated that experiments proved that the virus of the rabid cat was especially virulent. It was suggested as probable that Landry's paralysis was sometimes only paralytic rabies, and that acute myelitis also might be an acute specific disease. Dr. Bristowe stated that the case while the patient was in the hospital was thought to be one of rabies. There was no mental defect, no aberration, no dread of water, simply the water could not be swallowed; he believed that the disease had been derived from the cat and not from M. Pasteur's inoculations.

Mr. Horsley, replying to the comments on his paper, which were in themselves unimportant, said that the latest evidence went to show that the paralytic form of the disease did not follow inoculation if the animal had been previously inoculated with non-virulent material; very large quantities of virulent cords could be injected into a dog without producing rabies after it had undergone inoculation with non-virulent cords. As to the value of M. Pasteur's methods, the patients had been divided into three classes: the first including those bitten by animals known to be rabid by the fact that they had bitten and killed other animals; the second, those bitten by animals presumed to be rabid and certified as such by veterinary surgeons; and the third, those bitten by animals only supposed to be rabid. The death-rate among Pasteur's patients belonging to the first of these classes only amounted to 2 per cent., while in Lancashire, which he regarded as the home of rabies, it was 16 per cent. He had been asked why the inoculations had not protected his patient. It might be that he was a person whom it was impossible to protect, or possibly the original virus from the cat was so strong that the patient should from the first have been protected with stronger virus or more of it on each day so as to bring him sooner under its influence. As to the identity or non-identity of paralytic rabies with Landry's disease, he pointed out that the absence of a history of having been bitten was not a reliable argument against rabies. As an instance of two specific animal poisons circulating in the same patient at the same time, he mentioned the case of a boy who was bitten by a dog suspected to be rabid, in whom, three weeks later, the wound having healed, scarlatina developed, and while the boy was convalescent from this, symptoms of hydrophobia appeared, and he died; the existence of rabies was proved by inoculation.

An interesting discussion took place at the last meeting of the Medico-chirurgical Society on arthrectomy, or erasion of joints, introduced by a paper of Mr. Edmund Owen's. The credit of the introduction of this operation belongs to a provincial surgeon, Mr. Wright, of Manchester. The operation consists in scraping out the diseased and pulpy synovial membrane from the joint in cases of that form of disease, the cartilage joining the epiphysis with the shaft being left intact. The result of this is that the growth of the limb is not interfered with, a point in which it compares most favorably with excision. The operation would appear to be well suited for all those forms of joint affection which have no tendency to spontaneous recovery, and in which the disease does not begin in the bones. The patient is, of course, left with a stiff joint, but that is better than the shortening entailed by excision and better than the result of amputation.

A case of immense importance has just been settled in our law courts. A man had been convicted on two counts of an assault upon his wife, the assault being that he had infected her with syphilis. He appealed, and the case was argued before a full bench of judges some months ago, and, having taken time to consider, they have quite recently given their decision. They were not agreed—like doctors, they seldom are—but a very considerable majority were in favor of quashing the conviction. They did not think that the laws as they stood at present had ever been meant to have such an interpretation put upon them, and, though expressing the utmost abhorrence of the deed, they declined to afford a precedent the full consequences of which no one could possibly foresee. The judges no doubt were quite right; an opposite decision would have led to endless litigation and domestic misery, and would not in any way have contributed to the decrease of syphilis. A re-enactment of the Contagious Diseases Acts on a larger scale and in a more stringent form would no doubt in a very short time effect a marked reduction in the number of infected people in this country, but there is very little prospect of their being again put in operation.

**Death from Hydrophobia.**—A man named Harman died last Saturday, June 2d, in Barrington's Hospital, Limerick, from hydrophobia. About three months ago deceased was bitten in the hand by a stray cat, but no symptoms of the dread malady supervened until the evening of May 30th.—*Brit. Med. Journal.*

THE
NEW YORK MEDICAL JOURNAL,
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NEW YORK, SATURDAY, DECEMBER 22, 1888.

## THE MANAGEMENT OF CONSULTATIONS.

A *feuilletoniste* who signs himself "Dr. Chero" has been contributing to the "Revue générale de clinique et de thérapeutique" a series of letters to a young practitioner on certain points in medical ethics. In one of them he deals with the subject of consultations. Consultations, he says, are as much in vogue in France now as they were in the time of Louis XIV, and, save for the pomp and circumstance that were then made the accompaniments of all undertakings, they are much of the same character. This shows, he remarks, that, if ridicule kills, it kills very slowly, for consultations figured prominently in the medical affairs that were unmercifully caricatured by Molière. A consultation has often the double advantage that it suits alike the physician and the patient and his family. But it should be managed properly, that is to say, by the physician in attendance.

The family physician may properly ask for a consultation whenever there is doubt as to the diagnosis, whenever a considerable operation is to be performed, whenever the services of a specialist are needed, or whenever the responsibility of the case is too heavy for one person to bear alone. It may be added, as was inculcated by the late Professor Gilman, of New York, that it is unreasonable and disloyal to "divide" the responsibility by shifting it all on to the consultant. It is often wise and proper, and indirectly for the patient's benefit, to ask for a consultation for no other purpose than to strengthen or re-establish the confidence with which one is regarded by the patient or his friends.

But it sometimes happens that the waning of confidence first shows itself in a proposal for a consultation from the family. This should be forestalled whenever it is possible; the attending physician should endeavor to make out when there is a consultation "in the air," so to speak, and should take the bull by the horns by asking for it himself. Thus he obtains the advantage of appearing to have things his own way, and will be considered more entitled to name the consultant, with whom, moreover, he will find himself more on a footing of equality. Sometimes, however, the demand for a consultation can not be foreseen; it should then be acceded to promptly and gracefully, no matter if there is no good reason for it. "Dr. Chero" remarks that there are some persons, particularly the big-wigs of suburban localities, who always make it a point of honor to make a show of having two doctors whenever a case of illness in their families lasts more than a few days. Even such persons' demand for a consultation should never be openly opposed, although, unless it is properly managed, it is prone to result in unpleasant inferences as to the family physician's incompetency. But there is one way of robbing it of its sting, and that is by making some such remark as this: "I have no objection to a consultation, if you wish for it, but I must tell you beforehand that the disease will be cured within" such or such a period of time. After the result has been found to justify the prediction a few times, the doctor will be credited with having known what he was about, and his patients will have all the more confidence in him.

A consultation having been agreed upon, according to "Dr. Chero," the family has the undeniable right to choose the consultant, although the choice is often left to the attending physician. Ordinarily, he thinks, no opposition should be made to the preference expressed by the family. In this we can not agree with him; it is our decided impression that a physician in whom the patient and his friends have not confidence enough to allow him the choice had better retire from the case altogether. Even "Dr. Chero" admits that there are circumstances under which the physician in attendance is warranted in following this course, as when a callow graduate is suggested, simply because Mr. X. or Mrs. Y. has "heard of his having done wonders in a similar case."

## THE REMOVAL OF HOOK-SHAPED FOREIGN BODIES.

One of the most acute of American physicians, Dr. Morrill Wyman, of Cambridge, Massachusetts, is reputed to have once relieved a small boy of a fish-hook that he had swallowed by the clever device of slipping a perforated bullet over the line, which fortunately was hanging from the boy's mouth, causing him to swallow the bullet, and then drawing upon the line, the bullet guarding the tissues against injury from the hook during the process of extraction. But the small boy, owing doubtless to the special Providence that watches over him, rarely feeds on fish-hooks, so that Dr. Wyman's expedient, ingenious as it was, is more likely to be handed down in anecdote than to serve as a precedent in actual practice. Most of us are not in pressing need of a device for removing fish-hooks from the stomach—not so much, indeed, as of a trick for enticing hairpins from the urethra—but it happens now and then to almost every practitioner to find himself face to face with the task of disengaging some hook-shaped body that has become imbedded in the tissues. In such a case M. Le Fort, of the Necker Hospital, Paris, lately made use of a procedure which we find detailed in a clinical lecture published in the "Union médicale" for October 18th. The manipulation, however complicated it may seem at first thought when described as *par version, bascule et propulsion*, was really very simple. Undoubtedly it has been resorted to by many practitioners, for it would suggest itself at once to a man of ordinary ingenuity; but, as we do not remember to have seen it described in print, we think it may prove of interest to our readers.

The patient was a lad who, nine months before his admission into the hospital, had been struck upon the cheek by a person who held a button-hook in the hand with which the blow was given. The pain of the blow was very great, and

the lad at once perceived that the person who had struck him now held only the handle of the button-hook. There was a punctured wound of the cheek, from which a free flow of blood took place, situated in front of the masseter muscle and at the level of the lower teeth. An hour afterward there was considerable swelling of the cheek, and on the following morning, the swelling being persistent and accompanied with rather sharp pain, a pharmacist was consulted, who, as the patient said, "corked up the hole in his cheek." At the end of two or three days the wound had healed and the swelling had subsided, but there was some induration perceptible to the patient, who, however, felt no further pain and no embarrassment of the movements of the jaw. This quiescent state of things continued until about a month before the lad's admission into the hospital, when an inflammatory redness appeared at the site of the wound and an opening formed from which a little shaft of iron protruded to the extent of about a third of an inch. The hooked extremity was directed backward, and was so engaged in the masseter muscle as not to admit of removal by direct traction without great risk of serious injury. Having enlarged the opening by a slight cut, M. Le Fort depressed the presenting end of the piece of iron and gradually worked it backward until he had reversed its original position. The hooked end now lay forward, and was easily made to emerge from the wound. Reference was made also to a somewhat similar case in which, some years before, M. Le Fort had extracted from a lady's hand a hook-shaped English implement for drawing corks.

## *MINOR PARAGRAPHS.*

### THE COMPARATIVE NUTRITIVE VALUE OF THE ANIMAL AND VEGETABLE ALBUMINS.

Dr. S. Rutgers, of Rotterdam, gives an account in the "Zeitschrift für Biologie" of certain dietetic experiments that he has made upon himself and his wife, a summary of which appears in the "Centrablatt für klinische Medicin." From the 13th of March to the 16th of April each of them consumed daily 2,250 grains of meat, 9,000 grains of milk, 750 grains of butter, 3,000 grains of white bread, 195 grains of zwieback, 4,500 grains of potato, 1,800 grains of rice, 1,050 grains of cane-sugar, half an orange, 600 grains of Tokay wine, 900 grains of red wine, and 75 grains of tea; and from the 17th of April to the 21st of May each of them took 4,230 grains of green peas, 1,500 grains of dried peas, 1,500 grains of small white beans, 1,238 grains of butter, 193,005 grains of meat extract, 2,000 grains of white bread, 195 grains of zwieback, 1,500 grains of potato, a little tea, 390 grains of Tokay wine, 900 grains of red wine, and half an orange. Daily comparisons were made of the weight of the two persons, of the quantity, specific gravity, and nitrogenous constituents of the urine, and of the weight of the fæces. In one of them the weight remained about constant; in the other there was a decided loss during the first period, which was not so marked in the second period. Although they often longed for a more varied diet, the articles to which they had restricted themselves gave rise to no repugnance. There was no feeling of hunger or of any insupportable craving for particular articles of food or drink. Both felt well all the time. During both periods the nitrogen excreted by the kidneys and the intestines did not differ materially from the normal amount. The inference is that the animal albumins ordinarily taken as food may be replaced by those of vegetable origin without disturbing the nitrogen balance. It is mentioned that beans and peas proved very troublesome by giving rise to abundant intestinal gas and fæces, while meat and rice caused little of either—facts that involve many contra-indications to an exclusively vegetable diet. The acidity of the stomach and of the urine was notably reduced by the vegetable food.

### THERAPEUTICAL FLAGELLATION WITH NETTLES.

The "Gazette hebdomadaire des sciences médicales" gives an abstract of an account in a Russian journal, by Dr. Frankowsky, of the revulsive and excitant effects that may be obtained by flagellation with nettles. The application is to be continued until urticaria is produced. According to the author, the nettle is to be preferred to other revulsives and excitants, because of the celerity of its action and its freedom from danger, in such conditions as migraine, ataxia, paralyses, anæsthesia, asthma, amenorrhœa, impotence, and rheumatism. It is said to cause neither maculæ, scars, suppuration, nor any disturbance of the kidneys.

### THE ARTISTIC CAPABILITIES OF INDIA-RUBBER.

"Punch" once gave a decided hint in this direction, in the famous garden scene in which Napoleon III was represented as engaged in blowing up a little rubber effigy of his uncle and, looking up at an heroic statue of Julius Cæsar, exclaiming, "Aha! Monsieur, I shall soon make him so big as you!" But that was only a hint; it has remained for the Davidson Rubber Company, of Boston, to better the instruction. In a pad calendar for the year 1889, recently issued by that company, we find an assortment of pictorial representations of articles in rubber of the variety of which nobody could complain, accompanied by printed epigrams so choice as to make us wonder they were not put in the form of sonnets. Here is the family syringe, with its pipes falling gracefully into serpentine lines of beauty, together with the "purity nipple," the colpeurynter, and a rich array of other artistic appliances, of which the *pièce de résistance* seems to be the "sanitary cover" (a sort of extinguisher for a *pot de chambre*). *Ter quaterque beati* those to whom it is given to beautify their walls with this æsthetic production!

### A SANITARIUM IN THE CATSKILLS.

Some weeks ago we called attention to a few of the features of the Catskill region as a health resort, and especially to its availability in consequence of the ease of reaching it. It has long been a matter of surprise that special institutions for the reception of invalids have not been established there as well as in more remote districts of no greater natural virtues. We are pleased to learn, therefore, that the Catskill Mountain Sanitarium is now about being opened at Tannersville, in Greene County. The sanitarium is in charge of Dr. H. M. Wilson, Jr., formerly of Baltimore, a gentleman of most creditable professional attainments and general culture. It is not to be doubted that Dr. Wilson's professional brethren will be glad to avail themselves of the opportunity offered by his sanitarium of sending patients to the Catskills.

### THE MANHATTAN EYE AND EAR HOSPITAL.

The "Nineteenth Annual Report of the Board of Directors" of the hospital, recently issued, is a reminder of the continued usefulness of this institution. We learn that it is sought to endow the hospital by means of a fund named the "C. R. Agnew

Memorial Fund," in fitting recognition of the services rendered by its founder, the late Dr. Agnew, whose example in giving time and money to further the work of many a charitable undertaking ought, as the directors justly say, to make the mere connection of his name with the fund "a touching appeal to every benevolent heart."

### NATIONAL HEALTH LEGISLATION.

In the article on this subject contained in our last issue we followed the text of the bill as published. A copy from the Public Printer's office shows, however, that the proposed health commissioner is to "hold his office until he is seventy years of age, *unless sooner removed by the President.*" That part of the section printed in Italics removes the constitutional objection we made against it in that respect. The material objections to the rest of the bill remain as we stated them.

### THE POST-GRADUATE HOSPITAL.

In their "Third Annual Report" the board of directors of the hospital very properly ask for pecuniary assistance to enable them to clear off the indebtedness about to be incurred in a purchase of additional property and to increase the usefulness of the institution, notably by the establishment of a lying-in ward. The medical school with which the hospital is connected is said to be self-supporting, but the hospital itself, it is added, like all charitable institutions, is constantly in need of funds. A special appeal is made to the women of New York.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 18, 1888:

| DISEASES. | Week ending Dec. 11. | | Week ending Dec. 18. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases | Deaths. |
| Typhoid fever | 23 | 7 | 24 | 6 |
| Scarlet fever | 164 | 31 | 239 | 37 |
| Cerebro-spinal meningitis | 0 | 0 | 2 | 2 |
| Measles | 351 | 23 | 306 | 21 |
| Diphtheria | 136 | 32 | 165 | 26 |
| Small-pox | 1 | 0 | 0 | 0 |

**The Philadelphia Polyclinic** has established a three-months' special course in ophthalmology, including systematic didactic instruction and quizzing, with three hours' clinical work daily.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 9 to December 15, 1888:*

Baxter, Jedediah H., Colonel and Chief Medical Purveyor, will, by direction of the Secretary of War, proceed to St. Louis, Missouri, and Hot Springs, Arkansas, on public business connected with the Medical Department, on completion thereof to return to his proper station. Par. 13, S. O. 289, A. G. O., Washington, December 12, 1888.

Town, Francis L., Major and Surgeon, is relieved from duty at the post of San Antonio, Texas, and will report in person to the commanding officer, Presidio of San Francisco, California for duty at that station, relieving Major Henry R. Tilton, Surgeon, and by letter to the commanding general, Department of California. Par. 19, S. O. 286, A. G. O., Washington, D. C., December 8, 1888.

Tilton, Henry R., Major and Surgeon, upon being relieved by Major Town, will proceed to West Point, New York, and report in person to the Superintendent of the U. S. Military Academy for duty at station, relieving Major Charles F. Heizmann, Surgeon. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Heizmann, Charles F., Major and Surgeon, upon being relieved by Major Tilton, will proceed to San Antonio, Texas, and report in person to the commanding officer of that post for duty, and by letter to the commanding general, Department of Texas. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Finley, James A., Captain and Assistant Surgeon, is relieved from duty at Fort Buford, Dakota Territory, to take effect upon the expiration of his present sick leave of absence, and will report in person to the commanding officer at Fort Assinniboine, Montana, for duty at that post. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

Chapin, Alonzo R., Captain and Assistant Surgeon, is granted leave of absence for fourteen days, to commence on or about December 24, 1888. Par. 1, S. O. 261, Headquarters Division of the Atlantic, Governor's Island, New York city, December 11, 1888.

La Garde, Louis A., Captain and Assistant Surgeon, is granted leave of absence for one month, with permission to apply for an extension of three months. Par. 15, S. O. 290, A. G. O., Washington, December 13, 1888.

Jarvis, Nathan S, First Lieutenant and Assistant Surgeon, is, by direction of the Secretary of War, relieved from duty at Fort Leavenworth, Kansas, and will report to the commanding officer at Fort Lewis, Colorado, for duty. Par. 14, S. O. 290, A. G. O., Washington, December 13, 1888.

Johnson, Richard W., Captain and Assistant Surgeon, is relieved from duty at Fort Adams, Rhode Island, and will report in person to the Superintendent of the U. S. Military Academy, West Point, New York, for temporary duty at that station. Par. 19, S. O. 286, A. G. O., Washington, December 8, 1888.

**Naval Intelligence.**—*Official List of Changes in the Medical Corps of the United States Navy for the week ending December 15, 1888:*

Penrose, Thomas N., Surgeon. Ordered for examination preliminary to promotion.

Oberly, A. S., Medical Inspector. Ordered before the Retiring Board.

Dickson, S. H., Passed Assistant Surgeon. Detached from the Richmond and ordered to the Pensacola.

Ashbridge, Richard, Passed Assistant Surgeon. Detached from the St. Louis and ordered to the Richmond.

Auzal, Ernest W., Assistant Surgeon. Promoted to Passed Assistant Surgeon.

Wieber, F. W. F., Assistant Surgeon. Promoted to Passed Assistant Surgeon.

**Society Meetings for the Coming Week:**

Monday, *December 24th:* Medical Society of the County of New York; Boston Society for Medical Improvement; Lawrence, Mass., Medical Club (private); Cambridge, Mass., Society for Medical Improvement; Baltimore Medical Association.

Tuesday, *December 25th:* New York Academy of Medicine (Section in Laryngology and Rhinology); New York Dermatological Society (private); Buffalo Obstetrical Society (private); Medical Society of the County of Lewis (quarterly), N. Y.; Boston Society of Medical Sciences (private).

Wednesday, *December 26th:* New York Surgical Society; New York Pathological Society; American Microscopical Society of the City of New York; Medical Society of the County of

Albany; Auburn, N. Y., City Medical Association; Berkshire, Mass., District Medical Society (Pittsfield); Philadelphia County Medical Society.

THURSDAY, *December 27th:* New York Academy of Medicine (Section in Obstetrics and Diseases of Women and Children); New York Orthopædic Society; Brooklyn Pathological Society; Roxbury, Mass., Society for Medical Improvement (private); Cumberland, Me., County Medical Society (Portland).

FRIDAY, *December 28th:* Yorkville Medical Association (private); New York Society of German Physicians; New York Clinical Society (private); Philadelphia Clinical Society; Philadelphia Laryngological Society.

# Letters to the Editor.

## THE SHARON SPRINGS.

SHARON SPRINGS, N. Y., *December 8, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: In your editorial, "Medical Journal," December 1, 1888, in the last part, after insisting upon the necessity of a discriminating and intelligent administration as of first importance in the success of water applications, you mention in commendation certain European sulphur springs, but no allusion is made to the sulphur springs of this State, although certainly several of these have a merited and sustained reputation.

In the "Rapport général sur le service médical des eaux minérales de France," made to the "Académie," and "read and adopted in the séance of April 3, 1874," it is stated that "le mode d'administration et l'emploi des eaux prennent aussi une importance égale à la minéralisation, car la manière de les applique" peut modifier, changer même leurs qualités naturelles et même leur en communiquer de nouvelles, suivant la température et la dose auxquelles on les emploie, les agents balnéaires variés qui en secondent l'application. Elles peuvent produire des effets diurétiques, sudorifiques, excitants, toniques, sédatifs, résolutifs, révulsifs, etc., selon le but que le médecin se propose."

Recognizing the importance of this subject, it has been our effort for several years to introduce and develop at this spring the same varied and scientific applications of sulphur water that are employed at the European sulphur springs enumerated by you, and that are known by experience to be of value, and it has been our special endeavor to persuade all who visit this place to use the waters only and always under the constant advice and watchfulness of physicians. It is strange, but none the less true, that it is really difficult to induce a free-born American citizen to submit to such *régime at home*, however willing he may be to observe strictly a prescribed routine *abroad*. Those physicians who have visited us, and personally inspected the various applications, have expressed their gratification that these methods of employing sulphur water are now within reach in this country.

We do not seek a free advertisement, we assure you; the establishment is closed at this season, and we do not advertise in the winter. But we do think that, in a general and forcible article relating to this subject by a professional author, our efforts, as demonstrated, are entitled to recognition, and that an invidious distinction should not be made in favor of foreign ulphur springs. It would be quite as sensible to seek foreign, medical services, when equally able advice can be procured at home, as to visit foreign springs solely to obtain methods already in operation here.

We should be very glad to have you visit us, as our guest, during the coming season, so that you may personally see what we have accomplished in the direction indicated.

JOHN H. GARDNER & SONS.

*** It is true that in the article referred to we did not mention the Sharon Springs, but we did mention several American springs with commendation. We are glad to say now that we know of no reason to question the efficiency and good management of the Sharon waters. Reference to our article will show we think, that no invidious discrimination was intended.

## SYMPATHETIC VOMITING.

228 WEST THIRTY-FOURTH STREET, NEW YORK, *December 10, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: Concerning the sympathetic vomiting of husbands whose wives are pregnant and affected with the morning sickness, I have found it to be a well-rooted impression among many of the laity that it is an event of frequent occurrence. I had never seen an undoubted case of it, however, until last month, when a lady and her husband called on me together, both complaining of severe morning sickness. The husband's sickness occurred every morning, but only after the wife had vomited or complained of nausea, when he would at once follow suit. I prescribed oxalate of cerium and a glass of milk before getting out of bed for each patient, with little success. The administration of an eightieth of a grain of atropine every morning to the wife only, relieved her symptoms, upon which the husband ceased to be troubled.

The trouble, to my mind, is readily explained. Attempts at vomiting on the part of a patient are very frequently enough to turn the stomach (as the laity term it) of bystanders who themselves have rather weak stomachs. We know that on board ship persons are suddenly attacked with vomiting through merely being near some other person who is seasick, though they have felt perfectly well beforehand. A lady who was walking with me in the street was strongly nauseated while passing a drunken man who was vomiting on the sidewalk a year ago. I believe that in the husbands' cases the trouble is imitative in part, and partly an actual nauseated feeling at beholding the efforts at and the actual vomiting of their wives. If I happened to come across another such case as I have related I should direct the husband and wife to sleep in separate rooms for a few nights and to have their breakfasts separately. If, as I am persuaded, the husband felt no sickness during the time of separation, I should be inclined to think my explanation pretty well proved, although, in some cases, I do not doubt that he might feel sick a few mornings from mere habit, or from some false mental impression of some more remote sympathetic cause than the one I have advanced as the true one.

GEORGE G. VAN SCHAICK.

48 EAST TWENTY-SIXTH STREET,
NEW YORK, *December 17, 1888.*

*To the Editor of the New York Medical Journal:*

SIR: A striking instance of morning sickness in the male has recently come under my observation. Mr. Z. married in the spring of 1888. His wife became pregnant in July. The first symptoms she observed were those of morning nausea and vomiting, which were unusually severe, lasting until eleven or twelve o'clock. Ordinary remedies (lime-water, ice, brandy, champagne) seemed to have no effect. No physician was called. The husband consulted me early in October, stating that for ten days his stomach had been in very bad condition, that after rising in the morning he was almost daily seized with distressing nausea and vomiting to an extent to preclude the possibility

of taking food, but that this sickness soon passed off after his leaving the house. He had reached a point of emaciation and weakness which forced him to consult a physician. Upon questioning the patient, he remarked, among other things: "The queer thing about it is that when I am sick my wife is very well." It subsequently proved that they were never simultaneously ill. I followed the case for a week, giving the usual remedies—such as cerium oxalate, liquor potassii arsenitis, tincture of nux vomica, etc.—but nothing exercised control over the sickness of either.

The pair occupied the same bed, and the husband noticed that before rising, and when his stomach was already beginning to feel the approaching nausea, if his wife lay close to him he had at once an increase of the gastric irritability. This, he informed me, he had distinctly observed before I had informed him of my opinion as to his trouble.

I sent the wife to her mother's for a week. She left on Sunday afternoon. On Monday morning Mr. Z. arose, feeling, as he said, "as well as he ever did in his life." His wife while away was troubled with nausea, but not to the degree of intensity as before. She would not remain away for a week, but returned on Thursday afternoon. On Friday morning her husband was again sick, but not so severely as before. This lasted for a week, but since the middle of November he has been free from nausea, and the sickness of his wife has gradually abated. Both husband and wife are of active nervous temperament.

Morton Grinnell.

## A CONTRIBUTION TO THE ÆTIOLOGY OF SEASICKNESS.

New York, *December 3, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: Following the recent storm, which did so much damage along the Atlantic coast, a party of adults and children visited the beach at Monmouth Beach and Seabright, N. J., to observe the effects of the storm upon the cottages, and especially to see the house which some of them had occupied during the past summer. The sea had washed away the foundation of this house, so that one side had sunk and the whole house was inclined at a considerable angle. The children of the party ran ahead and found an entrance, but reappeared in a few moments and urged their mother not to go in, as it would make her seasick. The entire party went in, however, and the effect of the displacement of the lines of the rooms was to make them all more or less dizzy. The mother referred to, with some effort, owing to the oblique position of the floor, succeeded in getting to the further end of the hallway, when she was so overcome by "seasickness" that she had to be carried out.

F. A. Castle.

## MEDICAL SUPERSTITIONS.

New York, *December 8, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In the issue of your Journal of December 8th you refer to some very interesting medical superstitions related in the work of M. Challamel. A young girl of fifteen, of Irish parentage, brought her little brother to my clinic for treatment. I observed a chalazion on her left lower lid, and told her she had a small tumor, which she had better allow me to remove. She replied no; she knew what it was and could take it away herself when she wished. I asked what her treatment would be. She said her grandmother had told her that this could be removed by pointing at it with a steel knife and fork for nine days. On questioning her further, I found that it was necessary to point with a knife one day and a fork the next, and that it was necessary to point with each once every day for nine days. I asked her if she had ever seen a sty removed in this way. She said no, but her grandmother had.

I expressed the desire to make the acquaintance of her grandmother, with a view to learning more about this method of cure of styes. The girl replied that I could not make her grandmother's acquaintance, as she was dead.

I finally gained her complete confidence, and the chalazion was removed *secundum modum.*

I report this, as I consider it of interest in connection with medical superstitions.

J. Herbert Claiborne, Jr.

## BOILED SILKWORM-GUT SUTURES.

93 E. Fourth Street, Cincinnati, *December 3, 1888.*

*To the Editor of the New York Medical Journal:*

Sir: In your issue of December 1st I read the article "Boiled Silkworm-gut Sutures," by Dr. Carr, of the Columbia Hospital, Washington, with much interest.

I can testify that for perinæorrhaphy, trachelorrhaphy, and other operations it has no superior. I never keep it in *any* antiseptic fluid, nor do I boil it—simply clean it before using—and the results are all that one could ask for. Rarely a stitch abscess have I to record. Nor do the "bugs" or the thirty-nine amphibious little imps interfere with the healing process. Much valuable time is gained by not boiling, and the results are no better with boiled sutures than with those not boiled.

Edwin Ricketts.

# Proceedings of Societies.

## AMERICAN GYNÆCOLOGICAL SOCIETY.

*Thirteenth Annual Meeting, held at Washington, September 18, 19, and 20, 1888.*

The President, Dr. Robert Battey, of Rome, Ga., in the Chair.

There was a large representation of the fellows present, and also several guests, among whom were Sir Spencer Wells, Dr. Graily Hewitt, and Dr. Priestley, of London.

Dr. Samuel C. Busey, of Washington, made a brief address of welcome, in which he alluded to the advance in medical science, and to the prosperity of the American Gynæcological Society, which now occupied the foremost position among national associations. He alluded to the distinguished foreign guests.

**Palpation of the Ureters in the Female.**—Dr. Howard A. Kelly, of Philadelphia, read a paper with this title, in which he opened by affirming that palpation of the ureters afforded a sure method of recognizing disease of these ducts, and hence disease of the kidneys, which so frequently accompanied the former. The ureters were liable to share in vesical inflammation (especially that form which was of gonorrhœal origin), while calculi might be impacted in them, or they might be displaced or occluded by adhesions or displacements and neoplasms of the uterus, especially carcinoma. They were sometimes tied during the removal of abdominal tumors, and might be injured in operations for vesico-vaginal fistula. It was therefore quite important for the gynæcologist to be able to recognize the ureters in health and disease. The methods of examination were by catheterization and inspection. To inspect them it was necessary to split the vesico-vaginal septum, and to look for the ureteric openings, into which a catheter could be passed directly. Grünfeld had tried to catheterize the

ureters by the aid of the endoscope, but with indifferent success. Catheterization was practiced by Simon after introducing the index-finger into the bladder and feeling the ureteric openings; this method was not only very difficult, but there was danger of lacerating the urethra. Pawlik's method was preferable. The patient being placed in the exaggerated lithotomy posture, a Simon's speculum was introduced, and the anterior vaginal wall clearly exposed. A fine silver catheter of peculiar shape was introduced into the bladder. Its point could be seen by the eye to glide over the floor of that organ and to follow the diverging folds in the vesico-vaginal septum, which extended upward from the neck of the bladder on either side of the cervix. The point of the instrument would be felt to glide over the ureteric opening. It was then drawn backward slightly, then pushed forward, and would make a pocket in the anterior vaginal wall. A few drops of urine would escape on introducing and withdrawing the instrument. It was important not to use force, or to pass the catheter beyond the pelvic brim. In palpating the ureters the finger was introduced as high as possible along the lateral wall of the pelvis, and was then carried downward until a cord was felt, which was then traced along its course. In some cases, especially during pregnancy, the ureters could be mapped out bimanually. They could often not be felt at all, or the obturator arteries and nerves, or bundles of fibrous or muscular tissue, might be mistaken for them. Several cases occurring in the reader's practice were reported, in which supposed vesical trouble of long standing was found to be due to ureteritis. Dr. H. C. Coe had related to him three recent cases in which he had discovered at autopsies obstruction and dilatation of the ureter, which might have been discovered during life, if palpation had been practiced. He was not prepared to discuss the question of treatment, as the subject was still somewhat indefinite.

Dr. W. M. Polk, of New York, thought that the subject of the paper was one of much interest. The slow progress in the diagnosis and treatment of disease of the ureters was due to the inaccessibility of the ducts. He had tried Pawlik's method five years before, but without satisfactory results. Subsequently he had made an opening into the bladder in order to reach the ureteric openings directly. He had often been able to detect an enlarged ureter by palpating it through the rectum, especially during pregnancy. He had found no difficulty in compressing the ureter through the rectum by the method which he had devised, but was unable to keep up pressure long enough to secure practical results. It could be compressed by introducing a prostatic catheter into the bladder and pressing its convex side against the pelvic wall, while the hand, or a proper instrument, was inserted into the rectum.

Dr. H. T. Byford, of Chicago (a guest of the society), said that he had succeeded in palpating the ureters in one hundred cases by a new method, which consisted in carrying the finger outward from the cervix uteri as a center, and pressing firmly against the vaginal roof until a cord was felt, which was then traced downward. In introducing the catheter he relied upon the touch alone. The ureter, or inter-ureteric ligament, having been felt through the anterior vaginal wall, the catheter was passed into the urethra and slipped backward and forward over the inter-ureteric ligament until a small ridge was discovered. This was situated at the opening of the ureter, and into it the point of the instrument could be made to glide with a little manipulation.

Dr. W. H. Baker, of Boston, thought that considerable practice was necessary in order to palpate and catheterize the ureters. He had made repeated trials before he had been successful. It was often important to decide whether the ureters were diseased or not before performing cystotomy for inflammation of the bladder. He had met with a case of malposition of the ureter, which opened near the meatus instead of into the bladder. He had been successful in restoring the parts to their natural relations with each other, so that the ureters had their outlet into the bladder, as in the normal anatomy.

Dr. H. C. Coe, of New York, described several cases in which he had discovered ureteritis post mortem, the affection being due to obstruction of the ureter from the pressure of perimetric adhesions or indurations, and not to an extension of inflammation from the bladder. In each instance there was pyelitis or pyonephrosis on the affected side. At an early stage of the condition it might have been accessible to direct treatment by means of catheterization. In no case was there complete obstruction, hence the ureter was always hypertrophied more than dilated.

Dr. B. McE. Emmet, of New York, referred to Dr. T. Addis Emmet's methods of inspecting the mouths of the ureters through an artificial fistula in the bladder. The canals could then be treated directly if necessary, although in most cases the symptoms were doubtless due to extrinsic causes, or to an inflammation of the bladder.

Dr. Kelly, in closing, said that he had tried the method recommended by Dr. Byford, but had found it less practicable than Pawlik's. He believed that many cases of urinary trouble after laparotomy were due to compression of the ureters by inflammatory indurations.

**The Cause and Treatment of Urethrocele.**—Dr. T. Addis Emmet, of New York, contributed a paper with this title, for an abstract of which see page 449.

Dr. Priestley, of London, said that he had written a paper on urethral cysts, or urethrocele, several years before, and had recently had a discussion with Dr. Emmet on this subject. He had seen many cases, some of which were not of traumatic origin. In one instance the supposed urethrocele proved to be a sebaceous cyst in the urethro-vaginal septum, which projected from the vaginal orifice and discharged sebaceous material through the urethra.

Dr. A. J. C. Skene, of Brooklyn, criticised the writer's pathology. There were two distinct features to be considered —prolapse and laceration—which were separate and referable to different causes. Dr. Emmet had stated that urethrocele was confined to the lower portion of the canal, whereas in the speaker's experience it was most commonly due to a downward dislocation of the entire urethra, although the sacculation might indeed be confined to the lower third. This dislocation was due to the tearing away of the urethra from the pubic symphysis, which was by far the more common accident during labor. Transverse or longitudinal laceration from this cause must be more rare than Dr. Emmet affirmed, at least the speaker had never been able to find it in his post-mortem examinations of subjects who had died immediately after labor, dislocation of the entire canal being the rule. He did not see what was accomplished in these cases by making a button-hole; it might be useful in cases of sacculation, but not when the entire urethra was displaced. It was no more than just to state that this lesion had been clearly described by a former fellow of the society (Dr. Bozeman) in a paper read several years ago, although he might not have suggested this operation as a cure for it.

Dr. W. T. Lusk, of New York, said that he had tried the button-hole operation in the case of patients who had been long under treatment for vesical trouble, and had been surprised at the successful results. It was applicable to a limited class of cases. He was inclined to leave the fistula permanently.

Dr. H. A. Kelly, of Philadelphia, alluded to cases in which

Dr. Skene Keith had performed the operation successfully. It was important to distinguish real from false urethrocele. Since the wall of the urethra, in passing under the symphysis, moved through a smaller arc than that of the vagina, the latter would naturally be the first to become prolapsed.

Dr. J. Duncan Emmet called attention to the wide difference between a urethrocele, which involved the entire urethra, and sebaceous cysts which were situated in its wall. In reply to questions by Dr. Engelmann, of St. Louis, he stated that if a patient was perfectly relieved by the button-hole operation, urethrocele was not likely to recur after the fistula was closed, unless there was a fresh injury to the urethra.

**The Treatment of Pelvic Abscess.**—Dr. R. Stansbury Sutton, of Pittsburgh, Pa., read a paper with this title, in the beginning of which he explained that his paper was limited to a consideration of abscess following a pelvic cellulitis, of either puerperal or non-puerperal origin. Abscesses might be septic or aseptic. Parametritis might follow gonorrhœal or other septic infection, laceration of the cervix, etc. In some instances it seemed to be idiopathic. The prophylactic treatment consisted in regulating the bowels, giving hot injections and antipyretics, and applying first ice-bags to limit inflammation, and subsequently hot poultices to promote suppuration. If an abscess formed, it should be explored by the aspirating-needle as soon as fluctuation was distinct, then opened freely and drained. Gynæcologists usually met with chronic abscesses—hard, immovable masses in the pelvis—which occasionally discharged pus, usually into the rectum. If they opened into the vagina, recovery was almost certain to follow. Mr. Tait had shown that when the abscess rose above the pelvic brim it could be reached and drained by laparotomy. The most difficult cases to cure were those in which there were old sinuses. Under these circumstances the walls of the sac might be scraped with a curette and an antiseptic fluid injected. If it communicated with the rectum, the patient should be etherized, the rectum explored, and a catheter introduced into the opening, if it could be found. After dilating the opening, the operator should again introduce the catheter and irrigate with bichloride solution (1 to 1,000) at intervals of a few days. Some cases were incurable.

Dr. William Goodell, of Philadelphia, said that he had never met with a pelvic abscess of gonorrhœal origin; he had found pus in the tubes and ovaries from this cause, but not a true abscess. Sepsis was a common cause. Cases occurring in virgins were nearly always due to suppression of the menses from taking cold. He was accustomed to open abscesses by boring through the tissues with a pair of scissors, and then to dilate the opening and introduce a drainage-tube. If the abscess had opened into the rectum and the fistula was accessible, he inserted a bent probe into the sac, and, if he could feel its end in the vaginal vault, made a counter-opening and introduced a drainage-tube as before. He would not dilate the rectal opening, as gas and fæcal matter might then enter the sac. Tait's plan of reaching the abscess from above was a good one, but there were cases in which the abscess was small, the opening high up in the rectum or bladder, and the sac never large enough to need to be opened by laparotomy. Under these circumstances the speaker had sometimes reached and opened the sac from above and then introduced scissors into it, and brought their points through the vaginal roof, thus establishing drainage. In case there was a fistula in the groin he also sought to establish a counter-opening in the vagina.

Dr. Parrish, of Philadelphia, said that he had operated on several cases a few weeks after labor. He did not use the aspirator except for diagnostic purposes, as it was apt to increase the inflammatory action. He opened through the vagina, if possible, following Hilton's method of pushing a grooved director into the sac and introducing a dilator on it. He had in three instances opened the abscess extraperitoneally by performing laparotomy and stripping up the peritonæum from the pelvic wall until the abscess was reached. Drainage was quickly followed by recovery.

Dr. T. Gaillard Thomas, of New York, did not agree with the author as regarded treatment. There were three varieties of pelvic abscess—viz., the pus might be confined between the folds of the broad ligaments, it might be between the vagina and peritonæum behind the uterus, or in the areolar tissue between the bladder and the uterus. Another variety might be due to pyosalpinx, and was often unsuspected. Laparotomy might sometimes be avoided by draining a pyosalpinx. The sooner a pelvic abscess was opened, the better. The speaker's views on this subject had undergone a change. If a tumor of inflammatory origin had existed in the pelvis for a month or more, whether fluctuation existed or not, it should be explored, because it might be filled with pus. There was a great difference between puerperal and non-puerperal abscesses; the former were apt to travel rapidly and open through the abdominal wall, while in the latter the conditions were exactly the reverse. He who waited for constitutional symptoms to appear would wait very long. There were only two passages for the safe artificial evacuation of pus—namely, through a vaginal opening and through one in the abdominal wall. It should never be allowed to discharge into the rectum. The speaker had seen two cases of death from this cause. He was accustomed to reach these abscesses by dissecting off the posterior vaginal wall, thus getting nearer to them than he could by any other channel. The sac was then opened, the opening dilated, and a drainage-tube introduced. If the abscess was anterior to the uterus, he separated the anterior vaginal wall as if about to perform vaginal hysterectomy. Dr. Mathews Duncan had described movable abscesses that simulated subperitoneal fibroids. The speaker always opened abscesses with a pair of pointed scissors, after making a large opening in the vagina, boring rather than cutting; he then introduced a Goodell's dilator to enlarge the opening and finally inserted a soft-rubber tube, the lower end of which was split in two, the two halves being stitched to the edges of the wound. He irrigated the cavity with a two-and-a-half-per-cent. solution of carbolic acid, using bichloride (1 to 4,000) if septic symptoms developed. In performing laparotomy for pelvic abscess, provided he found it adherent to the abdominal wall, he introduced an old-fashioned exploring-needle, passed a bistoury along it, and inserted a drainage-tube. If there were no adhesions, he made an incision along Poupart's ligament, pushed the peritonæum forward, and opened the abscess with the finger, then inserted a tube and washed out the sac.

Dr. W. Gill Wylie, of New York, did not accept the author's view of the pathology of these cases. He thought that cellulitis had been assigned too important a place in gynæcology. So long as we regarded pelvic abscesses as situated mainly in the pelvic connective tissue we should continue to open them *per vaginam*. Nine out of ten of such abscesses resulted from salpingitis and oophoritis, as had been proved by laparotomists. If the abscess was of tubal origin, unless the patient's condition was too bad we should open the abdomen and remove the cause of the suppuration. Drainage *per vaginam* might relieve the acute symptoms, but it did not cure. If the patient's condition was threatening (as shown by fever and sweating) and the abscess pointed in the vagina, he would open it through the fornix, but even then he preferred to open the abdomen in order to see more clearly where to open the sac *per vaginam*. He preferred a median to a lateral incision in the abdominal wall.

Dr. Polk said that the question of the treatment of pelvic

abscesses depended entirely upon a proper appreciation of their pathology. If they were derived from the tubes, then it was necessary to perform laparotomy and to extirpate the tubes, and thus to effect a radical cure. The case was different when an abscess was extraperitoneal. The same question had lately been agitating general surgeons. Perityphlitic abscesses were formerly supposed to be limited to the cellular tissue; now it was known that they were nearly always due to perforation of the appendix. If the perforation took place into a mass of adhesions, the abscess might be secondarily extraperitoneal. The speaker formerly supposed that all pelvic abscesses resulted from cellulitis, but, on performing laparotomy in such cases, he invariably found a tube distended with pus, or else such a tube with pus encysted around it. By removing the tube and washing out the cavity the patient was cured. Nearly all pelvic abscesses were of tubal origin, and the treatment for them was laparotomy. Wherever pus pointed, there was the best place to open the abscess.

Dr. H. T. Byford rose to defend the method of treatment recommended by his father, Professor W. H. Byford—*i. e.*, to open pelvic abscesses *per rectum*. He did not believe, moreover, that these were all of tubal origin, and cited a case to support his opinion. It had been said that there were practically only two avenues for the evacuation of pus—through the vaginal and through an abdominal incision; this could not be absolutely maintained. In every case it was best to open the abscess in such a way that it would have the most direct outlet, even if this was through the rectum or the bladder. If the abscess pointed into the rectum, it would burst there; in most of the speaker's cases this had been their course, and the majority had healed. The attendant frequently failed to observe when this occurred; the patient might see a little pus in the stools, and then recovered rapidly. The speaker thought that more abscesses healed after rupturing into the rectum than after discharging through the vagina.

Dr. Kelly cited two cases of pelvic abscess in which the patients had high temperature and were much prostrated. In one case he opened the sac with Paquelin's cautery, evacuating several ounces of fœtid pus, and irrigated the cavity, and the patient made a rapid recovery. In the second case the abscess pointed in the left lateral fornix. It was opened with scissors, and a pint of pus was evacuated; the cavity was irrigated and packed with iodoform gauze. The speaker thought that this treatment was quite as successful as laparotomy; in fact, laparotomy was too dangerous in many cases, as an attempt to tear out the abscess would lead to the formation of a fæcal fistula.

Dr. Johnston compared the pathology of pelvic inflammation to that of acute lobar pneumonia. In both instances the exudation might be absorbed or suppuration might result. In every specimen that he had examined the speaker had found disease of the epithelial structures—*i. e.*, of the ovary and tube—which accounted for the persistence of the abscess. He had frequently examined and seen Tait operate in cases which were pronounced to be chronic cellulitis, and pyosalpinx was the condition always found on opening the abdomen.

Dr. Baldy, of Philadelphia (a guest of the society), said that, excluding cases of hæmatocele that had undergone suppuration, all chronic pelvic abscesses orginated in the tube or ovary. He favored laparotomy, as opposed to vaginal incision. He had often found an ovarian cyst complicating the abscess; hence there could be no permanent cure in such a case by simply tapping. He did not approve of making a counter-opening in the vagina after performing laparotomy. Martin had stated that in such cases pus continued to be discharged for months, and a mass remained permanently in the pelvis.

Dr. Thaddeus A. Reamy, of Cincinnati, thought that there were other ways of treating abscesses besides opening the abdomen. He cited a case in which a tubal abscess discharged through the uterus, as well as through an artificial opening in the vagina; the patient recovered, and subsequently bore children. There was danger that the brilliant results obtained by abdominal surgery would lead us to attempt what was unjustifiable.

Dr. Sutton, in closing, reiterated his statement that there were two channels by which septic matter might be transmitted from the uterus to the surrounding tissues—the tubes and the lymphatics. It was conceivable that a tube distended with pus might rupture at its lower border and discharge its contents between the layers of the broad ligaments, just as the blood escaped after rupture in extra-uterine pregnancy. A pelvic abscess would thus be formed, which might point in the vaginal roof in the usual manner. The chapter on pelvic abscess in text-books on gynæcology should be rewritten.

**Ovariotomy Performed Twice on the Same Patient.**—Sir Thomas Spencer Wells, Bart., of London, read a short paper with this title in which he said that he had, during the last three months, twice removed ovarian tumors for the second time from the same patient. The first patient was a widow, forty years of age, upon whom ovariotomy had been performed ten years before. At the end of that period a second cyst was successfully removed. The second patient was a married woman, thirty-two years of age, sterile, from whom an ovarian cyst had been removed eight years before. The old cicatrix was excised. The patient made a good recovery.

The subject of secondary ovariotomy should be especially interesting to Americans, since Atlee had been the first to perform such an operation in 1861. The reader's first case had occurred in 1862. Reference was made to a recent paper by Martin, of Berlin. It was important to distinguish between cases of true secondary ovariotomy and laparotomies undertaken for intestinal obstruction, the cure of hernia, hysterectomy, or the completion of a former imperfect operation subsequent to the original operation. The author had had fourteen true cases, excluding his first ninety-nine operations. When one ovary was left during ovariotomy, there was only about one chance in fifty that it would form a cyst.

Dr. Thomas regarded the paper as one of great practical value. In his own experience he could recall six of true secondary ovariotomy. In some cases he had met with great difficulty at the second operation, especially where peritonitis had followed the first. The removal of the tumor itself had not been especially difficult. He had never been able to find any trace of the first ligature. The lesson to be drawn was, that if there was any good excuse for removing the second ovary, it was better to do it. If the ovary was not perfectly healthy, or there was a strong desire on the part of the patient to avoid the risk of a subsequent operation, he had been accustomed to remove it. He had been surprised to hear the author express the opinion that there was only one chance in fifty of the remaining ovary becoming diseased, since, in his own experience, the liability was much greater.

Dr. Goodell said that Dr. Thomas had expressed his views exactly. He could recall two cases in his own practice, one of which had terminated fatally. He would remove the other ovary if the patient was approaching or had passed the menopause. Patients had often requested him to remove both ovaries.

Dr. James B. Hunter, of New York, cited three cases in which he had performed ovariotomy for the second time in the same patient. The question of the removal of the second ovary was a very important one. He had often hesitated, especially in the case of women before the climacteric. In two instances in which the ovary seemed to be diseased he had given the women

the benefit of the doubt; they had subsequently borne children. Sufficient data had not yet been collected.

Dr. Kelly said that Sir Spencer Wells's own statistics proved the advisability of sparing the other ovary, since, of the women who recovered, only 13 required a subsequent operation, and 2 died, while 117 of the others bore 223 children after one ovary was removed.

Sir Spencer Wells said that the question raised by Dr. Thomas was a very important one. If the remaining ovary was somewhat enlarged and showed a few ovisacs on its exterior, many operators would be in favor of removing it. The speaker had sometimes done so, and sometimes he had not. He could recall several such cases in which young women had borne children. There was a slight additional risk in removing the second ovary. After the age of child-bearing there was less doubt as to the course to be pursued. There was also a moral question involved—*i. e.*, whether by removing a healthy ovary we ought to encourage women in the desire to avoid bearing children.

**The New Cæsarean Section.**—Dr. William T. Lusk, of New York, read a paper with this title in which he said that several years before he had made a special study of Cæsarean section, and he believed that the operation would eventually be accepted as a practicable and useful one. To Sänger we owed the present improvements in the technique of the operation; this surgeon has, in fact, given it its present prominence. Of course, his original details had been considerably modified. Porro's operation was now restricted to a small class of cases.

The following cases had occurred in the author's practice:

Case I.—The patient had a Nägele pelvis, with extreme transverse contraction. Craniotomy involved too great a risk. The operation was performed in an hour and a quarter, and the patient's temperature only once rose to 102·8° F., falling to 100° after an evacuation of the bowels. A pelvic abscess subsequently developed, but she made a good recovery, and both mother and child were then well. According to Dr. Harris, this was the second successful operation in New York, the first having been performed in 1838.

Case II.—In this instance there was advanced epithelioma of the cervix, involving the vagina, bladder, and rectum. The woman was in very bad condition, and craniotomy would have been fatal. The operation was undertaken in behalf of the child, and lasted a little over an hour. The child was saved and had been well ever since its birth. During the operation the patient became very blue, but this was attributed to the fact that, after the rubber ligature had been applied to the uterus, the house-physician administered a dose of ergot hypodermatically, which necessarily affected the general vascular system instead of the uterus. On the tenth day she had mania, which continued until her death on the sixty-second day. Death was due to the disease.

Case III.—The patient, aged twenty-six, was very anæmic on her entrance into the hospital, labor having begun six days and a half before. Her pulse was 130, and her temperature 102° F. She had a rhachitic pelvis, with an anterior conjugate of two inches and a half. There was no hope of saving her life by craniotomy, and, as the fœtal heart could still be heard, it was decided to perform Cæsarean section. On removing the child the decidua was found to be in a sloughing condition. The pulse and temperature declined immediately after the operation. Then there was slight fever for a few days. On the fifth day the house physician, acting on his own authority, removed the abdominal stitches, so that the entire wound gaped. Fortunately, the patient escaped with a pelvic abscess. On the ninth day she developed double pneumonia and was very ill for several weeks, after which she had thrombo-phlebitis, but subsequently recovered. The child died of trismus thirty-six hours after delivery.

A few days before, the author had performed craniotomy in a case similar to the last, the patient dying ten days after the operation, probably from sloughing of the decidua.

On general principles it could be affirmed that if the anterior conjugate was two inches and a half, craniotomy entailed as much risk as Cæsarean section, unless the transverse diameter was favorable. With a diameter of three inches and a half delivery could be effected by means of the forceps or the natural forces. If the diameter was three inches and a quarter, premature labor might be induced, or the spontaneous expulsion of a small child was possible. A skillful operator might perform version. With a pelvis varying between two inches and a third and three inches and a third there was still great difference of opinion as to the proper course to adopt. If after several hours the head remained above the brim, the choice lay between craniotomy and Cæsarean section, and the recent improvements in the latter operation led us to ask if it was not preferable to the former. In a letter received from Dr. Harris in 1865, he stated that in Germany the mortality after Cæsarean section was twenty-seven per cent. Since the use of antiseptics it had been reduced to eight or ten per cent. The total mortality in one hundred and thirty cases recorded up to date was twenty-seven per cent. From these Wyder would exclude cases in which the unskillful use of instruments or septic infection had already destroyed the chances of recovery. Craniotomy in skillful hands was not so dangerous as Cæsarean, section as the same writer had shown. The facts should be clearly stated to the patient and her friends.

In cases of cancer or other morbid growths in the pelvis it was impossible to formulate rules; the operator must assume the responsibility. In America fourteen out of twenty-three patients had recovered, or forty per cent. Many of the operations had been performed under unfavorable conditions. It was very important to have favorable surroundings and skilled assistants, and to observe strict antiseptic precautions. Every physician should be familiar with the subject of pelvimetry, as he could then detect deformities at an early stage, and thus secure to the patient the advantage of an early operation. Before beginning the operation the fœtal heart should be auscultated.

The author described briefly the details of the operation, and said in conclusion that if the patient's condition at the outset was fair, and the operation was performed in a hospital, the prognosis was good; but if she was operated upon in her own home, and did not receive proper nursing subsequently, her recovery must be regarded as little short of a miracle.

Dr. Kelly reported the following cases occurring in his own practice:

Case I.—On May 17, 1888, he was called to see a woman who had been two weeks in labor, the membranes having ruptured on the tenth day. Her hygienic surroundings were bad. She was about four feet six inches in height, and had a justo-minor pelvis with an anterior conjugate of two inches and a half or two inches and a quarter. On making a vaginal examination, it was found that the pelvic tissues were so infiltrated that the head could not be felt. The operation was completed in thirty-five minutes, owing to the dangerous condition of the patient. Some difficulty was encountered in removing the child, as its head was partly engaged. It died of icterus at the end of a week. The mother had a tedious convalescence; at the end of the first week symptoms of suppuration developed, and on examination the lower uterine segment was found to be dilated by decomposed blood-clots. Subsequently pus was discharged through the uterine wound, and the patient now menstruated through a fistulous opening in the abdominal wall. She was quite well.

Case II.—The patient had previously borne two children, one being dead, the other living, but small and feeble. Cæsarean section was performed, instead of craniotomy, at the request of the patient herself, who desired that the child should be saved. The mother had phlebitis on the fourteenth day, but made a good recovery, and was well, as was also the child.

Dr. H. J. Garrigues, of New York, said that he had performed the operation twice, the first time unsuccessfully, in 1882, upon a patient with a kyphotic pelvis, who was nearly dead from ante-partum hæmorrhage at the time of the operation. The second operation had been performed a few months before under favorable circumstances and had been entirely successful, both the mother and child being now alive and well. He agreed with the author that one could hardly hope to be fortunate in the case of private patients. He did not agree with him in regard to Sänger's claims, since the method ascribed to him had been employed before he had written on the subject. When the speaker performed his first operation he did not know that such a man as Sänger existed. He would not be understood as seeking to depreciate the value of the present operation, but he simply wished to call attention to the fact that the only suggestion original with Sänger was to remove a strip of muscular tissue from the edge of the uterine wound. Even this procedure was unnecessary. Two American operators (Duncan and Baker) had employed the same form of suture which was now used, before Sänger described it.

Dr. Engelmann said that the reason why the statistics of craniotomy were relatively so bad in foreign hospitals was because the patients were often brought in after they had been for many hours in the hands of midwives, whereas, in the cases of Cæsarean section, the patients were under observation for some time before the operation and were in better condition.

Dr. Polk said that he had had two fatal cases of Cæsarean section within the past four months. The first patient was moribund at the time of operation, the pelvis being filled with a cancerous mass. Her pulse was 160. She died at the end of twenty-four hours, but the child lived. In the second case the patient, who had a kyphotic pelvis, had been under observation for three or four weeks. The operation was performed six hours after labor began. Forty-eight hours after, she died of septic peritonitis.

(*To be continued.*)

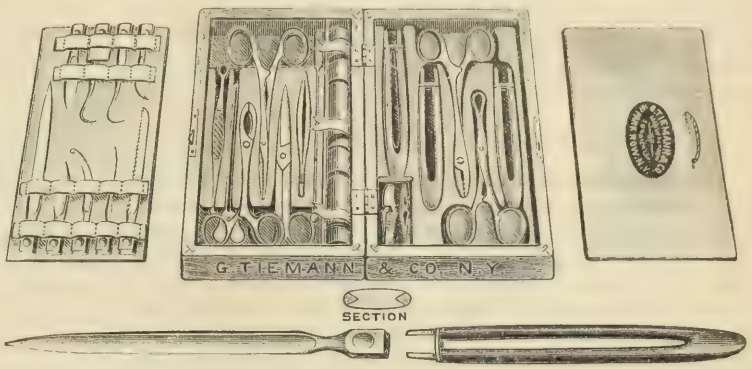
## New Inventions, etc.

### A COMPACT OPERATING CASE AND IMPROVED INSTRUMENT HANDLE.

By F. C. Husson, M. D.

I wish to call attention to a new instrument handle which was lately manufactured in Paris by Lüer, and which has been modified and improved by Messrs. Tiemann and myself. The handle is made of hard rubber, and tapers gradually so that the end may be used in separating the tissues. The handle is easily cleansed, all parts being readily accessible, which is not the case with any separable handle with which I am acquainted. There is no "patent" catch to get out of order, and a little firm pressure in the center permits of the introduction or removal of the instrument.

Into this handle a great variety of instruments, such as amputating knives, saws, etc., may be made to fit. I have had Messrs. Tiemann & Co. prepare an operating case fitted with such instruments, and it is perhaps the most complete and compact little case yet made. It is so small that it can easily be slipped into the coat-pocket, the dimensions being $7\frac{1}{2} \times 4 \times 1\frac{1}{2}$ inches, and it contains one amputation blade, six inches long; two scalpels, one tenotome, one probe-pointed curved bistoury, one sharp-pointed curved bistoury, one saw, one tenaculum, one aneurysm needle, three hard-rubber handles to fit the above-named instruments, besides which there are a double sharp curette, two Péan artery forceps, one bull-dog artery clamp, two steel serres-fines, one Abbe needle-holder, one pair of scissors, one volsella, with French lock, so that the instrument may be taken apart and used as a pair of sharp retractors; one thumb forceps, a grooved director, probes, half a dozen assorted needles, and three hard-rubber cases for silk and needles. All the instruments can be taken apart and thoroughly cleaned.




The woodcut so clearly shows the new handle and the case that further description is unnecessary.

## Miscellany.

**An Army Medical Board** will be in session in New York city, from May 1 to May 31, 1889, for the examination of candidates for appointment in the medical corps of the United States army, to fill existing vacancies. Persons desiring to present themselves for examination by the board will make application for the necessary invitation to the Secretary of War, before April 1, 1889, stating the place of birth and the place and State of permanent residence, and inclosing certificates based on personal knowledge, from at least two persons of repute, as to American citizenship, character, and moral habits. Testimonials as to professional standing, from professors of the medical college from which the applicant graduated, and of service in hospital from the authorities thereof, are also desirable. The candidate must be between twenty-one and twenty-eight years of age, and a graduate from a *regular medical college*, evidence of which, his diploma, must be submitted to the board. Further information regarding the examinations and their nature may be obtained by addressing the Surgeon-General, U. S. Army, Washington, D. C.

**The New York Academy of Medicine.**—At the next meeting of the Section in Pædiatrics, on Wednesday evening, the 26th inst., Dr. G. B. Fowler will read a paper on "Diabetes Mellitus," and Dr. S. Baruch will read a paper on "Enuresis."

At the next meeting of the Section in Obstetrics and Gynæcology, on Thursday evening, the 27th inst., Dr. A. H. Goelet will show a perineal retractor for the dorsal posture, with an elevator for the anterior vaginal wall, Dr. J. P. Tuttle will report a case of extra-uterine pregnancy in which the fœtus was expelled intact by the rectum, Dr. R. A. Murray will show specimens from a case of hæmatoma of both ovaries, and Dr. H. C. Coe will read a paper entitled "Immediate Application of Forceps to the after-coming Head in Cases of Version."

**Supplemental Respiration.**—Dr. William Ward, of Washington, asks us to state that his article on this subject, as published in the "Transactions of the Ninth International Medical Congress," was read by title, and is in an unfinished state; also that he intends to complete it and to furnish every member of the Congress with the amended version. Dr. Ward requests other medical journals to copy this notice.

**The Health of Michigan.**—According to the State Board of Health's circular for the four weeks ending December 1st, diphtheria was reported during that period from twenty-six places, scarlet fever from forty-one, typhoid fever from twenty-three, measles from six, and small-pox from seven.

## THERAPEUTICAL NOTES.

**Codeine in Abdominal Pain.**—Dr. T. Lauder Brunton ("Brit. Med. Jour.," June 9, 1888) considers it not improbable that this alkaloid, which has almost fallen into disuse as an anodyne, will again come into vogue. He finds that its use can be pushed further than that of morphine without causing drowsiness or impairing the digestion. He was led to employ it especially in cases of abdominal pain by reflecting upon certain old experiments in which it wholly prevented the pain of arsenical poisoning in dogs. In cases of long-continued enteralgia, he begins with a dose of half a grain in the form of a pill, increasing to a grain, and repeats the administration as often as may be necessary. In cases of the intense localized pain due to an overloaded cæcum, with the suspicion of inflammation, the grain dose gives prompt relief, and is to be repeated whenever the pain returns in any considerable severity.

**Iodine Applications in the Treatment of Ascites.**—Dr. Rivadeneyra ("Corresp. méd.," 1887, No. 241; "Dtsch. Med.-Ztg.," Aug. 20, 1888) reports good results in the treatment of ascites, not dependent on grave visceral disease, from applications of tincture of iodine to the abdomen. He applies it in stripes about an inch wide and an inch apart, and repeats the application as soon as exfoliation begins. He gives the notes of two cases of ascites thus treated, both of which were associated with malarial disease. In one of them the ascites was cured in fifteen days, and in the other in twenty days.

**Aluminium Acetate as a Resolvent.**—The antiseptic property of this salt is well known. According to Dr. Grosch ("Berlin. klin. Woch.," April 30, 1888; "Gaz. hebd. de méd. et de chir.," Sept. 21, 1888), it appears to have resolvent properties also. He has used a twenty-per-cent. solution in the abortive treatment of furuncles of the external auditory meatus. The meatus is irrigated with the solution every hour, and a wad of cotton wet with the same is inserted. Grosch says that the pain begins to diminish in four hours, and wholly disappears in eight hours. This effect he attributes to a diminution of the engorgement of the tissues, whereby pressure upon the terminal nerve filaments is reduced.

**The Administration of Creasote.**—The "Deutsche Medizinal-Zeitung" recommends the following formula:

| | |
|---|---|
| Creasote | 1 part; |
| Tincture of gentian | 5 parts; |
| Alcohol | 15 " |
| Tokay wine | 60 " |

A tablespoonful to be taken twice a day, in a glass of milk.

**An Ointment for Seborrhœa Sicca of the Scalp.**—Vidal ("Progr. méd."; "Memorabil.," xxxii, 8) recommends the following formula:

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|---|---|
| Precipitated sulphur | 15 parts; |
| Castor-oil | 50 " |
| Cacao butter | 12 " |
| Balsam of Peru | 2 " |

The sulphur and the castor-oil are to be mixed thoroughly, then the cacao butter is to be added with the aid of a gentle heat, and finally the balsam. The ointment is to be rubbed into the hairy scalp every morning and evening.

**An Ointment for Burns.**—The "Union médicale" credits Gomez de la Mata with the following formula:

| | |
|---|---|
| Iodoform | 80 parts; |
| Extract of conium | 40 " |
| Carbolic acid | 1 part; |
| Rose-ointment | 600 parts. |

## ANSWERS TO CORRESPONDENTS.

*No. 244.*—We think that a thoroughly competent male nurse, such as you describe, could obtain reasonably constant employment in New York. The usual compensation is from $25 to $30 a week, according to the nature of the case.

*No. 245.*—At the Presidio, San Francisco.

*No. 246.*—Ehrlich's staining solution (which, we presume, is what you mean) is prepared as follows: Cover the bottom of a flask with finely powdered gentian-violet to the depth of about two finger-breadths; then fill the flask with a saturated solution of aniline (made by stirring 4 parts of aniline in 100 of distilled water, and separating the excess of aniline by filtration). The mixture in the flask is to be shaken briskly at intervals, and in twenty-four hours the staining solution is ready. The section to be examined, having previously been immersed in absolute alcohol, is placed in this solution for a few minutes, when it becomes very deeply stained. It is then transferred to a solution of 1 part of iodine and 2 parts of potassium iodide in 100 parts of distilled water, in which it is left for from a minute to three minutes. It is then placed in absolute alcohol, where it becomes almost colorless, while the alcohol is colored purple-red. Finally it is cleared in oil of cloves and mounted in xylol, balsam, or glycerin.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

## Original Communications.

# ENUCLEATION OF THE EYEBALL DURING PURULENT PANOPHTHALMITIS.

*Twelve Consecutive Enucleations of the Eyeball during Purulent Panophthalmitis, in all of which the Course of Healing was uninterrupted by Unfavorable Symptoms.**

BY JOSEPH A. ANDREWS, M. D.,
OPHTHALMIC SURGEON TO CHARITY HOSPITAL, NEW YORK, ETC.

THE text-books on ophthalmology, reflecting the warning of Albrecht von Graefe, pronounce against enucleation of an eyeball which is the seat of acute purulent panophthalmitis, von Graefe's declaration against the operation having been based upon his experience in two instances in which meningitis and death had followed his excision of the globe. Since von Graefe's time, enucleation of the eyeball has been followed by death from purulent meningitis in a few instances only, recorded in ophthalmic literature. In these cases the enucleated globe was either in a state of purulent panophthalmitis, or the seat of non-purulent inflammation, or the excision was undertaken for the removal of an orbital or intra-orbital growth.

Therefore, that enucleation of the eyeball may lead to meningitis and death is a fact which can not be disregarded.

In the majority of the cases on record the conclusion seems justified that the meningitis was due to infection of the orbital wound after enucleation, the infection having spread through different predetermined paths to the cranial cavity. On the other hand, some of the cases leave the reader in doubt as to whether the meningitis was or was not already excited before the enucleation was undertaken, and the data so far do not satisfactorily answer this question one way or another, although the pretty uniform first appearance of symptoms pointing to intracranial disease in twenty-four or forty-eight hours after excision does make the idea of coincidence somewhat doubtful.

I have enucleated twelve globes during purulent panophthalmitis. In three of the cases the suppuration was just beginning; in two cases purulent panophthalmitis had followed a violent blow on the eye, the eyeball in each case having been laid open; the attendant swelling of the eyelids and ocular conjunctiva was very great, and rendered the operation of enucleation embarrassing and difficult; nevertheless, in these two cases, the course of healing was smooth and the patient's sufferings were unquestionably shortened by the operation. In the rest of the cases the suppuration was active, and the swelling of the ocular conjunctiva more or less pronounced, but the healing of the orbital wound was smooth in all of these cases.

In every instance, immediately after the enucleation, the orbit was thoroughly washed out by the aid of a gentle stream from a fountain syringe, with a solution of biniodide of mercury (1 to 20,000); in no case was the compress bandage applied, only a few layers of carbolized gauze having been laid over the empty orbit. The frequency of the washing of the orbit was regulated by the condition of the orbital wound. In the two cases in which there was great swelling of the lids, ocular conjunctiva, and tissues of the orbit, the washing was repeated a number of times during the day by a trained nurse; for I consider it to be essential that this very important part of the after-treatment should be attended to by a cleanly and competent person, since the majority of the cases of this disease occur in a class of persons to a member of whose family it would be unsafe to leave the washing of the orbital wound, in their invariably unclean homes.

The following tables show that the occurrence of meningitis after enucleation is not confined to cases of suppuration of the globe, it having been observed after excision of a globe which was the seat of a non-purulent inflammation; but death, when it did occur in such cases, was due to purulent meningitis, from which we must conclude that the orbital wound was infected at or shortly after the operation. Nevertheless, I can not escape the conviction that it is less dangerous to enucleate a suppurating globe than not to do so.

I have been able to collect only thirty-six cases of death following enucleation. Meningitis and death also followed purulent panophthalmitis when enucleation was not performed; and the same disastrous issue has attended a simple needling of a secondary cataract. But observe that purulent meningitis has resulted in these cases; in both cases the infection was carried from the globe to the brain independently of enucleation; but suppuration of the globe was present in each instance, as in the case of secondary cataract there was suppuration of the corneal wound. Now, no ophthalmic surgeon would hesitate to enucleate an eyeball containing a foreign body which can not otherwise be removed, and yet just such cases have resulted in purulent meningitis and death in consequence of infection of the orbital wound; but no surgeon has declared against enucleation under such conditions, although infection of the orbital wound was the cause of the meningitis in nearly all the cases of death after enucleation for purulent panophthalmitis. It is very evident that thirty-five, or even a hundred, cases would be a very small proportion of the enormous number of enucleations performed since 1863, unless we suppose there has been a fatal issue in many cases not reported. I have endeavored to ascertain the relative frequency of meningitis and death in purulent panophthalmitis with and without enucleation, but I have been unable to obtain figures which would be of much service to us.

In a thousand enucleations by Arlt or his assistants there had not been a single fatal result. D'Oench,* in his report on five hundred successive enucleations of the eyeball, states that the eye was removed in twenty-one cases during panophthalmitis. In some of the cases the inflammation

* Read before the Section in Ophthalmology of the New York Academy of Medicine, November 19, 1888.

* "Archives of Ophthalmology," vol. xvi, 1887. Dr. D'Oench reported that, since the reading of his paper, seventy-eight enucleations had been done at the Ophthalmic and Aural Institute, New York. In eleven cases there had been incipient panophthalmitis, in all of which recovery had taken place without the slightest accident.

STATISTICS OF CASES OF DEATH AFTER ENUCLEATION OF THE EYEBALL.

| # | Author. | Age | Disease. | Condition of the eye at time of enucleation. | When menin gitic symp toms occur'd. | Cause of death. | Remarks. |
|---|---|---|---|---|---|---|---|
| 1 | A. v. Graefe, "Klin. Monatsbl. f. Augenheilk," 1865. | ... | Purulent panophthalmitis. | Purulent panophthalmitis; exophthalmus. | | | |
| 2 | Horner, *ibid.*, 1863, p. 156. | ... | Glioma retinæ, entirely intrabulbar. | Eye free from inflammation. | 3 days after enucleation. | Purulent meningitis. | No inflammation of opticus found at autopsy. |
| 3 | A. v. Graefe, "Arch. f. Oph.," xii, 2, p. 100, 1866. | 6 yrs. | Orbital gliosarcoma (n. opt.) | Exophthalmus; neuro-retinitis; *swelling of optic disc.* | 10 days after enucleation. | Pur. meningitis; gliosarcoma at base of brain (unconnected with orbital growth) suppurating and connected with suppuration in orbit. | Condition favorable for first four days after enucleation; slight febrile action, referable to swelling and purulent infiltration of the fat of the orbit; collapse on fifth day. |
| 4 | Just, "Klin. Monatsblatter f. Augenheilk.," 1872, p. 273 or 253. | .... | Phthisis bulbi. | Eye painful; conjunctiva bulbi dark-red & swollen; sympathetic irido-cyclitis of fellow eye; pus in vitreous of enucleated eye. | 8 days after enucleation. | Death in sopor; no autopsy, but unquestionable clinical evidence of meningitis. | |
| 5 | H. Pagenstecher, "Klin. Monatsbl. f. Augenheilk.," 1873, p. 123. | .... | Left eyeball atrophic; gre'nish-y'llow mass in region of wound; chemosis of conjunctiva bulbi; irido-chorioiditis. | ..... ..... | 24 hours after enucleation of left eyeball. | Purulent meningitis of convexity and base of brain. | Stabbed in left eye six weeks before enucleation; for 14 days before headache, severe headache; pronounced irido-cyclitis. At autopsy the right eye was found infiltrated; no connection could be found between the intracranial disease and the wound-surface caused by the enucleation. |
| 6 | Verneuil, "Gazette hebd.," 1874, p. 21. | .... | "Encephaloid" of retina; orbital phlegmon. | ..... | ..... | Diffuse meningitis. | Death occurred on fifth day after enucleation. |
| 7 | Asplund, "Hygeia," 1880, p. 560; Stef. Nagel's "Jahresb. f. 1884," s. 480. | .... | Detachment of retina; no changes in chorioid. | ..... | On day following enucleation. | Purulent meningitis. | Foreign body in eye; eye wounded forty-eight hours before enucleation by chip of iron; optic nerve without changes at autopsy. |
| 8 | Alfred Graefe, "Naturforscherversammlung zu Magdeburg," 1884. | .... | Purulent panophthalmitis. | Purulent panophthalmitis. | On day following enucleation. | Purulent meningitis; no thrombosis. | Eye was enucleated under antiseptic precautions, on same day in which purulent panophthalmitis, following cataract extraction, showed itself. |
| 9 | Alfr. Graefe, *ibid.** | | | | | | |
| 10 | Teale, "Brain," vol. ii, p. 423, 1880. | 45 yrs. | ..... | ..... | 48 hours. | Purulent meningitis. | Lens needled for partial cataract, May 24th; on following day corneal puncture opaque; during night of second day, vomiting and pain; cornea sloughed and lens escaped; no changes in optic nerve at autopsy. |
| 11 | Alex. Dyce Davidson, "Trans. Ophthal. Soc. United Kingdom," June 8, 1886, p. 486 (reported by Stephen Mackenzie). | 49 yrs. | Phthisis bulbi (painful). | ..... | On morning of 3d day after enucleation. | Meningitis. | Eye was enucleated under antiseptic precautions; injury of eye four years previous to enucleation; history of case not wholly satisfactory. |
| 12 | Warren Tay and J. B. Lawford, *ibid.*, 1886, p. 482. | 9 yrs. | Purulent panophthalmitis. | Purulent panophthalmitis. | On day following enucleation. | Meningitis. | Penetrating wound of eyeball (recent); optic nerve was found to be normal on microscopic examination; the result of microscopic examinat'n was entirely negative, therefore no clew to the channel by which the infection passed from the eyeball or operation-wound to the basal meninges. |
| 13 | E. Nettleship, "Trans. Ophthal. Soc. U. K.," 1886, p. 446. | 19 yrs. | Purulent panophthalmitis. | ..... | On second day (?) after enucleation. | Meningitis symmetrical. | Gave history of blow on eye, which dislocated lens into anterior chamber; removal of lens followed by purulent panophthalmitis; meningeal appearances seemed to be due to a mixture of old thickening with new inflammation; the intracranial part of each optic nerve showed moderate inflammation of its covering. |
| 14 | Schreiber. See Graefe in "Naturforscherversammlung zu Magdeburg," 1884. | .... | Traumatic purulent irido-cyclitis. | Purulent panophthalmitis. | Not given. | Meningitis. | |

* In this, as in the foregoing case, purulent inflammation had followed extraction of a cataract, and, in order to save the patient the pain of purulent panophthalmitis, enucleation was performed. Death on the sixth day after enucleation, with symptoms of meningitis. Purulent meningitis was present in each case; in the one case the purulent process had extended through the pial sheath of optic nerve to base of brain. Contents of orbit in each case normal.

STATISTICS OF CASES OF DEATH AFTER ENUCLEATION OF THE EYEBALL.—*Continued.*

| No. | Author. | Age. | Disease. | Condition of the eye at time of enucleation. | When meningitic symptoms occur'd. | Cause of death. | Remarks. |
|---|---|---|---|---|---|---|---|
| 15 | Howe, "Naturforscherversamm. zu Magdeburg," 1884. | .... | Phthisis bulbi dolorosa. | ..... | Not given. | Meningitis. | |
| 16 | De Wecker, "Annales d'oculistique," vol. xcv, p. 56, 1886. | .... | Painful total staphyloma of cornea. | No note as to presence of pus in globe. | 24 hours after enucleation. | No autopsy. | Death occurred five days after enucleation. |
| 17 | Hill-Griffith, "Br. Med. Jr.," 1884, vol. ii, p. 1273. Case under care of Dr. Glascott. | 71 yrs. | Rodent ulcer of lids of right eye; globe atrophied. | ..... | ? | Purulent meningitis; base of brain perfectly free from exudation. | Did not rally from effects of operation, and died six days later. |
| 18 | Hill-Griffith, *ibid.* Case under care of Dr. Mules. | 48 yrs. | R. E., pur. panophthalmitis. | ..... | Not given. | Purulent meningitis. | In bad health for some time; no connection found between pus on surface of brain and either the orbit or temporal bone. |
| 19 | J. B. Story. Case of Arthur Ransome, *ibid.* | .... | Purulent panophthalmitis. | ..... | Not given. | Purulent meningitis. | |
| 20 | Braily, *ibid.** | | | | | | |
| 21 | Priestley Smith, "Ophthal. Rev.," 1885. | .... | Large ulc'rat'd sarcoma b'ginning in, but not protruding from, globe. | ..... | ..... | Purulent meningitis. | No details; swelling of orbital tissues, eyelids, and cheek a few hours after enucleation; purulent inflammation of orbital tissues; death forty-eight hours after operation. Erysipelas. |
| 22 | Priestley Smith, "Ophthal. Review," 1885, p. 39. | .... | Large ulc'rat'd sarcoma originating in and protruding from globe. | No de | tails. | Purulent meningitis. | Patient was an old man. |
| 23 | Priestley Smith, *ibid.* | .... | Eye hard, inflamed, and painful, but not obviously suppurating. | No de | tails. | The post-mortem record was orbital cellulitis and meningitis. | Swelling of orbital tissues, eyelids, and cheeks set in within a few hours after the operation, coma followed, and patient died within forty-eight hours. |
| 24 | De Wecker, "Annal. d'oculistique," T. 95, p. 57, 1886. | .... | Eye soft, tender, and painful; sympathetic irritat'n of fellow-eye. | ..... | ..... | No autopsy. | |
| 25 | H. Ström, "Norsk. Mag. f. Lägewid," vol. xv, 4, p. 242, 1885. See Nettleship's paper, "Tr. Ophth. Soc. U. K.," 1886, p. 472. | .... | Inflammatory absolute glaucoma. | ..... | Fourth day after enucleation. | Purulent meningitis. | Patient had chills with headache on fourth day after enucleation, and died nine days later, with symptoms of meningitis. A case of erysipelas was discovered in the same ward. |
| 26 | Katzenstein, Deutschmann's paper, v. Graefe's "Arch.," v. xxxi, 4, 1885, p. 259. | 1 yr. | Purulent irido-cyclitis. | Purulent irido-cyclitis. | About forty-eight hours after enucleation; commencing with vomiting and somnolence. Temperature 39·4° C. | Purulent meningitis; purulent infiltration of pia mater, most pronounced at chiasma, and greater amount of infiltration in left than in right Sylvian fossa. Infiltration of temporal and frontal lobes, and convexity of cerebrum; a few small foci of purulent infiltration on cerebellum; yellowish-gray thrombi in longitudinal sinus; contents and walls of veins of pia mater normal. Sinus of base of brain contains no thrombi; in sinus cavernosus alone are found, on either side of sella, puriform thrombi, which are connected with an extra-meningeal suppuration; this extra-meningeal suppuration is chiefly seen in sheath of fifth nerve on both sides. | Stabbed in right eye ten days before enucleation; eye excised in state of purulent irido-cyclitis; eyeball burst at operation, and purulent contents ran out into orbital wound; orbit freely syringed with two-per-cent. solution of carbolic acid. Death occurred on seventh day after enucleation. Fellow-eye showed venous pulsation. One of the larger vessels in fundus was fringed with white streak; fat of orbital veins, optic nerve, and operation-wound normal; a single *streak of pus passing along sixth nerve* of excised eye, far into orbit. |
| 27 | A. H. Benson, "Ophthalmic Review," 1885, p. 293. | 17 yrs. | Phthisis bulbi with purulent cavity. | Phthisis bulbi dolorosa. | On day following operation. | Purulent meningitis. | Operation under antiseptic precautions; died on eighth day after enucleation. Nerves showing perineurium and interfibrillar prolongations of connective tissue greatly hypertrophied. Sheath of nerve is very much thickened; subvaginal and supravagin'l sheaths contain pus; all this applies particularly to sections taken within orbit, some of them being from a point quite near to the eye, and others close to the foramen. |

* Similar to foregoing case; details not given.

STATISTICS OF CASES OF DEATH AFTER ENUCLEATION OF THE EYEBALL.—*Concluded.*

| No. | Author | Age | Disease. | Condition of the eye at time of enucleation. | When meningitic symptoms occur'd. | Cause of death. | Remarks. |
|---|---|---|---|---|---|---|---|
| 28 | Hoffmann; Deutschmann's paper, in v. Graefe's "Arch.," vol. xxxi, iv, p. 259. | .... | No | details | given. | Meningitis. | |
| 29 | Wordsworth, quoted by Nettleship in "Trans. Oph. Soc. U. K.," vol. vi, 1886, p. 467. | 41 yrs. | Purulent infection of cornea; adherent leucoma. | Saemisch's operation was done about two months ago. | 24 hours (?) after enucleation. | Purulent meningitis at base, passing from chiasma back to groove between cerebrum and cerebellum, and along each Sylvian fissure to upper surface of cerebrum. | Both optic nerves looked normal; their surroundings also looked quite normal, and there was no pus around them. |
| 30 | Mannhardt, Heidelberg Congress, '63. | .... | No | note. | ..... | No post-mortem. | |
| 31 | Lang, "Ophthalmic Review," 1887, p. 179. | .... | Panophthalmitis. | ..... | ..... | Purulent meningitis. | No details given. |
| 32 | Osio, Sajous's "Annual of the Med. Sciences," vol. iii, 1888, p. 83. | ... | ..... | Panophthalmitis. | ..... | Meningitis. | |
| 33 | Lang, "Br. Med. Jour.," vol. i, 1887, p. 1043. | ... | ..... | Purulent panophthalmitis. | ..... | Purulent meningitis. | Death 48 hours after enucleation. |
| 34 | Panas, "La semaine médicale," 9 Mai, 1888. | 67 yrs. | Purulent panophthalmitis. | ... ..... | Not given. | Purulent meningitis. | Patient showed, after enucleation, pleuritic symptoms and general infection. For details of this case, see an article by Panas, "Arch. d'ophthal.," July–Aug., 1888, p. 317. |
| 35 | Galezowski, *ibid.* | ..... .. | | Details not given. | | | Death had resulted after enucleation (no panophthalmitis), in which there was an accidental infection. |
| 36 | O. D. Pomeroy, at the meeting at which this paper was read. | .... | Purulent panophthalmitis. | Purulent panophthalmitis. | ..... | No autopsy allowed. | Patient was an old man; panophthalmitis had resulted from injury to the globe; the patient died comatose on the day after the enucleation. |

Cases in which recovery from meningitis has taken place after enucleation have been published by Snell, Leber, Priestley Smith, Meyhöfer and Vossius.

was just beginning; in two thirds of the whole number there was active suppuration attended with more or less swelling. In all the cases but three the panophthalmitis was of traumatic origin; in two no cause was mentioned, and in one the inflammation was supposed to have been of spontaneous origin. In two cases the eyeball was removed on account of suppuration which had set in after extraction of cataract. In all of these cases except one the course of healing was smooth. In this one case there was great chemosis before the operation, and the cornea had been converted into a yellowish mass. The globe was inclosed in hard lardaceous tissue, making its removal very difficult. When the sclera was incised, thin pus escaped; the globe collapsed and had to be pulled forward with a hook. After the operation the patient had some fever, and an abscess of the upper lid developed. The swelling then slowly disappeared and the result was good. In two other cases the globe was incised, permitting pus to escape, and was removed after the inflammation had somewhat subsided. In still another case the chemosis was so great that no squint-hook could be used. The great majority were discharged after five days, and of those who remained longer the stay was lengthened in some because an attempt was first made to save the eye before enucleation was resorted to.

A discussion on this subject published in the "Transactions of the Ophthalmological Society of the United Kingdom," 1887, reflects the views of some ophthalmic surgeons of extensive experience. The discussion was on Mr. Nettleship's paper.

Dr. Brudenell Carter said he had never met with a case of meningitis consecutive to enucleation of the eyeball, but he had always avoided enucleation during panophthalmitis. His practice in purulent panophthalmitis had been to make free incisions through the sclerotic for the purpose of relieving pain, and to defer anything more than this until the acute inflammation had subsided.

Mr. M. McHardy said he never left a panophthalmitis to run its course unassisted; he almost invariably *enucleated immediately the advent of panophthalmitis was established.* Mr. McHardy related (in this discussion) a case of death following simple incision in a case of acute panophthalmitis. Here may be added, although not a part of this discussion, Webster's case in which meningitis and death had resulted from panophthalmitis consecutive to extraction of cataract, but in which enucleation was not performed.

Mr. Higgins and Dr. Mules were opposed to enucleation in panophthalmitis.

Mr. Gunn expressed his surprise that so many members of the society believed in the danger of enucleation during panophthalmitis. Out of more than a thousand cases of excision of the eyeball that had been performed at Moorfields, in many of which the globe was suppurating, the case now brought forward by Mr. Nettleship was the first traceable to enucleation.

Still another discussion held in the *Société française d'ophthalmologie* ("La semaine médicale," 9 Mai, 1888) interests us in this connection.

Panas said that he had enucleated an eye in panophthal-

mitis; the patient then showed pleuritic phenomena and general infection, and died with symptoms of meningitis. The autopsy showed, aside from interstitial nephritis, the presence of an extensive purulent meningitis, sero-purulent pleuritis, and multiple abscesses of lungs. All of these foci of disease contained the same micro-organisms as the panophthalmitic eye.

This observation proves that a general infection may spread from the eye. Panas, therefore, concluded that we should remove the source of infection as soon as possible.

Dufur had seen good and bad results.

Abadie said: "In panophthalmitis the process is confined to the eyeball. It is by enucleation that the infective material is propagated to the orbital tissue." Abadie favored evisceration instead of enucleation, but said the resulting pain to the patient was very active.

Motais had had two cases of meningitis during panophthalmitis in which no operation had been performed. He favored enucleation.

Gayet agreed with Motais. In sixty to eighty enucleations of panophthalmitic eyes there was only one lethal termination, which, however, occurred in a patient who was infected at the time of the operation.

Meyer was opposed to enucleation in panophthalmitis.

Galezowski had collected cases of death after enucleation in panophthalmitis in the same period in which he had observed only one death after enucleation without panophthalmitis in which there was an accidental infection.

At the meeting of the Section in Ophthalmology of the New York Academy of Medicine, held in May, 1887, in answer to a question addressed to the meeting by myself, Dr. H. Knapp and the late Dr. C. R. Agnew said they were opposed to enucleation in panophthalmitis.

We see, therefore, that experienced surgeons differ on the question of enucleating an eyeball during panophthalmitis.

Now, the number of cases in which enucleation has been followed by meningitis and death is, in proportion to the enormous number of enucleations performed during a period of twenty-five years, extremely small; and as the results show that in a very large number of instances where the eye has been enucleated during panophthalmitis there was practically no reaction, we are certainly justified in believing that the danger of the operation has been overestimated. No matter from which side you view the question, the accidents have been entirely too few in number to establish the rule that an eyeball should not be removed during panophthalmitis.

Some surgeons who are opposed to enucleation in panophthalmitis favor evisceration. Evisceration, as proposed by Alfred Graefe in 1884, has had a varied experience among ophthalmic surgeons. Alfred Graefe proposed evisceration chiefly with the view of diminishing or abolishing the risk of meningitis. His mode of procedure was as follows: The cornea, together with a ring of the sclera from 1 to 2 mm. wide, is removed; the remainder of the globe is then completely emptied of its contents by means of a broad bent scoop, so that only the cup formed by the sclera remains; this is then washed out with an ice-cold solution of corrosive sublimate, and the conjunctiva is drawn together over it with gut sutures. Graefe also maintains that enucleation, undertaken in the presence of panophthalmitis, is apt to be more tedious than after evisceration. Experience is diametrically opposed to this claim. Graefe further contended that, since none of the channels of communication between the eye and the brain are opened in evisceration, the risk of meningitis and sympathetic ophthalmia is much lessened or entirely removed. This contention presupposes knowledge of the channels by which the infection extends from the eye to the meninges. Now, we are by no means positively informed as to these channels. My statistics show that fatal meningitis has been set up by intra-ocular suppuration following a simple needling of a secondary cataract. These statistics further show that, out of thirteen autopsies upon cases of meningitis after enucleation—in which especial attention was directed to the ascertainment by microscopic examination of the channel by which the infection was conveyed to the cranial cavity—in seven the most careful search failed to discover any evidence of inflammation of the optic nerve, and in the majority of the cases the examination, as to answering this question, was negative. In almost every instance the meningitis was of a purulent character, and was as marked at the convexity as at the base of the brain.

Axel Key, Retzius, and Schwalbe have demonstrated the anatomical connection of the arachnoid space of the cranial cavity with the spaces in the sheath of the optic nerve. Although we have in this fact a possible clew to the channel by which infection may be conveyed to the brain, there is very little pathologico-anatomical material to support this connection, in the human being at least. In the animal, experiments have brought out some interesting facts in this connection. Thus Deutschmann showed that when tuberculous pus was introduced into the arachnoid space of rabbits it gave rise to tubercular meningitis, perineuritis, tubercle in the outer and inner sheath of the optic nerve up to the bulbar end, papillitis, and tuberculosis of the chorioid and vitreous. These experiments illustrated descending optic neuritis, and that an infectious inflammation in the cranial cavity may be carried along the optic nerve to the papilla, and even to the uveal tract of the eye. Deutschmann * further demonstrated the opposite course—*i. e.*, descending optic neuritis, in that injections of certain micro-organisms made into the vitreous chamber of rabbits produced chronic irido-cyclitis, purulent infiltration of the vitreous, and papillitis of the infected eye; then interstitial optic neuritis, perineuritis, and purulent infiltration of the pia mater at the base of the cerebrum; further, infiltration at the chiasm, descending neuritis, and perineuritis optica, extending into the papilla and uveal tract of the fellow-eye. It has been shown that the analogy between the conducting channels in the situation in question, in man and rabbits, is so great that these experiments have been applied to elucidate similar pathological conditions in man. Unfortunately, the reports of autopsies in cases of meningitis after enucleation have thus far shown that the optic nerve was the channel along

* V. Graefe's "Arch. f. Ophthal.," xxix, xxx, 3, 4; xxxi, 2.

which the infection was conveyed to the cranial cavity in exceptional instances only, as in the majority of such cases the autopsies have failed to disclose any path of extension whatsoever.

Gifford maintains that his experiments prove that the route taken by micrococci in passing from the eye to the brain is not, as Deutschmann has stated, in the sheaths of the optic nerves, but that, in leaving the infected eye, they pass out of the eye around the *central vessels* to the apex of the orbit, and thence to the cranial cavity, where they were found in the pia mater at the chiasm.

Now, as I have said before, the majority of autopsies failing to disclose any path by which the infection spread to the brain, we are justified in concluding that meningitis after enucleation is only exceptionally due to extension along the optic nerve, and that there must, therefore, be some other path, and it does seem that we should look to the veins for an explanation. The autopsies do not sustain this view; nevertheless, the veins are most likely the paths along which the infection is carried, for we know that absorption might occur through the veins without any change being discoverable in their walls—to wit: Leber's case of meningitis after enucleation, in which case the veins were unchanged in septic phlebitis of the cavernous sinus. In the face of this view I fail to see any advantage in substituting evisceration for enucleation, because septic absorption could take place from the interior of the sclerotic through the open mouths of the trunks formed by the union of the venæ vorticosæ as easily as by the vessels of Tenon's capsule which are imbedded in soft tissues; indeed, I can see only serious disadvantages in the performance of evisceration in panophthalmitis, in that we have the danger of open veins as in enucleation, with the added danger of pent-up pus, and without the decided advantage afforded by enucleation of our being able to thoroughly wash the orbital cavity. Further, evisceration does not, as has been claimed, afford immunity to sympathetic ophthalmia.*

Therefore, as I believe that the veins are the chief channels along which infection is carried to the brain in panophthalmitis, where enucleation has been done, as well as in those cases in which meningitis has occurred, enucleation not having been resorted to, and as evisceration is not a barrier to this disaster, I am disposed to favor enucleation in panophthalmitis. I recognize that in so doing I am but following the general principle of surgery to remove the source of infection, represented in the case under consideration by the suppurating eyeball.

In conclusion, I wish to repeat that I fully appreciate the fact that enucleation of an eyeball involves serious mutilation, and that the operation is not wholly free from danger even when performed with care and under antiseptic precautions; but that I believe the element of danger is best modified, and the fatal issue even averted, by applying thorough antiseptic precautions after the operation. The great point to aim at, therefore, is to *prevent the further retention and absorption of septic matter;* and I believe that this end is best attained by not applying the compress bandage to the lids, and by keeping the wound in the orbit purified by proper drainage and frequent antiseptic injections. With such precautions, panophthalmitis is, it seems to me, not a barrier to enucleation.

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* See report of two cases of sympathetic ophthalmia after evisceration, by Cross, in "Transactions of the Ophthalmological Society of the United Kingdom," vol. vii, 1887, p. 149.

## SURGICAL TREATMENT FOR LACERATIONS OF THE PERINÆUM AND PELVIC FLOOR.*

By W. H. WATHEN, M. D.,
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Professor of Obstetrics and Diseases of Women in the Kentucky School of Medicine; Chairman of the Section in Obstetrics and Diseases of Women, American Medical Association; Ex-President of the Kentucky State Medical Society; Consulting Gynæcologist to the Louisville City Hospital, etc.

I will not consume your time in vague theories to prove the relative value of the so-called perineal body in holding the uterus, etc., in position, or its action as the keystone of an arch, but will confine myself especially to the surgical treatment for lacerations or injuries of the muscular and aponeurotic structures that form the floor or diaphragm of the pelvis. There is probably no other subject in gynæcology about which so much has been said that is of no real value, and hence a relatively simple operation has been made to appear so complicated that it is seldom correctly performed. We will pass by much of this immensity of pseudo-scientific rubbish, and take a practical view of the subject.

The fat in the areolar connective tissue of the perinæum constitutes a valuable part of this structure, just as it does in other parts of the body, but it gives but little strength, and with the muscles and fascia destroyed is of no use in holding the vagina, uterus, rectum, or bladder in their normal positions. But all the perinæum may be lacerated except the muscles and the fascia, and still we may have no displacement of the pelvic organs.

The muscles and the fascia in the perinæum give it strength, and when they are lacerated no operation that does not primarily tend to reunite them is logical, or will be followed by permanent good results. Prolapsus of the uterus, with rectocele and cystocele, may result from subcutaneous rupture of these structures with no laceration or injury of the mucous membrane or other parts of the perinæum. This condition is usually not diagnosticated by the attending physician, and the woman is subjected to various plans of treatment to hold the parts in position and relieve the annoyance from pressure, weight, etc., all of which give but little relief; nor can she be cured except by an operation to bring together and reunite the muscles and fascia. Nearly all the muscles that contribute to the formation of the pelvic floor are united to the bony parts of the pelvis—symphysis pubis, tuber ischii, and coccyx—and are joined together by muscular or ligamentary union between

* Read before the American Association of Obstetricians and Gynæcologists at its first annual meeting.

the vagina and the rectum to give strength and protection to the perinæum. The muscles are surrounded and protected by the three layers—superficial, middle, and deep—of the pelvic fascia, which are also joined together in the perineal raphe, and give additional protection to the perinæum, and hold the rectum, vagina, and urethra in position.

The following are about all the muscles that constitute the pelvic floor, namely: the levator ani, the ischio-coccygeus, the sphincter ani, the constrictor vaginæ, the transversus perinæi, and the ischio-cavernosus; the levator ani and the ischio-coccygeus may be described together. The sphincter ani and the constrictor vaginæ are the most important muscles in the perinæum, and in surrounding the rectum and vagina they unite and form a figure of eight.

When any or all of the perineal union of these muscles, or of the fascia, is lacerated, unless at once united and held together, the muscular contractions continue to widen the distance between the torn ends, so that the vulva gradually becomes enlarged laterally. The extent of this lateral separation is governed by the degree of laceration and the length of time since it occurred. If the foregoing is correct, then no operation will succeed that fails to bring these torn ends together so as to reunite them. This is a simple question that holds good in all operations to restore the perinæum in complete or incomplete ruptures, and if we are controlled by it, and are familiar with the technique of the operation, success will nearly always crown our efforts.

I do not know of any operation that is not faulty in this particular, but the operations that accomplish this purpose best are performed by Tait, Duncan, Simpson, Langenbeck, Saenger, Hart, and Barbour; but, if I understand their methods correctly, they do not fully appreciate the importance of dissecting up and uniting the muscles and fascia. Emmet, Marcy, and Jenks have done much to perfect the technique of the operation.

It would be a waste of time to mention the almost endless variety of operations that have been suggested or performed, most of which are of no real value to the patient, or, at best, give only temporary and imperfect relief. No permanent good results can follow secondary operations where the operator practices the usual form of denudation and removes only the superficial parts of the membrane covering the lacerated surfaces. He gets union of the surfaces of the mucous membrane only; the ends of the muscles and the torn fascia are still separated, and the perinæum gives no firm or sustaining support. The muscles and fascia can not be united in secondary operations unless we dissect up the torn ends by deep incisions, so as to bring them together and hold them in apposition. This is accomplished by a splitting process, something after the fashion of Tait, Langenbeck, Saenger, and others. The incisions should go deep near the anus on the lateral borders of the vulva, and the recto-vaginal septum should be split through the connective tissue between the vaginal and rectal layers, so that the vaginal flap may be thick enough to prevent sloughing.

In complete ruptures the incisions must expose the ends of the sphincter ani muscle, and the lateral and the recto-vaginal splitting must be continued and widened until it exposes, if possible, the separated muscles and fascia, but the operator must be governed by the condition he finds and never make incisions more extensive than are necessary. In ruptures extending high up the recto-vaginal wall, and especially in ruptures of old standing, followed by atrophy of the tissues, where the ends of the muscles have become widely separated, the splitting will necessarily have to be made more extensive.

If the operation to restore the perinæum is not done within twelve hours after the injury, it is hardly possible to get union. It is not necessary to give the reasons why the primary operation should be performed, as there are now but few men of recognized ability in obstetrics or gynæcology who are opposed to it. In this list the name of the distinguished Professor A. Charpentier, of Paris, is conspicuous. His objections are illogical and are not sustained in actual practice where the operation is correctly done. There are a few cases of profound shock, or where the tissues are so injured that the parts will surely slough, in which any operation is contra-indicated. But these instances are rare and the woman is nearly always benefited by the operation. I do not wish to be understood to urge the primary operation, nor the secondary operation, where there is only a short rent that does not involve the perineal muscles or fascia. These lacerations do about as well without treatment, and, if they do not entirely unite, cause but little immediate or remote inconvenience. But if deeper lacerations are not operated on immediately, various complications may arise, including septicæmia, uterine displacements, rectocele, cystocele, chronic inflammation of the bladder or rectum, subinvolution resulting in hyperplasia of the uterus, vagina, and other pelvic structures, weakening of the uterine ligaments, a tendency to abortion, impaired sexual desire or gratification to the husband, and neuralgia in the site of rupture, or reflex disturbances; and, if the sphincter ani is entirely torn through, incontinence of fæces and gases. If the muscles and fascia are much injured, we can not expect the torn ends to perfectly unite unless held together by sutures. The union otherwise, if any, will be imperfect, and often of the integument and the superficial structures only. But if the operation is properly performed in partial or complete ruptures, union will be nearly perfect in most cases. Of course the operator must be familiar with the correct technique of the operation and must observe absolute asepsis. The same general principles should govern us in the use of sutures that apply to the secondary operation. I have operated in such cases often and have never had a failure; in fact, the success is usually more perfect than in the secondary operation. The torn ends of the muscles and fascia are now easily held in apposition and unite within a few days. I operated on a typical case a few weeks ago for my friend Dr. ——.

The woman was delivered of a large child when sixteen years old, and was torn through into the rectum for over an inch, and the vaginal wall and the connective tissue were torn two inches further up. The operation was done about an hour and a half after delivery. About fifteen sutures were used in

the vagina and the perinæum. The vaginal tear was united by silk sutures and the perineal by silver wire and silk-worm gut, using only one silver wire as a base suture to hold together the ends of the sphincter muscle. The sanitary and hygienic surroundings were not good, and she had but little after attention. She passed her urine, the vagina was washed out but a few times, and her bowels moved daily, after the second day. At no time was there any pus, and the entire laceration healed by first intention. When I called to see her on the twelfth day she had gone into a back room and was nursing her babe. In a final examination the perinæum was found as perfect as before labor, with no disfigurement of the vulva. I select this case out of many, as the conditions were less encouraging than in any of the rest. I have been so uniformly successful that I now have but little concern about getting a good result if the woman will obey instructions.

If the operation is well done, I doubt the necessity of drawing the water or tying the legs. Nor is it necessary to wash out the vagina often. The urine and the lochia are not poisonous, especially after the second day, if strict asepsis has been observed in the operation. I have used a variety of sutures, including silver wire, silk, silk-worm gut, and catgut, but I am not prepared to assume any positive position in favor of one over another, if they are properly prepared. I have not used the kangaroo tendon, but I am told by my friend Dr. Marcy that it is more reliable than the catgut, never causes septic infection, and is easily absorbed, but retains its integrity long enough for strong union to occur. It is doubtful if the catgut will do this in complete ruptures, if used as a base suture, or to hold the ends of the sphincter muscle together. Then the catgut is not always reliable, and sometimes causes septic infection. The silk suture would be as good as any were it possible for the tissues to absorb it. It can be buried in the tissues more easily than the catgut or the kangaroo tendon, but remains there to be encysted, or to finally slough out. The silk-worm gut is in many ways a typical suture, and may be used alone or with other sutures. If carefully used, it is one of the most perfectly aseptic sutures, but it can not be absorbed, and is so sharp at the ends that it cuts the tissues as much as the silver wire. I have usually buried this suture, but was nearly always compelled to cut it out, as the sharp ends would finally protrude through the tissues and cause irritation and pain. The sutures should be buried in the ideal operation in aseptic surgery, but we should use sutures that will be absorbed when the parts have adhered with sufficient firmness to prevent separation. In complete ruptures I have always used a base suture of silver wire; but if the kangaroo tendon, or any suture that will be absorbed, will serve the same purpose in keeping the ends of the sphincter ani muscle in contact, I would be pleased to adopt it.

In the secondary operation the patient must have preparatory treatment. Do not operate until the parts have healed. Have the woman in reasonably good health, purge her two or three times a day for nearly a week before the operation, and give her mainly liquid food that does not form much solid fæces.

Just before the operation she should wash her entire person carefully with soap and hot water, and also wash out the vagina with a gallon of hot water. In cases where the cervix is abraded, so as to cause a profuse acid discharge, it is best to treat this condition and not operate until the surface is nearly healed over. The operation should be done about a week or ten days after the menses. With one or two fingers in the rectum as a guide, in partial ruptures, the splitting may be done in five minutes. The knife should be introduced at the muco-integumentary junction, just in front of the anus, and pushed up under the tissues until they are divided as high up as is needed; then, by cutting deeply on each side, the muscles and fascia will be exposed. The outer line of the incision must follow the line that marks the junction of the skin and mucous membrane. If the rupture extends into the bowel, then the lateral incisions should go deep enough to expose the ends of the sphincter ani muscle, and be made on the sides of the labia just as in the incomplete cases. The recto-vaginal septum should be separated up a quarter to half an inch by carefully dissecting the vagina from the rectum through the connective tissue. Bleeding is not so troublesome as that following the superficial denudation, and can usually be quickly stopped by sponging, irrigation, exposure, or torsion, and, if necessary, by catch forceps; or a fine gut ligature may be thrown around the bleeding vessel.

Capillary bleeding does not delay the operation, for, if the parts are in perfect coaptation, the pressure will control hæmorrhage, and union will not be interfered with. Where any form of an aseptic animal suture is used, the needle should be introduced, and brought out just within the lower or external edges of the raw surfaces, so that when they are united the suture will be concealed or buried in the tissues. Sometimes a few superficial sutures will be required. The sutures should be so introduced as to be entirely covered by the tissues, and to bring the surfaces into even and exact apposition. If the sphincter ani is ruptured, I always use the base suture after the fashion of Emmet. In incomplete ruptures the deep-buried animal suture, used after the fashion of Schroeder, may serve an excellent purpose in the practice of an expert operator; and, where the splitting has been made extensive, the parts are brought more perfectly in apposition by using a continuous suture, or one or more separate sutures at the bottom of the wound before introducing the deep perineal sutures.

In complete ruptures, about three or four deep sutures will be required, and sometimes that number is required where the sphincter ani is intact. If the rent in the recto-vaginal wall extends up more than an inch, it is usually necessary to suture this part before introducing the perineal sutures, but the operations should be completed at one sitting.

When the tissues on each side and at the apex of the rent are deeply split, the recto-vaginal surfaces should be well separated, and brought together by one or more sutures after the fashion of Mr. Tait in his vesico-vaginal fistule operations; or, if this can not be done, the split edges may be united by interrupted sutures, or by a continued suture, so introduced as to be buried in the flaps, going into neither the vagina nor rectum.

This operation exposes and brings together the ends o

the perineal muscles and fascia and the fascia that holds the rectal and vaginal walls in position, and restores the perinæum and the pelvic floor to nearly a normal condition, with about the same resisting power as before the injury occurred. In operating for incomplete ruptures with rectocele, the recto-vaginal septum should be split up to nearly the apex of the vaginal protrusion.

No tissue should be destroyed except jagged edges in some complete ruptures; the dissected part assists in protecting the wounded surface against the dangers of infection from uterine or vaginal secretions, and also increases the thickness of the perinæum. I have never had a recto-vaginal fistule after an operation for complete ruptures, nor do I believe it will often occur if the operation is correctly done. It is immaterial whether sponges are used or the parts cleansed by constant irrigation with clean water. It will be observed that I do not allude to antiseptics, but speak of asepsis, or perfect surgical cleanliness. Weak solutions of bichloride of mercury or of carbolic acid would probably do no harm; but if we depend on their use and do not observe the laws of absolute cleanliness, our operations will not always succeed. I do not wish to inveigh against the antiseptic craze, for it has resulted in much good by directing the medical mind to the necessity of a rigid observance of all the laws of cleanliness; and the technique of surgical operations, even in minute details, has been wonderfully perfected. Septic infection does not follow my operations, and I have but little fear of it so long as I continue to observe the rules that now govern me. I do not remove the deep base wire sutures for about one week, and allow the patient to get out of bed from the tenth to the fifteenth day. I have got equally good results by constipating the bowels and by allowing them to move daily, but I do not think it good treatment to constipate the bowels for from five to eight days, as was once the custom.

In nearly every case I prefer to have a soft or a liquid stool each day after the operation, and especially after the third day. I could relate many interesting successful operations performed by me after the fashion described during the last six years, in complete and incomplete ruptures, illustrating the position I assume, but I am sure it is not necessary to do so.

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## DYSPEPTIC DYSPNŒA.*

By W. H. KATZENBACH, M. D.

There are probably no functional disorders for which the general practitioner is oftener consulted than those included under the term dyspepsia. Trousseau, in concluding his lecture on this subject, says: "Never forget that dyspepsia will present itself to you under aspects and under forms most varied." Cough, pains in the chest, palpitation, vertigo, constipation, diarrhœa, various neuralgias, and certain forms of skin disease, are mentioned by writers as of frequent occurrence in dyspepsia. But there is one symptom of this disorder which is not mentioned by most authors, and has received from none the consideration its importance demands. That symptom is *dyspnœa*. This form of dyspnœa usually accompanies other symptoms recognized as dependent upon dyspepsia, but in some cases it is so predominant that the other symptoms present are overlooked, and the real nature of the dyspnœa, for a time at least, may not be determined. The amount of suffering during an attack is not inconsiderable, and the anxiety, apprehension, and dread of the existence of some grave disease of the heart or lungs add to the distress.

Dyspeptic dyspnœa is characterized by a sense of weight or oppression across the chest, an almost constant desire to draw a long breath, and a feeling that the air does not enter the lungs to a sufficient depth. Repeated inspiratory efforts are made. The body is fixed in some certain position, or a sudden quick change of position is made before a satisfactory inspiration is obtained, but the relief is of short duration, and these efforts must soon be repeated.

Diversion, intense occupation, or active bodily exercise, such as rapid walking, sometimes mitigates or relieves the attack. None of these ever aggravates it. Dyspeptic dyspnœa occurs after meals, in the intervals of stomach digestion, and not infrequently at night. The duration of the attacks is variable, but they usually extend over a considerable portion of the day or night. They recur daily, or at intervals of a few days, for weeks or months, or there may be but a single attack.

There is a more alarming form of dyspeptic dyspnœa, the paroxysms of which occur at night only. Attention was called to this a few years ago by patients who presented themselves complaining of severe attacks of shortness of breath or smothering coming on at night, and unaccompanied by wheezing, as in asthma.

Physical examination of the chests of these patients gave no signs of pulmonary or cardiac disease, and the urine gave no evidence of kidney disorder. The only accompanying symptoms that could be obtained related to the digestive organs. This variety is less frequent than the milder form of dyspnœa previously described. The writer has seen only a few examples. The paroxysm occurs usually after the patient has gone to bed. He is awakened out of sleep with a feeling of weight across the chest, a distressing sense of suffocation, and inability to get his breath. He sits up quickly in bed and makes strong efforts to inspire, but the air does not seem to enter his lungs. He becomes nervous and anxious. No position gives comfort. He gets out of bed, sits in a chair, walks the floor, probably goes to an open window, lies down, sits up again, but obtains no relief. Becoming excited, his heart beats rapidly, and this increases his distress and anxiety. The respiration is slow, irregular, and sighing. The expression is one of great suffering. The face is pale; the surface is cool. Perspiration may appear on the forehead only or involve the whole body. Examination of the lungs reveals no abnormal signs except possibly feebleness of the respiratory murmur. The heart's action is usually rapid and irregular; it may be slow and regular. No albumin is found in the urine, but this secretion is sometimes dark and of high specific gravity, depositing urates and uric acid.

The attack lasts from half an hour to an hour or more.

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* Read before the New York Clinical Society, April 27, 1888.

It subsides gradually, and the patient falls asleep; but he may be awakened by another before morning. The attacks may recur several successive nights or at longer intervals over a considerable period. There may be but a single attack.

Dyspeptic dyspnœa in its ordinary and mild form is to be distinguished from that of anæmia or chlorosis and hysteria. In anæmia the breathing is rapid while the individual is quiet, though he may not be conscious of it, but it is still more rapid, labored, and suffocative from effort or excitement. The habitual pallor of such patients assists in determining the condition. In hysteria, dyspnœa is accompanied with other signs of the disease.

The more severe and nocturnal form of dyspeptic dyspnœa is to be differentiated from that occurring in uræmia. In the latter the difficulty of breathing is very distressing, but the sufferer is less excited. In bed, with his head and shoulders thrown back, he gasps for breath quietly but with great effort. The pulmonary signs are negative, but his heart is hypertrophied, his arteries are tense, and the urine further reveals the existence of renal disease.

In bronchial asthma the dyspnœa is expiratory. The breathing is audible at a distance, and signs of bronchial spasm are obtained by auscultation.

In the dyspnœa from cardiac disease the respiration is panting. Cyanosis and anasarca are present, with other symptoms and signs of heart weakness.

In the dyspnœa from laryngeal, tracheal, or bronchial obstruction from inflammatory thickening, the presence of growths, foreign bodies, and the pressure of aneurysm or mediastinal tumors, the breathing is slow, labored, noisy, and stridulous during very slight effort, or even when the patient is quiet. Examination completes the diagnosis.

In pleurisy, at the outset the respiration is short and jerking, with sharp, suppressed cough. Subsequently, during effusion, it is labored, with livid lips and cheeks.

In pneumonia the breathing is rapid, with or without dyspnœa. The face is flushed and the nostrils dilate in inspiration.

In these as well as in other diseases of the respiratory organs—as phthisis, pneumo-hydrothorax, broncho-pneumonia, etc.—the clinical history, associated symptoms, and physical signs will determine the pathological condition.

In dilated stomach or intestine, ascites, and abdominal tumors, the dyspnœa is a constant distress, unrelieved by inspiratory efforts while the mechanical condition producing it persists.

The majority of cases of dyspeptic dyspnœa yield readily to treatment directed to the morbid conditions present in the digestive system, but some resist for a long time the measures employed for their relief.

If the attacks of dyspeptic dyspnœa are of the milder form, and occur in the intervals of stomach digestion, those measures are to be employed which improve the functions of the digestive organs and restore nutrition to a healthy state.

Diet, clothing, bathing, hours for rest and sleep, as well as for exercise and diversion, are to be regulated. The abuse of alcohol, tobacco, coffee, tea, and venery must be corrected.

Electricity, massage, and sea-bathing are to be considered as valuable agents in the treatment of the chronic dyspeptic.

Flatulent and atonic dyspepsia, as a rule, is relieved by the alkalies before meals in combination with nux vomica and other bitters; or by mineral acids, with or without pepsin, after meals. Constipation, if it exists, will receive attention.

If the patient suffering with a severe attack of dyspeptic dyspnœa has recently taken food, his stomach should be evacuated at once by means of an emetic or the tube, and, if necessary, further washed out. This may be followed by the administration of strychnine and the bicarbonate or salicylate or sulphocarbolate of sodium, with aromatic ammonia or chloric ether.

In a case of furred tongue, foul breath, and headache, a mercurial cathartic is indicated.

This brief paper is presented with the object of drawing more general attention to the subject of dyspeptic dyspnœa, and as an introduction to the narration of the following case:

Mr. A. Y., aged fifty-two, native of the United States, a lumber merchant, was brought from an adjoining State by his family physician, September 30, 1887, on account of a difficulty in breathing which had existed for five years. Previously he enjoyed perfect health. At that time he began to suffer pain between the shoulders (upper dorsal region) and shortness of breath. These symptoms have continued off and on to the present. Besides, he complains of flatulence and belching after meals. He has no headache, no tinnitus, no vertigo. His appetite is good; he has no nausea; no pain or difficulty in swallowing. At times a fluttering is experienced in the epigastrium. His bowels act regularly. No urinary symptoms are present.

Two or three hours after eating he has a burning sensation in his hands, forearms, feet, and legs. When his breathing permits he sleeps well.

He lost weight in the spring, but has since regained it. He attends daily to his business, which keeps him out of doors.

He is of average height, of spare but muscular build, with a complexion testifying of his out-door life. Says he is as "tough as a knot." His habits are, and have always been, temperate in every particular. He has never had gout or rheumatism.

His mother died at the age of seventy-three of rheumatism and dropsy; his father, at seventy-two, from what cause he does not know. A sister died at twenty-three of consumption. Three sisters and two brothers living enjoy good health. His breathing has these characteristics: Sitting or lying down he has the desire, more or less constantly, to "draw for a long breath," but he "can't get it down." At intervals of a few minutes he assists the inspiratory efforts by "giving a twitch," or sudden twisting movement of his body, which seems to remove the difficulty, and "the air, as a general thing, goes right into the lungs." He has this dyspnœa several days in succession, then for a day or two is free from it. Rapid walking and exercise do not affect it, unless to relieve it somewhat. Some days, when occupied more than usual, or when excited, it does not annoy him at all. If he falls asleep immediately on retiring at night, he usually rests until morning, but the dyspnœa frequently wakes him out of sleep. If he becomes nervous during the attacks, he has a fluttering at the pit of the stomach.

His present condition: Conjunctivæ yellowish, tongue clean, pulse slow, regular, and of good volume. Chest well formed, and its movements normal in conscious respiration; pulmonary

resonance good. Respiratory murmur somewhat feeble generally over both lungs, but the quality is vesicular, and the rhythm normal. No râles are present.

The heart apex is in its proper situation, the impulse is good, the sounds are excellent, and no murmurs are heard. Venous hum is present in the neck. There are no signs of thoracic aneurysm. The abdomen is not distended or tympanitic. By palpation no tumor can be discovered. The liver and spleen are not increased in size. The urine is of good color, acid reaction, with specific gravity 1·025, and contains no albumin or sugar.

He was advised about his diet and habits of eating, and was directed to take, one hour before each meal in a cup of hot water, a powder consisting of sodii bicarbonat., gr. xv, and magnesii calcinat., gr. v; and, shortly after each meal, sodii bromidi, gr. xx, and carbonis ligni, gr. x.

*October 18th* his physician writes: "He seems better, has a good appetite, and rests well nearly every night. The sallow, lithæmic appearance of his skin is removed, and he is in better spirits. In the day-time he has to 'pull for his breath,' if he has eaten any food which disagrees, as to-day he ate a little cold cabbage for dinner and felt the effects very sensibly. He is quite active, attending to business."

On November 10th he seemed better, but was losing courage. He was advised to continue the powders of sodium and magnesium before, the following pill after meals:

℞ Extr. hyoscyam ..... gr. ss.;
Strychninæ sulphat., Acidi arsenios., ..... āā gr. $\frac{1}{60}$;
Quininæ sulphat..... gr. ij. M.

He was not seen or heard from until April 24, 1888, when he presented himself, feeling better, although, as he confessed, he had not faithfully carried out the line of treatment laid down. Pain between the shoulders has disappeared. He complains of soreness a little above the navel when he "draws for a long breath," but at no other time. Breathing is not affected by rapid walking. His appetite is good; flatulence and eructation have been entirely relieved; nausea or drowsiness is not present. Burning sensations are still experienced in the extremities two or three hours after meals. His strength is preserved. When lying on his back, respiration gradually becomes slower and weaker, and then he is forced to make respiratory efforts. He attends to his business daily with a clear head, and thinks he is better on this account.

Tongue clean and moist; pulse 60, regular, of good volume; respirations 16; cardiac and pulmonary signs normal. Abdomen not distended. Slight tenderness is elicited over the region previously mentioned as painful during dyspnœa, but no tumor can be felt. The liver and spleen are not enlarged; urine, specific gravity 1·019, acid, contains no sugar or albumin, no pus, no crystals, no casts.

He was further advised as regards diet, and directed to continue sodium and magnesium before meals. The following pill was prescribed to be taken after meals:

Extracti hyoscyami..... gr. $\frac{2}{3}$;
Acidi arseniosi..... gr. $\frac{1}{60}$;
Strychninæ sulphatis..... gr. $\frac{1}{40}$;
Quininæ sulphatis..... gr. jss.;
Pulv. ipecac..... gr. $\frac{1}{6}$. M.

**Cadaverin.**—"It has been held to be demonstrated that several ptomaines are capable of provoking suppuration in the rabbit without the presence of micro-organisms. Behring has attempted to ascertain whether iodoform can prevent such a suppurative process. Cadaverin and iodoform are mutually destructive, so that the former loses its pyogenic properties."—*Lancet.*

# THE MORAL AND SANITARY USE OF HOUSE-TOPS.

By JOHN V. SHOEMAKER, A. M., M. D.,
PHILADELPHIA.

Dickens somewhere says that Americans are the only people in the world who ever found out what to do with the small of the back—they sit on it. Americans are certainly the most inventive people in the world, but it must be confessed that their development of material agencies in the way of comfort—except in such rough-and-ready ways as that which Dickens describes—has certainly not been at all commensurate with their ability to produce novelties in response to any other need. This, as we must argue from their having produced so much greater things than those within the lines of comfort, is because they have not felt the need, and the fact of their not having felt it is naturally explained by the heretofore busy, eager, striving life in other directions of a primitive population. The late evolution of our parlor-cars and other traveling equipment, besides several other things only lately produced, bears out the truth of these assertions.

There is no point of simplicity, except Jeffersonian, that even pretends to be defined, and even that is variously conceived, as demonstrated by the practice of its advocates. The luxuries of one people are the necessaries of another. The luxury of the same people may become in a few years the necessaries of their life. The comfort of farm-life would be discomfort in a city, the food there satisfactory would be unpalatable in a city, for taste in the respective places has been educated on a different basis, and the conditions of air and employment are entirely different. We have proceeded at sufficient length to show that, men being in tendency essentially the same everywhere as to their material likings and dislikings, the reason that we find them unlike in requirements and tastes is owing to the education of different circumstances. Each and all of them follow the lines of least resistance, obtaining what they can as easily as it is procurable, and under the limitations of the immutable laws of their vicinage. The nomadic hunter does not pine for kitchen utensils, or a *fauteuil* on which to rest his weary limbs. He roasts his meat before the fire, and seats himself with *his* perfect comfort upon grass or stone, while the luxurious denizens of cities, and even the laborers within their confines, need tables and chairs for comfort. The sailor dips his fingers or fork into the promiscuous mess-kit, while even the rudest log-cabin has by comparison some pretense to style.

Comfort, then, is only a relative idea that may vary even in the same individual at different periods of his life, depending upon the circumstances into which he is thrown. Beginning at the foot of the social ladder, the first requirement of existence—mere existence—must be satisfied before even a thought is bestowed upon what we think of as comfort. Then comes, with an advance, the comfort reached by those who have passed beyond the struggle for mere sustenance, clothes, and shelter. And finally come the varying degrees of comfort, as wealth is acquired, through which many men are obliged to minister to the comfort of one,

until luxury at its highest point is reached, there entailing manifold *discomfort*. Thus extremes truly meet, leading for that reason some of the wisest men who ever lived to say that the happiest of any of the conditions of men lies in the middle walks of life.

We Americans up to the present time, when a new departure has taken place, have been too much occupied in the development of an enormous country of wonderful richness to have had much time left for the study and achievement of comfort. Up to only a few years ago even the architecture of our buildings for every purpose was patterned in servile following, with only slight modifications, upon what had gone before. The internal arrangements, too, of our houses exhibited no evidence of progress. Even now, when there has been a recoil from the old practice and buildings are going up which in their adaptation exteriorly and interiorly to needs would do credit to any part of the world, there is in many other instances far more attempt at æstheticism than at study of what should be the primary requirements of architecture. Ruskin said many a true word amid many a false one, and never a truer one than when he declared with his usual emphasis that architecture, alone of all arts, was based on the useful, and that its examples must justify their right to existence by conformity to this law.

The kind of climate in which a dwelling is erected is necessarily the first condition to be considered, as determining the character of the structure. Many other considerations—the exposure and what not—claim notice before a thought should be expended upon the question of architectural design. Here it is where we are often grievously at fault, the character of the climate hereabouts being often not taken at all into consideration. In Canada, among a people whom we consider comparatively benighted, the people recognize that they live in a climate of great rigor. Consequently they adopt not only double doors, but double windows there. We here in this locality are living in what is meteorologically known as an extreme climate—a climate having extremes of heat and cold—and yet our dwellings very inadequately conform to that fact. With ample supplies of coal, if we can afford to buy them, we are sure of being able to keep dwellings warm, but there is no recognition whatever of the demands which the terrible heats of summer make for a change.

It would, some years ago, have been as unavailing as talking to the winds to suggest that the roofs of this city should be so arranged as to be occupied at night during torrid weather. Yet I can remember that, even as a lad—when, on some occasions, I sweltered in this city for two mortal weeks on a stretch, in company with other equally miserable beings who could not get out of town—I could not help thinking that if the dwellings had had but some means of allowing people to occupy the roofs, what incalculable discomfort and suffering could have been spared? The city seemed then, as it seems now, as if built for people who all the long summer are at the sea-side or on the mountains. When I pass now, as then, through alleys teeming with a population of people overflowing on to the narrow sidewalks, on door-steps and cellar-doors, with fretful babies and squalling children occupying every nook, I can not but think, as I thought then, that much of this suffering might be spared and many a life saved, and, if not to be snatched from death, at least brightened by a brief release from the depressing misery of heat.

At last the day has come when —steps having been taken, not for the sake of the suffering poor, but for that of the luxurious, who must needs have hanging gardens from which to waft the fragrant smoke of the nicotian weed heavenward in thankfulness for temporary relief from the torrid plain below—it becomes possible for the humanitarian to put in a plea for the poor who can not go to sea-side or mountain, who must suffer, whether in health or sickness, from the lamentable lack in our city of means to enable the denizens of crowded quarters to breathe a breath of fresh air. It is said in "The Annals of Hygiene" for September, in noticing another article on this topic, that "to construct new houses with such roofs would put a hard strain upon buyers and renters of houses." In the same article, in another place, the doubt is expressed of the likelihood of the day ever coming "when a city in the United States shall have its roofs comparable to those of the towns of Syria, which are sometimes called cities." Perhaps not; but it will not be because of the strain put upon even the poorest classes of people here. The people here can certainly afford as much as the inhabitants of Syria. This periodical quoted being the official organ of the State Board of Health of Pennsylvania, and deservedly a publication of much influence, I hope that its writers will eventually see their way more clearly than at present to the consummation to which our desires point.

There is no reason why the modification suggested in dwellings in Philadelphia should be an expensive one. It is not, in the first place, needful that the whole roof of an individual house should be taken into the design. All that is requisite is that the lateral or parapet walls, as now required by law, should be run up a little higher, so as to secure on the roof the same privacy from sight as a family enjoys in the interior of their dwelling, and even that might in some places be dispensed with. The front and back walls could be supplemented with an ornamental railing. Then whatever portion of the circumscribed space it may be desired to devote to the purposes of occupancy should be covered with horizontal planking, laid slightly apart so as to allow water to pass through and out to the usual gutters and spouts. For those who could afford it, a few potted plants on a bench would lend pleasantness to the aspect of the place, from which, in the midst of air comparatively pure, fanned by whatever breezes were stirring, the poor dwellers in stuffy courts and alleys could revel in the hot evenings, and sate their fainting bodies and souls with the view far and near, bounded only by the immeasurable canopy of heaven. Can any one doubt that such relief from heat after toil, and such recreation in the summer evenings, would go further in the cause of health and morality than any other device that could be named, or that carrying out the plan is perfectly feasible? I may add that the introduction of this plan here is only a question of time; the thing among a people so intelligent as ours will surely come to pass. But time is a valuable element in life, so let every one who

can promote the advent of so great an increase of comfort and alleviation of suffering in this city do his part to forward the good work.

## CARDIAC DISEASES IN THE NEGRO RACE.

By PEARCE KINTZING, M. D.,
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The unusual percentage of the various cardiac lesions in the summary of general cases treated at this clinic during the past summer first drew the writer's attention to that subject, the result of which is here briefly stated.

A fraction over fifty per cent. of all the cases treated are of the negro race. This race presents little that is attractive to the general practitioner. The negro's "miseries" and "agonies" are numerous and shifting, his habit of magnifying every fleeting pain to a superlative degree is well known, and mendacity seems to be a universal quality. On the other hand, the amount of time and tact required to elicit rational answers sufficient to form a diagnosis, owing to the limited understanding and more limited vocabulary of the race, cause the general practitioner to resort to a placebo rather than subject himself to the unpleasantness of making a physical examination; the more so as they are easily appeased, and are pecuniarily probably the most unremunerative class of his patients. For these reasons we believe that many cases fell to the clinic after having passed unrecognized through other hands, since frequently the symptoms enumerated bore no reference to the true malady, and only a small percentage of the cases could be traced to acute inflammatory affections. The cases under consideration include the various chronic valvular lesions, simple hypertrophy, and palpitation. The various functional disorders are unusually frequent in the negro, and generally accompanied by nervous and hysterical phenomena or by constipation, which in this race is common and obstinately chronic, especially among the females. Sometimes palpitation was accompanied by vertigo, dyspnœa, and a burning pain under the xiphoid cartilage. One case, which has been under observation at intervals during two years, presents, as its only symptom, dyspnœa, but no evidence of pulmonary obstruction can be obtained by physical examination. There exists considerable left-sided hypertrophy and the ventricular contractions follow almost in metrical rhythm, thus: one —one, two—one, two, three—a pause of somewhat varying length preceding the "one."

Most of the cases of palpitation occurred in young subjects, and these were associated with hysterical signs in a majority of instances. One case presented vertigo with tinnitus aurium as the predominant symptom, and this symptom was frequently found associated with anæmia, increase in the cardiac rate, and the usual symptoms of chlorosis. Another large class of cases—attended with pallor and a relaxed condition of the mucous membranes, a flabby, pendent, soft palate, and elongated uvula, a general enlargement of the cardiac area and a marked bruit, denoting a functional dilatation, accompanied apparently by some slight roughening of the serous lining, sufficiently marked in some cases to cause dyspnœa and general distress—promptly improved upon the exhibition of the tincture of the chloride of iron. In some of the cases of this class the patient complained of sleeplessness, due perhaps to the inefficiency of the cerebral circulation, as well as to the watery condition of the blood. Neither change from the horizontal position nor careful attention to diet seemed in any wise beneficial.

Lastly, among the functional disorders were several cases of rapid fluttering action, accompanied by pain in the back and in the course of the intercostal nerves, with a sensation of constriction in the throat—symptoms which have received marked attention lately in Paris as pathognomonic of neurasthenia.

With regard to the ætiology of functional disorders, the general characteristics of the race would lead us to expect a large percentage of such cases. They are directly traceable to their emotional natures, hysterical tendencies, early marriages, frequent pregnancies and overlactations—it being not uncommon to prolong this function from the birth of one child until the next pregnancy is well advanced—excessive use of tea, tobacco, and alcohol, and the long list of digestive and dyspeptic disturbances to which the negro is peculiarly liable, owing both to these excesses and to his immoderate appetites and fondness for cold victuals. The relative frequency of functional cardiac disturbances in the negro and the white race, as observed at this clinic, was about three to one.

Next in frequency to functional derangements stands mitral valvular disease without aortic implication. The relation of mitral disease to rheumatism was especially considered, and was not found to be so constant as one would be led to suppose when the prevalence of rheumatism in the negro race is considered. While some cases were undoubtedly traceable to antecedent attacks of acute rheumatic inflammation, yet the number was comparatively small. Rheumatism in negroes is chiefly subacute or chronic, and various rheumatic pains enter almost universally into their own histories of their maladies, chiefly because they are familiar with the word. But a large number of patients presenting themselves with true rheumatic histories were examined as a matter of routine, and in but few was the cardiac complication found to exist; nor, as has been mentioned, was it possible to trace the lesion to an acute febrile affection in many cases. As regards frequency, about two thirds of the total number of mitral lesions occurred in the colored race.

Aortic valvular disease, as a primary affection or with implication of the mitral valve, was likewise found to be far more frequent than in a corresponding number of general cases in the white race, but the preponderance was not so great as in the varieties previously mentioned, and no symptoms worthy of special note were observed.

One advanced case, presenting aortic insufficiency with mitral implication, hypertrophy, and general œdema, gave a curious though imperfect history. The father had died of apoplexy at the age of seventy. The mother had died of "heart disease" at an advanced age. Of eleven brothers and sisters, all had died before the age of thirty except two. In three of these, death had been attended by dropsy, and no fewer than three others had died suddenly. The patient, who was in her fifty third year, was the youngest in the family. She had never

had rheumatism, but had had typhoid fever twenty years ago and variolod four years earlier. Three years ago she had had an apoplexy, followed by left-sided hemiplegia, from which she dated all her cardiac symptoms. She has partially recovered from the hemiplegia. It is to be regretted that the facts bearing upon this interesting case could not be obtained with greater fullness and accuracy.

With regard to the causation of valvular diseases and their greater relative frequency in the negro race, perhaps the explanation lies in the greater frequency of specific diseases, both inherited and acquired. Rheumatism and scrofulous affections play their part as well as their unhygienic surroundings, their general negligence, addiction to exposure and to drink, but, above all, in the amount and character of their labor. Both males and females belong to the class of heavy workers—stevedores, hod-carriers, coal-heavers, draymen, and washerwomen. In many of the cases observed, the influence of this special factor could be traced.

Fatty infiltration as evinced by general obesity, dyspnœa upon exertion or during excitement, vertigo owing to weak or disturbed cerebral circulation, an enlarged area of cardiac dullness and intermittency, unaccompanied by valvular lesion, was frequently found in negro women of advanced age, in whom the accumulation of fat is much more common than among the males. True fatty degeneration, however, seems to be quite rare, as but few indisputable cases were observed; and in respect to fatty degeneration, it is concluded that the condition is of less frequent occurrence than in the white race.

It may be interesting to note, in connection with allied diseases, that but one case of exophthalmic goître in the negro race in a total of eighteen hundred cases presented itself. Since there were but two cases in the white race during the same period (all three cases being in females), no conclusion of any value can be drawn as to the relative frequency of this disease in the two races.

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## EXAMPLES OF FRACTURES AND THEIR UNION IN THE BONES OF BIRDS.

By R. W. SHUFELDT, M. D.

Dr. John Bland Sutton, Lecturer in the Royal College of Surgeons of London, has during the past few years, by his studies in comparative pathology and by his admirable series of published memoirs upon the same, brought up the subject of the investigation of the diseases of all the lower orders of vertebrates to its proper plane, and clearly shown to the profession the high importance of such researches. A large number of the cases examined by Dr. Sutton were of animals either dead or suffering from various manners of diseases in the zoological gardens of London, and one of the ideas uppermost in his mind during his labors was to demonstrate that a number of the pathological states to which man was subject, diseased conditions of greater or less obscurity, could in many cases have light, perhaps, thrown upon the question by the study of disease in the various forms of animals; that there was an evolution in disease; and pathological states that many of the vertebrate animals at least were subject to, departures from a standard of health, were quite comparable with similar abnormal states in man, which states in them were liable to be presented in a more simple form and characterized by a less complex array of symptoms. In short, diseases should be studied in their entirety to be fully understood, and to be able to thoroughly grasp any single problem in pathology we must search it out in all its highways and by-ways throughout all nature, and to accomplish this we must carry our investigations with the utmost exhaustiveness into the very beginnings of certain diseases among the more lowly forms of life. Since it has been through our studies of the morphology of all animals alone that anatomists have been enabled to explain a great many of the structures in man's body, which were by no other means explainable, it would surely stand to reason that by a similar course of study the affections of those same structures in the less highly organized types would go toward explaining the diseases of the corresponding parts in ourselves, and such has been found to be the case.

This being so, the recording of any facts of the kind can now only be construed as contributions to pathology and to the *science of pathology* in its widest sense. And the complete digestion of all the accumulated knowledge of this character in the future will tend to bring about an understanding of pathology in all its breadth, and in due time we shall have an insight into its most complex and far-reaching questions.

In the present paper the writer has no further aim in view beyond inviting attention to a few interesting cases of fractures in birds that have recently come under his observation, a short chapter setting forth some of nature's surgery, and briefly told.

During the early part of August, 1888, while residing in New Mexico, I was presented with a living specimen of an adult female of the red-tailed hawk (*Buteo borealis calurus*), which had been secured by having been shot with a 0·45 caliber Government carbine while flying high in the air. It was impossible for me to discover the wound on the bird, and he was apparently as whole and as vigorous as any hawk alive. About three weeks after its capture, however, circumstances induced me to kill the specimen for the purpose of securing the skeleton. Imagine my surprise when I found that that great rifle-ball, fired out of one of the most powerful arms in the world, had entered the left side of the chest of this hawk, passed obliquely through, narrowly escaping the heart, and emerging on the opposite side. Now, this species has seven costal ribs (hæmapophyses) that articulate with the sternum and the ends of the vertebral ribs; *all* of these had been broken across by the ball, while at the wound of exit the scapula of the right side had been twice fractured across at its posterior third, but the vertebral ribs were apparently uninjured. In healing, the costal ribs each individually had made a good union and there was no ankylosis among them. The blade of the scapula, something in form like a miniature blade of a cimeter, showed a most interesting condition, for, notwithstanding the fact that the apical piece had been drawn down some little distance toward the sternum, it had, nevertheless, by the aid of the second

fractured piece, been included in the marvelous mass of callus which had been thrown out by this thin, blade-like bone, and all within the short period above specified. At the time of the bird's death, then, this injury had about healed, and the scapula, to all intents and purposes, was as useful as before, its anterior two thirds remaining intact and supporting at their distal extremity this great osseous mass to which all the now somewhat distorted muscles were still attached. Here was a fearful wound with a truly magnificent recovery, leaving all the parts in essentially as good a condition as ever. Further, this hawk showed that at some time or other there had been a superficial inflammation of both surfaces of the tarso-metatarsi and of the upper fourth of the left femur, on its posterior aspect just below the summit. From this inflammation it had also recovered, leaving the surface of the bone much roughened.

My second subject was a turkey vulture (*Cathartes aura*), secured at the same time and place and with the same weapon under the same circumstances, being shot while high in the air. This bird was in a wretched plight when I received it, having been kicked about by some brutal soldiers, and was more dead than alive. After being in my possession about a week, this bird thoroughly recovered, could fly well, and left me in doubt as to where the ball had hit him. At the end of this time I killed him with chloroform, and prepared his skeleton. This at once revealed the fact that an extraordinary fracture and its union had been sustained on the part of this subject. The ulna had been broken in two at the junction of its proximal and middle thirds, while the radius was similarly fractured at the middle of its shaft. Union was now complete, and a mass of callus was rapidly being absorbed at the sites of the fractures, and undoubtedly a wonderfully good result would have been attained in the near future had the bird been allowed to live; as it was, the union was perfectly firm. But the most extraordinary part of it all was that these two bones had remained practically straight, with absolutely no shortening in the radius, and only four millimetres shortening in the ulna, and withal with very little distortion. From blows and it, too, was once more united, each palatine bone showing a slight deposit of callus upon its nether aspect, between the inner and outer laminæ. These fractures had been made without any corresponding fracture of the naso-frontal region, and no doubt the superior mandible had not been thrown back far enough to bring this latter result about.

For many years past I have prepared a great many skeletons of birds, mammals, and other vertebrates, and, in the case of fracture of the bones of the wings in birds, I am convinced that the good unions that result, with scarcely any deformity or shortening, are largely due to the material assistance afforded on the part of the quills of the primary and secondary feathers, which act as efficient splints to the injured bones. Fortunate for birds that this is so, for doubtless, were any very marked distortion to follow, it would surely result in some abrogation of their powers of flight, and leave them helpless on the ground. Among mammals it is much the same throughout the class, for, with all the smaller representatives as with man himself, usually great deformity follows unless the parts are promptly and properly splinted. I have seen the femur unite in small rodents—such as muskrats and squirrels—where the two halves of the shaft of the bone were firmly joined at nearly a right angle, referring as I do, of course, to where the shaft is fractured across its middle.

Miserable deformity usually results, too, from fracture of the lower jaw in the smaller mammals, as is the case in man, unless splinting is resorted to, and these remarks apply also to the pelvis.

In animals that possess the clavicles, however, the bone on either side may be occasionally broken across, and an unaided union result, with but very little appreciable distortion, and this may also be the case in man.



Left ulna and radius of a specimen of the turkey vulture (*Cathartes aura*), outer aspect, showing union three weeks after fracture from a ·45 caliber carbine ball. Life size and drawn by the author from the specimen. (The larger bone is the ulna.)

gress of American Physicians and Surgeons. Among other important and promising new organizations are to be mentioned the American Physiological Society, the Association of American Obstetricians and Gynæcologists, and the Southern Surgical and Gynæcological Association. Of the notable additions to the teaching facilities of the country, the Hoagland Laboratory, lately opened in Brooklyn, deserves special mention.

Of important legislation bearing upon medical matters there has been little or none. It is true, however, that the State of

## A PIN IMBEDDED IN A WOMAN'S HEART.*

By GEORGE L. PEABODY, M. D.

The patient from whose body the heart that I show you was removed died in the New York Hospital on the 26th of last May. Unfortunately, she was under observation only a few hours, and only an incomplete history of her could therefore be obtained.

She was twenty-nine years of age, a native of Ireland, married, and a nurse by occupation. She said that one brother had rheumatism, but she gave no other morbid family history. She had never had rheumatism, malarial fever, or syphilis. She

* Read before the Association of American Physicians at its third annual meeting.

confessed to a very moderate alcoholic habit. On her admission she was suffering greatly from dyspnœa, and was unable to give a circumstantial account of her illness. Five years previously she had given birth to a girl, her labor having been uncomplicated. Five months previously she had again been confined, and up to the time of her admission was acting as a wet-nurse. She said that for some time previously she had passed less urine than normal, that it was high-colored, and that from time to time her feet had been swollen. For four months previously she had been short of breath, had suffered from palpitation, vertigo, muscæ volitantes, tinnitus aurium, morning nausea and vomiting, and constant swelling of the feet and abdomen. Her appetite had been poor, her bowels regular.

At the time of her admission, on the 25th of May, 1888, at 4.30 P. M., her temperature was 100·8° F., her respirations were 44, and her pulse was 130. A specimen of her urine, obtained immediately, was of a yellow color, acid reaction, and 1·020 specific gravity, and contained a large amount of albumin, many hyaline and epithelial casts, and pus cells.

On physical examination, both pleuræ were found to contain fluid as high as the angles of the scapulæ, and there were a great many moist râles all over, both behind and in front. The heart-sounds were very feeble, and heard with difficulty. No murmur could be distinguished. There was œdema of the feet and legs. She was given acetate of potassium and infusion of digitalis, and passed a fairly comfortable night. The next morning she seemed to be doing fairly well, when she suddenly experienced great precordial pain, distress, and dyspnœa, which latter was intense. She was given morphine subcutaneously, but she continued to suffer, and died in half an hour, at 10.45 A. M.

An autopsy was made on the same day at 2 P. M. There was general anasarca; rigor mortis was well marked; the peritonæum was normal. The diaphragm was at the level of the fourth rib on the right side and of the sixth rib on the left side. There were 1,300 cubic centimetres of serum in the left pleural cavity, and half as much in the right. There were no pleuritic adhesions. *Heart:* The pericardium was normal. The heart was very slightly increased in size. The wall of the left ventricle was to a slight extent thickened; the cusps of the mitral valve were somewhat thickened, and there was a perceptible degree of stenosis of the mitral orifice. The other valves were normal. The muscular tissue was soft, flabby, yellowish, and in places contained fat. A black or blackened pin, the top of the head of which was free in the left ventricle, was seen piercing one of the papillary muscles attached to the anterior segment of the mitral valve, and penetrating the wall of the ventricle obliquely to the depth of three centimetres. The point of the pin was distant five millimetres from the external surface of the heart. The pin seemed eroded and was broken by accidental contact with the scissors, without, however, becoming displaced. There was no evidence of any *recent* inflammation in this neighborhood, but the endocardium in the neighborhood of the protruding head of the pin was greatly thickened and snow-white, and firmly adherent to the edge of the head. The endocardium at a corresponding point on the opposite surface of the ventricle was also thickened. This latter area of thickened endocardium measured a centimetre and a half in diameter, and could be more distinctly seen when the specimen was fresh than it can be now. The shaft of the pin just below the head seems to be unevenly thickened. Following the course of the pin there was seen a cicatricial depression in the papillary muscle, which is still distinctly visible. A most careful examination of the heart failed to reveal the route by which the pin had traveled to its present location. The œsophagus, stomach, pericardium, and great vessels were examined with great care and found to be uninjured. A microscopical examination of many parts of the heart showed fat in the muscular fibers, but not so generally as had appeared to the naked eye. The right ventricle contained more fat than the left.

The *spleen* was normal. The *kidneys* were normal in size, they were intensely congested, their cortices were swollen, their markings were not distinct. The microscope showed the epithelium of the kidneys to be generally very granular, and also showed fat in some of the convoluted tubes. The *stomach* was found by the microscope to have an enormous amount of fat in its tubes, generally confined to the lower two thirds of them, but in some of them extending up to the surface of the mucous membrane. The fat was in the shape of very small globules; the epithelium was very granular. The *liver* was very fatty. The *bladder*, *ovaries*, and *uterus* were normal.

I show the specimen to the association as a pathological curiosity, and not in expectation that anything can be learned from it, though it is certainly interesting that even so small a foreign body as the upper surface of the head of a pin should have been for a long time free in the cavity of the ventricle without producing thrombosis.

The pin had evidently been in its present situation a long time, and in all probability had entered the body by the mouth. Whether it was causative in the production of the heart lesions, and secondarily of the kidney and other lesions, can only be a matter of conjecture in the absence of a definite history. I have in vain endeavored to obtain such a history from the husband and employer of the woman. A letter from the latter gentleman, a physician, states that during the week preceding her admission to the hospital she suffered occasionally from severe attacks of dyspnœa, but gives no facts of her antecedent history.

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**Invalid Cookery in the First Century.**—In pleurisy the practice of the Roman physicians in the reign of Tiberius (A. D. 14–37) was to keep the patient on food as light and demulcent as possible (*cibus quam maxime tenuis et lenis*), principally on nutrient drinks (*sorbitiones*), of which barley gruel was a favorite, or, equally so, "broth in which leeks and a young poultry-cock had been boiled together" (*jus in quo porrus cum pullo gallinaceo coctus sit*). Readers of Lockhart's "Life of Scott" must remember the famous forty-first chapter, in which the author refers to Sir Walter's favorite dishes, "such as Scotland borrowed from France before Catherine de Medicis brought in her Italian *virtuosi* to revolutionize the kitchen like the court. Of most of these he has in the course of his novels found some opportunity to record his esteem. But, above all, who can forget that his King Jamie, amidst the splendors of Whitehall, thinks himself an ill-used monarch unless his first course includes 'cocky-leekie.'" Mr. Lockhart, who was a well-read scholar, should have known that the savory broth referred to was as little French as it was Scottish, but was an important article in the invalid *menu* of the first century, if not indeed much earlier.—*Lancet.*

**Typhoid Bacilli in the Kidneys.**—According to the "Lancet," "Dr. Konyaeff has published some researches, which he has made with the

this species has seven costal ribs (Haplopappus) articulate with the sternum and the ends of the vertebral ribs; *all* of these had been broken across by the ball, while at the wound of exit the scapula of the right side had been twice fractured across at its posterior third, but the vertebral ribs were apparently uninjured. In healing, the costal ribs each individually had made a good union and there was no ankylosis among them. The blade of the scapula, something in form like a miniature blade of a cimeter, showed a most interesting condition, for, notwithstanding the fact that the apical piece had been drawn down some little distance toward the sternum, it had, nevertheless, by the aid of the second

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## A REVIEW OF THE YEAR.

IT looks as if this issue of the Journal would be sent to press without our having been called upon to record during the year any of the epochal occurrences that form the most notable tokens of the advance of our art. But the year has been one of substantial progress, nevertheless. Perhaps the most striking novelty that has been brought out is the proposal, by Dr. Senn, of Milwaukee, to employ intestinal insufflations of hydrogen as an aid to diagnosis in abdominal wounds. An important new hypnotic, sulphonal, has come into common use, and it seems to be the general opinion that it constitutes a most valuable addition to the materia medica. The trials that have been made of erythrophlœine as a local anæsthetic have not resulted in raising that alkaloid to the rank of cocaine, but they are of interest as recalling the early experiments made by Dr. Hammond and Dr. Mitchell with the bark of the tree from which it is derived.

The procedure known as intubation of the larynx has continued to meet with favor, and its practice has gained decidedly in precision. Concerning saccharin, while perhaps not all that was expected of it as a sweetening agent has been realized, new therapeutic properties have been found to be possessed by it, and it seems destined to take its place as a drug having well-defined uses. The diversified purposes for which antipyrine has been employed are remarkable, and probably we can not yet mark out its full field in the treatment of disease. Among the subjects that have been earnestly discussed in this country and elsewhere are the surgery of the brain, especially by Dr. Roswell Park and Mr. Victor Horsley; inflammatory affections of the vermiform appendix and adjacent structures; the use of systematic exercise in heart disease, as prominently set forth by Oertel; and the general subject of tumors, particularly as considered in the recent discussion before the New York State Medical Association.

Society work has been active during the year. So far as America is concerned, the most noteworthy occurrence in this connection has been the successful inauguration of the Congress of American Physicians and Surgeons. Among other important and promising new organizations are to be mentioned the American Physiological Society, the Association of American Obstetricians and Gynæcologists, and the Southern Surgical and Gynæcological Association. Of the notable additions to the teaching facilities of the country, the Hoagland Laboratory, lately opened in Brooklyn, deserves special mention.

Of important legislation bearing upon medical matters there has been little or none. It is true, however, that the State of New York is about to undertake an experiment that may turn out to be of considerable interest to physiologists—that of substituting electricity for the hangman's rope in the execution of capital punishment. Of much more immediate interest, and assuredly more closely bound up in true humanitarianism, are the excellent devices adopted by the Surgeon-General of the State of New York in establishing ambulance corps in the militia. In a number of the States, notably in the West and in the South, the State boards of health have continued to show commendable energy in their executive work and in diffusing sanitary information among the people, and the same boards or others organized for the purpose have accomplished much in keeping pretenders and incompetents out of the medical profession. We are sorry to be obliged to say that Congress has not yet taken action calculated to mitigate the unsatisfactory conditions under which medical service in the navy is expected to be undertaken.

The country has been free from epidemics of a character serious enough to work more than a local derangement of ordinary trade and travel, save in the matter of the outbreak of yellow fever in Florida, and in that case the restriction of the disease to a circumscribed area within the State and the ample precautions taken to prevent its recurrence next spring testify abundantly to the efficiency and fidelity of the officers of the Marine Hospital Service.

## *MINOR PARAGRAPHS.*

### POISONING WITH SULPHONAL.

IN the "Deutsche Medizinal-Zeitung" for November 26th Dr. Bornemann, who has charge of an institution for the treatment of neurotic invalids, gives an account of the case of a physician, fifty-three years old, a victim to the morphine habit, to whom sulphonal was given among various other hypnotics. On one occasion sixty grains were given shortly after nine o'clock in the evening, and thirty grains more an hour after midnight. Sleep did not follow promptly, but the patient shortly showed symptoms of muscular inco-ordination of a decided character. It took six days for the ataxia to subside entirely, and during a portion of that time there was great mental depression. The author infers that the action of sulphonal is not confined to the cerebral cortex, for in this case the ataxia was of central origin, inasmuch as the patient's condition was the same whether his eyes were open or closed. Certainly the case should serve as a reminder that the use of sulphonal is not wholly free from danger.

### THE UNIVERSITY MEDICAL COLLEGE.

SOME stir has been made in the newspapers over certain manifestations of discontent among the students of the Medical Department of the University of the City of New York. Meetings have been held by the students, at which their displeasure has been expressed at the action of the faculty in postponing the appointment of a professor of anatomy. It seems that they are desirous that the appointment should be given to a gentleman who has taught anatomy in the college for many years in subordinate positions. The faculty, on the other hand, have let it be understood that they preferred to wait, and at length to fill the chair by open competition. The position taken by the

students is creditable to them, viewed as a matter of loyalty, but it is to be hoped that their natural fondness for certain tried teachers may be reconciled with the course that the faculty may finally decide upon, for nobody can have the real interests of the school more at heart than the faculty.

### THE HOSPITAL SATURDAY AND SUNDAY COLLECTION.

Our readers generally are aware of the thoroughly commendable and efficient work done by the Hospital Saturday and Sunday Association of New York, namely, the collection of funds in the churches, in the synagogues, and through trade organizations to be distributed among the various hospitals of the city. These institutions are doing a constantly increasing work, and are yearly more and more in need of such an auxiliary to enable them to meet expenses. It is to be hoped, therefore, that this year's collection will show a handsome increase over those of former years.

### THE VITAL STATISTICS OF NEW YORK.

There are signs that the Health Department's effort to secure a more general compliance now than formerly with the ordinances calling for returns of marriages and births are proving successful. For example, the department's report for the week ending December 1st includes returns of 302 marriages, 732 births, 58 still births, and 691 deaths. Returns of deaths have been unavoidable for many years past, but those of births, and marriages it has been possible to evade in many instances, so that commonly in former years the deaths reported exceeded the births, and that fact led to grossly misleading statistics.

### ITEMS, ETC.

**Infectious Diseases in New York.**—We are indebted to the Sanitary Bureau of the Health Department for the following statement of cases and deaths reported during the two weeks ending December 22, 1888:

| DISEASES. | Week ending Dec. 15. | | Week ending Dec. 22. | |
|---|---|---|---|---|
| | Cases. | Deaths. | Cases. | Deaths. |
| Typhoid fever | 21 | 8 | 16 | 5 |
| Scarlet fever | 210 | 31 | 241 | 53 |
| Cerebro-spinal meningitis | 1 | 1 | 4 | 4 |
| Measles | 334 | 20 | 374 | 24 |
| Diphtheria | 133 | 23 | 144 | 49 |

**The Medical Society of the State of New York.**—The eighty-second annual meeting will be held in Albany on Tuesday, Wednesday, and Thursday, February 5, 6, and 7, 1889. We are asked to state that it will greatly facilitate the labors of the business committee if members and delegates desiring to read papers will immediately forward their names, with the title of their papers, to Dr. D. B. St. John Roosa, chairman of the committee, No. 20 East Thirtieth Street, New York. The following-named papers have been promised: "The Ætiology of Croupous Pneumonia," by Dr. Edward W. Sternberg; "A Clinical Study of Alopecia Areata and its Treatment," by Dr. L. Duncan Bulkley; "Chronic Headache," by Dr. C. L. Dana; "Vertigo, its Causation and Therapeutics," by Dr. J. Leonard Corning; "The Medical Treatment of the Diseases of the Urinary Organs in Children," by Dr. A. Jacobi; "The Treatment of Typhoid Fever," by Dr. S. S. Burt; "The Management of Cardiac Dilatation, based on its Ætiology," by Dr. A. W. Loomis; "The Municipal Control of Diphtheria," by Dr. Charles Storer; "The Prevention of Summer Diarrhœa among Infants, viewed in the Light of the Lesions," by Dr. L. Emmett Holt; "Some Sanitary Suggestions," by Dr. L. E. Felton; "The Diagnostic Value of Spinal Rotation," by Dr. Bernard Barton; "The Uses of Galvanism in Gynæcology," by Dr. W. E. Ford; "The Management of Hip-joint Disease," by Dr. A. M. Phelps; "The Treatment of Hypertrophies at the Base of the Tongue," by Dr. W. C. Phillips; "Recent Advances in the Treatment of Hernia," by Dr. W. B. De Garmo; "A Plea for the Employment of Koeller's Method," by Dr. C. A. Powers; "The Orthopædic Treatment of Tubercular Disease of the Knee in Children," by Dr. V. P. Gibney; "A Contribution to the Surgery of Central Tumors," by Dr. L. S. Pilcher; "A Contribution to the Surgery of the Spine," by Dr. Robert Abbe; "The Disorders of Menstruation," by Dr. Andrew F. Currier; "The Treatment of Acute Inflammation of the Middle Ear," by Dr. Gorham Bacon; "The Operative Treatment of Hyperostosis of the External Auditory Canal," by Dr. E. Gruening; "The Use of Prismatic Spectacles for the Relief of Asthenopia caused by Insufficiency of the Ocular Muscles, with Reports of Cases," by Dr. D. Webster; "Considerations concerning the Operation for Hard Cataract," by Dr. Henry D. Noyes; "Membranous Rhinitis," by Dr. Frank H. Potter; "The Spectroscopic Examination of the Blood and certain Diseases of the Eye," by Dr. Lucien Howe; "Purulent Conjunctivitis of Infants and Blindness in relation to the State," by Dr. Lucien Howe.

**The Journal of Cutaneous and Genito-urinary Diseases,** beginning with the number for January, 1889, will be published by D. Appleton & Co. The editor, Dr. Prince A. Morrow, has associated with him in the editorial management of the journal Dr. John A. Fordyce, who brings with him a ripe experience in dermatology, and whose work will enhance the value of this popular and highly instructive journal.

**Army Intelligence.**—*Official List of Changes in the Stations and Duties of Officers serving in the Medical Department, United States Army, from December 16 to December 22, 1888:*

Alexander, Charles T., Lieutenant-Colonel and Surgeon, and Kilbourne, Henry S., Captain and Assistant Surgeon, detailed for duty on Army Retiring Board to meet at Vancouver Barracks, Washington Territory, at the call of the president thereof. Par. 22, S. O. 292, A. G. O., Washington, D. C., December 15, 1888.

Carter, William F., Captain and Assistant Surgeon. By direction of the Secretary of War, the leave of absence granted in S. O. No. 116, November 12, 1888, Department of Texas, is extended five months. Par. 4, S. O. 292, A. G. O., Washington, December 15, 1888.

McCreery, George, Captain and Assistant Surgeon, is granted leave of absence for one month. Par. 4, S. O. 265, Headquarters Division of the Atlantic, Governor's Island, N. Y., December 15, 1888.

Hopkins, William E., Captain and Assistant Surgeon, is detailed as member of the Army Retiring Board to meet at San Francisco, Cal., *vice* Major Henry E. Tilton, Surgeon, relieved. Par. 3, S. O. 294, A. G. O., Washington, December 18, 1888.

**Society Meetings for the Coming Week:**

Tuesday, *January 1st:* New York Obstetrical Society (private); New York Neurological Society; Elmira Academy of Medicine; Buffalo Medical and Surgical Association; Ogdensburgh Medical Association; Medical Societies of the Counties of Broome (quarterly) and Niagara (semi annual—Lockport), N. Y.; Hudson (Jersey City) and Union (quarterly), N. J., County Medical Societies; Androscoggin, Me., County Medical Association (Lewiston—annual); Chittenden, Vt., County Medical Society; Baltimore Academy of Medicine.

WEDNESDAY, *January 2d:* Society of the Alumni of Bellevue Hospital; Harlem Medical Association of the City of New York; Medical Microscopical Society of the City of Brooklin; Medical Society of the County of Richmond (Stapleton), N. Y.; Penobscot, Me., County Medical Society (Bangor); Bridgeport, Conn., Medical Association; Philadelphia County Medical Society.

THURSDAY, *January 3d:* New York Academy of Medicine; Brooklyn Surgical Society; Society of Physicians of the Village of Canandaigua; Medical Society of the County of Cayuga, N. Y.; Boston Medico-psychological Association; Washington, Vt., County Medical Society (annual—Montpelier); Pathological Society of Philadelphia.

FRIDAY, *January 4th:* Practitioners' Society of New York (private); Baltimore Clinical Society.

SATURDAY, *January 5th:* Clinical Society of the New York Post-graduate Medical School and Hospital; Manhattan Medical and Surgical Society (private); Miller's River, Mass., Medical Society.

## OBITUARY NOTES.

**Ira Russell, M. D.,** of Winchendon, Mass, died on Wednesday, the 19th inst. The deceased was born in Rindge, N. H., in November, 1815, and was graduated from the Medical Department of the University of the City of New York in 1844. After practicing in Winchendon for a few years, in 1853 he removed to Natick, Mass., where he remained until the breaking out of the Civil War, when he entered the volunteer service as surgeon to the Eleventh Massachusetts Regiment. In 1862 he was appointed brigade surgeon, and in 1863 medical director in northwestern Arkansas. In 1865 he was brevetted lieutenant-colonel for meritorious services. In 1867 he settled in Winchendon, where he has since resided. He was a member of the Massachusetts Medical Society and of the American Medical Association.

**George J. Bernays, M. D.,** of St. Louis, died on Monday, the 17th inst., at the age of sixty-four. He was graduated from the University of Würzburg in 1859, and his professional life in this country has been spent in St. Louis.

**Edwin M. Snow, M. D.,** of Providence, R. I., died on Saturday, the 22d inst. He was born in Pomfret, Vt., in May, 1820, and was graduated from the College of Physicians and Surgeons of New York in 1849. After residing in Holyoke, Mass., for one year, he settled in Providence in 1850. His attention was given early in his professional life to sanitary matters, and he founded and was the first superintendent of the Health Department of Providence, and he soon became a recognized authority in sanitary science. He was a member of the American Medical Association and of the American Public Health Association, of which he was twice elected president.

# Proceedings of Societies.

## NEW YORK ACADEMY OF MEDICINE.

SECTION IN LARYNGOLOGY AND RHINOLOGY.

*Meeting of November 27, 1888.*

Dr. O. B. DOUGLAS in the Chair.

**A Case of Primary Tuberculosis of the Buccal Cavity.**—Dr. J. W. GLEITSMANN showed a patient who had been cured of this rare and dangerous disease, and read the following comments on the case and its remarkably successful treatment: All writers who had described the affection had spoken of it as fatal. He had been able to find records of only three recoveries from it where it had been primary, and one where secondary. That the case which he presented had been one of primary tuberculosis there was no doubt; the lungs and the lymphatic glands were still unaffected. The patient had come to him fourteen months previously, having been well up to within two weeks prior to her consulting him. At that time she had had slight pains on swallowing food, and fluids in particular. Her family history and general history were good. He had found on his first examination an ulcer as large as a pea on the base of the tongue, and to the left. On the second visit he had applied to the ulcer lactic acid, a remedy which he had been the first in this country to use, and to the use of which he mainly attributed the patient's recovery. A scraping away of diseased tissues, the rubbing in of lactic acid, and, at a certain stage, the galvano-cautery, had been the only measures which he had made use of. He had purposely kept aloof from medication, wishing to see the general and local phenomena in an unaltered state. The ulcer at the base of the tongue had proved to be only the beginning of the process with which he had had to struggle. A tuberculous ulceration had next appeared along the arytæno-epiglottidean ligament. He had attacked it, as before, with the blunt spoon and lactic acid. Repeated microscopical examinations of the matter removed invariably showed tubercle bacilli present in large numbers. In the early part of last July the primary ulceration on the base of the tongue had healed, but the ulceration in the epiglottidean folds had grown and was making great havoc. A little later there was pain in the left tonsil, and, on examination, a deep flabby ulceration was found in and about the tonsil, which also he had scraped out and cauterized with the galvano-cautery. Later on the lingual surface of the epiglottis had become affected. For a month it remained in an œdematous thickened condition; then, scarifying having failed to relieve this tuberculous infiltration, the whole lingual surface of the epiglottis had sloughed away, and with this the process had stopped at that point. On October 1st the free edge of the soft palate had ulcerated, but healed after being cauterized. Next the ulceration had reappeared in the arytæno-epiglottidean folds, the tonsils were ulcerating as rapidly as before, and the uvula was now badly involved. The condition of the patient indeed became very serious, swallowing gave her great pain, and he had almost despaired of saving her life. On October 20th, feeling that the last measures were now justified, he had scraped away the tonsils and scooped out the other infected areas with a sharp spoon, in spite of brisk hæmorrhage, and had rubbed in lactic acid most energetically. When the slough caused by the acid came away a few days afterward, he had been agreeably surprised to find a smooth and healthy granulating surface beneath, and the tuberculous process come entirely to an end. The pain on swallowing had ceased immediately after the last operation. The denuded surfaces had healed over with smooth cicatricial tissue, without sinuses, and with but a few irregularities or pockets. He ascribed the result mainly to the effect of the lactic acid. No medicines had been used internally. The patient was now in robust health and entirely free of any indications of tubercular deposits elsewhere. Her throat was inspected with the laryngoscopic mirror by most of the members present.

The CHAIRMAN then related the history of a case where, after a very deep syphilitic ulceration of the roof of the mouth, the palate had become adherent to the posterior wall of the pharynx, nearly occluding the latter. He had cut through the palate to re-establish the opening, and had applied monochloracetic acid

with the effect of keeping the pharynx open, and of causing the ulcer, which had finally perforated the roof of the mouth into the nose, to heal and contract so as to close the false passage.

Dr. J. M. W. Kitchen, discussing local germicides, recommended highly the hyposulphite of sodium solution, and referred to three cases where he had applied it in the beginning stage of what was either diphtheria or follicular amygdalitis. Four persons had been exposed to infection in the same house at the same time. Three of them whom he attended and treated with application of the hyposulphite recovered immediately. The fourth, under the usual methods of treatment, had a sickness of two weeks.

**Improved Instruments for Deflection of the Nasal Septum.**—Dr. George Hore showed two forceps designed for correcting this deformity, one of which had between the flat faces of its jaws a small pin received into a socket at its free end. By punching out the outline of the displaced bone at short intervals it was more easily restored to its normal place by the other forceps. The latter had smooth flat jaws which were set so as to grip firmly any body, however thin, which came between them when closed. He had found it much more efficient than the Adams forceps on this account.

**Improved Tongue Depressor for Children.**—Dr. J. M. Blair exhibited a tongue depressor consisting of a flat, slightly convex blade, the free end of which was narrowed and curved quite over on itself, forming a blunt hook by which the epiglottis could be pulled forward on to the base of the tongue at the same time that the tongue was depressed. Thus a full view of the pharynx and larynx could be obtained in children who could not control themselves so as to make examination by the usual methods at all satisfactory.

**Pharyngeal Mycosis.**—Dr. A. O. Vander Poel read a paper with this title. (It will be published hereafter.)

Dr. D. B. Delavan remarked that the affection was not uncommon. He had seen a case that same day. He had also observed the liability to attacks of acute follicular amygdalitis being set up from time to time, in which the presence of the parasite could often be shown. Consequently many cases of acute follicular amygdalitis were treated wrongly, the frequency of pharyngeal mycosis not being generally appreciated.

Dr. Kitchen suggested the hyposulphite of sodium as a means of treatment, especially if allowed time to soak in well, and therefore applied repeatedly with a swab.

Peroxide of hydrogen and other agents were recommended in diphtheria by other members.

Dr. White asked for information from any member as to whether the various sorts of dust, such as librarians and many factory employees constantly inhaled, were a prominent cause of laryngeal and other inflammations in the respiratory tract.

Dr. Kitchen replied that he was himself exceedingly liable to bronchitis, having had several hundred attacks of it. He knew that the inhalation of dust had produced a large number of them. So certain was it to do so that he always carried a lady's veil in his pocket, and, whenever he saw a cloud of dust coming along the street, placed the veil over his mouth and nose till he reached pure air again. Dusts acted both as mechanical irritants and as physiologically noxious agents. The pollen of certain plants caused an irritation producing hyperæmia of the mucous membranes in some way not fully understood.

Dr. C. S. Allen replied to Dr. Kitchen's question that in his hospital service it was common to find a large proportion of those whose work in factories exposed them to dust from polishing-wheels, or to the dust of tobacco, suffering from nasopharyngeal affections.

Dr. J. P. Tuthill asked for opinions as to what contra-indications to the use of cocaine as an anæsthetic spray, if any, had been found; and, secondly, what treatment was best when the use of cocaine was found to have brought on dyspnœa, faintness, and staggering, as sometimes happened? In two cases he had caused convulsions by the use of a cocaine spray. Was there any means of knowing such patients beforehand?

The Chairman replied that no means was known of determining those constitutions thus morbidly sensitive to the toxic action of cocaine short of actual trial. As antidotes he used digitalis, ammonia, and whisky.

**The Use of Cocaine in Laryngology and Rhinology** was discussed at length by Dr. Huntington Richards, Dr. Delavan, Dr. Gleitsmann, and others. It was agreed that some patients were made faint by the least touch of mild solutions on the mucous membrane. It was urged that mild solutions had quite as lasting an effect as the stronger ones, though the effect was slower in appearing; also that care should be taken not to allow the solution to trickle into the larynx, and to clean the surface of the remains of each application before applying another. No lasting relief to irritable inflammations was to be had from cocaine, as there was a reaction from its primary effect which went quite as far in the other direction. As a general stimulant, it was always followed by a severe vital depression. The danger of forming a cocaine habit existed, according to Dr. Tuthill, only for those who had what might be called the habit-forming habit.

## AMERICAN GYNÆCOLOGICAL SOCIETY.

*Thirteenth Annual Meeting, held at Washington, September 18, 19, and 20, 1888.*

The President, Dr. Robert Battey, of Rome, Ga., in the Chair.

(*Continued from page 699.*)

**The Ætiology, Pathology, and Treatment of Anteflexion of the Uterus.**—Dr. T. Gaillard Thomas, of New York, read a paper with this title. Three varieties of anteflexion, he said, were usually recognized—that of the body, that of the cervix, and that of both combined. An anteflexion might also be reducible or irreducible. The term "congenital" as applied to this displacement was incorrect, since it did not exist at birth, but was the result of imperfect development. Bad habits in regard to dress and constipation increased, by direct pressure, the natural anterior bend in the organ. Obstinate constipation was more likely to lead to anteflexion of the cervix. Malnutrition was a potent factor. The displacement led to no symptoms until after puberty, when they were seldom absent. Dysmenorrhœa and sterility or a tendency to abortion were the common accompaniments. The diagnosis was easy, except in certain cases where the angle of flexion was so high up in the body of the uterus as to elude the examining finger. Great caution was necessary in giving a prognosis, as treatment was often unsuccessful; but so many were either relieved or entirely cured that gynæcologists should always offer hope. Each case must be studied and treated separately. There was a great tendency to relapse even after years of treatment, as the wall of the uterus became atrophied or the seat of fatty degeneration. In regard to treatment the reader's views were different from those of some specialists. He had had patients come to him who had passed through the hands of several gynæcologists, one of whom had tried internal remedies alone, another local applications and vaginal douches, a third electricity, a fourth pessaries. All of these were wrong, since they did not proceed in a rational manner. The author first decided whether the case was a suitable one for treatment, then whether palliative or operative treatment was preferable, and finally whether the patient was willing to take the risks. There was a risk attending every gynæcological operation, no matter how trivial, and this should be

frankly stated to the patient and her family. He would not be understood as undervaluing pessaries, but would only deprecate the rash use of them. He employed several, but had been most satisfied with Cutter's, used as an anteversion pessary. If the latter did not give relief he used a glass stem and cup. The patient was put on generous diet and the syrup of hypophosphites, and galvanism was applied to the uterus twice a week. After several months of this treatment the stem was removed and the result noted. If the flexion was irreducible he dilated the canal with an Ellinger-Goodell instrument, and introduced a stem under strict antiseptic precautions. A carbolized douche was given every eight hours. If the temperature rose to 102° F. the stem was removed and more frequent douches were given; if it rose to 104°, the uterus was washed out. The author had never had a death, although he had had two cases of pelvic abscess. In cases of true cervical flexion, due to arrest of development, it was necessary to perform posterior section, an operation that had been abused, but should not therefore be abandoned. In a restricted class of cases the only resort was to amputate the cervix and keep a stem in for three or four months.

The author was unable to state in what percentage of cases of anteflexion sterility was cured by the operation. His impression was that conception had frequently occurred after the use of ordinary pessaries, but rarely after the introduction of a stem, and only once after amputation of the cervix. In conclusion, he believed that, while treatment often failed to cure, or even to palliate, it not infrequently relieved the symptoms. When he failed, he felt that it had been in spite of his best efforts.

Dr. Graily Hewitt, of London, remarked that anteflexion developed very gradually. He accepted Dr. Thomas's classification. The degree of flexion was important; it depended largely on the degree of softness in the uterine tissue. After the flexion had occurred the tissue might harden again. Sterility was present in many cases where the flexion caused no marked symptoms; it was also a common cause of abortion. He had cured sterility in one instance by making a reef in the posterior vaginal wall, thus drawing the cervix backward. General treatment was very important.

Dr. Priestley, of London, alluded to the great change of opinion that had taken place in Great Britain with regard to the significance of uterine displacements since the time of Churchill. Sufficiently trustworthy statistics with regard to the frequency of anteflexion and the results of treatment were wanting. Through Dr. Hewitt's influence a school had sprung up which seemed to attribute even hysteria in young girls to this condition. Its significance was certainly much greater in the case of married women, where the element of sterility was to be considered. Many cases did not require treatment. There was always some risk in intra-uterine manipulations, and a perfectly safe method of treatment was greatly needed.

Dr. Ely Van de Warker, of Syracuse, said that he had ten years before advocated the treatment of which Dr. Thomas did not then approve, but had since adopted. He had used stem-pessaries for twenty years, and had never seen any trouble result, even before the introduction of antiseptics. He had never seen a case of anteflexion unaccompanied by symptoms, though these might vary in different patients. A patient might have no symptoms until after marriage; then she became, in consequence of the flexion, weak, nervous, and hysterical.

Dr. H. P. C. Wilson, of Baltimore, believed that constipation was the most common cause of anteflexion in young women, and it developed quite gradually. He agreed in general with the author in regard to treatment, although he had never seen any benefit result from the use of pessaries, since these only increased the flexion so far from curing it. He still performed Sims's original operation of posterior section, and then inserted into the cervix a plug of iron-cotton, which was allowed to remain for three days. After cicatrization had occurred the canal was kept open by means of a dilator. So far as he could remember, at least seventy-five per cent. of the patients thus treated had conceived. In one case a woman had borne a child after being sterile for fifteen years.

Dr. B. McE. Emmet said that anteflexion as such seldom gave rise to symptoms, these being more often due to former pelvic inflammation. The pain was often due to the sinking of the uterus below its normal plane, and this could be relieved by elevating the organ with an ordinary retroversion pessary.

Dr. Goodell remarked that he did not recognize any symptoms referable to anteflexion *per se* except dysmenorrhœa and sterility. Hysteria and other neuroses might of course accompany it. Rest and tonic treatment were best in the case of young girls. To cure the symptoms mentioned he dilated the os, but rarely used a stem afterward. He had operated over three hundred times without any serious results. He had long since ceased to practice posterior section. Dilatation did not cure the anteflexion, but it enlarged the canal and cured dysmenorrhœa and sterility. Anteflexion pessaries were of little use, as they pressed on the bladder.

Dr. Wylie said that he had largely discarded pessaries. He believed that the symptoms in cases of anteflexion were due to the accompanying endometritis, and that the appropriate treatment was to dilate and drain the canal; hence the stem did not straighten the uterus so much as it exerted a stimulating action on the diseased endometrium. It was a dangerous instrument, and if a patient was allowed to go about wearing it she was liable to an attack of pelvic peritonitis. He had operated in a case of salpingitis in which the tubal disease was traceable to the use of a stem-pessary. A well-marked flexion might exist without symptoms, but if the endometrium at the os internum was hyperæsthetic (as shown on passing a sound), reflex symptoms would be noted. Posterior section was applicable to cases of sharp cervical flexion, but the old anterior incision should be discarded, as it was highly dangerous.

Dr. Thomas closed the discussion with a few remarks.

**The Results of High Amputation of the Cervix Uteri for Cancer, based upon Observations in Fifty-five Selected Cases.**—Dr. Reamy read a paper with this title. No case was reported that had not been under observation for two or more years. The cases reported had been selected from over three hundred that had been under the reader's care. The results of the medical treatment of cancer had been negative, but in a certain percentage of the cases life might, he thought, be saved by a surgical operation, provided it was performed at the very earliest stage of the disease. The consideration of cases of advanced malignant disease of the cervix, or cancer of the corpus uteri, was excluded from the present discussion, as they were of no use in deciding upon the curability or non-curability of cancer. In nearly all instances the patients had been operated upon in private, as hospital cases were usually already far advanced when first seen. The diagnosis in nearly every instance had been confirmed by a competent pathologist. The author's technique was the same as that described by Dr. Baker in a paper published in the "American Journal of Obstetrics" for April, 1882. He aimed at removing all the diseased tissue, making a wedge-shaped incision in the cervix. Sometimes it was safer not to amputate the supravaginal portion. As a rule, the disease began at the os externum and invaded the vaginal wall before extending to the deeper cervical tissue; hence it was more important to cut wide than deep. When the disease had extended higher the

reader made his preliminary incision as for vaginal hysterectomy. In many cases in which a cure resulted after total extirpation of the uterus a less radical operation would have been equally efficacious, where the cervix alone was involved. When the body of the uterus was involved, or the disease had extended to the posterior vaginal wall, extirpation was the only resource. If the supravaginal portion was not involved, why not be content with amputation of the infravaginal portion alone? Not only was the disease thoroughly removed, but flaps of healthy tissue were found which could be united with sutures, so that the stump presented a better appearance after the lapse of a year. The author had found that he was apt to remove the surrounding diseased tissue more thoroughly when performing high amputation than when doing vaginal hysterectomy. Careful observers had noted that in 75 or 80 per cent. of all cases the parametric tissues were involved, and the patient died before the body of the uterus was involved. Of the fifty-five patients operated upon by the author, twenty-eight had had no recurrence of the disease, one case having been under observation for fifteen years, while the shortest period that had elapsed since the operation was one year.

Dr. Baker said that all his success in the treatment of these cases was due to the teaching of Dr. Sims. The latter had been accustomed to excise the cervix with scissors and then to apply the cautery. The speaker had at first contented himself with simply excising a cone-shaped mass from the cervix, but he had soon found that he did not thus remove all the disease. He then began his incision higher up, and removed a cone as before, including nearly one third of the body of the uterus. The edges of the vagina were then united to those of the uterine wound with silver sutures. Subsequently he allowed the wound to remain open after applying the cautery freely. He had published his cases up to 1886, at which time, out of ten patients operated on, six were free from recurrence from three to four years after operation, and one after eight years. Five patients were now alive and well. At least 50 per cent. of the patients were well at the end of four years. It was necessary to keep a patient under observation for more than two years in order to decide as to the permanence of the cure. This method of treatment was better than total extirpation; in fact, the speaker would limit the operation for extirpation of the uterus to cases in which the body of the uterus was primarily affected, or where the disease tended to extend upward rather than laterally. Even if the vaginal vault was extensively involved by means of the curette and caustics it might be entirely removed.

Dr. John Byrne, of Brooklyn, said that for nineteen years he had used only the galvano-cautery in amputating the cancerous cervix. He had operated several hundred times, and in a considerable proportion of the cases the disease had not returned. Many patients were still alive at the end of periods varying from five to ten years, and several had since borne children. He had never had an accident from the operation; there was no difficulty in the use of the cautery. The cervix was drawn down, a circular incision was made around it, and the wire was applied; the cervix would be removed at the level of the os internum. If necessary, the scalpel or scissors could be used. The speaker could affirm that in every instance in which the disease returned it was not at the site of the operation.

Dr. Van de Warker said that after a thorough operation with a cutting instrument, with subsequent suture of the parts, when the disease returned it was impossible to remove much more of the uterus in the same way. For ten years he had relied on the chemical cautery, scraping away the cancerous tissue, and packing the cavity with tampons saturated with a solution of chloride of zinc. He cited a case in which a woman had had seven recurrences, yet after every treatment she improved and was able to return to her work. In this way she had been kept alive for several years.

Dr. Reamy, in closing, said in all his cases of high amputation he left the wound open and applied caustics in case of a recurrence. The great advantage of the primary cutting operation was that more of the diseased tissue could be removed. The point which he wished particularly to emphasize was that cancer of the neck of the uterus did not extend to the body as often as was usually supposed. Most of his patients were seen by him at an early stage in the disease, when it was called "laceration" or "ulceration." The reason why the treatment of cancer was so unsuccessful was that the patients were seen too late. The results of treatment in proper cases were most encouraging. It was surprising how little recognition the work of American gynæcologists in this field had received in Great Britain. Even the admirable Harveian lectures of Williams contained no reference to American statistics, notably those of Baker.

The President, Dr. Robert Battey, of Rome, Ga., then made a short address, in which he alluded to the change of the place of meeting from Boston to Washington in order to make the time coincide with that of the congress. Allusion was made to the number of vacancies in the list of members and the desirability of increasing the membership. A review of the records of the society since its foundation showed that the attendance at the annual meetings had varied from nineteen to forty-four, the average being twenty-nine. The attendance had been much greater when the meetings were held in the Eastern cities. Two fellows had been present at every meeting; one had contributed nine papers; two had written eight; two, seven; eight, five; and eight, four papers. But it was time for the older men to rest. New blood was needed. Without lowering the standard, the membership might be increased to one hundred, and eligible men in different parts of the country should be invited to apply. The president then referred to the subject of prior right in medical discoveries or operations. There should be a statute of limitation in medicine. If a physician concealed his discovery for years, until another not only made the same discovery but gave the profession the benefit of his observations, the former need not complain if he did not receive the credit of it. Personal modesty under such circumstances was wrong. The *ipse dixit* of an operator after he had allowed years to elapse before he set up his claim to priority was not enough to establish his claim before the world. Discoverers should promptly place their claims on record when the details were still fresh in their minds.

**The Pressure-forceps versus the Ligature in Vaginal Hysterectomy.**—Dr. E. C. Dudley, of Chicago, read a paper with this title. Reviewing the statistics of vaginal hysterectomy, the reader had found that the mortality from the operation was only 15 per cent. Leopold had lost but 6·2 per cent. of his patients, and Klotz none. The objections to the use of the ligature were the difficulty of applying it, whereby the operation was considerably prolonged, and the fact that it was unreliable. Péan, Richelot, and others had recommended the forceps. The technique was briefly as follows: The patient having been placed in the lithotomy posture, a Simon's speculum was introduced and the cervix was drawn down as far as possible. A circular incision was made around the cervix and the tissues were dissected up close to the uterus until the lower borders of the broad ligaments were reached. Douglas's pouch was opened, and two or three soft sponges, with strings attached, were introduced into the opening to absorb the blood and prevent the intestines from prolapsing. The index-finger of the left hand, or a blunt hook, was then passed over each broad ligament in turn, which was drawn down and grasped with a long-bladed hæmostatic forceps. After locking the for-

ceps, the broad ligaments were divided close to the uterus, and the organ was detached and removed. If the broad ligaments were diseased, other forceps could be applied outside the first ones, and the diseased portions could then be excised. Small vessels could subsequently be caught by other forceps. The time of operation was thus greatly shortened. It was even possible to coaptate the edges of the wound with forceps. These not only promoted drainage, but also caused sloughing of the tissues and destruction of any of the diseased parts that had not been removed. They were left in position from forty-eight to seventy-two hours, the vagina being packed with iodoform gauze. The author had collected twenty cases in which the forceps were used, with two deaths. A further application of this method had been suggested by Dr. Mary Dixon Jones in supravaginal amputation of the uterus for fibroid tumors. The author intended in the next suitable case of this kind to first secure the broad ligaments, and then remove the entire uterus; in this way all the advantages of the intraperitoneal method would be secured and the mortality would be reduced. A letter from Péan to the author was read in which the latter defended his claims to this special use of the hæmostatic forceps against those of Richelot.

Dr. Hunter said that he had used the forceps in four cases of vaginal extirpation, with three recoveries. He had found that the operation was considerably shortened, and that there was less danger of hæmorrhage than when the ligature was used. He thought the forceps shown by the reader too weak; he preferred Polk's modification of Richelot's. He had never been able to include the entire broad ligament in a single forceps; in one instance he had left fourteen *in situ* for forty-eight hours. No vaginal injection was given for three or four days. The operation ought to be completed in half an hour by this method.

Dr. H. T. Byford said that he preferred the ligature, and had no fear of hæmorrhage when using it. In eleven operations he had used the hæmostatic forceps four times, not having room to apply ligatures.

Dr. Reamy reported nine cases of vaginal hysterectomy, with one death. He did not see how the broad ligament could be secured with a single forceps, and if several were used there was no room to pull down the uterus. There was really no more shock than in ovariotomy; but it was one thing to have a patient survive the operation and another to know that she was cured of the disease. He thought that the author had underrated the difficulty of drawing down the broad ligaments, as there was often great lack of room.

Dr. Lane, of San Francisco (a guest of the society), said that he had performed the first vaginal hysterectomy in America in 1877 or 1878, having, after careful consideration of the anatomy of the parts, satisfied himself that it was feasible. He had operated fourteen times, with one death, and believed that it was highly important to select cases carefully. If the uterus could not be drawn down readily, the case was not suitable. He had found no difficulty in pulling down the broad liagments and passing a strong cord around each of them by means of a curved forceps. Three of his patients still survived, and some others had lived for several months after the operation.

Dr. Dudley, in closing, said that he had found no difficulty in drawing down the broad ligaments, and had not been inconvenienced for want of room even when sixteen or twenty forceps were applied. He had always operated with the hope of curing the patient.

**A Case of Rupture of the Uterus in Labor at Full Term.**—Dr. C. M. Green, of Boston, read a paper with this title. The patient, a multipara, was seen by the reader twelve hours after labor had begun. The cervix was deeply lacerated, and the lower segment much thinned. The head had not engaged, and an examination of the pelvis showed that it was of the rhachitic type, the anterior conjugate being three inches and a half. Version was performed by Professor Reynolds, and in about fifteen minutes a male child, weighing nine pounds, was extracted. The uterus contracted well, but the placenta was not expelled, and on examination it was found that it had escaped through a rent in the lower segment, and lay among the intestines; it was removed through the rent. The patient suffered from profound shock, and laparotomy did not seem to be advisable, since the uterus was well contracted. Her temperature rose to 103° F., the pulse being 130, and the abdomen became tympanitic. Her condition subsequently improved, and she made an uninterrupted recovery, being perfectly well at the end of a month. It was impossible to state just where the rupture occurred. It was probably due to the prolonged pressure of the head, which was in an occipito-posterior position, rather than to the version. In these cases, if the patient did not die within a few hours, she would probably do well. The indications for laparotomy were the presence of continuous hæmorrhage, and the entire escape of the child into the abdominal cavity. If the rupture involved the body of the uterus, it was better to do Porro's operation. In another similar case the reader would resort to high forceps delivery or craniotomy rather than version. He attended the same patient in labor two years after the accident described, and delivered her of an eight-pound child, the position of the head being occipito-posterior. Both the labor and the convalescence were normal.

**The Severe Vomiting of Pregnancy.**—Dr. Graily Hewitt, of London, in a paper with this title, said that the difference between the slight and severe vomiting of pregnancy was only one of degree. Many practitioners seemed to be able to find no resource in these cases except the induction of premature labor. Severe vomiting might be due to several different causes. These might be classed as non-uterine and uterine. Among the reported fatal cases of the former class were disease of the stomach, liver, and intestines. Mathews Duncan had described a fatal case of "icterus gravis" during pregnancy; Lomer had recently written a paper on the same subject. The second class of causes were due to abnormal conditions of the uterus—such as anteversions and retroversions or flexions, induration of the cervix, and endometritis. Retroflexion of the gravid uterus did not always cause severe vomiting. On the other hand, retroflexion of the non-gravid uterus sometimes gave rise to vomiting. Several cases of impaction of the anteflexed gravid uterus had been reported; this impaction was due to the unyielding character of the uterine tissue. By dilating the cervix in cases of vomiting we overcame the tension in the neighborhood of the os internum. As regarded treatment, most cases were cured by reducing the displacement, or sometimes by simply supporting the uterus. Severe vomiting might be of reflex origin, due to distension of the uterus. Some observers thought that the nerves around the os internum were primarily irritated. There was a close parallel between cases of vomiting in flexions of the gravid and of the non-gravid uterus. [This paper consisted principally of comments upon a series of printed tables prepared by the writer.]

Dr. Fordyce Barker, of New York, said that the subject of the paper was one of great interest, and that the profession was already deeply indebted to Dr. Hewitt for former papers on it. The speaker believed that vomiting during pregnancy was largely influenced by the constitution of the patient. Some individuals could not even ride in a railroad car without feeling nauseated, while others were never affected. It was not strange that a constitutional tendency of this nature was apt to be exaggerated during the period of gestation when there was such a total change in the system. He did not believe that anteflexion of the uterus

was a potent factor in causing vomiting, and cited, in support of this opinion, a case of marked antetlexion in which the patient became pregnant and passed through the entire period without experiencing the least nausea. The flexion was not cured by gestation, but recurred after delivery. In another case there was marked retroflexion with absence of vomiting. However, he had seen cases in which vomiting was associated with flexions. He had seen in consultation no less than ten patients who were *in extremis* from severe vomiting, the question of inducing labor having been entertained too late. He had never been obliged to induce labor for this cause, having succeeded in curing the patients without it. There were many methods of treatment, some of them apparently contradictory. Sometimes it was wisest to give the patient what she craved most, as in a case in which he allowed a lady, who had been able to retain nothing whatever, to eat lobster salad, for which she had a longing. The speaker referred to Copeman's method of dilating the cervix, which he had frequently found of value.

Dr. Skene agreed with Dr. Barker that the vomiting in these cases was often of neurotic origin. He had also observed that in cases of corporeal endometritis the patient was apt to have more nausea than when the cervical endometrium alone was diseased, and hence had been led to infer that the same pathological condition existing in a pregnant uterus must be a potent factor in causing vomiting. There were many different causes, and each case must be investigated separately.

Dr. Wylie said that he had frequently dilated the cervix, even as high as the os internum, for vomiting, and nearly always with success. He believed that the neurotic condition of the patient was an important factor. The dilatation must be thorough. At least three fourths of the cases of obstinate vomiting during pregnancy could be cured thus. The speaker always resorted to this method after excluding the ordinary causes of vomiting.

Dr. Hewitt, in closing, said that the word "neurosis" had come to be used rather loosely to explain symptoms which were otherwise obscure. In employing it we probably referred to greater susceptibility of the nerve-centers in a given case, as in the case of weak, anæmic subjects. Such patients were often cured by perfect rest alone. In general, the recognition of the cause of the vomiting was the most important point, because as soon as the diagnosis was made the treatment was clearly indicated.

**The Treatment of Chronic Endometritis by Drainage.**—Dr. Polk read a short paper on this subject, in which he presented the results of treatment in seven cases, all the patients being cured. The treatment was applicable to either the hæmorrhagic or the catarrhal form, which were so difficult to cure. In these cases the os externum was often large and gaping, while the os internum was contracted; hence it was necessary, in the first place, to dilate the latter thoroughly, the patient being under an anæsthetic. Then the uterine cavity was irrigated by means of a double catheter, and after being dried was packed with iodoform gauze, which was left *in situ* for twenty-four hours or longer, when it was removed and fresh gauze was introduced. In this way we obtained the advantage not only of thorough drainage, but also of direct medication to the diseased endometrium. This treatment was especially valuable in those cases of endometritis fungosa in which we are accustomed to use the curette.

**The Dangers of Galvano-puncture in the Treatment of Pelvic Tumors.**—Dr. Ely Van de Warker, of Syracuse, read a paper with this title, in which the following illustrative cases were cited:

Case I.—The patient had a large mass behind the uterus, which had grown rapidly and was evidently a fibroid tumor. Bipolar galvano-puncture was tried, according to Freeman's method. The patient, after the first application, developed a high temperature, with local tenderness, and subsequently an abscess formed and discharged. The tumor became visibly smaller. Subsequently bipolar puncture was tried again, without bad results.

Case II.—The tumor was a large fibroid, filling the pelvis and firmly adherent. Apostoli's method was followed, one hundred and fifty milliampères being reached. The patient was sent home in a carriage after recovery from the anæsthetic. Two weeks after the operation (during the interval she had been reported as quite ill) there was general softening of the tumor, which was subsequently aspirated, a little bloody fluid, but no pus, being removed.

Case III.—The pelvis was filled with a hard, irregular mass. Under chloroform, galvano-puncture was employed, with a current of one hundred milliampères passed for ten minutes. The needle penetrated a soft mass like cheese. The operation was followed by pain in the abdomen and a moderate elevation of temperature. The patient died on the seventh day of peritonitis.

The speaker said that the cases of abscess had all occurred after galvano-puncture, hence he preferred to use the electrolytic action of the current. Galvanism must be employed with great care, as the milliampèremeter did not always furnish a safe guide. He suggested the following points: 1. In no case should a cystic tumor (*i. e.*, a fibrocyst) be punctured, since, if the fluid became purulent, it could not be drained away. 2. The passage of the current might generate ptomaines, which were absorbed and produced general infection. 3. Special precautions should be taken in selecting cases for operation. A fibroid tumor should first be punctured in order to see if it was undergoing cystic degeneration.

The paper was discussed briefly by Dr. Engelmann and others.

(*To be concluded.*)

# Reports on the Progress of Medicine.

## PHYSIOLOGY.

By LOUISE G. RABINOVITCH.

**On the Variation of the Quantity and Activity of Reduction of Oxyhæmoglobin in Typhoid Fever.**—In eleven typhoid patients A. Hénocque and George Boudouin ("Jour. des soc. sc.," No. 6, 1888) made one hundred and eighty hæmatoscopic analyses of the oxyhæmoglobin and of the activity of its reduction. The observations were performed at the same time daily. The results are: In typhoid patients a lowering of the quantity of oxyhæmoglobin exists at a rate of 9 to 10 or 11 per cent., which continues for a considerable period during convalescence; anæmia of the first or second degree persists. The variations of the duration of reduction are more marked, especially in the first two or three weeks of the disease; at the period of convalescence the duration of reduction is shorter. In complicated cases the duration is much influenced. The activity of reduction is noticeably diminished in the initial period, particularly when anæmia and diminished nutritive changes are combined. In the period of convalescence the activity, while increasing, remains still lowered, on account of the persisting anæmia. In other words, from the hæmatoscopic point of view, typhoid fever is characterized by a pronounced and persistent anæmia and by the diminished activity of nutritive changes, but the latter improves before the anæmia disappears.

**Studies on the Variation of the Respiratory Exchanges with the Pulmonary Ventilation, and under the Influence of Sleep.**—Hanriot and Ch. Richet ("Jour. des soc. sc.," No. 2, 1888) followed out in a

series of experiments the continued curve of oxygen absorbed and carbon dioxide exhaled. They found the production of carbon dioxide to be independent of the frequency of the respiratory movements. The excretion of this acid is influenced by the respiratory movements in the beginning only. The quantity of carbon dioxide produced is scarcely dependent upon the sleeping or waking condition of the individual. The authors think the slightly diminished quantity of carbon dioxide during sleep depends upon the muscular resolution being greater during this time. They also found the nutritive exchanges to be lowered in hypnotic sleep.

**Colored Vision and the Equivalence of Sensory Excitations.**—Ch. Féré (" Jour. des soc. sc.," No. 21, 1888) distinguishes between " photopsie " and " chromopsie " occurring in individuals after their different special senses were stimulated. Photopsie is defined as a luminous impression following a sonorous stimulus and which can occur only in the darkness. Chromopsie, or colored visual sensation, has multiple forms; it may occur as a consequence of sonorous stimulations by a singing voice only, by the voice of ordinary speech, by pronouncing consonants or vowels, and sometimes it may be caused by a special voice or instrumental notes. The visual sensation is independent of the timbre, intensity, or pitch of the sound. Some subjects see only one color, others see many. Pouchet and Fourneux explain the phenomena by supposing nerve-fibers going from the auditory to the visual center, which fibers are usually affected by luminous impressions transmitted by the optic-nerve fibers exclusively. Pedrono devised the view of anastomosis between the cerebral centers. The theory of simultaneous action of the visual and auditory vibrations on both sensory organs was sustained by the fact that blind patients experienced colored visual sensation after the report of a cannon. Baratoux and Urbanschitsch think, after the author's statement, that the sonorous vibrations affect to a slight degree the sense of vision, and the perception of this excitation occurs after the auditory excitation. In Féré's opinion, the excitations must be of identical nature for the occurrence of simultaneous, sonorous, and luminous impressions.

Colored smell (*olfaction colorée*) was observed by Hilbert. In Féré's case of colored taste (*gustation colorée*) the taste of vinegar always excited a visual sensation of a given color; the odor of vinegar never had any special effect.

The colored vision, the author states, may occur spontaneously in some neuropathics without any apparent special excitation. He has shown by different and numerous experiments not only that excitations of the organs of special sense determined subjective sensations, but also that on given subjects it could be demonstrated that these phenomena were accompanied (and this seems to the author to be a necessary physiological condition) by modifications of muscular tonicity, of energy, and of the circulation of the organic functions in general. The facts seem to the author to be of importance in the physiological interpretation of colored vision. The experiments have shown also that a given produced sensation is in intimate relation with some physiological conditions; that the same, or analogous, physiological conditions can be provoked by exciting two different senses. In certain subjects an augmentation of muscular force and volume in the upper limbs determined by visual excitations may be equivalent to that produced by excitation of the auditory or olfactory nerve. The same physiological facts may be produced by mental imagination of the same excitations or by given emotions. The visual sensation of red, for instance, may result from an auditory, olfactory, or gustatory excitation, from a perceptible emotion, such as joy or sorrow, or a violent impulse. If in a given individual the physiological effects of an excitation of the optic, auditory, or olfactory nerves were absolutely equivalent, the corresponding sensations furnished by the different nerves were more or less completely confounded. The author sees an extreme analogy between these facts and the "*audition*," "*olfaction*," and "*gustation colorée*." It seems to M. Féré that the equivalence of physiological effects of sensory excitations may be the hypothesis for the explanation of the phenomena of colored vision, as considered in a general way.

**Note on the Important Phenomena following a Lateral Section of One Half of the Medulla in the Dog.**—Brown-Séquard (" Jour. des soc. sc.," No. 19, 1888) has shown the persistence of the encephalic functions as regards the voluntary movements and general and special senses, while the cerebral excito-motor zones seemed to have entirely lost their power. The author was enabled recently to demonstrate the reverse, the excito-motor centers preserving their excitability when all functions were abolished and the animal was completely unconscious. The results of the experiments are thus formulated: 1. All activity of the brain—motor, sensitive, and sensory—can be inhibited by irritating the medulla, or, in other words, unconsciousness can be induced by inhibition. 2. The spinal reflexes can be inhibited by bulbar irritation. 3. Unconsciousness accompanied by diminished excitability of the excito-motor zones does not influence this excitability. 4. Regardless of the loss of consciousness, a lateral section of one half of the base of the brain determines inhibition of the so-called motor centers of the opposite side; these centers remain intact on the same side. 5. The section of one lateral half of the base of the brain does not interfere with the manifestation on one side of an artificially provoked epileptic attack by irritating either the dura or the so-called motor centers. M. Dupuy observed a general epileptic attack following an irritation of the excito-motor zone after section of the cerebral peduncle of the same side. 6. As a rule, with some exceptions, movements of the same side are provoked by exciting the parts opposite to the transverse basal section of one half of the brain. 7. The respiratory function, though relatively feebler at the side of the lesion, maintains sufficiently the diaphragmatic and thoracic movements. 8. For a period of twelve years the author has noticed that a mechanical or galvanic stimulation of any part of the brain can inhibit different movements, or contractions, whether these are on the same, opposite, or both sides. 9. The rapid lowering of the temperature following a bulbar lesion is caused by the absence of exchange between the blood and the tissues.

**Contribution to the Study of the Vital Knot in Men.**—Paul Loye (" Comp. rend. hebd. de la soc. de biol.," No. 25, 1888) has shown that a decapitated dog dies with movements of the head and trunk, and for about two minutes the head executes grimaces and the body is agitated. In decapitated men he observed the head remaining still; the physiognomy guards an expression of tranquillity and impassibility; the trunk remains immobile. In both cases hæmorrhage, asphyxia, and violent irritation of the nervous centers share in the death; but in the dog the predominant causes are anæmia and asphyxia, the outflow of the blood, and the insufficient oxygenation of that which remains in the head. These conditions account for the convulsive agony in the dog. In men the calm death is caused by inhibition, induced by the violent stroke of the knife and the energetic irritation of the nervous system. There is a suspension, an immediate abolition of the reflex and automatic powers of the nervous centers. The abolition of the excitability of these centers accounts for the ineffective peripheral irritations, for the asphyxiated blood remaining without effect, for the absence of agony and convulsions. Men die of inhibition wherever along the cervical spinal cord the stroke of the knife comes. With the same conditions equal, dogs die with convulsions. Dogs die with symptoms of inhibition, as men, only when the section passes through the vital knot. The author states that, if decapitation were not to be used as a synonym of decollation, the following would formulate the facts: Decapitation through the vital knot in the dog equals the decollation at any point in the cervical spinal cord in men.

These facts, the author alleges, seem to modify the notion of the existence of the vital knot as determined by Flourens, for in men a section or lesion at any part of the cervical spinal cord induces a calm death, with prompt suppression of the respiration. The author gives, with Brown-Séquard, the definition of the vital knot as the region in the nervous system which, on being irritated, is the most favorable to generate inhibition of the centers. It is also added that the vital knot, being considered as the seat of the greatest inhibitory power, is limited in the dog, while in men it is of incomparably greater extent. This definition, it is further stated, must not be contradicted by the fact that in decapitated men the inhibition is not always absolute and definite This fact may be explained by the fact that a certain quantity of blood remain sin the decapitated head. The inhibitory effects are characterized often, besides, by promptitude and by short duration. There may occur sometimes suspension, and not suppression, of function. The non-active stage after decapitation may have two causes—permanent or transitory inhibition. In the first case the centers are definitely stupe-

fied, in the second the functions are temporarily suspended. Their vitality may reappear if the conditions necessary for their nutrition are found. The fact of the occurrence of vital function in a man's head after a previous inhibition may be explained by a retained quantity of blood during the violent shock, then function on account of this blood, and final death caused by absence of renewal of the asphyxiated blood.

Paul Loye (*id.*, No. 27, 1888) states that his work under this heading was criticised by M. Laborde, who announced the author's views as regards the calm death of a decapitated man to be incorrect, spasms of the facial muscles and convulsive grimaces being the rule in this death, the fact being well known from the bloody public scenes since the first and frequent use of the guillotine in 1793. The body, separated from the head, has been seen often to present general convulsive movements.

M. Loye adduces the following authorities, who have personally observed human decapitations: Wendt, Klein (twice), Rigley, Bonnefaut (twice), Holmgren (five times), Petitgaud, Regnard, and Paul Loye twice). According to the authors named, in fourteen observations the head was seen to be immobile after separation from the body. Six times there was complete immobility; six times there were, after one or two minutes, very slight movements of the eyes and jaws; twice it was agitated, after the same time, by more marked movements. As regards the body, in all cases (fourteen) it remained immobile. In Petitgaud's observation there were some movements of the facial muscles at the level of section. The author states that, contrary to Laborde's enunciation, the facial muscular spasms and convulsive grimaces are not the rule, and the body separated from the head is not agitated by convulsive movements. The author says that he has collected information from physicians and physiologists exclusively, and in his personal observations with Dr. Regnard he was surprised by the prompt corporeal immobility. As regards the psychical influence in men, M. Laborde relates to the author that he expects to demonstrate in future the insignificant influence of this factor in death following decapitation.

**On the Physiology of the Subcortical Ganglia, and the Relation existing between these Ganglia and Epileptic Attacks.**—Ziehen ("Jour. des soc. sci.," No. 35, 1888) has drawn conclusions from his preceding researches that clonic convulsions of an epileptic attack were of cortical origin, and tonic convulsions of subcortical origin. According to Beswanger, the medulla and the spinal cord, on being excited in a reflex manner, give rise to tonic convulsions and movements of displacement. To elucidate the question of the origin of tonic convulsions, Ziehen experimented on rabbits in which the hemispheres had been extirpated so as to expose the corpus striatum, the lenticular nucleus, the optic layer, and the corpora quadrigemina. Faradaic stimulation of these parts gave the following results: The stimulation of the corpus striatum and the lenticular nucleus was followed by movements of mastication, movements of the eyelids, rotation of the head to the side opposite to the excitation, and tonic contractions of the muscles of the legs; the latter contractions followed also upon stimulation of the optic layer. The section of the optic layer was followed by movements of locomotion. The same movements and general tonic contractions followed the excitation and section of the anterior pair of the corpora quadrigemina. Ziehen concludes that motor centers presiding over movements of coordination exist probably between the optic layer and the anterior part of the corpora quadrigemina; and that in the above-mentioned experiments these centers were excited in a reflex way; that the intracerebral set of the optic nerves share probably in the production of these reflexes.

**Experimental Nephritis.**—Gaucher ("Jour. des soc. sci.," No. 3, 1888) recognizes, besides the usual causes of the large white kidney, an internal toxic cause, which develops insidiously in the organism itself, and enables us to determine the real ætiology. The incomplete oxygenation of the nitrogenous substances yields different extractive matters which poison the organism. The same conditions, experimentally established by the author, have shown the toxic action on the kidneys. Gradually increasing doses of aqueous solutions of creatine, leucine or tyrosine, xanthine or hypoxanthine, were introduced subcutaneously in guinea-pigs. The animals presented albuminuria, and died of toxic doses of these substances. The post-mortem revealed the true white kidney. The accumulation of the extractive matters in the blood irritates the secreting epithelium, and generates parenchymatous nephritis. Parenchymatous affections of the liver, according to the author, which interfere with the nitrogenous metabolism, present favorable conditions for the occurrence of the large white kidney. The unassimilated nitrogenous substances accumulate in the blood, and this explains the frequent occurrence of albuminuria in cirrhosis of the liver. The author produced experimentally the noxious action on the kidneys of these materials in chronic wasting diseases where metabolism is interfered with. An excessive introduction as well as production of extractive materials, the author states, suffice to produce a large white kidney; and if the kidneys were previously irritated, the lesion will necessarily be aggravated. From the therapeutical point of view, it is said, great danger is offered to nephritic patients by any of the meat preparations and broths; for patients with kidney disease, these are poisonous solutions. The same is true, even for healthy persons, of all meat extracts, concentrated broths, and meat powders, which contain, besides potash salts, all the excrementitious materials referred to.

**On the Action of Iron on the Normal Organism.**—In the "Revue méd.," No. 6, 1888, are reported Schuly's experiments on four medical students in perfect health. The experiments were conducted during four weeks, and each experimenter took about fifty centigrammes of perchloride of iron for this period. The following were the symptoms: During the first days there was nothing abnormal; at the end of the first week a heavy sensation in the stomach, intestinal meteorism, and nausea were noted. The intestinal embarrassment disappeared, and was replaced by symptoms of congestion of the face and acceleration of the pulse; some cutaneous eruptions, and a sensation of heat and prickling. At the fourth week the appetite increased, the experimenters felt stronger than usual, the pulse increased gradually all the time, and became hard. During two weeks after the suspension of the experiments the students were enfeebled, had the same gastro-intestinal trouble, the same fits of depression which were observed in the beginning of the administration of the salt. These facts show, according to the author: 1. Iron is an active medicament even in very small doses. 2. Its action is analogous to that of arsenic. 3. Experiments on healthy persons may be of great value.

**Experiments Relative to the Influence of Coffee on the Excretion of Urea.**—A. Dumont ("Revue méd.," No. 6, 1888) investigated the subject by analyzing daily the urine of a person who had a strictly regular diet for ten days. In the first period no coffee entered into the regular regimen; during the last four days an ordinary dose of coffee was given daily. The average amount of urea excreted in the twenty-four hours was 38·16 grammes for the first period and 32·84 grammes for the last. The author concludes that coffee diminishes the metabolic phenomenon. He alleges also that the fact has been announced already by others, but no statements have before been based upon strictly scientific calculations.

**Researches on the Physiology of the Cerebellum.**—E. Dupuy ("Revue des sc. méd.," No. 63, 1888) reports that Flourens has shown lesion of the cerebellum to be followed by special trouble of locomotion. Dupuy alleges that a complete ablation of the cerebellum, cutting entirely the peduncles at the same level, and all at the same time, does not cause any trouble of locomotion. The experiments were made on dogs.

**Remark on the Respiratory Centers.**—M. E. Wertheimer ("Comp. rend. hebdom. de la soc. de biol.," No. 27, 1888) does not agree with M. Laborde's statements that an ablation of the vital knot leads to a decided abolition of the respiratory movements. The author has seen sub-bulbar sections of the spinal cord at a level with the axis followed by respiratory movements, the latter occurring even two or three hours after the operation if the respiration was artificially maintained. With Brown-Séquard the author admits the loss of respiration to be due to inhibition. Being guided by the fact that in cold-blooded animals the medullary reflexes reappear more readily than in warm-blooded animals after the section of the spinal cord, the animals operated on were cooled previous to the operation to suppress the traumatic shock. The results were positive. The respiration reappeared a few minutes after the operation.

**Determination of the Electro-motor Action of the Heart in Men** (Presented by Brown-Séquard).—Augustus D. Waller ("Jour. des soc.

sc.," No. 23, 1888) gives the results only of his work. The electric variation preceding and accompanying the ventricular systole can be determined in men and in animals by means of Lipmann's capillary electrometer, deriving from different parts of the body at a distance from the heart (extremities, mouth, eyes, etc.). This variation has two phases: 1. In the beginning of the ventricular contraction a negativity of the point is caused; in other words, an excitatory change beginning in this part of the heart. 2. In the second phase, toward the end of the ventricular contraction, a negativity of the base is caused, or an excitatory change ending in this part of the heart.

**On the Retardation of Retinal Impressions.**—Bloch ("Comp. rend. de la soc. de biol.," 1888) contests Carpenter's theory on the interval between succeeding luminous impressions. Carpenter's experiments consist in finding out the interval of the visual perception between a first and a second excitation, then between a second and third. The last interval is of less duration. Bloch explains the fact by the augmentation of the intensity of the luminous sensation after the second excitation. Since the persistence varies in inverse ratio to the intensity of sensation, it is obvious that under this sole influence the persistence appears shorter between the second and third excitations than between the first and second.

**Experimental Studies on Sea-vertigo.**—Pampoukis ("Jour. des soc. sc.," No. 36, 1888) concludes his work as follows: 1. Most animals are susceptible to sea-vertigo, but they vomit very rarely. 2. Dogs suffer enormously, showing dilatation of the pupils, loss of equilibrium, anorexia, and muscular tremors. 3. The respiration is more frequent, but shallow in the beginning of the balancing; after a short time the contrary occurs. 4. Rabbits present approximately the same symptoms as dogs. 5. The comparison of the results obtained with sea-vertigo in men shows that this malady is the result of the brisk movements of the vessel, and especially when the latter sinks into the waves. 6. Idiosyncrasy influences the manifestation decidedly. 7. The most radical means of avoiding this malady is to ask the navigation companies to suspend the beds after the marine-lamp system.

**Experimental Researches on the Comparative Rapidity of Absorption, by the Subcutaneous Connective Tissue, of Some Anodynes.**—H. Chouppe ("Comp. rend. hebdom. de la soc. de biol.," No. 26, 1888) considers it important to notice the place of injection, the substance used, and the corresponding rapidity of absorption of the drug; these conditions, says the author, must guide the physician in administering second doses of anodynes in cases where the previous injections are of latent action. From experiments on dogs and guinea-pigs the following results are given: The action of the minimum vomiting dose of apomorphine is determined in dogs after between four and five minutes; the effects appear after one minute if the same dose is given intravenously. In guinea-pigs convulsions are determined by cocaine in from ten to twelve minutes. The minimum fatal dose of strychnine causes convulsions in dogs after twenty minutes. In guinea-pigs the action is seen after twenty to twenty-five minutes. The author announced that different anodynes, equal quantities of which are injected, do not reach the general circulation with the same rapidity. As is known clinically, the effects of morphine are seen within six or seven minutes, while those of apomorphine appear within from four to five minutes.

**On the Vascular Reflexes in Fever.**—Thibierge ("Revue des sc. méd.," No. 63, 1888) reports the following: From 66 experiments on normal persons it was found that cutaneous excitations did not always bring about vascular reflexes. In the positive case the reflex is characterized by constriction of the vessels, and sometimes by dilatation; the interval between the stimulus applied and the occurrence of the reflex phenomena varies with the individuals. The reflex reaches its maximum intensity at the end of variable times between two and fourteen seconds, according to the individual; the period of its persistence varies between ten, twelve, and forty-five seconds. The vascular reaction is not always proportional to the intensity or duration of the excitation; it is more active after meals. In febrile patients the reflexes are expressed either by vascular constriction or, rarely, by dilatation. The principal reaction is sometimes preceded for a short interval by an accessory reaction of opposite character. In the same individuals the reactions are not the same during the febrile and apyretic periods. During the first the vascular reactions are usually more energetic, quicker, and last for a longer time than in the apyretic period; but sometimes the reverse is observed.

**The Influence of the Nervous System on Absorption.**—B. Baculo ("Revue des sc. méd.," No. 63, 1888) reports that absorption is not a pure physical phenomenon, but is dependent upon a vital activity and nervous influence. The author's conclusions are: 1. The stomach absorbs more rapidly after section of the vagi, and the same is true of the lungs. 2. Section or hemisection of the spinal cord, or section of nerves, does not interfere with the more rapid absorption in the paralyzed regions. 3. Section of the splanchnic nerves on both sides accelerates the intestinal absorption.

**Experimental Researches on the Mechanism of the Respiratory Movements.**—Unverricht ("Jour. des soc. sci.," No. 18, 1888) has studied by the graphic method the modifications of the respiratory movements subsequent upon excitations of the cerebral gray substance. The animals were anæsthetized by morphine, to avoid the excitability of the cerebral cortex. Faradaic stimulation of the cortex caused diminished respiratory movements, and the intervals between them were decidedly longer than the usual. The author tried to demonstrate that neither were branches of the trigeminus irritated nor did any reflex action intervene—that it was due to a cortical inhibitory center of respiration.

**The Modification of the Temperature in Connection with Muscular Work.**—Laborde ("Revue des sci. méd.," No. 63, 1888) reports the conclusions that even after the death of an animal an application of a strong electric current to a muscle augments its temperature. The latter is the result of simple muscular contraction, for neither the nervous system nor the circulation takes part in it.

**The Exhaustive Stage following an Epileptic Attack.**—M. Féré ("Jour. des soc. sci.," No. 35, 1888) has observed epileptic attacks to be followed by muscular feebleness, which reached sometimes hemiplegia or paraplegia. This was especially true of the muscles that suffered contractions. The muscles of the tongue, eyes, and respiration are also enfeebled; the expiration is prolonged and abrupt. The motor trouble is often associated with that of general and special sensibility. This nervous exhaustion influences the action of pilocarpine in diminishing its action on perspiration, but the action of pilocarpine is not modified in cases of absence of this nervous exhaustion. In such cases, the author states, it is erroneous to think that this agent can guide in making a diagnosis of epilepsy. Contrary to the general opinion, M. Féré has found the pilocarpine to augment the arterial tension.

**On the Effects of Faradization of the Right Pneumogastric on the Urinary Secretion.**—Arthaud and Butte ("Jour. des soc. scientifiques," No. 3, 1888) have compared the quantity of urine excreted from the right ureter in the normal animal and the excretion during the experimental manipulation by introducing a long capillary tube into the ureter and noticing the velocity of the liquid for a unit of time. In the normal stage the velocity was from four to four and a half centimetres a minute. During stimulation of the vagus by a slight faradaic current the secretion diminished. The latter was in inverse ratio to the intensity of the current. After section of the vagus, a feeble current gave a normal secretion; with the increase of the intensity of the current the same ratio existed as before, and the secretion ceased with the maximum intensity. The secretion occurred normally after the cessation of the stimulus.

The examination after the stimulation revealed an artificial nephritis of the right kidney. The modification of the urinary secretion was accompanied by decided albuminuria. The authors conclude that the right vagus influences by its peripheral branches the urinary secretion, though Cl. Bernard and Vulpian observed opposite results. The conditions of the experiments were not exactly the same in the authors' cases. Arthaud and Butte expect to verify the results experimentally.

**The Centripetal Way of the Reflex of Sneezing** (Presented by M. R. Blanchard).—E. Wertheim and H. Surmont ("Jour. des soc. sci.," No. 5, 1888) reach the following conclusions: 1. Excitation of the olfactory lobes does not provoke sneezing, nor any movements. 2. The ethmoidal ramus of the nasal nerve of the ophthalmic branch, when parting from the nasal fauces, represents habitually the only centripetal way of the reflex of sneezing. 3. Sneezing of ocular origin has its point of departure in the ciliary nerves.

**The Significance of the Corpora Quadrigemina.**—E. Retterer ("Revue des sc. med.," No. 63, 1888) reports Betcherew's experiments on birds and *Mammifera*, performed with the object of determining the center of innate movements of expression, or affective movements (psycho-reflex of some authors). 1. After ablation of the cerebral hemispheres, there were provoked, by peripheral excitations, movements of locomotion, or an act of very complex movements, which express in animals sentiments of sensation. The author calls them movements of reflex expression, to distinguish them from simple reflex movements. 2. After the abolition of the corpora quadrigemina the animals were rendered completely blind, but they could groan and cry after violent peripheral excitations. After this mutilation the animals were still capable of performing various movements of the anterior and posterior extremities. 3. The passage of an electric current through the corpora quadrigemina provokes in animals possessing, as well as deprived of, their hemispheres, a very prolonged manifestation of the voice, accompanied by prolonged expiratory movements, and also by contractions of the muscles of the face, trunk, and extremities. The different movements remind one of those of expression in higher animals. 4. Animals with the quadrigemina destroyed and the hemispheres intact are capable of performing all kinds of voluntary movements, but are not able to manifest their sensations and sentiments by movements of expression, though it is possible to provoke some movements of expression in animals by destroying their hemispheres and using an extremely painful excitation. Feeble excitations remain without any effect. The corpora quadrigemina seem then to be a motor center of expression in response to involuntary and psychic impulses and to excitations of the organs of special senses. 5. Clinical observations on man seem to corroborate the conclusions: anencephalic subjects are able to cry, to open their eyes, and to make suction movements during the few hours of their life. Patients with facial paralysis or deprived of the power of mimetic movements are able to laugh and cry without possessing the power of stopping these acts. Chorea seems to be the anatomical substratum of an affection of the corpora quadrigemina. In fact, in most cases of hemichorea, lesions of the quadrigemina are found, as well as, in some cases, of the fibers passing through the internal capsule. Localized lesions or tumors of the quadrigemina are often accompanied by hemichorea, without well-marked paralysis of voluntary movements. The author was enabled to induce chorea-like movements in animals by producing circumscribed lesions of the quadrigemina.

**On the Movement of Rotation determined by a Lesion of the Supra-œsophageal Ganglia in the Snail.**—M. Louis's article ("Jour. des soc. sc.," 1888) is concluded as follows: Ablation or lesion of one of the supra-œsophageal ganglia produces in the snail a movement of rotation from the sound to the severed side. In the slug the same lesion causes the body to curve upon the side opposite to the lesion. Immediately after making the lesion the head reaches the legs, and the slug assumes the form of a ring. If it attempts to move in this position, it turns from the severed to the sound side. The author ascribes this difference of direction in the two examples to the fact that the examination was made under different conditions; some were observed immediately after the operation, others about a month after the experiment.

# Miscellany.

**The Health of San Francisco.**—According to the Health Department's "Condensed Statement of Mortality" for November, the whole number of deaths was 562, including 5 from cerebro-spinal meningitis, 4 from cholera infantum, 29 from croup and diphtheria, 1 from erysipelas, 15 from typhoid fever, 3 from typho-malarial fever, 3 from malarial fever, 4 from whooping-cough, and 1 from septicæmia.

**The Health of Connecticut.**—According to the State Board of Health's "Monthly Bulletin" for November, the whole number of deaths reported was 850, including 1 from measles, 12 from scarlet fever, 10 from cerebro-spinal fever, 58 from croup and diphtheria, 4 from whooping-cough, 4 from erysipelas, 29 from typhoid fever, 11 from malarial fever, 8 from typho-malarial fever, and 7 from puerperal fever.

**The Health of Kansas City, Mo.**—According to the Health Department's "Weekly Return" for the week ending December 15th, there were 28 deaths, including 2 from croup and diphtheria, 2 from pneumonia, and 1 from septicæmia. This corresponds to an annual death-rate of 8·08 in a thousand of the population.

## ANSWERS TO CORRESPONDENTS.

*No. 247.*—Address Dr. William R. Ballou, No. 236 East Thirty-first Street, New York.

*No. 248.*—See an article on the subject by Rosenbach, in the "Breslauer ärztliche Zeitschrift," vol. viii, 1886, pp. 181 and 193; and one by Strahan, in the "British Medical Journal," 1885, vol. ii, p. 435. The subject is treated of incidentally also by Rockwell, in this Journal for February 18, 1888, p. 180, and by Webber, in the "Boston Medical and Surgical Journal" for May 3, 1888.

**To Contributors and Correspondents.**—*The attention of all who purpose favoring us with communications is respectfully called to the following:*

*Authors of articles intended for publication under the head of "original contributions" are respectfully informed that, in accepting such articles, we always do so with the understanding that the following conditions are to be observed: (1) when a manuscript is sent to this journal, a similar manuscript or any abstract thereof must not be or have been sent to any other periodical, unless we are specially notified of the fact at the time the article is sent to us; (2) accepted articles are subject to the customary rules of editorial revision, and will be published as promptly as our other engagements will admit of—we can not engage to publish an article in any specified issue; (3) any conditions which an author wishes complied with must be distinctly stated in a communication accompanying the manuscript, and no new conditions can be considered after the manuscript has been put into the type-setters' hands. We are often constrained to decline articles which, although they may be creditable to their authors, are not suitable for publication in this journal, either because they are too long, or are loaded with tabular matter or prolix histories of cases, or deal with subjects of little interest to the medical profession at large. We can not enter into any correspondence concerning our reasons for declining an article.*

*All letters, whether intended for publication or not, must contain the writer's name and address, not necessarily for publication. No attention will be paid to anonymous communications. Hereafter, correspondents asking for information that we are capable of giving, and that can properly be given in this journal, will be answered by number, a private communication being previously sent to each correspondent informing him under what number the answer to his note is to be looked for. All communications not intended for publication under the author's name are treated as strictly confidential. We can not give advice to laymen as to particular cases or recommend individual practitioners.*

*Secretaries of medical societies will confer a favor by keeping us informed of the dates of their societies' regular meetings. Brief notifications of matters that are expected to come up at particular meetings will be inserted when they are received in time.*

*Newspapers and other publications containing matter which the person sending them desires to bring to our notice should be marked. Members of the profession who send us information of matters of interest to our readers will be considered as doing them and us a favor, and, if the space at our command admits of it, we shall take pleasure in inserting the substance of such communications.*

*All communications intended for the editor should be addressed to him in care of the publishers.*

*All communications relating to the business of the journal should be addressed to the publishers.*

# INDEX TO VOLUME XLVIII.


PAGE

Abdominal Section in Extra-uterine Pregnancy. 122
Abscess, A Case of Cerebral. 374
Abscess, Cerebral, as a Sequel of Compound Fracture of the Skull. 505, 585
Abscess of the Neck. 380
Abscess of the Vesico-vaginal Septum (Pyokolpos). 291
Abscess, Perityphlitic. 268
Abscess, The Treatment of Pelvic. 696
Abscesses of the Frontal Sinuses and Orbits. 213
Abscesses of the Orbit. 245
Abscesses, The Treatment of Acute. 402, 463
Academy of Medicine, The New York. 390, 444, 500, 524, 557, 635, 699
Accommodation, Overexertion of the, and its Results. 212
Acetabulum, The Formation of a New. 643
Acetanilide, The Relative Indications for the Use of Antipyrine and. 242
Acids, Effect of, on the Sense of Taste. 308
Acne, The Treatment of. 108
Acne with Comedones, The Treatment of. 108
Aconite Poisoning, A Case of. 659
Act, A Generous. 410
Actinomycosis in Man. 352
Address, Changes of. 69, 196, 435, 532
Adenoma, Suspected and Malignant. 189
Advertisements, Medical Bulletins and Interviews as. 129, 130
Advertisements, Quack, in Religious Newspapers. 249
Agnew, A Memorial of Dr. C. R. 99
Agnew, The late Dr. Cornelius R. 54
Albumin, etc., in the Diagnosis and Prognosis of Diseases of the Kidney, The Value of the Presence of. 638
Albumins, The Comparative Nutritive Value of the Animal and Vegetable. 691
Albuminuria and Disease of the Placenta, The Relation between. 220
Albuminuria in Diabetes Mellitus. 88, 104
Albuminuria, The Relation of, to Life Insurance. 639
Alexia and Paralysis of the Trochlearis. 276
Alkaloids, The Relation of the Animal, to Disease. 113
Alopecia Areata, The Ætiology and Symptomatology of. 109
Alopecia Pityriodes, Treatment of. 109
Altitude, The Effect of Rapid Changes of, on a Case of Interstitial Nephritis in an Advanced Stage. 630
Aluminium Acetate as a Resolvent. 700
Amblyopia, A Case of Tobacco. 256
Amblyopia, Quinine. 246
Amblyopia, Some of the Forms of Congenital and Infantile. 50
Amblyopia, Tobacco. 163
Amputations, The Mortality for Major. 643
Amyl Nitrite and Prussic Acid, Antagonism between. 584
Anæsthesia, A New Method of Mixed. 389
Anæsthesia, An Inherited Indiosyncrasy with Regard to 16
Anæsthesia by the Inhalation of Nitrous Oxide, etc. 464
Anæsthetic, Hydrochloride of Erythrophlœine, The New Local. 164
Anatomy of the Elephant's Ear, A Contribution to the. 102
Anatomy, Reports on. 133, 415
Anconæus and its Nerve, The. 416
Andrews, J. A. Enucleation of the Eyeball during Purulent Panophthalmitis. 701
Aneurysm of the Arch of the Aorta or of the Innominate Artery, etc. 373
Aneurysm at the Bend of the Elbow, Varicose. 643
Aneurysm of the Internal Pudic Artery. 3
Angeioma of the Larynx. 439
Angeioma, Polypoid, of the Ear. 102
Angeio-sarcoma of the Trachea. 217
Angina Ludovici, Parenchymatous Injections of Carbolic Acid in. 560
Angina Pectoris, The Relation between Chronic Interstitial Nephritis and. 640
Angina, The Treatment of Diphtheritic. 333
Ankle Joint, Movements of the. 416
Anodynes, Absorption by the Subcutaneous Connective Tissues of some. 727
Anophthalmia. 50
Anopsia, Cortical. 247
Anteflexion of the Uterus, The Ætiology, Pathology, and Treatment of. 720
Anthrarobin. 107, 606
Anthrarobin in Psoriasis, Herpes Tonsurans, and Pityriasis Versicolor. 555
Anthropological Notes. 138
Antiparasitic, The Sambucus Nigra as an. 183
Antipyretics and Antipyrine, On the Action of. 474
Antipyretics, On the Influence of, on the Amount of Glycogen in the Liver. 272
Antipyrine and Acetanilide, The Relative Indications for the Use of. 242
Antipyrine and its Uses. 267
Antipyrine as a Uterine Sedative. 560
Antipyrine in Hæmorrhoidal Ulcers. 588
Antipyrine in Labor, The Use of. 38
Antipyrine in Neuralgia, The Hypodermic Use of. 17
Antipyrine in Pertussis. 137
Antipyrine in Seasickness. 344
Antipyrine in the Nasal Passages, Clinical Notes on the Use of. 429

PAGE

Antipyrine in Whooping-cough, The Use of. 18
Antipyrine, On the Action of Antipyretics and. 474
Antipyrine, The Action of, on the Teeth. 524
Antisepsis and Asepsis, Experimental Researches on, in Ophthalmic Practice. 51
Antiseptic, Salol as an Internal. 104
Anus, Treatment of Imperforate. 303
Apex-beat, The Situation of the, in Children. 461
Apoplexy, General, of the Vitreous in Young Persons. 162
Argyria of the Conjunctiva. 247
Army, Changes of Medical Officers of the:
Adair, George W. 410
Ainsworth, Fred. C. 243, 325
Alden, Charles H. 301, 325, 603
Alexander, Charles T. 524, 718
Alexander, Richard H. 243, 603
Appel, Daniel M. 209, 552
Arthur, William H. 525, 576
Baily, Elisha I. 524, 576
Baily, Joseph C. 524, 552
Ball, Robert R. 301, 493, 663
Banister, William B. 99, 325, 435
Bartholf, John H. 493, 576
Baxter, J. H. 45, 692
Benham, Robert B. 635
Bentley, Edwin 45
Birmingham, Henry P. 301
Borden, William C. 493
Bradley, Alfred E. 525, 552
Brown, Harvey E. 209, 378
Brown, J. M. 12
Brown, Paul R. 325, 493
Byrne, Charles B. 130
Caldwell, Daniel G. 130, 301, 325
Carter, Edward C. 325, 493
Carter, William F. 635, 718
Chapin, Alonzo R. 692
Clendenin, Paul. 12, 45, 635
Cochran, John J. 129, 552
Comegys, Edward T. 461
Corbusier, William H. 410
Corson, Joseph K. 99, 156
Cowdrey, Stevens G. 209
Cronkhite, Henry M. 410, 635
Crosby, William D. 45
Davis, William B. 99, 435
De Witt, Calvin. 99, 156
Dietz, William D. 462
Ewen, Clarence 552
Ewing, Charles B. 130
Finley, James A. 692
Forwood, William H. 493
Gandy, Charles M. 12
Gardiner, John de B. W. 156, 462
Gardner, William H. 129
Gibson, Robert J. 378
Glennan, James D 525
Gorgas, William C. 12, 156, 210, 462
Hall, J. D. 301
Harvey, Philip F. 156
Heger, Anthony 243
Heizmann, Charles F. 692
Hoff, John Van R. 378, 552, 635
Hopkins, William E. 718
Janeway, John H. 209
Jarvis, Nathan S. 129, 325, 692
Johnson, Henry 129
Johnson, Richard W. 12, 45 410, 692
Kneedler, William L. 462
Koerper, Egon A. 156
La Garde, Louis A. 692
Lauderdale, J. V. 182
Loring, Leonard Y. 301, 494
Macauley, C. N. B. 462
Magruder, D. L. 129
Mason, Charles F. 182, 243
Matthews, Washington 378
Maus, Louis M. 243, 435
McClellan, Ely 576, 635
McCreery, George 12, 410, 718
McElderry, Henry 325, 552
McParlin, Thomas A 12, 99
Meacham, Frank 435
Mearns, Edgar A. 462
Merrill, James C. 156, 410
Morris, Edward R. 12, 378
Moseley, Edward B 635
Munday, Benjamin 378, 462
Munn, Curtis E. 12, 129
Newton, Richard C. 603
Norris, Basil 325, 524, 576
Owen, William O., Jr 12, 243, 378, 525
Page, Charles 325, 461
Phillips, John L. 462
Poindexter, J. D. 12
Price, Curtis E. 552
Rafferty, Ogden 301, 410
Robertson, Reuben L. 129
Shannon, William C. 12
Smart, Charles 603
Smith, Joseph R. 243, 603
Spencer, William G. 435
Sternberg, George M. 325, 378
Strong, Norton 325, 525
Sutherland, Charles 209
Swift, Eugene L. 12, 301
Taylor, Arthur W. 410
Taylor, Marcus E. 301
Tilton, Henry R. 692
Torney, George H. 12, 209
Town, Francis L. 692

PAGE

Army, Changes of Medical Officers of the:
Vickery, Richard S. 99
Vollum, Edward P. 243, 524
Waters, William E. 576
Weisel, Daniel 525
White, Robert H. 12, 129, 378
Williams, John W 378, 410, 493, 663
Wilson, George F. 378
Wolverton, William D. 99, 129, 493
Wood, Leonard 99, 210
Wood, Marshall W. 12, 552, 603
Woodhull, Alfred A. 12, 242, 378
Woodruff, Ezra 378
Worthington J. C. 301
Wright, Joseph P. 243
Army, The Medical Corps of the. 168
Arteries, Pulsation of the Retinal. 274
Artery, A Pulmonary, with Two Valves. 416
Artery, Aneurysm of the Internal Pudic. 3, 18
Artery, The Right Subclavian. 134
Arthropathia Tabidorum. 1
Articular Disease, Immobilization in. 457
Ascites, Iodine Applications in the Treatment of 700
Association, An Address delivered at the Opening of the Section of Obstetric Medicine of the British Medical. 141
Association of Acting Assistant Surgeons of the United States Army. 588
Association of Genito-urinary Surgeons, The American. 221
Association of Railway Surgeons, The National. 83
Association, The American Dermatological. 222
Association, The American Medical. 500
Association, The American Orthopædic. 194
Association, The American Public Health. 502
Association, The British Medical. 27
Association, The Ladies' Health Protective. 662
Association, The Lehigh Valley Medical. 12, 166, 221
Association, The Mississippi Valley Medical 209, 267
Association, The New York State Medical. 139
Association, the New York State Medical, The Fifth Annual Meeting of. 362
Association, The Southern Surgical and Gynæcological. 27, 167, 280, 575, 587, 663
Associations, Meetings of. See Societies.
Astigmatism. 164
Astigmatism a Factor in the Causation of Glaucoma? Is 382
Astigmatism, Binocular. 248
Astigmatism, Meridional. 383
Astigmatism, Ophthalmic Migraine and. 247
Astigmatism, Progressive Hypermetropic. 100
Astigmatism, The Relation of Myopia to. 248
Asylum for the Insane, The New Jersey State. 165
Asymmetry of the Iris, Chromatic. 549
Ataxia, Apoplectiform, Epileptiform, and Hemiparetic Attacks in Locomotor. 86
Ataxia, Paralysis of Convergence in Progressive Locomotor. 164
Ataxy, Ocular Phenomena in. 161
Athetosis in an Infant. 67
Atomizer, The Horse's Tail as an Antiseptic. 662
Atrophy, Hereditary, of the Optic Nerve. 51
Atrophy, Infantile. 280
Atrophy of the Optic Nerves, etc. 247
Atrophy, Optic, in Tabes Dorsalis. 405
Atropine, Poisoning by. 266
Auditory Canal, Foreign Bodies in the External 181
Aural Disease, Mental Affections and. 55
Auricle, Teratoid Tumor of the. 103
Autoplasty, Ectocardia and its Cure by. 305
Axillary Arch and the Pectoralis Quartus, The Homology and Innervation of the. 416

Bacilli in the Kidneys, Typhoid. 716
Bacilli of Syphilis and of the Smegma. 556
Bacillus of Tuberculosis, On the Action of some Antiseptics and of Heat on the. 474
Bacillus Pyocyaneus, Creolin and. 250
Bacterial Invasion of the Inner Ear in the Course of Diphtheria. 186
Bacteriotherapy, Spontaneous. 492
Bamberger, The Death of Prof. Heinrich von. 603
Bangs, L. B. Clinical Observations of Diseases of the Testicle. 426
Bartlett, Josiah. 10
Bathing, Precautions in. 27
Battery, A New Portable, for the Storage of Electro-motive Force. 102
Bauer, F. M. A Case of Strangulated Hernia reduced by Faradization. 572
Beach, W. P. Some Remarks regarding the Treatment of Cholera Infantum. 180
Becker, C. P. Sulphuric Acid in Medicine. 286
"Better than Nothing" 241
Bident, An Attachment for Agnew's. 587
Biggs, H. M. The Accidents Incidental to the Use of the Exploring Needle for Diagnosis. 177
Bile in the Digestion of Fats, The Rôle of the. 273
Billings, J. S. On Medical Museums, with Special Reference to the Army Medical Museum at Washington. 309
Billroth on Mackenzie. 10
Biscuits, Peptonized-Potato. 551
Bismuth, Salicylate of. 420
Bladder, A Foreign Body in the Male. 643
Bladder and Kidney Affections, Some Points in the Differential Diagnosis of. 355
Bladder and Urethra, The Surgical Treatment of the Urinary. 74
Bladder, Drainage of the. 214
Bladder, Ruptures of the, and their Treatment. 388

PAGE

Bladder, Stone in the, in Connection with Enlargement of the Spleen 342
Bladder, Suture in the 244
Blepharospasm 283
Blindness due to Whooping-cough 602
Blindness in the Male, Hysterical 101, 638
Blindness, Sudden, due to Lesions of both Occipital Lobes 247
Blindness, Total, from a Cortical Lesion, etc 161
Blood and the Tissues, Experiments on the Elementary Respiration of the 273
Blood-corpuscles, The Red, of Lamprey Eels in Relation to Jurisprudence 149
Blood-current in newly formed Corneal Vessels, The Visible 243
Blood, Preliminary Communication on the Coagulation of the 473
Blood, The Appearance of Substances in the 271
Board of Health, The Illinois State 155
Boils, The Treatment of Carbuncles and 108
Bone Repair, A Contribution to the Study of 156
"Bone Setting" 246
Bone, The Possibility of determining some Important Topographical Relations in the Temporal, from the Form of the Skull 187
Book Notices:
Bartholow, R. A Practical Treatise on Materia Medica and Therapeutics 159
Beard, G. M., and Rockwell, A. D. A Practical Treatise on the Medical and Surgical Uses of Electricity 553
Bell, J. A Manual of the Operations of Surgery 25
Browne, L. The Throat and its Diseases 184
Brunton, T. L. A Text-book of Pharmacology, Therapeutics, and Materia Medica 669
Buxton, D. W. Anæsthetics 211
Byford, W. H. The Practice of Medicine and Surgery applied to the Diseases and Accidents incident to Women 160
Carter, R. B. Ophthalmic Surgery 131
Corning, J. L. A Treatise on Headache and Neuralgia 669
Crocker, H. R. Diseases of the Skin 668
Croom, J. H. A Manual of Minor Gynæcological Operations 612
Cutter, E. Partial Syllabic Lists of the Clinical Morphologies of the Blood, etc 185
Dulles, C. W. Accidents and Emergencies 26
Fox, G. H. Photographic Illustrations of Skin Diseases 25
Freyer, P. J. The Modern Treatment of Stone in the Bladder by Litholapaxy 270
Gerster, A. G. The Rules of Aseptic and Antiseptic Surgery 270
Gowers, W. R. A Manual of Diseases of the Nervous System 49
Hall, F. de H. Differential Diagnosis 106
Heath, C. Lectures on Certain Diseases of the Jaws 48
Hückel, A. Die Rolle der Suggestion 414
Hutchinson, W. F. Practical Electro-therapeutics 210
Hyde, J. N. A Practical Treatise on Diseases of the Skin 25
Illingworth, C. R. The Abortive Treatment of Specific Febrile Disorders by the Biniodide of Mercury 244
Kerr, N. Inebriety 105
Kingzett, C. T. Nature's Hygiene 387
Mays, T. J. Theine in the Treatment of Neuralgia 26
Mercier, C. The Nervous System and the Mind 414
Morrow, P. A. Atlas of Venereal and Skin Diseases 24
Newell, O. K. The Best Surgical Dressing 211
Pfungen, R. F. v. Ueber Atonie des Magens. 106
Pomeroy, H. S. The Ethics of Marriage. 270
Proceedings of the New York Pathological Society 211
Ravogli, A. The Hygiene of the Skin 132
Salisbury, J. H. The Relation of Alimentation and Disease 184
Saxton, S. The Ear and its Diseases 669
Seifert, O. Manual of Clinical Diagnosis 106
Smith, J. G. Abdominal Surgery 132
Starr, L. A Synopsis of the Physiological Action of Medicines 106
Starr, L. Hygiene of the Nursery 612
Stewart, J. S. Obstetric Synopsis 132
Stimson, L. A. A Treatise on Dislocations 48
Tanner, T. H. Memoranda on Poisons 26
Taylor, R. W. A Clinical Atlas of Venereal and Skin Diseases 472
The Medical Annual and Practitioner's Index. 133
The National Formulary of Unofficial Preparations 211
The Year-book of Treatment for 1887 106
Tyson, J. A Guide to the Practical Examination of Urine 25
Vaughan, V. C., and Novy, F. G. Ptomaines and Leucomaines 245
Witthaus, R. A. Essentials of Chemistry and Toxicology 131
Woody, S. E. The Essentials of Medical Chemistry and Urinalysis 26
Boston, The Health of 166, 224
Bowel ending in the Urethra of a Child Four Weeks Old 356
Brain Disease with Hemianopsia 51
Brain, Experiments on the Motor Functions of the 271
Brain, Surgery of the, based on the Principles of Cerebral Localization 479, 514, 539

PAGE

Brain, The Condition of the, in Cases of Concussion 352
Brain, The Influence of the, on the Production of Animal Heat and Fever 188
Breast, Carcinoma of the 82
Bright's Disease, The Cardiac Changes in Chronic 505, 640
Bronchitis of Children, Oxygen in the Capillary 503
Broncho pneumonia, Iodide of Potassium in 560
Broun, I. Two Cases of Primary Carcinoma of the Vagina 261
Brown, C. W. Railway Injuries 683
Brush, E. F. Letter to the Editor 69
Bryant, J. D. Malignant Neoplasmata 677
Buboes 217
Buboes, The Treatment of Suppurating Venereal 110
"Bulletin of the Agricultural Experiment Station of Nebraska," The 469
Bulletins, Medical, and Interviews as Advertisements 129, 130
Burnett, C. H. Chronic Purulent Inflammation of the Tympanic Attic 569
Burns, An Ointment for 700
Butler, J. S. Letter to the Editor 463

Cadaverin 711
Cæsarean Section 242, 360
Cæsarean Section, The Abuse of the 360
Cæsarean Section, The New 698
Caffeine and the Salicylates in Headache 644
Calculi of the Kidney, The Origin and Treatment of Uric-acid 466
Calculus, An Unusual Case of Urethral 356
Calculus and Hydronephrosis, A Case of Renal. 546
Cammann, D. M. Observations on the Use of Terebene 519
Cancer of the Testis, The Diagnosis of Encephaloid 642
Cancer, Mammary, in the Male 44
Cancer, The Chian Turpentine Treatment of 65
Cancer, The Results of High Amputation of the Cervix Uteri for 721
Cancer? What is 641
Cannabis Indica, Uses of 136
Cannabis Sativa in Exophthalmic Goitre 503
Capiat, The 586
Capsules, Compensatory Hypertrophy of the Suprarenal 271
Capsule, New Forceps for the Extraction of a Piece of the Anterior 247
Carbolic Acid in Angina Ludovici, Parenchymatous Injections of 560
Carbon Oxide, On the Accidents produced by 474
Carbuncle 82
Carbuncles and Boils, The Treatment of 108
Carcinoma of the Breast 82
Carcinoma of the Ear 185
Carcinoma of the Vagina, Two Cases of Primary. 261
Cardiac Diseases in the Negro Race 713
Carr, W. P. Letter to the Editor 604
Cartilage, Suture of Internal Semilunar, to the Head of the Tibia 215
Caruncle, Urethral; its Ætiology and Progress. 78
Cascara Sagrada in Mixtures 644
Cascara Sagrada, Untoward Effects of 208
Castle, F. A. Letter to the Editor 603, 694
Cataract developed in Early Life, An Instance of Marked Heredity in a Form of 161
Cataract Extraction with Irrigation of the Anterior Chamber 165
Cataract, One Hundred Consecutive Cases of, etc 165
Cataract, One Hundred Successive Extractions of, without Iridectomy 212
Cataract, The Operative Treatment of Zonular 165
Cataract, The Return to the Flap Operation for 160
Cataracts, The Treatment of Dislocated 248
Catarrh, Acute Gastric 206
Catarrh of Little Girls, The Vulvo-vaginal 551
Catarrh, Reflex Influences in the Production of Naso-pharyngeal 102
Catarrh, The Ætiology and Pathology of Acute. 330
Catarrh, The Surgical Treatment of Nasal 331
Catheter, The Use of the Flexible, for Drainage in Diseases of the Ear 103
Catheterization of the Ureters 215
Cats, Diphtheria from 575
Catskills, A Sanitarium in the 691
Cephalalgia, Ocular 162
Cephal-hydrocele 217
Cephalocele, The Operative Treatment of 332
Cerebellum, Researches on the Physiology of the 726
Cerebral Cortex when subjected to Experimental Irritation, The Excitability of the Gray Substance of the 273
Cerebral Localization in its Practical Relations. 356
Cervix and Perinæum, The Immediate Repair of Lacerations of the 253
Charcot, M., and the Emperor of Brazil 66
Childhood, Herpes Zoster during 304
Children, Causes which may retard or prevent Walking in 303
Children, Comedones in 108
Children, Coryza in Very Young 304
Children, Improved Tongue Depressor for 720
Children, Litholapaxy in 304
Children, Oxygen in the Capillary Bronchitis of. 503
Children, Pleurisy in Very Young 303
Children, Recent Experience in Litholapaxy in Male 320
Children, Reports on Diseases of 301, 332
Children, Sarcoma of the Vagina in 459
Children, Summer Diarrhœas of 344

PAGE

Children, The Situation of the Apex beat in 161
Children, Treatment of Pulmonary Diseases in 312
Chilmore, G. Observations of the Effect of Rapid Changes of Attitude on a Case of Interstitial Nephritis in an Advanced Stage 630
Chloroform, Observation of the Pupil in the Administration of 247
Chlorophyll 364
Chlorosis and Heart Disease 83
Cholecystenterostomy 79
Cholecystotomy 79
Cholera Infantum, Some Remarks regarding the Treatment of 180
Chorea, Hereditary 500
Chorea of the Soft Palate 329
Choroid and Retina, Œdema of the 100
Choroid, The Origin of Ruptures of the Sclerotic and 276
Chorioiditis, Macular 245
Chromatopsia, Perioptometry and 248
Cigarette-smoking and Malignant Disease of the Throat 419
Cigarettes, Egyptian 444
Circulation, The Retinal 274
Circumcision, Ritual, in Paris 98
Circumcision, The Communication of Tuberculosis by Ritual 81
Claiborne, J. H., Jr. Letter to the Editor 694
Clarke, E. W. Ligation of a Tonsil for Hæmorrhage 7
Clitoris, Strangulation of the 45
Clitoris, Tumor of the 24
Club-foot, Analysis of Treatment of Seventy Cases of 494
Coca in Laryngeal Affections 672
Cocaine, Gangrene following the Hypodermatic Use of 242
Cocaine in Laryngology and Rhinology, The Use of 720
Cocaine, The Influence of Organic Temperature on the Convulsions caused by 272
Cocculus Indicus, Remarks on 29
Coccygodynia in the Male 493
Codeine in Abdominal Pain 700
Cod-liver Oil, A Substitute for 186
Coe, A. S. Sudden Heart Failure 85
Coe, H. C. Albuminuria in Diabetes Mellitus 88, 104
Coe, H. C. Localized Peritonitis as a Factor in Disease of the Abdominal Viscera 340
Coffee, The Influence of, on the Excretion of Urea 726
Colic, Tumor of the Intestine with Symptoms of Biliary 80
Collection, The Hospital Saturday and Sunday 718
College of Physicians and Surgeons, The New Requirements at the 11
College, The University Medical 717
Coloboma of the Iris 245
Colo-colostomy for Cancerous Stricture of the Ascending Colon 584
Colon, The Peritoneal Covering of the 135
Colotomy, Lumbar 80
Color-perception, Tests for the Detection of 101
Comedones in Children 108
Comedones, The Treatment of Acne with 108
Concussion, The Condition of the Brain in Cases of 352
Condylomaform Lesions induced by Ingestion of Some of the Iodine Compounds 609
Congress, The Intercolonial Medical, of Australia 336
Congress, The, of American Physicians and Surgeons 98, 129, 210, 250, 296, 377
Congress, The Second, of the German Gynæcological Society 372
Conjunctiva, Argyria of the 247
Conjunctivitis, A Form of Granular, due to Syphilis 246
Conjunctivitis, Acute Cocaine 383
Conjunctivitis Follicularis, The Galvano-cautery in 163
Conjunctivitis, Purulent, of the Newly Born 161
Conjunctivitis, The Treatment of Gonorrhœal 248
Conjunctivitis, The Treatment of Serious Forms of Granular 161
Connecticut, The Health of 434, 588, 728
Constipation, The Glycerin Treatment of 588
Convention, A Sanitary 334
Convulsions, The Influence of Temperature on Cocaine 84
Cookery in the First Century, Invalid 716
Cornea, The Anatomy of Serpiginous Ulcer of the 164
Cornea, The Treatment of Ulcers of the 382
Cornea, Transplantation of the 206
Corns on the Soles of the Feet, Treatment of 556
Corpora Quadrigemina, The Significance of the 728
Corpora Striata and Optic Thalami, The Minute Structure of the 415
Corpuscles of the Blood, On the Development of the Red 272
Corpuscles, The Method of Counting the Red and White Blood 272
Correspondent, An Unknown 435
Correspondents, Answers to 28, 84, 112, 140, 168, 196, 224, 252, 280, 392, 420, 448, 476, 504, 532, 560, 588, 616, 672, 700, 728
Coryza in Very Young Children 304
Cough, Stomach 461
Cough, Uterine 492
Courtesy, Professional 10
Coxitis, The Mechanical Treatment of Senile 658

PAGE

Cragin, E. B. Gangrenous Tonsillitis; Fatal Hæmorrhage ... 233
Creasote in the Treatment of Phthisis Pulmonalis ... 617
Creasote, The Administration of ... 700
Creolin and Bacillus Pyocyaneus ... 250
Creolin in Obstetrical Practice ... 218
Creolin in Ophthalmic Practice, The Use of ... 246
Croton River Water-shed, The Sanitary Condition of the ... 14
Croup, Tracheotomy in ... 448
Croup, Tracheotomy for ... 333
Curetting in Endometritis ... 191
Curvature, The Treatment of Lateral, by Posture and Exercise ... 288
Cutaneous Diseases, Reports on ... 107, 555
Cutaneous Sensations, On the Cortical Localization of ... 497
Cutler, C. W. Gonorrhœal Infection of the Mouth ... 521
Cyclopia ... 415
Cylinders, Refraction by ... 131
Cyst, Suppurating Hydatid, probably connected with the Liver ... 215

Davos, The Engadine and ... 337
Deafness following Mumps, Bilateral and Unilateral Total ... 186
Deafness treated by Pilocarpine ... 206
Death following Hæmorrhage and Post-hæmorrhagic Transfusion ... 188
Death, The Chair of ... 660
Deformities, Rickety, of the Lower Extremities. 216
Degeneration of the Stomach, Lardaceous ... 549
Delivery prior to the Seventh Lunar Month, The Management of ... 19
Delivery, The Conduct of Pregnant Women before and after ... 667
Delphinium Staphisagria ... 135
Dentifrice, An Antiseptic ... 84
Dentition, Spasmus Nutans in ... 490
Dermatitis Herpetiformis ... 608
Dermatitis Plantaris and Palmaris ... 611
Dermatitis Tuberosa of Iodic Origin; the so-called Acne anthracoïde iodopotassique. 477, 611
Dermatology, The Value of Salicylic Acid in ... 605
Diabetes, A Remedy for Thirst in ... 420
Diabetes Mellitus, Albuminuria in ... 88, 104
Diarrhœa, Lactic Acid and Diet in Infantile ... 123
Diarrhœa, Lactic Acid in the Treatment of Tubercular ... 364
Diarrhœas of Children, Summer ... 344
Diet in Infantile Diarrhœa, Lactic Acid and ... 123
Digastricus Muscle, The Interclavicularis Anticus ... 133
Dilatation for Stenosis and Flexions of the Uterus ... 150
Dilator, Uterine ... 220
Diphtheria ... 301
Diphtheria, Bacterial Invasion of the Inner Ear in the Course of ... 186
Diphtheria from Cats ... 575
Diphtheria, Mercurial Fumigations in Laryngeal ... 302
Diphtheria of the Nose, Menthol in ... 302
Diphtheria, Ophthalmoplegia Externa following Faucial ... 164
Diphtheria, The Treatment of ... 467
Disease, "The Fly as a Carrier of ... 267
Disease, The Relation of the Animal Alkaloids to ... 113
Disease? What is the Duty of a Doctor to his Patient suffering from Malignant ... 666
Disinfection of Dwellings, Dr. Theobald Smith on the ... 155
Disinfection of Dwellings, Recent Advances in the ... 117
Dislocation, Compound, of the Tibia and Fibula at the Right Ankle ... 92
Dislocation of Cervical Vertebræ ... 499
Dislocation of the Shoulder, Supracoracoid ... 644
Dispensary, The Eastern ... 353
"Distraction" in Hip Disease ... 209
Dix, T. L. Predisposition in Tuberculosis ... 292
Doctor, A Mishap to an Amateur ... 155
Doolittle, E. B. Sulphonal in Insomnia ... 687
Doubleday, E. T. A Case of Suppurative Pericarditis treated by Aspiration ... 232
Drainage of the Bladder, etc ... 214
Drainage-tubes, The Use of, after Ovariotomy ... 39
Dressing, A New Surgical ... 642
Dudley, A. P. Varicocele in the Female; What is its Influence upon the Ovary? ... 147, 174, 183
Dwellings, Recent Advances in the Disinfection of ... 117
Dyspnœa, Dyspeptic ... 709
Dystrophies, Muscular ... 498
Dystrophies, Progressive Muscular ... 620, 651

Ear, Bacterial Invasion of the Inner, in the Course of Diphtheria ... 186
Ear, Carcinoma of the ... 185
Ear Diseases, The Relative Frequency of, in the White and Colored Races ... 187
Ear, Lactic Acid in Suppuration of the ... 187
Ear, Othæmatoma or Insane ... 664
Ear, Polypoid Angeioma of the ... 102
Ear, The Anatomy of the Elephant's ... 102
Ear, The Use of the Flexible Catheter for Drainage in Diseases of the ... 103
Ectocardia and its Cure by Autoplasty ... 305
Eczema, The Treatment of, by Cold Powders ... 687
Edes, R. T. Letter to the Editor ... 210
Electric Current, Experiments with the Alternating ... 155

PAGE

Electricity, Execution by ... 662
Electricity in Inflammatory Disease of the Uterine Appendages ... 242
Electricity in the Vomiting of Pregnancy ... 503
Electricity, The Curability of Urethral Stricture by ... 365
Electrolysis in Gynæcological Practice ... 192
Embolism of the Central Retinal Artery ... 101
Emmet, T. A. The Cause and Treatment of Urethrocele ... 449
Emperor Frederick, The late; the Alleged False Passage ... 557
Emperor, The Alleged False Passage in the Case of the late German ... 551
Emperor, The Autopsy in the Case of the late German ... 137
Empyema ... 642
Empyema following Croupous Pneumonia ... 575
Empyema of the Superior Maxillary Antrum with only Nasal Symptoms ... 81
Endometritis, Curetting in ... 191
Endometritis, The Treatment of Chronic, by Drainage ... 724
Enema Lesions ... 43
Engadine and Davos, The ... 337
Enterectomy and Enterorrhaphy ... 79
Enterectomy, Jejunal, for the Closure of an Artificial Anus ... 215
Enterorrhaphy, Enterectomy and ... 79
Entropium, An Operation for Simple Forms of. 246
Entropium and Trichiasis, A Method of Operating for ... 277
Enucleation of the Eyeball during Purulent Panophthalmitis ... 701
Epidermal Growths, The Treatment of Abnormal ... 110
Epiglottis, The ... 415
Epilepsy, A Case of Focal, etc ... 498
Epilepsy, Aural, compared with other Forms of Epilepsy ... 188
Epilepsy, Auricular ... 406
Epilepsy following Cerebral Hemiplegia, A Clinical Report of Cases of ... 496
Epileptic Attack, The Exhaustive Stage following an ... 727
Epiphysis of the Scapula, Separation of the Coracoid ... 642
Epistaxis, Oil of Turpentine in the Treatment of 560
Epithelioma Contagiosum ... 555
Epithelioma of the Cervix Uteri and Vagina ... 268
Eruptions, Medicinal ... 108
Erysipelas of the Larynx, Primary ... 601
Erysipelas, The Treatment of ... 108
Erythrophleine, Further Experiments with ... 246
Erythrophleine in Ophthalmology, The Value of 245
Erythrophlœine, Hydrochloride of, The New Local Anæsthetic ... 164
Erythropsia ... 214
Ethical. Letter to the Editor ... 130
Evacuator, A Perfected ... 355
Evans, Z. H. Removal of Spina Bifida with the Knife ... 205
Excision of the Knee Joint, Results of ... 215
Excisions, Two Knee-joint ... 495
Execution by Electricity ... 662
Excreta, Slag as an Absorbent and Deodorizer of ... 267
Exophthalmia, Pulsating, Cured by Ligation of the Common Carotid ... 100
Exostosis, Ivory, of the Orbit removed by Drilling ... 53
Exploring Needle, The Accidents Incidental to the Use of the, for Diagnosis ... 177
Exudates, Some Determining Causes of Pleural. 47
Eye, Bichloride of Mercury in the treatment of External Diseases of the ... 53
Eye, Photographing the ... 246
Eye, The Anatomy of the ... 416
Eye, The Connection between Diseases of the, and Diseases of the Nose ... 54
Eye, The Indications for the Operative Treatment of Paralytic Deviations of One ... 277
Eye, Tuberculosis of the ... 54
Eyeball, Enucleation of the, during Purulent Panophthalmitis ... 701
Eyelids and Eyes, Anomaly of Motility of the ... 247
Eyelids, Carbolized Spray in the Treatment of Diseases of the ... 248
Eyelids, Chronic Œdema of the ... 215
Eyes of Diabetic Patients, Pathologico-anatomical Investigations of the ... 212

Faculties, The European ... 27
Faculties, The German Medical ... 560
Faradization, A Case of Strangulated Hernia reduced by ... 572
Faradization of the Right Pneumogastric, The Effects of, on the Urinary Secretion ... 727
Farrington, J. M. The Shady and the Sunny Sides of the Practice of Medicine ... 234
Fehling's Solution, A Rapid Method for the Quantitative Estimation of Glucose in Urine by ... 5
Ferguson, E. D. The Relation of the Animal Alkaloids to Disease ... 113
Ferments, Researches on the Hepatic ... 189
Fever, On the Vascular Reflexes in ... 727
Fibroma, Corneal ... 277
Fibromyomata complicating Pregnancy and Labor, on the Management of ... 219
Fibula, Compound Dislocation of the Tibia and, at the Right Ankle ... 92
Filaria Medinensis, Note of a Case of ... 609
Filter, A Simple and Efficient ... 27

PAGE

Fistulæ Fissurarum Branchialium, etc ... 186
Fistulæ Fissurarum Branchialium with Defective Membrana Tympani ... 135
Flat-foot, Observations on Seventy-five Cases of. 495
Flexions of the Uterus, Dilatation for Stenosis and ... 150
Flexor Carpi Radialis, Absence of the ... 123
Flies as Carriers of Infection ... 377
Flint, A., and Maury, R. Creasote in the Treatment of Phthisis Pulmonalis ... 617
Flint, W. H. Clinical Report on Sulphonal ... 648
Fluid, The Escape of, from the Aqueous and Vitreous Chambers ... 277
Fœtus, A Case in which the Death of the, occurred before the Rupture of the Membranes. 219
Fœtus, Bacteriological Investigations upon an Extra-uterine ... 217
Food, Reed & Carnrick's Soluble ... 475
Forceps, An Improved Cannular Aural ... 671
Forceps-lock, The Antiseptic ... 494, 552
Foreign Bodies in the External Auditory Canal. 181
Foster, M. L. A Clinical Lecture on Syphilitic Otitis ... 57
Fothergill, The late Dr. Milner ... 193
Fracture, Compound, of the Left Foot ... 92
Fracture of the Coronoid Process and of the Head of the Radius ... 585
Fracture of the First Rib alone ... 642
Fracture of the Olecranon ... 216
Fracture of the Skull, Cerebral Abscess as a Sequel of Compound ... 565, 585
Fractures and their Union in the Bones of Birds, Examples of ... 714
Fractures of the Patella, Wiring ... 216
France, Intubation in ... 69
Freeman, J. A. Letter to the Editor ... 637
Frogs and Insects, Viviparous ... 551
Fumigations, Mercurial, in Laryngeal Diphtheria 302
Fundus? Can Overuse of the Retina cause Organic Disease of the ... 163

Gage, S. H. The Red Blood-corpuscles of Lamprey Eels in Relation to Jurisprudence ... 149
Galvano-puncture in Goître ... 308
Galvano-puncture in the Treatment of Pelvic Tumors, The Dangers of ... 724
Ganglia, On the Physiology of the Subcortical. 726
Ganglion of the Palm of the Hand as a Cause of Neuralgia ... 83
Gangrene following the Hypodermatic Use of Cocaine ... 242
Gardner, J. H. & Sons. Letter to the Editor ... 693
Garnett, The late Dr ... 139
Gastric Juice, The Diagnostic Value of Hydrochloric Acid in the ... 473
Gastro-enterostomy ... 79
Genu Valgum, Ogston's Operation for ... 215
Germicide, Hydrogen Peroxide as a ... 267
Gestation, Abdominal Section in Advanced Extra-uterine ... 242
Gestation, Two Cases of Ectopic ... 90
Gibney, V. P. Immobilization in Articular Disease ... 457
Gibney, V. P. The Treatment of Lateral Curvature by Posture and Exercise ... 288
Glands, On the Anatomy and Physiology of ... 120
Glaucoma, A Contribution to the Doctrine of ... 275
Glaucoma? Is Astigmatism a Factor in the Causation of ... 382
Glaucoma, Œdema of the Suprachorioidea in ... 163
Glaucoma, The Pathogenesis of ... 160
Glioma of the Retina ... 131
Glucose in Urine, A Rapid Method for the Quantitative Estimation of, by Fehling's Solution ... 5
Glycogen in Muscles, on the Influence of Antipyretic Substances on the Amount of ... 474
Glycogen in the Liver, The Influence of Antipyretics on ... 272
Goître, Cannabis Sativa in Exophthalmic ... 503
Goître, Exophthalmic ... 43
Goître, Galvano-puncture in ... 308
Goître, Pregnancy as a Remedy for Exophthalmic ... 461
Gold, Potentized Arsenate of ... 45
Gonorrhœa, Clinical Observations on ... 354
Gonorrhœa, Pyæmia as a Direct Sequel of ... 353
Gonorrhœa, Retrojection in ... 597
Gonorrhœa, Spinal Manifestations of ... 182
Gouley, J. W. S. A General Consideration of Tumors from a Surgical Point of View ... 393
Gouley, J. W. S. On Tumors ... 680
Grandin, E. H. Abscess of the Vesico-vaginal Septum (Pyokolpos) ... 991
Grandin, E. H. The Use of Antipyrine in Labor. 38
Graves's Disease, High Altitudes in ... 405
Gravitation, The Influence of, on the Motor Centers ... 271
Gray, L. C. Neurasthenia: its Differentiation and Treatment ... 421
Grinnell, M. Letter to the Editor ... 693
Gymnasium, The Importance of Careful Physical Examinations in the ... 257
Gynæcology, Progress in ... 70
Gynæcology, Reports on ... 189

Hæmatoma Auris as a Sign of Injury to the Spine in the Superior Cervical Region ... 495
Hæmatoma of the Orbit, Spontaneous ... 245
Hæmaturia ... 215
Hæmoglobinuria in Rheumatism ... 4
Hæmoptysis, Iodoform in ... 504
Hæmorrhage, Fatal ... 233
Hæmorrhage, Ligation of a Tonsil for ... 7

PAGE

Hemorrhage, Rectal Saline Injections in Post partum ... 588
Hemorrhoids, Whitehead's Operation for ... 626
Hamilton, W. D. Two Cases of Ectopic Gestation ... 90
Harrison, R. Perineal Lichenitis ... 372
Headache, Caffeine and the Salicylates in ... 644
Headache, Common Salt in the Treatment of ... 98
Health Reports, Government ... 27, 55, 83, 111, 139, 166, 194, 250, 278, 306, 334, 390, 417, 445, 500, 527, 558, 613
Health Resort, The Catskill Mountains as a ... 363
Heart, A Pin imbedded in a Woman's ... 775
Heart Disease, Chlorosis and ... 81
Heart Failure, Sudden ... 85
Heart, Fatty ... 469
Heart in Men, Determination of the Electromotor Action of the ... 726
Heart rhythm, Disturbances of the ... 637
Heart, The Inhibition of the Mammalian ... 475
Heart, The Treatment of Valvular Affections of the ... 637
Heat Centers in Man ... 496
Hedwigia Balsamifera, The ... 503
Hemianopsia, A Case of Homonymous Right ... 276
Hemianopsia, Brain Disease with ... 51
Henry, J. N. Letter to the Editor ... 463
Heredity in a Form of Cataract developed in Early Life, An Instance of Marked ... 161
Hernia, Inguinal ... 80
Hernia, Inguinal Properitoneal ... 80
Hernia, Radical Cure of ... 585
Hernia reduced by Faradization, A Case of Strangulated ... 572
Hernia, Strangulated, etc ... 80
Hernia, Traumatic Diaphragmatic ... 642
Herpes Zoster during Childhood ... 304
Heterophoria, Tenotomy for the Correction of ... 382
Hiccough, with Notes on Treatment ... 467
Hinkel, F. W. Clinical Notes on the Use of Antipyrine in the Nasal Passages ... 429
Hip Disease, "Distraction" in ... 209
Hip-joint Disease, Dr. Sayre's Treatment of Incipient ... 409
Hip-joint Disease, The Treatment of, by Fixation ... 496
Hippophagy ... 409
Holden, E. A Possible Substitute for Tracheotomy and Intubation in Certain Cases ... 645
Hooper, F. H. Effects of Varying Rates of Stimulation on the Action of the Recurrent Laryngeal Nerves ... 485
Hospital, Charity ... 672
Hospital for the Insane, The North Dakota ... 390
Hospital, Mr. Reginald Harrison and Mr. Arthur Durham at Bellevue ... 389
Hospital, The Boston Children's ... 493
Hospital, The Jefferson Medical College ... 663
Hospital, The Manhattan Eye and Ear ... 691
Hospital, The New York Polyclinic ... 45
Hospital, The New York Post-graduate Medical School and ... 524
Hospital, The Polyclinic ... 409
Hospital, The Post-graduate ... 692
Hospital, The Willard Parker ... 45
Hospital, The Woman's ... 575
House-tops, The Moral and Sanitary Use of ... 711
Hubbard, L. W. The Treatment of Acute Abscesses, based upon their Ætiology and Pathology ... 402
Humerus, Resection of the Upper Third of the ... 216
Hydatids, A Case of Uterine ... 93
Hydatids, The Treatment of, by the Injection of Ox-gall ... 644
Hydrastis Canadensis, A Study of ... 137
Hydrofluoric Acid in Tuberculosis, Inhalations of ... 136
Hydrogen Peroxide as a Germicide ... 267
Hydronephrosis, A Case of Renal Calculus and ... 546
Hydrophobia, Death from ... 689
Hygiene, Camp ... 182
Hymen, The ... 135
Hyoscine ... 136
Hyperostosis, Diffuse, of the Greater Wing of the Sphenoid ... 212
Hypertrophy, Compensatory, of the Suprarenal Capsules ... 271
Hypnotic, The Use of Strychnine as a ... 136
Hypnotics, A Point in Experiments with ... 634
Hysterectomies, Sixteen Abdominal ... 191
Hysterectomy, Complete ... 198, 226
Hysterectomy, Suprapubic ... 198, 226
Hysterectomy, The Pressure-forceps *versus* the Ligature in Vaginal ... 722
Hysterectomy, Vaginal, for Procidentia ... 268

Ichthyol, The Internal Use of ... 137
Idiosyncrasy, An Inherited, with regard to Anæsthesia ... 16
Impressions, On the Retardation of Retinal ... 727
Immobilization in Articular Disease ... 457
"Index-Catalogue," The New Volume of the ... 409
India-rubber, The Artistic Capabilities of ... 691
Infant, Athetosis in an ... 67
Infant, Extraordinary Tolerance of Morphine in an ... 70
Infant with Two Mouths, An ... 135
Infants, Irrigation of the Stomach in Nursing ... 332
Infection, Flies as Carriers of ... 377
Infection in Women, Gonorrhœal ... 192
Infection of the Mouth, Gonorrhœal ... 521
Infection, Some Conditions Relating to ... 582
Infectious Diseases, Cau al Therapeutics in the ... 469

PAGE

Infectivity, The Cause of Cancerous ... 241
Inflammation, Chronic Purulent, of the Tympanic Attic ... 381
Inflammation, Independent Idiopathic, of the Optic Nerve ... 161
Inflammation of the Attic of the Tympanum, Excision of the Drum-head and Ossicles for the Cure of Chronic Purulent ... 381
Inflammation of the Tympanic Attic, Chronic Purulent ... 569
Inflammation, Purulent, of the Middle Ear ... 103
Inflammation, The Effect of Nasal, on the Mind ... 340
Injections in Post partum Hæmorrhage, Rectal Saline ... 588
Injuries, Railway ... 168, 693
Injury, Cerebral, from a Fall ... 217
Injury, Nervous Affections following ... 496
Inorganic Elements and their Biological Action, The Relation between the Atomicity of ... 273
Insane Asylums, The "Dual System" in ... 392
Insanity and Life Insurance ... 75
Insanity and Mental Defectiveness, The Increase of ... 348
Insomnia, Sulphonal in ... 687
Instruments and Medicines Abroad, American ... 603
Insufficiencies of the Recti Muscles, A New Instrument for Testing ... 54
Interviews, Medical Bulletins and, as Advertisements ... 129, 130
Intestinal Obstruction, Acute ... 79, 80
Intestinal Obstruction in its Medical and Surgical Relations ... 328
Intestinal Puncture in the Treatment of Tympanites ... 14
Intestine, Insertion of the Ureter into the ... 215
Intestine, The Removal of Prolapsed ... 352
Intestines, A Case of Supposed Partial Twist of the ... 468
Intranasal Obstructions ... 331
Intubation, A Possible Substitute for Tracheotomy and, in Certain Cases ... 645
Intubation in France ... 69
Intussusception during Pregnancy ... 80
Iodides, The Administration of the ... 408
Iodine Applications in the Treatment of Ascites ... 700
Iodine in the Treatment of Dissection Wounds ... 44
Iodoform in Hæmoptysis ... 504
Iodoform in Tuberculosis Cutis, Hypodermic Injections of ... 110
Iodoformum Bituminatum ... 503
Irideremia, Double Congenital ... 130
Iris, Chromatic Asymmetry of the ... 549
Iris, Coloboma of the ... 245
Iritis ... 380
Iritis, Blennorrhagic or Gonorrhœal ... 248
Iritis, Quiet ... 51
Iron, On the Action of, on the Normal Organism ... 726
Iron, The Physiology of ... 475
Irrigation, A Danger from Peritoneal ... 493
Irrigation of the Stomach in Nursing Infants ... 332

Jacobi, M. P. Remarks on Cocculus Indicus ... 29
Joint, The Medio-tarsal ... 416
Jones, C. N. D. Letters to the Editor ... 326, 552
Jones, J. H. Summer Diarrhœas of Children ... 344
Jones, M. A. D. Two Cases of Removal of Uterine Myoma ... 198, 226
Journal, A New Special ... 182
"Journal of the American Medical Association," The ... 576
Journal of Cutaneous and Genito-urinary Diseases ... 719
Judson, A. B. A Practical Point in the Treatment of Pott's Disease of the Spin ... 323

Kansas City, Mo., The Health of ... 364, 409, 444, 500, 524, 557, 602, 663, 728
Katzenbach, W. H. Dyspeptic Dyspnœa ... 709
Keegan, D. F. Recent Experience in Lithotapaxy in Male Children ... 320
Kefir ... 69
Keloid, The Treatment of ... 110
Kelsey, C. B. Whitehead's Operation for Hæmorrhoids ... 626
Keratitis Bullosa ... 212
Keratoplasty, Experimental Investigations in ... 276
Keyes, E. L. The Curability of Urethral Stricture by Electricity ... 365
Kidney, Floating ... 81
Kidney, Intrapelvic, mistaken for Diseased Uterine Appendages, etc ... 58
Kidney, The Depth of the Cortex of the ... 417
Kidney, Vesical Symptoms due to the ... 643
Kidneys, Typhoid Bacilli in the ... 716
Kintzing, P. Cardiac Diseases in the Negro Race ... 713
Knife, A New Form of Cataract ... 100
Kollock, C. W. Foreign Bodies in the External Auditory Canal ... 181
Kraurosis of the Vulva ... 611

Labor, The Induction of Premature ... 283
Labor, The Use of Antipyrine in ... 38
Laboratory, A Bill for the Establishment of a National Patho-biological ... 526
Laboratory, The Hoagland ... 434, 546, 672
Laboratory, The Proposed National Pathobiological ... 523
Labyrinth, Necrosis of the ... 187
Labyrinthine Affection, A Bilateral, during Cerebro-spinal Meningitis ... 186
Labyrinthine Disease in a Case of Leukæmia ... 185
Lacerations of the Cervix and Perinæum, The Immediate Repair of ... 253

PAGE

Lacerations of the Perinæum and Pelvic Floor, Surgical Treatment for ... 706
Lactic Acid and Diet in Infantile Diarrhœa ... 123
Lactic Acid in Suppuration of the Ear ... 187
Lactic Acid in the Treatment of Tubercular Diarrhœa ... 361
Lamprey Eels, The Red Blood corpuscles of, in Relation to Juri-prudence ... 149
Laparotomy ... 268
Laparotomy for Gunshot Wounds of the Abdominal Viscera ... 389
Laparotomy for Reduction of an Inverted Uterus ... 451
Laparotomy, Septic Peritonitis following ... 75
Laryngitis, The Treatment of Some Forms of Chronic ... 439
Laryngology, A Decade of ... 435
Larynx, A Cortical Motor Center for the Human ... 438
Larynx, Angeioma of the ... 439
Larynx, Antiseptic Irrigation of the ... 602
Larynx, Primary Erysipelas of the ... 601
Larynx, Stenosis of the ... 437
Larynx, Stricture of the ... 437
LEADING ARTICLES:
Abscess of the Lung, The Treatment of ... 632
Acrodynia? Is there such a Disease as ... 491
Air Treatment and Water Treatment ... 600
Albumin, Tests for Minute Amounts of ... 460
Albuminuria, Eclampsia and ... 324
Asylum, The Morristown Lunatic ... 154
Blood-Plates and their Relation to Thrombosis ... 126
Blood, The Morphological Changes in the, during Coagulation, and the Causes of Coagulation ... 573
Children, What Kills the ... 153
College, The, of Physicians and Surgeons ... 9
Congress, The, of American Physicians and Surgeons ... 97
Constipation, Habitual, in Children ... 350
Consultations, The Management of ... 690
Death by Drowning, The Medico-legal Aspect of ... 44
Diseases and Remedies in Children and Adults, The Comparative Behavior of ... 574
Eclampsia and Albuminuria ... 324
Electricity, Execution by ... 376
Emmet's Operation in Scotland ... 128
Emperor of Germany, The Case of the late ... 431
English? Shall Physicians use good ... 661
Enterostomy *versus* Laparotomy in Acute Intestinal Obstruction ... 265
Epilepsy, The Ætiology of ... 550
Execution by Electricity ... 376
Exercise in the Treatment of Heart Disease ... 459
Foreign Bodies, The Removal of Hook-shaped ... 690
General Boulanger's Case, Queer Complications in ... 68
Goître, Exophthalmic ... 490
Gum Chewing ... 492
Hæmorrhoids, Diseases of the Liver as a Cause of ... 550
Heart Disease, Exercise in the Treatment of ... 459
Incontinence of Urine, The Surgical Treatment of Nocturnal ... 460
Laity, The Medical Education of the ... 295
Legislation, National Health ... 661
Liquors, The Injurious Effects of Factitious ... 522
Liver, Disorders of the, as a Cause of Hæmorrhoids ... 550
Lung, The Treatment of Abscess of the ... 632
Malformation, A Remarkable Case of Congenital ... 522
Medical Profession, The Social Position of the ... 67
Oophorectomy and the Sexual Appetite ... 207
Placenta, Mechanism of the Separation of the ... 376
Play as a Means of Development ... 239
Science, Three Quarters of a ... 181
Scotland, Emmet's Operation in ... 128
Ships, The Disinfection of, and their Cargoes at New Orleans ... 43
Specialties, The Undue Multiplication of ... 407
Status, The Relative, of Expectancy and Radical Treatment ... 407
Sulphonal, The New Hypnotic ... 9
Superstitions, Medical ... 633
Thrombosis, The Blood-plates and their Relation to ... 126
Urine, The Surgical Treatment of Nocturnal Incontinence of ... 460
Wine of the Country, The ... 207
Wines, Plastered ... 406
Wounds, Is Suppuration in, caused by Germs present in the Air? ... 239
Year, A Review of the ... 717
Legislation, National Health ... 692
Lens, Extraction of a Partially Absorbed Calcareous ... 131
Lens, Extraction of the Luxated, by Means of Agnew's Bident ... 383
Lenticonus, A Case of Posterior ... 213
Lepra, The Ocular Symptoms of, and their Treatment ... 164
Leuf, A. H. P. The Spinal Cord; its Removal ... 63
Leukæmia, Labyrinthine Disease in a Case of ... 185
Lewis, D. The Chian Turpentine Treatment of Cancer ... 65
Lichen Planus ... 610
Lichen Ruber ... 610
Ligation of a Tonsil for Hæmorrhage ... 7
Lithiasis, The Buffalo Lithia Water in Uric-acid ... 671
Litholapaxy in Children ... 304
Litholapaxy in Male Children, Recent Experience in ... 320

PAGE

Lithotrity in Children ..... 642
Lithotrity, Perineal ..... 372
Liver, Remarks on the Diagnosis of Diseases of the ..... 577
Liver, Resection of a Detached Lobe of the ..... 524
Liver, Suppurating Hydatid Cyst probably connected with the ..... 215
Liver, The Physiology of the ..... 189
Liver, Variations in the Shape and Position of the ..... 135
LL. D., The Honorary Degree of ..... 222
Lock for Scissors and Forceps, The Antiseptic .. 326
London, Letters from ..... 66, 238, 489, 689
Long, J. W. Letter to the Editor ..... 244
Loomis, A. L. The Cardiac Changes in Chronic Bright's Disease ..... 505, 640
Lunacy, Testimony in Cases of ..... 662
Lupus, The Treatment of ..... 110
Lyman, C. W. Reaction; a Generalization .... 61
Lyman, C. W. Tobacco; its Use and Abuse ... 262

Mackenzie, A Defender of Sir Morell ..... 523
Mackenzie, Billroth on ..... 10
Madden, T. M. An Address delivered at the Opening of the Section of Obstetric Medicine at the Annual Meeting of the British Medical Association ..... 141
Maloney, J. A. The Sphenoid Bone; Some of its Possible Functions ..... 144
Man, Actinomycosis in ..... 352
"Maritime Medical News," The ..... 551
MARINE-HOSPITAL SERVICE, CHANGES OF MEDICAL OFFICERS OF THE :
Armstrong, S. T. ..... 494
Austin, H. W. ..... 636
Bailhache, P. H. ..... 130, 636
Banks, C. E. ..... 210
Bratton, W. D. ..... 301
Brooks, S. D. ..... 636, 663
Carmichael, D. A. ..... 663
Cobb, J. O. ..... 633
Condict, A. W. ..... 496
Devan, S. C. ..... 636, 663
Fattic, J. B. ..... 130, 301, 410, 663
Fessenden, C. S. D. ..... 13, 130, 636
Geddings, H. D. ..... 243, 410, 636
Glennan, A. H. ..... 210
Godfrey, John ..... 636
Goldsborough, C. B. ..... 210, 410
Goodwin, H. T. ..... 130
Guitéras, G. M. ..... 130, 210, 663
Guitéras, John ..... 243, 301, 636
Hussey, S. H. ..... 130
Hutton, W. H. H. ..... 243, 301
Kinyoun, J. J. ..... 663
Long, W. H. ..... 636
Magruder, G. M. ..... 301, 410, 636, 663
McIntosh, W. P. ..... 130, 636
Mead, F. W. ..... 13, 636
Murray, R. D. ..... 130, 301
Norman, Seaton ..... 410, 663
Peckham, C. T. ..... 210
Pettus, W. J. ..... 130
Purviance, George ..... 130, 210, 301, 410, 636
Sawtelle, H. W. ..... 130, 210, 243
Stoner, G. W. ..... 410, 663
Stoner, J. B. ..... 210, 243, 636
Urquhart, F. M. ..... 210, 243, 636, 663
Vansant, John ..... 13
Vaughan, G. T. ..... 663
Wasdin, Eugene ..... 130, 210, 301
Wertenbaker, C. P. ..... 243
Williams, L. L. ..... 210
Woodward, R. M. ..... 130, 494
Wyman, Walter ..... 13, 636
Marine-Hospital Service, The ..... 45
Marlow, F. W. On the Advisability of Early Operation in Cases of Pterygium, combined with Loss of Acuteness of Vision ..... 206
Marsh, J. P. A Case of Uterine Hydatids ..... 93
Marshall, C. R. Report of a Case of Enlarged Thyreoid producing Tracheal Stenosis ..... 6
Masturbation and Stricture of the Urethra, The Connection between ..... 354
Materia Medica, Reports on ..... 135
McGillicuddy, T. J. Dilatation for Stenosis and Flexions of the Uterus, with New Instruments ..... 150
McLaren, A. The Ætiology of Chronic Oophoritis; its Relation to Tait's Operation ..... 171
McLaury, W. M. Letter to the Editor ..... 70
Measles, Clinical and Therapeutical Observations concerning ..... 333
Measles in Negroes ..... 434
Medical Board, An Army ..... 699
Medical Learning, A Royal Road to ..... 208
Medicine, Mysticism in the Developments of ... 665
Medical Profession, The Means of effecting the Unity of the ..... 561
Medical Service, Steamship ..... 68
Medical Service, The Naval ..... 662
Medicine and Religion ..... 196
Medicine, Legislative Regulation of the Practice of ..... 493
Medicine, Some Reflections upon the Relations which Scientific and Practical, bear to each other ..... 411
Medicine, Sulphuric Acid in ..... 286
Medicine, The Shady and the Sunny Sides of the Practice of ..... 234
Medicines Abroad, American Instruments and .. 603
Medulla in the Dog, Phenomena following a Lateral Section of One Half of the ..... 725
Medulla Oblongata, A New Function of the ..... 188

PAGE

Medulla Oblongata, The Cardiac Nucleus of Motor Fibers of the Pneumogastric Nerve in the ..... 189
Membrana Tympani, The Primary Physiological Purpose of the ..... 379
Membrane, False Drum ..... 103
Mendelson, W. A Rapid Method for the Quantitative Estimation of Glucose in Urine by Fehling's Solution ..... 5
Meningitis, A Bilateral Labyrinthine Affection during Cerebro-spinal ..... 186
Meningitis, Cerebro-spinal Tubercular ..... 682
Menstruation, On Sensory Disorders in Diseases and Changes in the Field of Vision in ..... 51
Menstruation, The Influence of, on the Pulse and Temperature ..... 575
Menstruation, The Repression of, as a Curative Measure ..... 602
Mental Affections and Aural Disease ..... 55
Menthol in Diphtheria of the Nose ..... 302
Mercury, Bichloride of, in the Treatment of External Diseases of the Eye ..... 53
Mercury in the System, The Retention of ..... 408
Mercury, Salicylate of ..... 111
Mesmerist, The Tribulation of a ..... 98
Michigan, The Health of .. 55, 166, 334, 417, 557, 700
Micro-organisms in the Genital Tract of the Healthy Woman ..... 352
Microscopists, A Circular to Medical ..... 616
Migraine and Astigmatism, Ophthalmic ..... 247
Milk Inspection in New York City ..... 364
Milk, Some of the Properties of ..... 634
Milk, The Influence of Nutriment upon the Supply and the Nutritive Character of Woman's, 218, 305
Mills, T. W. The Influence of the Nervous System on Cell Life (Metabolism) ..... 673
Mitral Systolic Murmur, The Diagnostic Significance of the ..... 470
Molluscum Contagiosum ..... 609
Moore, W. O. Hysterical Blindness in the Male 628
Morphine, Extraordinary Tolerance of, in an Infant ..... 70
Morphine, The Accidental Intravenous Injection of ..... 635
Morphine, Unusual After-effects of ..... 408
Mortality, The High, of an English Town ..... 69
Mule, The Healing Properties of a Brass ..... 55
Mumps, Bilateral and Unilateral, Total Deafness following ..... 186
Mundé, P. F. Intrapelvic Kidney mistaken for Diseased Uterine Appendages. Abdominal Nephrectomy; Recovery ..... 58
Mundé, P. F. Laparotomy for Reduction of an Inverted Uterus ..... 451
Murmurs, The Diagnostic Significance of Epigastric ..... 523
Murray, F. W. Aneurysm of the Internal Pudic Artery ..... 3
Muscular Tremor, Contributions to the Study of. 499
Museums, On Medical, etc ..... 309
Mycosis Fungoides ..... 110
Myoma, Two Cases of Removal of Uterine. 198, 226
Myomata, The Treatment of Uterine ..... 192
Myopia ..... 252
Myopia, Pathogeny and Treatment of Progressive ..... 246
Myopia, Symptomatic ..... 101
Myopia, The Relation of, to Astigmatism ..... 248
Mycosis, Pharyngeal ..... 720
Myositis Syphilitica ..... 111
Myxosarcoma of the Upper Lid ..... 52

Nail in the Stomach, Dissolution of a, by Hydrochloric Acid ..... 643
Nasal and Throat Troubles, Improved Means of Diagnosis and Surgical Treatment of ..... 668
Nasal Cavities, The Surgery of Gummatous Growths of the ..... 331
Nasal Difficulties in Ear Diseases ..... 381
Nasal Disease, Ocular Symptoms due to ..... 53
Nasal Diseases, The Ætiology and Pathology of. 330
Nasal Diseases, The Relation of, to other Diseases ..... 330
Nasal Duct in Man, The Development of the ... 274
Nasal Septum, Improved Instruments for Deflection of the ..... 720
Nasal Septum, The Surgical Treatment of Deflected ..... 13
National Guard of the State of New York, The Medical Department of the ..... 334
NAVY, CHANGES OF MEDICAL OFFICERS OF THE :
Anderson, Frank ..... 156, 635
Arnold, W. F. ..... 325, 378
Ashbridge, Richard ..... 692
Austin, A. A. ..... 12, 462
Auzal, E. W. ..... 69, 525, 692
Baker, J. W. ..... 378
Bates, Newton L. ..... 156, 378, 435, 525
Berryhill, F. A. ..... 525
Bertolette, D. N. ..... 525
Beyer, H. G. ..... 576
Bradley, G. P. ..... 576
Bradley, Michael ..... 12, 378, 525
Bransford, J. F. ..... 663
Bryant, Patrick H. ..... 576, 603
Cabell, A. G. ..... 378
Cooke, George H. ..... 378, 525
Cordeiro, F. J. B. ..... 243, 378
Crandall, R. P. ..... 12, 45, 325
Crawford, M. H. ..... 525
Derr, Ezra Z. ..... 525
Dickinson, Dwight ..... 243, 576
Dickson, S. H. ..... 243, 692

PAGE

NAVY, CHANGES OF MEDICAL OFFICERS OF THE :
Drake, N. H ..... 636
Drennan, M. C. ..... 603
Du Bois, F. L ..... 12, 525
Du Bose, W. R. ..... 325
Edgar, John M. ..... 12
Farwell, W. G. ..... 243, 435
Ferober, N. M ..... 210
Gaines, J. H. ..... 525, 635
Gibson, A. L. ..... 410, 525
Gravatt, C. U ..... 12
Hall, John H. ..... 525
Harmon G. E. H ..... 378
Harris, H. N. T ..... 525, 576
Heffenger, A. C. ..... 378, 603
Hennenberger, L. G. ..... 12
Henry, C. P. ..... 378
Hudson, Adrian ..... 156, 378, 410, 525
Jones, William H. ..... 156, 603, 635
Keeney, J. F. ..... 462
Kershner, Edward ..... 12
Kite, Isaac W. ..... 12, 156
Lewis, D. O. ..... 636
Lung, George A. ..... 325
Mackie, B. S. ..... 12
Magruder, A. F. ..... 435, 462
Martin, William ..... 69
McCarty, Rufus ..... 12
McClurg, W. A ..... 603
McCormick, Albert McD. ..... 130, 156, 462
McMurtrie, Daniel ..... 12, 603
Moore, A. M ..... 12, 462
Norfleet, Ernest ..... 576
Oberly, A. S. ..... 603, 692
Owens, Thomas ..... 13, 525
Parker, J. B. ..... 12, 130
Peck, George ..... 45
Penrose, Thomas N. ..... 130, 692
Persons, R. C. ..... 576
Pickrel, George McC. ..... 378
Russell, A. C. H. ..... 243, 636
Sayre, J. S ..... 12, 576
Scott, H. B. ..... 435
Shippen, Edward ..... 12
Simons, Manley H. ..... 243, 378, 379
Smith, Howard ..... 525
Spear, J. C. ..... 378
Stephenson, F. B. ..... 525, 603
Stone, E. P. ..... 156, 462
Swan, Robert ..... 576
Taylor, John Y. ..... 525
Tryon, J. Rufus ..... 12
Uric, John F. ..... 156, 525
Von Wedekind, Luther L. ..... 576, 603
Wells, Henry M. ..... 379
Wells, Howard ..... 525
Wentworth, A. R. ..... 636
Whitaker, H. W. ..... 183, 636
White, C. H. ..... 12, 156, 525
Wieber, F. W. F. ..... 156, 692
Winslow, G. F. ..... 603
Woods, G. W ..... 12, 525
Woolverton, Theoron ..... 12, 525
Navel, Plaster-of-Paris Dressing for the ..... 420
Necrosis of the Labyrinth ..... 187
Necrosis of the Temporal Bone ..... 379
Necrosis, Tubercular, of Cranial Bones leading to Perforation ..... 81
Needle in Diagnosis, The Exploring ..... 244
Negro, Personal Observations on Skin Diseases in the ..... 607
Neoplasmata, Malignant ..... 677
Nephrectomy, Abdominal ..... 58
Nephritis and Angina Pectoris, The Relation between Chronic Interstitial ..... 640
Nephritis, Experimental ..... 726
Nephritis, The Effect of Rapid Changes of Altitude on a Case of Interstitial, in an Advanced Stage ..... 356, 630
Nephritis, The Frequency of, as a Complication of Intestinal Catarrh ..... 24
Nephrolithiasis, A Case of ..... 355
Nephrolithotomy ..... 642
Nephrotomy, Lumbar ..... 355
Nerve, Paralysis of the Facial ..... 187
Nerves, Effects of Varying Rates of Stimulation on the Action of the Recurrent Laryngeal .. 485
Nervous System, The Influence of the, on Absorption ..... 727
Nervous System, The Influence of the, on Cell Life (Metabolism) ..... 673
Nettles, Therapeutical Flagellation with ..... 691
Neuralgia, Ganglion in the Palm of the Hand as a Cause of ..... 83
Neuralgia, The Hypodermic Use of Antipyrine in ..... 17
Neurasthenia: its Differentiation and Treatment ..... 421
Neuritis, Multiple ..... 104
Neuritis of Infectious Origin, A Case of Acute Fatal ..... 498
Neuropathies, Reflex ..... 428
Neuro-retinitis, Uni-ocular ..... 383
Neurosis of the Aural Apparatus, A Hitherto Undescribed ..... 438
New York City, The Health of ..... 69, 182, 296, 409, 552, 663
New York, Infectious Diseases in. 11, 45, 69, 98, 129, 155, 182, 209, 243, 267, 296, 324, 353, 377, 409, 437, 461, 552, 575, 602, 635, 663, 692, 748
New York, The Health of the State of ..... 280
New York, The Registration of Births, Marriages, and Deaths in ..... 613
New York, The University of the City of ..... 557

PAGE

New York, The Vital Statistics of ... 718
Nose, The Connection between Diseases of the Eye and Diseases of the ... 54
Nosography, Discussion on ... 144
Nurses, The Post-graduate Training School for ... 524
Nurses, The Milk School for Male ... 10
Nystagmus, Tractional Bilateral Horizontal, in Connection with Purulent Inflammation of the Middle Ear ... 133

OBITUARIES:
Arnold, John William Schmidt, M. D. ... 103
Sabine, Thomas F., M. D. ... 244
Sands, Henry Berton, M. D. ... 576
Williams, Elkanah, M. D. ... 132
OBITUARY NOTES:
Bernays, George J., M. D. ... 719
Campbell, Frederick R., M. D. ... 440
Ceccarini, Giovanni, M. D. ... 636
Cheesman, T. Matlack, M. D. ... 69
Crane, James, M. D. ... 494
Dunphy, John F., M. D. ... 183
Freeman, John N., M. D. ... 244
Garnett, A. Y. P., M. D. ... 46
Maxwell, William H., M. D. ... 69
Miller, John, M. D. ... 183
Page, William H., M. D. ... 244
Ramsey, Walter L., M. D. ... 240
Raphael, Henry, M. D. ... 183
Russell, Ira, M. D. ... 719
Sabin, R. H., M. D. ... 636
Simon, William J., M. D. ... 603
Snow, Edwin M., M. D. ... 719
Thallon, William M., M. D. ... 440
Townshend, George D., M. D. ... 244
Walton, Early W., M. D. ... 440
Obstetrics, Progress in ... 74
Obstetrics, Reports on ... 217
Ocular Movements, Congenital and Hereditary Defects of ... 53
Ocular Phenomena in Sclerosis "en Plaques" and in Ataxy ... 161
Ocular Symptoms due to Nasal Disease ... 54
Œdema Cutis, Acute Circumscribed ... 109
Œdema of the Chorioid and Retina ... 190
Œdema of the Eyelids, Chronic ... 275
Œdema of the Suprachoroidea in Glaucoma ... 163
Œdema, The so-called Essential ... 306
Œsophagotomy ... 78
Œsophagotomy, Internal ... 438
Olecranon, Fracture of the ... 216
Oophorectomy, A Year's Work in ... 359
Oophoritis, The Ætiology of Chronic ... 171
Opacities of the Vitreous, A Contribution to the Treatment of Membranous ... 99
Operating Case, A Compact ... 699
Ophthalmia, Electric ... 165
Ophthalmology, Progress in ... 73
Ophthalmology, Reports on ... 49, 160, 212, 245, 274
Ophthalmometer, A New Practical ... 153, 248
Ophthalmoplegia Externa, A Case of Chronic ... 50
Ophthalmoplegia Externa following Faucial Diphtheria ... 164
Optic Disc, Anomalous Outgrowths upon the ... 131
Optic Nerve, Independent Idiopathic Inflammation of the ... 161
Optic Nerve, Tumor of the ... 163
Optic Thalami, The Minute Structure of the Corpora Striata and ... 415
Orbit, Abscesses of the ... 245
Orbit, Ivory Exostosis of the, removed by Drilling ... 53
Orbit, Spontaneous Hæmatoma of the ... 245
Organic Tissues, The Electrolytic Decomposition of ... 589, 635
Osler, W. On a Form of Purpura associated with Articular, Gastro-intestinal, and Renal Symptoms ... 675
Osteoma, Small Orbital, removed with the Chisel ... 213
Osteo-myelitis, Resection of the Shaft of the Tibia for ... 16
Osteotomy, Femoral, for the Correction of Deformity resulting from Hip-joint Disease ... 593
Osteotomy for Anterior Tibial Curves ... 495
Othæmatoma or Insane Ear ... 664
Otitis, A Clinical Lecture on Syphilitic ... 57
Otitis Media ... 380
Otitis Media Suppurativa, Boric Acid in Solution in the Treatment of ... 381
Otology, Reports on ... 135
Ovaries, The Anatomy of Healthy and Diseased ... 192
Ovariotomy performed twice on the Same Patient ... 697
Ovariotomy, The Use of the Drainage-tube after ... 39, 325
Ovariotomy Work, Notes on Three Years' ... 190
Ovary? Varicocele in the Female: What is its Influence upon the ... 147, 174, 183
Ox-gall, The Treatment of Hydatids by the Injection of ... 644
Oxygen in the Capillary Bronchitis of Children ... 503
Oxyhæmoglobin in Men in Health and Disease, Variations of the Activity of the Reduction of ... 273
Oxyhæmoglobin, On the Variation of the Quantity and Activity of Reduction of, in Typhoid Fever ... 724
Oxyhæmoglobin, The Influence of Temperature on the Dissociation of ... 272

Paget's Disease of the Scrotum ... 602
Palmer, E. R. Retrojection in Gonorrhœa ... 597
Palpation of the Ureters in the Female ... 694
Panophthalmitis, Enucleation of the Eyeball during Purulent ... 701

PAGE

Panophthalmitis without Open Wound ... 246
Papilloma, The Relations of, to Syphilis and Tuberculosis of the Skin ... 607
Paralysis after Typhoid Fever, On Some Forms of ... 108
Paralysis, Diphtheritic ... 467
Paralysis, Infantile Spastic ... 19
Paralysis of Convergence in Progressive Locomotor Ataxia ... 104
Paralysis of the Facial Nerve ... 187
Paralysis of the Trochlearis ... 276
Paralysis, Treatment of Infantile ... 304
Paraplegia, Ataxic ... 16
Paris, Letters from ... 7, 125, 230, 374, 548, 697
Paris, Ritual Circumcision in ... 98
Paris, The Increase of the Medical and Pharmaceutical Professions in ... 98
Park, R. Surgery of the Brain, based on the Principles of Cerebral Localization. 479, 514, 539
Parker, J. P. Dihydrobromide of Quinine for Subcutaneous Injections ... 660
Parotid, On the Secretory Fibers of the Sympathetic supplying the ... 272
Parthenine ... 320
Patella, Wiring Fractures of the ... 216
Peabody, G. L. A Pin imbedded in a Woman's Heart ... 715
Pectoralis Quartus, The Homology and Innervation of the Axillary Arch and the ... 416
Pennsylvania, The University of ... 635
Pepper, W. Flatulent Distension of the Stomach, etc ... 281
Pericarditis, A Case of Suppurative, treated by Aspiration ... 232
Perinæum and Pelvic Floor, Surgical Treatment for Lacerations of the ... 706
Perinæum, The Immediate Repair of Lacerations of the Cervix and ... 253
Perioptometry and Chromatopsia ... 248
Periostitis, Variolous ... 323
Peritonæum, Malignant Disease of the ... 103
Peritonitis, Abdominal Section and Drainage in Puerperal ... 242
Peritonitis, Localized, as a Factor in Disease of the Abdominal Viscera ... 340
Peritonitis, Septic, following Laparotomy ... 75
Perityphlitis ... 16
Peter, M. A Clinical Lecture on Scrumuria and its Treatment ... 169
Petroleum, The Poisonous Action of, upon the Organism in General and upon the Skin ... 108
Pertussis, Antipyrine in ... 137
Phthisis, Cultivation of Vocal Music as One of the Means of preventing ... 665
Phthisis, Pleurisy as a Predisposing Cause of ... 47
Phthisis Pulmonalis, Creasote in the Treatment of ... 617
Phthisis, Residence at Certain Great Altitudes as a Means of Cure for Laryngeal ... 437
Phthisis, Treatment of Predisposition to, in Children who have had Pleurisy ... 47
Physiology, Reports on ... 183, 271, 473, 724
Physostigma in Traumatic Tetanus ... 242
Pigment in the Anterior Chamber, Movable Masses of ... 247
Pilocarpine, Deafness treated by ... 206
Placenta, The Relation between Albuminuria and Disease of the ... 220
Pleurisy as a Predisposing Cause of Phthisis ... 47
Pleurisy, Compressed Air in ... 140
Pleurisy in Very Young Children ... 303
Pleurisy, Sudden Death in, and after Thoracentesis ... 662
Pleurisy, Treatment of Predisposition to Phthisis in Children who have had ... 47
Pneumonia, A New Form of Infectious ... 67
Pneumonia, Empyema following Croupous ... 575
Poisoning by Atropine ... 266
Poisoning, Fish ... 588
Polk, W. M. Letter to the Editor ... 325
Polk, W. M. The Induction of Premature Labor. ... 283
Polyclinic, The Cincinnati ... 524
Polyclinic, The New York ... 296
Polyclinic, The Philadelphia ... 692
Polymyositis, On Subacute Progressive ... 497
Polypi of the Tympanic Cavity, The Effects of Pressure by ... 186
Potassium, Cobalto-nitrite of ... 197
Potassium, Iodide of, in Broncho-pneumonia ... 560
Pott's Disease, An Effective and Inexpensive Method for the Mechanical Treatment of ... 453
Pott's Disease of the Spine, A Practical Point in the Treatment of ... 323
Practice, The Advantages of Clandestine ... 155
Predisposition in Tuberculosis ... 292
Pregnancy, A Contribution to the Anatomy of Extra-uterine ... 219
Pregnancy, Abdominal Section in Extra-uterine ... 122
Pregnancy as a Remedy for Exophthalmic Goître ... 461
Pregnancy, Electricity in the Vomiting of ... 503
Pregnancy, Extra-uterine ... 208
Pregnancy, Intussusception during ... 80
Pregnancy, The Severe Vomiting of ... 723
Prichard, J. E. Compound Dislocation of the Tibia and Fibula at the Right Ankle; also Compound Fracture of the Left Foot ... 92
Prisms, The Designation of, by their Refracting Power ... 131
Prisms, The Numbering of, according to their Refractive Power ... 383
Probes, Aluminium Lacrymal ... 101
Prolapsus Uteri, Operations for ... 190
Prostate, Prostatotomy for Enlarged ... 354

PAGE

Prostate, The Operative Treatment of Hypertrophy of the ... 354
Prostatic Enlargement ... 580
Prostatic Enlargement, Harrison's Operation for ... 696
Prostatotomy for Enlarged Prostate ... 354
Pruritus Pudendi ... 110
Pruritus, Senile ... 110
Prussic Acid, Antagonism between Amyl Nitrite and ... 584
Pterygium, An Operation for ... 245
Pterygium, On the Advisability of Early Operation in Cases of, combined with Loss of Acuteness of Vision ... 206
Puerperal State, Acute Articular Rheumatism complicating the ... 23
Puerperium and Puerperal Infection, The Relation between Mental Disease during the ... 218
Pulse, The Subungual Capillary ... 575
Punctum Proximum, The Influence of the Removal of the ... 246
Pupil, Observation of the, in the Administration of Chloroform ... 217
Pupil, On the Action of the Nerves which dilate the ... 274
Pupils, Diagnosis of the Disturbances in the Reflex Movements of the ... 277
Purpura associated with Articular, Gastro-intestinal, and Renal Symptoms. On a Form of ... 675
Pusey, H. K. The Increase of Insanity and Mental Defectiveness ... 348
Pyæmia as a Direct Sequel of Gonorrhœa ... 353
Pyokolpos ... 291
Pyosalpinx and its Operative Removal, Experience with ... 189
Pyosalpinx, The Treatment of, by Aspiration ... 551
Pyrexia, Ætiology of ... 583

Quarantine Bill, The ... 129
Quarantine Law, The New National ... 155
Quarantine Laws and Regulations ... 222
Question, The Other Side of the ... 295
Quinine, Dihydrobromide of, for Subcutaneous Injections ... 660

Reaction; a Generalization ... 61
Reception, A ... 353
Refraction, An Apparatus for the Diagnosis of ... 383
Refraction, An Instrument for demonstrating the Laws of ... 383
Refraction and Acuteness of Vision, An Apparatus for the Determination of ... 213
Refraction by Cylinders ... 131
Refraction, Dr. Burnett on Corneal ... 129
Refraction of 576 Healthy Human Corneæ, An Analysis of the ... 100
Register, Bernd's Physician's Pocket ... 644
Religion, Medicine and ... 196
Renal Diseases, The Relation of, to Diseases of the Nervous System ... 497
Resection of the Foot, Osteoplastic ... 216
Resection of the Shaft of the Tibia for Osteomyelitis ... 16
Resection of the Upper Third of the Humerus ... 216
Resolvent, Aluminium Acetate as a ... 700
Respiration, Experimental Researches on the Chemical Phenomena of ... 188
Respiration, Forced, in Cases of Narcotic Poisoning, etc ... 464
Respiration, On a New Point in the Physiology of ... 474
Respiration, Regulation of the Temperature by the ... 188
Respiration, Supplemental ... 700
Respiration, The Influence of Cold and Heat on the Chemical Phenomena of ... 189
Respiratory Centers, Remark on the ... 726
Respiratory Exchanges with the Pulmonary Ventilation, and under the Influence of Sleep, Studies on the Variation of the ... 724
Respiratory Movements, The Mechanism of the. 727
Retina, Can Overuse of the, cause Organic Disease of the Fundus? ... 163
Retina, Curability of Detachment of the, by Aspiration of the Subretinal Fluid ... 247
Retina, Glioma of the ... 131
Retina, Œdema of the Chorioid and ... 100
Retina, Puncture of the, for Detachment ... 130
Retinoscopy ... 49
Retroflexion of the Uterus, The Treatment of ... 192
Rewards for Meritorious Discoveries and Inventions ... 527
Rheumatism, Acute Articular, complicating the Puerperal State ... 23
Rheumatism, Hæmoglobinuria in ... 4
Rickets and Syphilis ... 238
Ricketts, E. Letter to the Editor ... 694
Rider's Bone ... 135
Rockwell, F. W. A Case of Renal Calculus and Hydronephrosis, etc ... 546
Rockwell, F. W. Cerebral Abscess as a Sequel of Compound Fracture of the Skull ... 565, 585
Rogers, W. B. A Dilating Bulbous Urethrotome (and Urethrometer) adapted to Strictures of both Large and Small Caliber ... 225
Rohé, G. H. The Electrolytic Decomposition of Organic Tissues ... 589
Roosa, D. B. St. J. The Engadine and Davos ... 337
Roosa, D. B. St. J. The Means of effecting the Unity of the Medical Profession ... 561
Roosevelt, J. W. Cobalto-nitrite of Potassium, Preliminary Note on some of its Therapeutic Effects ... 197
Rotation determined by a Lesion of the Supra-œsophageal Ganglia in the Snail, On the Movement of ... 728

PAGE

Roth, B. A Note on the Uselessness and Harmfulness of Shoulder-straps, Shoulder-braces, etc. 488
Rupture of the Uterus in Labor at Full Term... 723
Ruptures of the Sclerotic and Chorioid, The Origin of. 276

Saccharin in Ammoniacal Urine. 504
Sachs, B. Progressive Muscular Dystrophies; The Relation of the Primary Forms to one another, and to Typical Progressive Muscular Atrophy. 620, 651
Salicylic Acid in Dermatology, The Value of... 605
Salicylates, Caffeine and the, in Headache. 644
Salol as an Internal Antiseptic. 104
Salt, Common, in the Treatment of Sick Headache. 28
Sambucus Nigra, The, as an Antiparasitic. 183
Sands, the late Dr. 672
San Francisco, The Health of..... 111, 224, 390, 500, 588, 728
Sarcoma of the Tonsil, Primary. 439
Sarcoma of the Vagina in Children. 459
"Satellite of the 'Annual of the Universal Medical Sciences,'" The... 409
Sayre, R. H. The Treatment of Rotary Lateral Curvature of the Spine. 533
Scabies, An Ointment for. 420
Scapula, Fixation of the. 416
Scarlet Fever Independent of Infection. 602
School and Hospital, The New York Post-graduate Medical. 182, 444
School for Male Nurses, The Mills. 10
Sciatica, Massage, Rest, and Position in. 35
Scissors, Serrated. 249
Scleroderma, The Cure of a Case of. 551
Sclerosis, A Case presenting the Typical Symptoms of Disseminated. 499
Sclerosis "en Plaques," Ocular Phenomena in.. 161
Sclerotic and Chorioid, The Origin of Ruptures of the. 276
Scrofula and Tuberculosis. 81
Scrofulous Neck and its Treatment. 81
Scrotum, Paget's Disease of the. 602
Seasickness, A Contribution to the Ætiology of. 694
Seasickness, Antipyrine in. 344
Sea-vertigo, Experimental Studies on. 727
Seborrhœa. 108
Seborrhœa Sicca of the Scalp, An Ointment for. 700
Section, The Cæsarean, etc. 218
Sedative, Antipyrine as a Uterine. 560
Septicæmia, the Relation of Puerperal, to Maceration of the Fœtus. 17
Serumuria and its Treatment. 169
Sexes, The Mental Characteristics of the. 634
Sexual Organs, Relation of Ophthalmic Disease to Certain Conditions of the. 52
Shaw, F. W. Lactic Acid and Diet in Infantile Diarrhœa. 123
Shaw, J. C. Apoplectiform, Epileptiform, and Hemiparetic Attacks in Locomotor Ataxia.. 36
Shoemaker, J. V. The Moral and Sanitary Use of House-tops. 117
Shoulder-straps, A Note on the Uselessness and Harmfulness of, etc. 488
Shufeldt, R. W. Examples of Fractures and their Union in the Bones of Birds. 714
Skin, Clinical Instruction in Diseases of the.... 461
Skin, The Effect of Varnishing the Entire..... 461
Slag as an Absorbent and Deodorizer of Excreta 267
Small-pox in Tennessee. 68
Smith, J. G. The Importance of Careful Physical Examinations in the Gymnasium .. ... 257
Smith, T. Recent Advances in the Disinfection of Dwellings, as Illustrated by the Berlin Rules. 117
Snare, An Improved Aural. 103
Sneezing, The Centripetal Way of the Reflex of. 727
Soap, A Surgical. 420
Societies and Associations, Meetings of:
Academy of Medicine, New York..... 22, 46, 47, 577, 719
Association, Alumni, of the Woman's Hospital in the State of New York..... 75, 183
Association, Alumnæ, of the Woman's Medical College of the New York Infirmary. ... 23
Association, American Dermatological..... 604
Association, American Laryngological..... 435
Association, American Neurological..... 496
Association, American Orthopædic..... 404
Association, American Rhinological..... 329
Association, New York State Medical..... 463
Association of American Physicians.... 4, 11, 468, 637
Association of Genito-urinary Surgeons, American. 353
Congress of American Physicians and Surgeons. 326
Society, American Gynæcological ..... 694, 720
Society, American Ophthalmological. 99, 130, 382
Society, American Otological..... 101, 379
Society, Kentucky State Medical..... 70
Society, Medical, of the County of New York 13, 14
Society, Medical, of Virginia..... 577, 665
Society, New York Clinical..... 14, 16, 103
Society, New York Neurological..... 664
Society, New York Surgical..... 584
Society, Obstetrical, of Philadelphia..... 268, 359
Society of the Alumni of Bellevue Hospital... 18
Society, Philadelphia County Medical.... 19, 156, 383, 440
Society, Clinical, of the New York Post-graduate Medical School and Hospital..... 389

PAGE

Society, The American Gynæcological..... 324
Society, The Franklin, Vt., County Medical.... 296
Society, The Manhattan Medical and Surgical.. 514
Society, The Medical Microscopical, of Brooklyn. 616
Society, The Medical, of the County of Clinton, N. Y. 12
Society, The Medical, of the County of New York. 461
Society, The Medical, of the State of New York. 718
Society, The Medico-chirurgical, of German Physicians. 353
Society, The Medico-legal. 635
Society, The New York Obstetrical. 431
Society, The Washington Obstetrical and Gynæcological. 493
Soldiers, The Nervous Troubles of Old. 601
Spasmus Nutans in Dentition. 490
Sphenoid Bone, The; Some of its Possible Functions. 141
Sphenoid, Diffuse Hyperostosis of the Greater Wing of the. 212
Spina Bifida, Removal of a, with the Knife..... 205
Spinal Cord, The; its Removal. 63
Spine, The Treatment of Rotary Lateral Curvature of the. 533
Spitzka, E. C. A Note concerning the Probable Course of the Will-tract to the Cranial-nerve Nuclei. 405
Spleen, Stone in the Bladder in connection with Enlargement of the. 342
Spleen, The Structure of the. 273
Splint, The Plaster-of-Paris. 291
Springs, The Sharon. 693
Stenosis and Flexions of the Uterus, Dilatation for. 150
Stenosis, Enlarged Thyreoid producing Tracheal. 5
Stenosis of the Larynx. 437
Stenosis of the Larynx and Trachea. 437
Sternalis Muscle, The. 134
Sternum, Trephining of the. 662
Stillman, C. F. An Effective and Inexpensive Method for the Mechanical Treatment of Pott's Disease. 453
Stomach, Flatulent Distension of the. 281
Stomach, Lardaceous Degeneration of the..... 549
Stone in the Bladder in connection with Enlargement of the Spleen. 342
Strabismus, Binocular Vision after the Operation for. 165
Strabismus, Results of Treatment of Convergent, etc. 162
Strabismus, The Operation for. 52
Strangulation of the Clitoris. 45
Stricture of the Larynx. 437
Stricture of the Urethra, Notes upon the Prognosis of Organic. 354
Stricture of the Urethra, The Connection between Masturbation and. 354
Stricture, The Curability of Urethral, by Electricity. 365
Strychnine as a Hypnotic, The Use of. 136
Styloid Process, Resection of the, for Painful Deglutition. 574
Succus Alterans. 55
Sulphonal, Clinical Report on. 648
Sulphonal in Insomnia. 687
Sulphonal, Poisoning with. 717
Sulphuric Acid in Medicine. 286
Sulphurous Acid in Tuberculosis, Inhalations and Hypodermic Injections of. 137
Superstitions, Medical. 694
Suppuration and Septic Disease. 81
Suppuration of the Ear, Lactic Acid in. 187
Suppuration of the Knee Joint, Acute. 643
Surgery, Antiseptic Nasal. 438
Surgery, Cerebral. 216
Surgery, Hepatic. 215
Surgery, Improvements in Nasal. 74
Surgery of the Brain, based on the Principles of Cerebral Localization ..... 357, 479, 514, 539
Surgery, Preventive. 643
Surgery, Rectal. 72
Surgery, Reports on. ... 78, 214, 641
Surgical Dressings. 83
Suture for the Bladder. 214
Suture of Internal Semilunar Cartilage to the Head of the Tibia. 215
Sutures, Boiled Silkworm-gut. 604, 694
Sweat-Glands, Studies on the. 46
Sweating Hands and Feet, Treatment of. 556
Sycosis. 108
Sycosis, Treatment of. 556
Syms, P. Arthropathia Tabidorum. .. 1, 18
Syphilis and its Treatment. 305
Syphilis and Tuberculosis of the Skin, The Relations of Papilloma to. 607
Syphilis, Calomel Oil and Oleum Cinereum Hypodermically in the Treatment of. 110
Syphilis, Late Congenital. 305
Syphilis of the Larynx, Trachea, and Bronchi .. 383
Syphilis, Rickets and. 238
Syphilis, The Abortive Treatment of. 111
Syphilis, The Basis of the Present Treatment of. 555
Syphilis, The Earliest Symptoms of Hereditary. 111
Syphilis, The Treatment of, by Calomel Injections. 556

Tabes Dorsalis, Optic Atrophy in. 405
Tabes, Pseudo-. 238
Taft, C. E. The Use of Drainage-tubes after Ovariotomy. 39
Taste, Effect of Acids on the Sense of. 308

PAGE

Taylor, H. L. The Mechanical Treatment of Senile Coxitis. 658
Taylor, R. W. Dermatitis Tuberosa of Iodic Origin; the so-called Acne-anthracoïde iodopotassique. 477
Telephone, Influence of the Use of the, upon the Hearing Power. 382
Temperature, Regulation of the, by the Respiration. 188
Temperature, The Modification of the, in connection with Muscular Work. 727
Tennessee, Small-pox in. 68
Tenotomy for the Correction of Heterophoria... 382
Tension. 642
Terebene, Observations on the Use of. 519
Testicle, Clinical Observations of Diseases of the. 426
Testis, The Diagnosis of Encephaloid Cancer of the. 642
Tetanus after Hypodermic Injection. 599
Tetanus, Physostigma in Traumatic. 242
Therapeutics, Modern Cardiac. 136
Therapeutics, Report on. 135
Thomas, F. S. Letter to the Editor ..... 183
Thoracentesis, Sudden Death in Pleurisy and after. 662
Throat, Cigarette-smoking and Malignant Disease of the. 419
Thyreoid, Enlarged, producing Tracheal Stenosis
Thyreoid Gland, The Suspensory Ligaments of the. 134
Tibia and Fibula, Compound Dislocation of the, at the Right Ankle. 92
Tibia, Resection of the Shaft of the, for Osteomyelitis. 16
Tibia, Suture of Internal Semilunar Cartilage to the Head of the. 215
Tissues, The Staining of Living. 188
Tobacco: its Use and Abuse. 262
Tongue Depressor, A Self-retaining. 556
Tonsil, Ligation of a, for Hæmorrhage. 7
Tonsil, Primary Sarcoma of the. 439
Tonsillitis, Gangrenous. 233
Tonsils, A Case of Enlarged, etc. 331
Tonsils, Enlarged. 667
Toothache, An Application for. 84
Townshend, A. B. The Immediate Repair of Lacerations of the Cervix and Perinæum.... 253
Trachea, Angeio-sarcoma of the. 217
Tracheotomy and Intubation, A Possible Substitute for, in Certain Cases. 645
Tracheotomy for Croup. 333
Tracheotomy in Croup. 448
Trachoma, The Operative Treatment of. 276
Transfusion, Death following Hæmorrhage and Post-hæmorrhagic. 188
Transplantation, A New Method of Corneal .... 274
Transplantation of the Cornea. 206
Trephining of the Sternum.. 662
Trichiasis, A Method of Operating for Entropium and. 277
Trichiasis of the Upper Lid, Replacing the Lid Margin in. 213
Trichiasis, The Tarsocheiloplastic Operation for the Cure of. 51
Trismus or Tetanus in the Newly Born, The Ætiology of. 332
Trochlearis, Alexis and Paralysis of the ..... 276
Tubercular Joint Affections. 81
Tuberculosis Cutis, Hypodermic Injections of Iodoform in. 110
Tuberculosis, Inhalations of Hydrofluoric Acid in. 136
Tuberculosis, Inhalations and Hypodermic Injections of Sulphurous Acid in. 137
Tuberculosis of the Buccal Cavity, A Case of Primary. 719
Tuberculosis of the Eye. 54
Tuberculosis of the Skin, The Relations of Papilloma to Syphilis and. 607
Tuberculosis, Predisposition in. 292
Tuberculosis, Scrofula and. 81
Tuberculosis, The Communication of, by Ritual Circumcision. 81
Tuberculosis, The Treatment of Peritoneal..... 193
Tubes? Does the Menstrual Flow originate in the. 468
Tumor of the Cervical Spine, A Case of. 499
Tumor of the Clitoris. 24
Tumor of the Intestine with Symptoms of Biliary Colic. 80
Tumor of the Optic Nerve. 163
Tumor, Teratoid, of the Auricle. 103
Tumor, Tuberculous, compressing the Spinal Cord. 584
Tumors, A General Consideration of, from a Surgical Point of View. 393
Tumors, On. 680
Tumors, Sebaceous. 217
Tumors, The Ætiology of. 641
Tumors, The Diagnosis and Surgery of Cerebral. 22
Tumors, The Resection of the Great Venous Trunks in the Extirpation of Malignant .... 388
Tumors, Thomas's Operation for Benign Mammæ. 69
Turpentine, Oil of, in the Treatment of Epistaxis. 560
Tympanic Cavity, The Effects of Pressure by Polypi of the. 186
Tympanites, The Dangers of Intestinal Puncture in the Treatment of. 14
Typhoid Fever, Atypical Forms of ..... 578
Typhoid Fever, Experimental..... 532

PAGE

Typhoid Fever, On Some Forms of Paralysis after ... 114, 168
Typhoid Fever, The Geographical Distribution of ... 111
Typhoid Fever, The Influence of, on some other Diseases ... 368
Typhoid Fever, The Management of the Stage of Convalescence in ... 113

Ulcer of the Cornea, The Anatomy of Serpiginous ... 164
Ulceration, Imaginary Laryngeal ... 336
Ulcers, Antipyrine in Hemorrhoidal ... 588
Ulcers of the Cornea, The Treatment of ... 382
Ulceration of the Vulva, Tuberculous ... 190
Unity of the Medical Profession, The Means of effecting the ... 561
Universities and Medical Schools, The Question of the Connection between ... 377
"University Medical Magazine," The ... 408
Urea, The Influence of Coffee on the Excretion of ... 726
Ureter, Insertion of the, into the Intestine ... 215
Ureters, Catheterization of the ... 215
Ureters in the Female, Palpation of the ... 694
Urethra, Rupture of the ... 81
Urethral Discharges, The Use of Nitrate of Silver in the Local Treatment of Chronic ... 354
Urethritis, The Diagnosis and Treatment of Chronic ... 354
Urethrocele, The Cause and Treatment of ... 449, 695
Urethrotome, A Dilating Bulbous ... 225
Urethrotomy, Résumé of an Experience of Seventeen Years with the Operation of dilating ... 356
Urine, A Rapid Method for the Quantitative Estimation of Glucose in, by Fehling's Solution ... 5
Urine, Saccharin in Ammoniacal ... 504
Urine, The Relation between Pancreatic Action on the Albuminoids and the Quantity of Indican in the ... 474
Urticaria ... 109
Urticaria Pigmentosa ... 350
Utero-ovarian Operations, Reflex Accidents consequent upon ... 190
Uterus after Parturition, The Frequency of Backward Displacements of the ... 24
Uterus, Dilatation for Stenosis and Flexions of the ... 150
Uterus in Labor at Full Term, Rupture of the ... 723

PAGE

Uterus, Laparotomy for Reduction of an Inverted ... 151
Uterus, The Treatment of Retroflexion of the ... 192

Vagina, Two Cases of Primary Carcinoma of the ... 261
Valentine, F. C. A Case of Aconite Poisoning; Recovery ... 659
Valvular Affections of the Heart, The Treatment of ... 637
Vance, Ap M. Femoral Osteotomy for the Correction of Deformity resulting from Hip-joint Disease ... 593
Van Schaick, G. G. Letter to the Editor ... 693
Varicocele in the Female: What is its Influence upon the Ovary? ... 147, 174, 183
Varix in a Stump, Aneurysmal ... 643
Vastus Externus, Duplicity of the ... 133
Vedder, M. R. The Plaster of Paris Splint; Improvements Based upon Practice ... 291
Veins, Anatomical Injection of the ... 634
Venereal Diseases, Reports on ... 107, 555
Vergil, Sir Morell Mackenzie as an Emendator of ... 523
Vermont, The Nervine Establishment at Burlington ... 390
Vertebræ, Dislocation of Cervical ... 499
Vertigo, A Case of Aural, etc ... 101
Vesical Disease, The Cystoscope in the Diagnosis of Obscure ... 214
Vienna, Letter from ... 95
Virginia, The Medical College of ... 602
Vision, An Apparatus for the Determination of Refraction and Acuteness of ... 213
Vision, Binocular, after the Operation for Strabismus ... 165
Vision, Changes in the Field of, in Menstruation ... 51
Vision, Colored, and the Equivalence of Sensory Excitations ... 725
Vision, On the Advisability of Early Operation in Cases of Pterygium combined with Loss of Acuteness of ... 206
Visiting Lists for the Coming Year ... 603
Visual Records, A Needed Reform in ... 162
Vital Force, The Diurnal Minimum of ... 377
Vital Knot in Men, Contribution to the Study of the ... 725
Vitreous, A Contribution to the Treatment of Membranous Opacities of the ... 99
Vitreous Humor, The Nutrition of the ... 52

PAGE

Vitreous in Young Persons, General Apoplexy of the ... 162
Voice, The Cure of the Falsetto ... 330
Vomiting of Pregnancy, Electricity in the ... 503
Vomiting of Pregnancy, The Severe ... 723
Vomiting, Sympathetic ... 635, 636
Vulva, Kraurosis of the ... 611
Vulva, Tuberculous Ulceration of the ... 190

Warming-pan and Croup-kettle, A Combined ... 444
Warts, Treatment of Multiple ... 556
Washington, Letter from ... 529
Water Supply for New York, The Proposed New Source of ... 634
Wathen, W. H. Abdominal Section in Extra-uterine Pregnancy ... 122
Wathen, W. H. Letter to the Editor ... 494
Wathen, W. H. Surgical Treatment for Lacerations of the Perinæum and Pelvic Floor ... 706
Webster, D. A Case of Tobacco Amblyopia ... 256
Wells, J. A. Aneurysm of the Arch of the Aorta, or of the Innominate Artery. Simultaneous Ligation of the Right Common Carotid and Right Subclavian Arteries; Recovery ... 373
Wheelhouse's Operation ... 644
Whooping-cough, Blindness due to ... 602
Whooping-cough, Sulphurous-acid Fumigation in ... 503
Whooping-cough, The Treatment of ... 302
Whooping-cough, The Use of Antipyrine in ... 18
Williams, C. Stone in the Bladder in Connection with Enlargement of the Spleen ... 342
Willis, The Circle of ... 134
Will-tract, A Note concerning the Probable Course of the, to the Cranial-nerve Nuclei ... 406
Wine, A French Nobleman's Punishment for Adulterating ... 129
Wine, An Epidemic due to Sophisticated ... 45
Wines, California ... 112
Wines, Medicated, and Temperance Beverages ... 599
Woman, Micro-organism, in the Genital Tract of the Healthy ... 352
Women, Gonorrhœal Infection in ... 192
Wood, W. On the Anatomy and Physiology of Glands ... 120
Wounds, Iodine in the Treatment of Dissection ... 44

Yellow Fever ... 463
Yellow Fever in Jacksonville, Fla ... 149
Yellow Fever in the South, The Eradication of ... 574

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